VENTURA COUNTY

FIRE HAZARD SEVERITY ZONES IN SRA

Adopted by CAL FIRE on November 7, 2007

Fire and Resource Assessment Program
California Department of Forestry and Fire Protection

KERN COUNTY

SANTA BARBARA COUNTY

LOS ANGELES COUNTY

PACIFIC OCEAN

Stauffer
Ojai
Lake Casitas
Punta Gorda
Santa Paula
Fillmore
Piru Lake
Chrisman
Saticoy
Ventura
Moorpark
Simi Valley
Camarillo
Oxnard
Port Hueneme
Thousand Oaks

FIRE HAZARD SEVERITY ZONES in State Responsibility Area (SRA)
- Moderate
- High
- Very High

FIRE PROTECTION RESPONSIBILITY
- Federal Responsibility Area (FRA)
- Local Responsibility Area (LRA) - Unincorporated
- Local Responsibility Area (LRA) - Incorporated

Public Resources Code 4201-4204 direct the California Department of Forestry and Fire Protection (CAL FIRE) to map fire hazard within State Responsibility Areas (SRA), based on relevant factors such as fuels, terrain, and weather. These statutes were passed after significant wildland-urban interface fires; consequently these hazards are described according to their potential for causing ignitions to buildings. These zones referred to as Fire Hazard Severity Zones(FHSZ), provide the basis for application of various mitigation strategies to reduce risks to buildings associated with wildland fires. The zones also relate to the requirements for building codes designed to reduce the ignition potential to buildings in the wildland-urban interface zones.

These maps have been created by CAL FIRE's Fire and Resource Assessment Program (FRAP) using data and models describing development patterns, estimated fire behavior characteristics based on potential fuels over a 30-50 year time horizon, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure to new construction. Details on the project and specific modeling methodology can be found at http://frap.cdf.ca.gov/projects/hazard/methods.htm.

The version of the map shown here represents the official "Maps of Fire Hazard Severity Zones in the State Responsibility Area of California" as required by Public Resources Code 4201-4204 and entitled in the California Code of Regulation, Title 14, Section 1280 Fire Hazard Severity Zones, and as adopted by CAL FIRE on November 7, 2007.

An interactive system for viewing map data is hosted by the UC Center for Fire at http://firecenter.berkeley.edu/fhsz/

Questions can be directed to David Sapsis, at 916.445.5369, dave.sapsis@fire.ca.gov.

NOTE: Ventura County also includes:

San Nicolas Island - Federal Responsibility Area (FRA)
Anacapa Island - Local Responsibility Area (LRA)

Projection Albers, NAD 1927
Scale 1: 100,000
at 35.5" x 43"
November 06, 2007

Obtain FRAP maps, data, metadata and publications on the Internet at http://frap.cdf.ca.gov
For more information, contact CAL FIRE-FRAP, PO Box 944246, Sacramento, CA 94244-2460, (916) 327-3939.

Arnold Schwarzenegger, Governor,
State of California
Mike Chrisman, Secretary for Resources,
The Resources Agency
Ruben Grijalva, Director,
Department of Forestry and Fire Protection

MAP ID: FHSZS_MAP

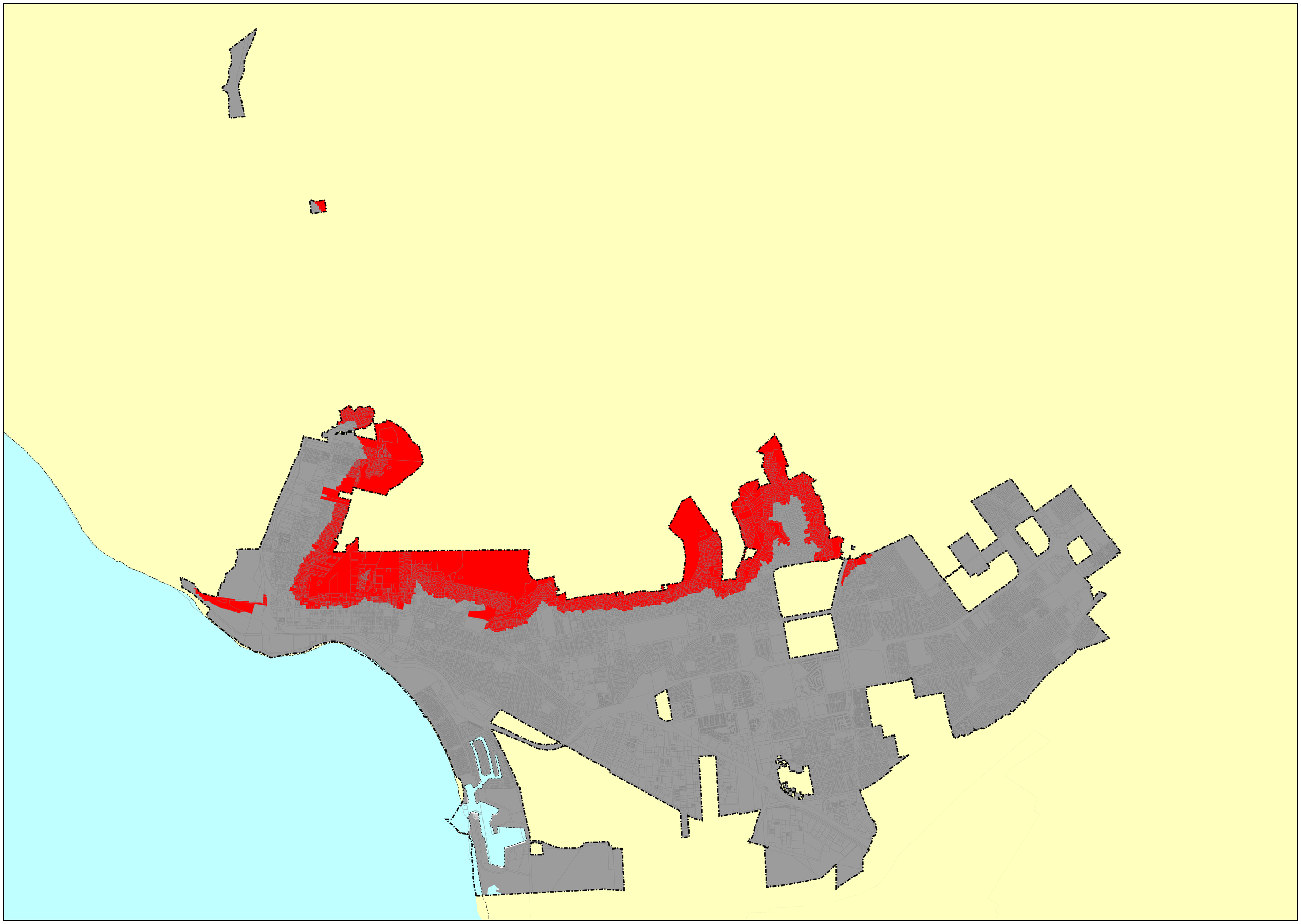
DATA SOURCES
CAL FIRE Fire Hazard Severity Zones (FHSZS06_3)
CAL FIRE State Responsibility Areas (SRA05_5)
CAL FIRE Incorporated Cities (Incorp07_3)
PLSS (1:100,000 USGS, Land Grants with CAL FIRE grid)

FRAP
Fire and Resource Assessment Program
California Department of Forestry and Fire Protection

Ventura

VERY HIGH FIRE HAZARD SEVERITY ZONES IN LRA

As Recommended by CALFIRE



FIRE HAZARD SEVERITY ZONES

Local Responsability Area	State Responsibility Area
VHFHSZ	VHFHSZ
Non-VHFHSZ	Non-VHFHSZ

City Boundary

Parcels

Government Code 51175-89 directs the California Department of Forestry and Fire Protection (CALFIRE) to map areas of very high fire hazard within Local Responsibility Areas (LRA). Mapping of the areas, referred to as Very High Fire Hazard Severity Zones (VHFHSZ), is based on relevant factors such as fuels, terrain, and weather. VHFHSZ maps were initially developed in the mid-1990s but are now being updated based on improved science, mapping techniques, and data.

The California Building Commission adopted the Wildland-Urban Interface codes in late 2005 to be effective in 2008. These new codes include provisions to improve the ignition resistance of buildings, especially from firebrands. The updated fire hazard severity zones will be used by building officials to determine appropriate construction materials for new buildings in the Wildland-Urban Interface. The updated zones will also be used by property owners to comply with natural hazards disclosure requirements at time of property sale and 100 foot defensible space clearance. It is also likely that the fire hazard severity zones will be used for updates to the safety element of general plans.

This map has been created by CAL FIRE's Fire and Resource Assessment Program (FRAP) using data and models describing development patterns, **potential** fuels over a 30-50 year time horizon, expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to new construction. Initial data was then modified based on recent (2009) aerial photography and local information regarding future land-use change. Details on the project and specific modeling methodology can be found at: http://frap.cdf.ca.gov/projects/hazard/methods.htm

This specific map is based on a geographic information system dataset that depicts final CALFIRE recommendations for Very High FHSZs within the local jurisdiction. The process of finalizing these boundaries involved an extensive local review process, the details fo which are available at http://frap.cdf.ca.gov/projects/hazard/btnet (click on "Continue as guest without logging in"). Local government has 120 days to designate, by ordinance, very high fire hazard severity zones within its jurisdiction after receiving the recommendation. Local government can add additional VHFHSZs. There is no requirement for local government to report their final action to CALFIRE when the recommended zones are adopted. Consequently, users are directed to the appropiate local entity (county, city, fire department, or Fire Protection District) to determine the status of the local fire hazard severity zone ordinance.

This map was developed using data products such as parcel and city boundaries provided by local government agencies. In certain cases, this includes copyrighted geographic information. The maps are for display purposes only - questions and requests related to parcel or city boundary data should be directed to the appropriate local government entity.

N
W E
S

0 2 Miles

0 2 Kilometers

Projection Albers, NAD 1983
Scale 1: 26,000
at 36" x 36"
October 6, 2010

Obtain FRAP maps, data, metadata and publications on the Internet at http://frap.cdf.ca.gov
For more information, contact CAL FIRE-FRAP, PO Box 944246, Sacramento, CA 94244-2460, (916) 327-3939.

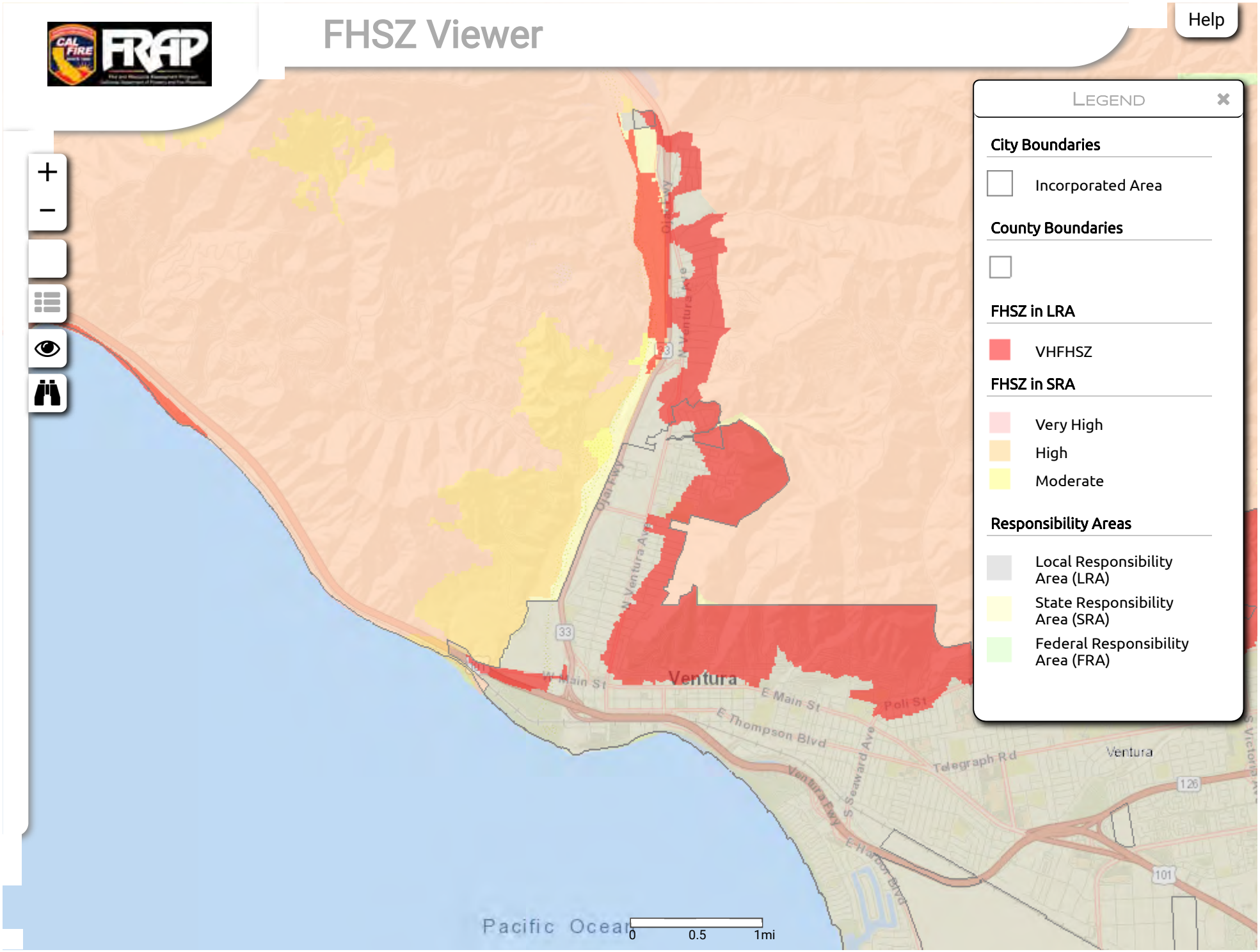
Arnold Schwarzenegger, Governor,
State of California
Lester Snow, Secretary for Resources,
The Resources Agency
Del Walters, Director,
Department of Forestry and Fire Protection

MAP ID: FHSZL_c56_Ventura

DATA SOURCES:
CALFIRE Very High Fire Hazard Severity Zones in LRA(c56fhzl06_3)
CALFIRE Incorporated Cities (Incorp10_2)
CALFIRE County Boundaries (cnty24k09_1)
CALFIRE Parcel Boundaries (c56_parcel)

FHSZ Viewer

Help



WE THE PEOPLE

of Ventura, in order to ensure that our City continues to be a great place for us to live . . .

ACHIEVING THE VISION

2005 ventura general plan

CITY OF SAN BUENAVENTURA

2005 VENTURA GENERAL PLAN

ADOPTED AUGUST 8, 2005

RESOLUTION NOS.2005-072 AND 2005-073

The following people contributed to the preparation of the 2005 Ventura General Plan:

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Carl E. Morehouse, Deputy Mayor
Neal Andrews, Council Member
Bill Fulton, Council Member
James L. Monahan, Council Member
Sandy E. Smith, Council Member
Christy Weir, Council Member

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Carolyn Briggs, Chair
Curt Stiles, Vice Chair
Ronald Allen, Commissioner
Michael Faulconer, Commissioner
Martel Fraser, Commissioner
Bill Growdon, Commissioner
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Michael Carney, Utilities
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Felix Yzaguirre, Engineering Technician

…and to the countless citizens who gave their time and energy towards the making of this plan.

This plan is dedicated to the citizens of Ventura.

August 8, 2005

In loving memory of Roma Armbrust and
Dennis R. Mackay

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FIGURES

ventura's general plan

OVERVIEW

"The building of cities is one of man's greatest achievements. The form of his city always has been and always will be a pitiless indicator of the state of his civilization. This form is determined by the multiplicity of decisions made by the people who live in it."

— Edmund N. Bacon
Design of Cities, 1967

CITY OF
VENTURA

We, the people of Ventura, in order to ensure that our City remains a great place for us to live ...

. . . establish these goals for our community's future:

OUR NATURAL COMMUNITY

Our goal is to be a model for other communities of environmental responsibility, living in balance with our natural setting of coastline, rivers, and hillside ecosystems.

OUR PROSPEROUS COMMUNITY

Our goal is to attract and retain enterprises that provide high-value, high wage jobs; to diversity the local economy; to increase the local tax base; and to anticipate our economic future in order to strengthen our economy and help fund vital public services.

OUR WELL-PLANNED COMMUNITY

Our goal is to protect our hillsides, farmlands, and open spaces; enhance Ventura's historic and cultural resources; respect our diverse neighborhoods; reinvest in older areas of our community; and make great places by insisting on the highest standards of quality in architecture, landscaping and urban design.

OUR ACCESSIBLE COMMUNITY

Our goal is to provide residents with more transportation choices by strengthening and balancing bicycle, pedestrian and transit connections in the City and surrounding region.

OUR SUSTAINABLE INFRASTRUCTURE

Our goal is to safeguard public health, well being and prosperity by providing and maintaining facilities that enable the community to live in balance with natural systems.

OUR ACTIVE COMMUNITY

Our goal is to add to and enhance our parks and open spaces to provide enriching recreation options for the entire community.

OUR HEALTHY AND SAFE COMMUNITY

Our goal is to build effective community partnerships that protect and improve the social well being and security of all our citizens.

OUR EDUCATED COMMUNITY

Our goal is to encourage academic excellence and life-long learning resources to promote a highly-educated citizenry.

OUR CREATIVE COMMUNITY

Our goal is to become a vibrant cultural center by weaving the arts and local heritage into everyday life.

OUR INVOLVED COMMUNITY

Our goal is to strive to work together as a community to achieve the Ventura Vision through civic engagement, partnerships, and volunteer service.

State law requires each California city to adopt a comprehensive, long-term General Plan for the physical development of the community that guides local decision-making by expressing community goals about the future distribution and character of land uses and activities. The plan should be comprehensive by both covering the City's entire planning area and addressing the broad range of issues facing the community, including physical, social, aesthetic and economic concerns. The plan must be internally consistent and serve as a long-term guide, establishing policies for day-to-day land use decisions over an approximately 20-year period.

Introduction and Background

"To remain successful, Ventura must periodically renew itself, re-examine its goals and create a shared vision to guide the community into the future."

With these opening words, the citizens of our community proclaimed the **Ventura Vision,** which was unanimously accepted by the City Council in March 2000. That landmark report captured the results of "a partnership encompassing city government, non-profit organizations, community groups, businesses, schools and individual residents to chart the community's future through a process of visioning."

Building on that shared vision, the City embarked on an effort to revise the 1989 Comprehensive Plan that served as the General Plan that all cities are required by State law to use to guide land use, transportation and other important policy decisions. This new General Plan is the culmination of that effort to translate the Ventura Vision into a coherent and comprehensive implementation plan to guide future development and preservation.

Throughout the visioning process and at the ballot box, Ventura residents have made clear we want a well-planned approach to managing growth. We don't want continued suburban sprawl paving over farm land and sensitive hillside areas. Instead, we want vacant or run-down properties to be improved with high quality "infill" to provide new jobs, new homes and new stores and services.

Managing growth to improve our quality of life and standard of living is the smart thing to do. Ventura residents don't want uncontrolled growth and suburban sprawl. We also don't want traffic gridlock, more "cookie cutter" tract houses or housing prices that make Ventura unaffordable for working families. By targeting new development to areas that would benefit from reinvestment – and by respecting our historic character and sense of place – "smart growth" is a better alternative.

Our vision is for a prosperous and well-planned community. Smart Growth emphasizes reusing existing buildings and land, revitalizing our historic downtown and neighborhoods, and protecting the environment for future generations. Smart Growth channels new businesses and homes into appropriate areas. It also provides options for public transportation, creates neighborhoods where homes are in walking distance of local services and ensures green space for public use.

We seek to protect and enhance our unique "sense of place" that builds on our pride in Ventura's history and natural setting. Instead of new development that looks like everywhere else, our vision is for interesting, unique neighborhoods and districts, which reflect our values and heritage. The policies for pursuing these goals are spelled out in this new General Plan.

The Ventura General Plan

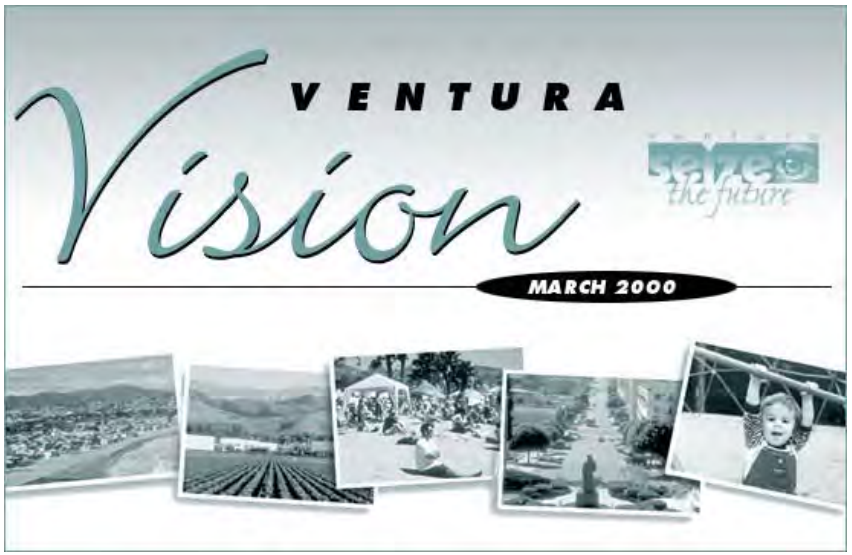
The *2005 Ventura General Plan* is the second in a series of three connected documents that will guide future conservation and change in the city. The *Ventura Vision* set the stage for this plan and enumerated four overarching principles that were affirmed by the community to guide Ventura into the future:

- Reach broadly and deeply into the community.
- Build on existing cultural, natural, and economic assets.
- Emphasize and encourage connections within the community.
- Work proactively and collaboratively to achieve the community's shared vision.

The final piece of the trilogy is a form-based *Development Code*. This code represents a new approach to zoning that prioritizes the appearance of development, while still ensuring that neighboring land uses are compatible and appropriate.

The *General Plan* will be put into action through the Development Code and a variety of other mechanisms, such as a mobility plan, specific plans, community plans, and capital improvement projects that will together shape the future of Ventura. The *General Plan* purposefully anticipates the *Code* focusing on the districts, corridors, and neighborhood centers where future change will be most pronounced.

The following vision statements reflect a high level of community consensus about a desired future for Ventura.



In the future, Ventura is a community that…

Environment

- Seeks sustainability by simultaneously promoting ecological health, economic vitality, and social well-being for current and future generations.
- Acts as an environmentally responsible model for other coastal areas.
- Protects and restores the natural character of its beaches, ocean views, hillsides, barrancas, and rivers as a scenic backdrop for its high quality urban environment.

Economy

- Develops a flourishing and balanced economy by encouraging a broad range of high quality employment and entrepreneurial opportunities.
- Encourages private economic development that supports public services and amenities associated with high quality of life.
- Has a vital, prosperous, and stable economy while maintaining its small-town feel.
- Is noted for private and public sector cooperation that enhances economic vitality.
- Actively participates in regional economic development efforts.

Planning, Design, and Circulation

- Retains its character as an attractive coastal town by growing slowly and sustainably, and by emphasizing its history, diversity, and natural environment.
- Cherishes its distinctive, diverse, and eclectic neighborhoods, and preserves their character.
- Has safe, accessible, and balanced transportation that promotes multiple modes of travel to local and regional destinations.

Social Activity

- Is known as an inclusive, diverse, and tolerant place that welcomes and celebrates all people.
- Provides all residents access to quality and affordable health and social services.
- Recognizes the importance of children and seniors by providing exceptional cultural, educational, and social support programs.
- Offers a diverse range of active and passive recreation for residents and visitors of all ages and abilities.
- Is dedicated to educational excellence and an emphasis on lifelong learning.
- Celebrates and is enriched by the arts and diverse cultural opportunities.

Collaboration

- Encourages residents to collaborate with each other and City government in an informed, active, and constructive manner to assess and resolve common issues.


ventura
seize
the future

Building on the Vision

Following adoption of the *Ventura Vision*, the City Council established a 19-member Comprehensive Plan Advisory Committee (CPAC) to shape the *Vision* concepts into issues and priorities for revision of the 1989 Comprehensive Plan. The CPAC included representatives of varied interests, including neighborhoods, agriculture, seniors and schools, as well as one member from the Planning Commission and one from the City Council. The committee met more than 30 times over almost three years. During that effort, the City published the August 2002 *Comprehensive Plan Update Background Report*, which provides a highly detailed account and analysis of opportunities and constraints that affect planning and land use in Ventura. This ultimately led to their findings, contained in the September 2003 *CPAC Issues & Alternatives Report*.

CPAC endeavored to create strategies to resolve planning and land use issues in Ventura utilizing the smart growth principles formulated by the U.S. Environmental Protection Agency:

- Mix land uses.
- Achieve compact building design.
- Provide a range of housing opportunities.
- Create walkable neighborhoods.
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, farmland, natural beauty, and critical environmental areas.
- Strengthen and direct development toward existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair, and cost effective.
- Encourage community collaboration in planning decisions.

The recommendations of the CPAC were presented to the Planning Commission and City Council. After several months of reviewing the CPAC recommendations, the Planning Commission in December 2003 made some modifications to the CPAC's recommended land use scenario.

The City Council met 11 times from February through August 2004 to consider the CPAC and Planning Commission recommendations, review relevant data, and formulate broad goals, policies, and a diagram to guide growth and change in the City until 2025. In September 2004, the City Council established an ad-hoc General Plan Committee consisting of three Planning Commissioners and three City Council members to work with City staff and consultants to ensure that the *General Plan* would be completed expeditiously and with ample public participation, and to ensure open communication, transparency, and coordination among all parties interested in the creation of the *Plan*. All of the CPAC, Planning Commission, City Council, and General Plan Committee workshops, meetings, and hearings were open to the public and included significant, meaningful, and often extensive citizen input and participation.

Goals *summarize how conservation, development, and future growth should occur by identifying physical, economic and social ends that the community wishes to achieve.*

Policies *establish basic courses of action for the Planning Commission and City Council to follow in working to achieve community goals, by directly guiding the response of elected and appointed officials to development proposals and related community actions.*

Actions *need to be undertaken by the City to implement policies.*

Plan Format

The comprehensive and involved process of creating what is really a totally new (not just updated) *General Plan* – based on a new community vision and smart growth principles – resulted in a new set of goals, policies, and actions to guide future decision-making in Ventura that truly reflect the planning objectives of the community. These policy directives are organized by subject area in *General Plan* Chapters 1 through 10, which follow the organizational framework established in the *Ventura Vision* (see Table 1). Each topic is introduced with an overarching goal that carries forward the *Vision*, a description of issues needing resolution and methods for remedying them, and finally measurable policies and actions to achieve those solutions. Each of the policies contained within the Plan are intended to be understood and read with the following preface: "It is the intent of the City of San Buenaventura to...". All of the actions are summarized in table form in Appendix A, along with the City department or division responsible for implementing each action and timeframe for completion. Also included in the Plan are the legally binding Appendices B through E. Attachment A is provided as a reference, while Attachment B is provided to serve as guidelines for future development until an update to the Zoning Ordinance is completed.

Table 1
General Plan Organization

Vision/General Plan Chapter	Required/*Optional* Elements	Examples of Topics Covered
1. Our Natural Community	Conservation Open Space	Open space, hillsides, watersheds, riparian areas, sensitive plants and animals
2. Our Prosperous Community	*Economic Development*	Commercial and industrial growth, economic diversification, job opportunities, tourism
3. Our Well-Planned and Designed Community	Land Use/*Design* Housing *Park & Recreation*	Development patterns, neighborhoods, visual character, urban design, streetscapes, demographics, housing needs, affordability, constraints on production
4. Our Accessible Community	Circulation	Traffic, street network, parking, transit services, bike routes
5. Our Sustainable Infrastructure	Land Use	Water supply, wastewater treatment, drainage
6. Our Active Community	Land Use *Park & Recreation*	Park and recreation facilities, youth and senior programs
7. Our Healthy and Safe Community	Safety Noise Land Use	Development in hazardous areas, hazardous waste management, seismicity, flood control, water quality, brownfields, noise, police, fire, air quality
8. Our Educated Community	Land Use	Schools and libraries
9. Our Creative Community	*Culture*	Arts, events, community programs, cultural and historic resources
10. Our Involved Community	*Citizen Input*	Participation in governance

The format of the *General Plan* satisfies the State requirement that every general plan include policies for seven "elements," as follows:

Land use – establishes the general distribution and intensity of land uses, including housing, commerce, industry, open space, education, and public facilities.

Circulation – identifies the location and type of existing and proposed highways, arterial and collector roadways, bicycle routes, and other transportation facilities.

Conservation – addresses treatment of natural and cultural resources, including watersheds, wetlands, trees, rivers and barrancas, and cultural and historic landmarks.

Housing – assesses current and projected housing needs of all segments of the community and identifies land to provide adequate housing to meet those needs. Although the City's Housing Element and Technical Report is contained in a separate document to facilitate the frequent updating required by the State, the goals, policies and programs of the Housing Element must be and are consistent with the goals, policies, and actions of the *2005 Ventura General Plan.* (See Chapter 3, page 3-28, for 2004 Housing Element Goals and Policies.)

Noise – appraises noise sources in the community and develops means to mitigate nuisances.

Open Space – details techniques for preserving open space areas for natural resources, outdoor recreation, public health and safety, and agricultural activities.

Safety – establishes policies to protect the community from risks associated with seismic, geologic, flood, fire, and other hazards.

The *General Plan* also contains a number of special elements that aren't required by State law but are integral to the unique identity of Ventura. These cover a range of topics including education, recreation, arts and culture, and community involvement in local government. Another chapter treats the very important subject of the local economy, providing guidance to citizens, City staff and policy makers regarding strategies and priorities for economic development in Ventura.

California Coastal Act

The *General Plan* also satisfies State requirements for the City's **Local Coastal Program** in accordance with the California Coastal Act (*Public Resources Code § 30000 et seq.)*. Actions in the *General Plan* that affect coastal resources are intended to become part of the Land Use Plan of the Local Coastal Program, which will be accomplished through specific or community plans for those areas. These actions are identified with the logo of the California Coastal Commission (which oversees all Local Coastal Programs). The basic goals of the State for the coastal zone are to:

- Protect, maintain, and where feasible, enhance and restore the overall quality of the coastal zone environment and its natural and artificial resources.
- Assure orderly, balanced utilization and conservation of coastal zone resources taking into account the social and economic needs of the people of the state.
- Maximize public access to and along the coast and maximize public recreational opportunities in the coastal zone consistent with sound resources conservation principles and constitutionally protected rights of the private property owners.
- Assure priority for coastal-dependent and coastal-related development over other development on the coast.
- Encourage state and local initiatives and cooperation in preparing procedures to implement coordinated planning and development for mutually beneficial uses, including educational uses, in the coastal zone.
  (Public Resources Code § 30001.5)

ventura's general plan

OUR NATURAL COMMUNITY

"As age comes on, one source of enjoyment after another is closed, but Nature's sources never fail. Like a generous host, she offers her brimming cups in endless variety, served in a grand hall, the sky its ceiling, the mountains its walls, decorated with glorious paintings and enlivened with bands of music ever playing."

— John Muir
20th Century Naturalist

CITY OF
VENTURA

1. OUR NATURAL COMMUNITY

Our goal is to be a model for other communities of environmental responsibility, living in balance with our natural setting of coastline, rivers, and hillside ecosystems.

Natural Context

Ventura's natural setting is one if its greatest assets, and preserving the environment is a top community priority. Situated between the ocean, hills, and two rivers, the city affords its residents and visitors with a significant amount of accessible, beautiful, and biologically diverse open space. Although a number of programs are in place to protect coastal and watershed ecosystems and to maintain and preserve existing open lands, some natural features in and around the city have been compromised by the impacts of human activity.

As in many communities across the nation, concern is growing in Ventura about human impacts on natural resources. The historic spread of local development has given rise to grassroots efforts aimed at preserving Ventura's viable agricultural land, open space, and hillsides. The 1995 Save Our Agricultural Resources initiative (see Appendix B) and the 2001 Hillside Voter Participation Area (Appendix C) measure require voter approval before the city can expand into open space areas. The Ventura Hillsides Conservancy formed in 2003 seeks to preserve local hillsides, canyons, and open space.

Ventura, Oxnard, Ventura County, and the County Local Agency Formation Commission have adopted agreements to preserve agricultural and open space land located between the cities. A change that amends these greenbelts requires the approval of all signatories.

Protecting Ventura's fragile natural resources is a fundamental focus of the *2005 Ventura General Plan*. Policies and actions in this chapter intend to ensure that coastal, hillside, and watershed features are preserved, remain visible and accessible, and demarcate boundaries for urban development to define and enhance the city's identity.

The community cherishes the shoreline as one of Ventura's best features. Coastal facilities in the city include:

- Emma Wood State Beach
- Ventura Seaside Park and Fairgrounds
- Surfers Point at Seaside Park
- Beachfront Promenade Park
- San Buenaventura State Beach
- Pierpont Community Beach
- Marina Beach/Cove Port District Beach
- Channel Islands National Park Headquarters
- Surfers Knoll
- Santa Clara River Mouth

Coastal Resources

Ventura boasts seven miles of beautiful sand beaches and valuable shoreline habitat. This "string of pearls" has long been identified by the community as one of the city's most prized features. At its eastern end, the Ventura Harbor offers opportunities for residents and visitors to explore the local marine environment, including the Channel Islands National Park and Marine Sanctuary. Elsewhere along the coast, shoreline and dune habitat provide nesting, feeding, and mating grounds for a wide variety of wildlife, including threatened or endangered species such as the western snowy plover and the least tern.

Shoreline conservation programs underway include the Surfers Point Managed Shoreline Retreat, San Buenaventura State Beach restoration, Ventura Harbor wetland rehabilitation, and coastline water quality monitoring. The City will continue to invest in restoration to enhance the shoreline ecosystem, with the actions in this chapter augmenting current efforts.

Hillsides

The hills of the Transverse Range rise 1,200 feet above Ventura, providing an important visual backdrop that frames the City. Not only do these hills provide residents and visitors with scenic vistas, they are also part of a larger integrated ecosystem comprised by the hillsides, coastal areas, rivers and barrancas that together provide a rich habitat for many species. It is vital to the community that these hillsides that lie outside the city limits (with a County land use designation of either Open Space or Agriculture), are protected and preserved.

These hillsides, by definition, are coterminous with the Hillside Voter Participation Area, and comprise the Hillside Open Space community as depicted on the General Plan Diagram (page 3-22). Because the Hillside Voter Participation Area measure prohibits the extension of City urban services to the hillsides through 2030 without voter approval, the General Plan Diagram identifies the hillsides affected by the measure with a Planning Designation of Open Space. The full text and map of the Hillside Voter Participation Area appears in Appendix C (as required by the act). This chapter calls working with land conservation organizations to establish a Ventura hillsides preserve, and Chapter 6, *Our Active Community*, contains actions to work with the County to create public trails in the hillsides.

Definitions for “Hillside Open Space,” “Hillside Area,” “hillsides,” and “Hillside Voter Participation Area” can be found in the Glossary (Attachment A).

Rivers and Barrancas

The Ventura River flows south to the Pacific Ocean along the western edge of the city, and the Santa Clara River bisects the Oxnard coastal plain south of Ventura. A series of seasonal watercourses called barrancas traverse the city in narrow incised drainage channels running down from the hillsides. The rivers and barrancas and their larger watersheds provide undeveloped open space, riparian vegetation, wildlife habitat and corridors, recreational opportunities, and aesthetic beauty.

Where local watercourses have not been channelized, riparian trees and shrubs grow in fringing woodlands and thickets. Several sensitive bird species breed in these areas, including the least Bell's vireo, willow flycatcher, yellow warbler, and yellow-breasted chat. Steelhead and rainbow trout seasonally inhabit both the Ventura and Santa Clara Rivers.

Riparian and freshwater marsh areas in Ventura represent only a remnant of pre-human coverage, but the City has initiated conservation and restoration efforts such as the Ventura River Estuary Program to help reverse this trend. The estuaries at the mouths of the Ventura and Santa Clara Rivers serve as breeding grounds and feeding areas for migratory and resident shorebirds and waterfowl, as well as home to many terrestrial animals, fish, and free-swimming invertebrates.

Actions in this chapter – such as maintaining adequate buffers from watercourses, requiring restoration of natural drainage features, and prohibiting the placement of manmade materials in drainages – can protect and improve water and habitat quality in local watersheds. The bolder action of removing concrete channel structures would further enhance natural functions and aesthetics.

Resource Conservation

As Ventura continues to grow, conserving resources, increasing energy efficiency, and achieving environmental sustainability become ever more important. The City desires to incorporate green building measures into the design, construction, and maintenance of public and private buildings which can result in significant cost savings and promote overall health and productivity of residents, workers, and visitors to the city. Raising conservation awareness can help minimize waste and pollution released into the natural environment. Improving energy efficiency in buildings, expanding recycling programs, and reducing transportation-related energy consumption will make the city a greener place. The policies and actions in this chapter provide clear direction to guide conservation, green practices, and responsible use of resources.

Policy 1A: Reduce beach and hillside erosion and threats to coastal ecosystem health.

Action 1.1: Adhere to the policies and directives of the California Coastal Act in reviewing and permitting any proposed development in the Coastal Zone.

Action 1.2: Prohibit non-coastal-dependent energy facilities within the Coastal Zone, and require any coastal-dependent facilities including pipelines and public utility structures to avoid coastal resources (including recreation, habitat, and archaeological areas) to the extent feasible, or to minimize any impacts if development in such areas is unavoidable.

Action 1.3: Work with the State Department of Parks and Recreation, Ventura County Watershed Protection Agency, and the Ventura Port District to determine and carry out appropriate methods for protecting and restoring coastal resources, including by supplying sand at beaches under the Beach Erosion Authority for Control Operations and Nourishment (BEACON) South Central Coast Beach Enhancement program.

Action 1.4: Require new coastal development to provide non-structural shoreline protection that avoids adverse impacts to coastal processes and nearby beaches.

Action 1.5: Collect suitable material from dredging and development, and add it to beaches as needed and feasible.

Action 1.6: Support continued efforts to decommission Matilija Dam to improve the sand supply to local beaches.

Action 1.7: Update the Hillside Management Program to address and be consistent with the Planning Designations as defined and depicted on the General Plan Diagram.

Policy 1B: Increase the area of open space protected from development impacts.

Action 1.8: Buffer barrancas and creeks that retain natural soil slopes from development according to State and Federal guidelines.

Action 1.9: Prohibit placement of material in watercourses other than native plants and required flood control structures, and remove debris periodically.

Action 1.10: Remove concrete channel structures as funding allows, and where doing so will fit the context of the surrounding area and not create unacceptable flood or erosion potential.

Action 1.11: Require that sensitive wetland and coastal areas be preserved as undeveloped open space wherever feasible and that future developments result in no net loss of wetlands or "natural" coastal areas.

Action 1.12: Update the provisions of the Hillside Management Program as necessary to ensure protection of open space lands.

Action 1.13: Recommend that the City's Sphere of Influence boundary be coterminous with the existing City limits in the hillsides in order to preserve the hillsides as open space.

Action 1.14: Work with established land conservation organizations toward establishing a Ventura hillsides preserve.

Action 1.15: Actively seek local, State, and federal funding sources to achieve preservation of the hillsides.

Policy 1C: Improve protection for native plants and animals.

Action 1.16: Comply with directives from regulatory authorities to update and enforce stormwater quality and watershed protection measures that limit impacts to aquatic ecosystems and that preserve and restore the beneficial uses of natural watercourses and wetlands in the city.

Action 1.17: Require development to mitigate its impacts on wildlife through the development review process.

Action 1.18: Require new development adjacent to rivers, creeks, and barrancas to use native or non-invasive plant species, preferably drought tolerant, for landscaping.

Action 1.19: Require projects near watercourses, shoreline areas, and other sensitive habitat areas to include surveys for State and/or federally listed sensitive species and to provide appropriate buffers and other mitigation necessary to protect habitat for listed species.

Action 1.20: Conduct coastal dredging in accordance with the U.S. Army Corps of Engineers and California Department of Fish and Game requirements in order to avoid impacts to sensitive fish and bird species.

Action 1.21: Work with State Parks on restoring the Alessandro Lagoon and pursue funding cooperatively.

Action 1.22: Adopt development code provisions to protect mature trees, as defined by minimum height, canopy, and/or trunk diameter.

Action 1.23: Require, where appropriate, the preservation of healthy tree windrows associated with current and former agricultural uses, and incorporate trees into the design of new developments.

Action 1.24: Require new development to maintain all indigenous tree species or provide adequately sized replacement native trees on a 3:1 basis.

Policy 1D: Expand the use of green practices.

Action 1.25: Purchase and use recycled materials and alternative and renewable energy sources as feasible in City operations.

Action 1.26: Reduce pesticide use in City operations.

Action 1.27: Utilize green waste as biomass/compost in City operations.

Action 1.28: Purchase low-emission City vehicles, and convert existing gasoline-powered fleet vehicles to cleaner fuels as technology becomes available.

Action 1.29: Require all City funded projects that enter design and construction after January 1, 2006 to meet a design construction standard equivalent to the minimum U.S. Green Building Council LEED™ Certified rating in accordance with the City's Green Building Standards for Private and Municipal Construction Projects. 

Action 1.30: Provide information to businesses about how to reduce waste and pollution and conserve resources.

Action 1.31: Provide incentives for green building projects in both the public and private sectors to comply with either the LEED™ Rating System, California Green Builder, or the Residential Built Green program and to pursue registration and certification; incentives include "Head-of-the-Line" discretionary processing and "Head-of-the-Line" building permit processing. 

Action 1.32: Apply for grants, rebates, and other funding to install solar panels on all City-owned structures to provide at least half of their electric energy requirements. 

Action 1.33: Publicly acknowledge individuals and businesses that implement green construction and building practices.

ventura's general plan

OUR PROSPEROUS COMMUNITY

"Every increment of construction should be done in such a way as to heal the city."

— Christopher Alexander
Author of *A Pattern Language*, 1977

CITY OF
VENTURA

2. OUR PROSPEROUS COMMUNITY

Our goal is to attract and retain enterprises that provide high-value, high wage jobs; to diversify the local economy; to increase the local tax base; and to anticipate our economic future in order to strengthen our economy and help fund vital public services.

Adapting in the 21st Century

Great communities are prosperous communities. A successful city brings people, institutions, ideas, and capital together in creative ways that enrich the lives of those who live and work there. In today's global economy, high-wage high-value jobs are the foundation of the prosperity that instills a city with the financial resources necessary to provide high quality of life and excellent community amenities.

Ventura has been blessed with a history of prosperity, thanks in large part to success in harnessing the area's natural assets for economic benefit. For most of the 20th Century, Ventura was sustained largely by its role as the hub of the region's oil and agriculture industries. These two sectors not only provided a stable source of jobs and business opportunities, but also helped to shape Ventura's role as the legal, governmental, and cultural center of the County.

In the 21st Century, however, Venturans can't take continued prosperity for granted. Competition occurs regionally, nationally, and globally for innovative businesses, top talent, and good jobs. The community must build on its resources and constantly be on the lookout for new economic opportunities.

County government will likely remain the city's largest employer, providing an important element of economic stability, but government employment is not likely to grow significantly. Oil and agriculture will continue to be important, but their roles are diminishing. While Ventura is a regional center for healthcare, that industry will continue to face intense pressures to reduce costs. Still, the City of Ventura is positioned to move into an era dominated by innovation and reliant on emerging technologies. Cities and regions that excel in the "New Economy" promote high tech industries and boast a high quality of life. Likewise, to remain competitive, Ventura must continue to support economic development, but also create a more attractive living environment, including by providing appropriate housing for all segments of the local workforce. Efforts to boost economic development must be supported by a high quality of life, including a thriving cultural arts scene, award winning schools, and an engaged community. Tourism is also a strong market for Ventura. The beaches, museums, downtown, harbor and the nearby Channel Islands National Park attract more than 1.5 million visitors a year.

The policies and actions in this chapter seek to identify business niches that can thrive locally to diversify the economic base and ensure future community prosperity.

Economic Challenges

Ventura faces a variety of interrelated challenges to continued economic vitality, including:

1. Capturing a share of high-value job markets, such as biotechnology, computer software, communications, entertainment, multimedia, education, and business and financial services.

2. Diversifying the local economy to reduce dependence on the service, retail, and government sectors.

3. Building on the success of the tourism, manufacturing, business, and financial services sectors through marketing and job training programs that will ensure retention and attraction of these enterprises.

4. Finding appropriate locations for commercial and industrial land, including through revitalization opportunities in the Westside and Downtown and possibly via annexations of sites in the North Ventura Avenue and 101 Business Corridor areas.

5. Expanding the retail base, because sales tax represents a major City revenue source.

6. Providing housing for the full range of workforce households at all income levels.

7. Providing adequate infrastructure and financing resources.

Meeting all of these challenges in an integrated, strategic manner will be necessary to achieve long-term economic stability and success. The City must endeavor to identify the businesses most likely to remain and grow in an area that has very high costs – especially for housing – but also has outstanding community amenities, including good weather, a spectacular natural setting, and a safe and desirable community fabric.

The *Ventura Vision* calls for targeting industries that demonstrate the greatest promise for long-term community prosperity by:

- Providing high-wage, high skilled jobs,
- Possessing a local competitive advantage in the global economy,
- Being committed to local responsibility,
- Growing from local ownership, control or management,
- Practicing environmental leadership in their markets, and
- Strengthening the community's creative, cultural identity.

The *Vision* also offers principles for the City to pursue in charting future strategies for economic development:

- Encourage a broad range of high-quality employment and entrepreneurial opportunities.
- Encourage private economic prosperity that can support public services and quality-of-life amenities.

- Develop a vital, prosperous, and stable economy while maintaining a "small-town" flavor.
- Encourage the public and private sectors to work together to achieve prosperity.
- Participate constructively in regional economic development efforts.

Implementing these strategies will not be simple or easy. For one reason, California's current tax system contains provisions that result in some of the lowest-paying economic sectors providing the city with the most tax revenue, and vice versa.

Pillars for Prosperity

Community prosperity is not something that a city government can create by itself. Any successful economic development effort requires the participation of many partners, including community-based business organizations, educational and training institutions, venture capitalists, individual entrepreneurs and business owners, networks of suppliers, and other government agencies that have a mission to enhance prosperity.

Together, the City and its economic partners must ensure that the building blocks for community prosperity are in place. These foundations include organizations and institutions that can coordinate local economic development efforts, as well as land and other economic infrastructure required to make Ventura an attractive business location.

This organizational infrastructure is evolving in Ventura. Business groups such as the Chamber of Commerce and the Ventura County Economic Development Association (a countywide group) are already active, but a wider network is needed to assemble the resources and capacity of entrepreneurs, venture capitalists, educators, and other stakeholders in building a healthy business climate. Greater synergy is needed among the area's higher education institutions – including California State University Channel Islands, Ventura College, Brooks Institute, and satellite campuses of other colleges and universities.

Appropriate and sufficient land will also be necessary to ensure continued economic prosperity over the next 20 years, even as we seek to protect open space and combat sprawl. Demand for land to support retail and office development is likely to outstrip current supply unless allowable building intensities are significantly increased. While some increased density is likely, and some older industrial land may be recycled for new business uses, the City must take care to reserve sufficient land for these purposes – especially in an environment where short-term pressure is likely to encourage conversion of land to commuter housing.

Thus, the strategy for community prosperity must be coordinated with area-specific planning efforts, especially on the Westside (where industrial land is likely to be recycled), Downtown (which must stress office, studio, and retail business growth as well as an emerging residential component), and in the 101 Corridor between Mills Road and

Johnson Drive (where most of the city's business activity now takes place). The City will advance on a set of defined focused areas:

Auto Center – efforts over the short term will focus on making the area a regional retail destination. The City will strengthen its partnership with Auto Center dealers to realize beautification projects and facilitate land use entitlements for additional dealerships.

McGrath Property – the 76-acre site provides Ventura with the very best opportunity to attract new industry with high-value, high-wage jobs. The City and property owners will work on securing project entitlement approvals and recruiting desired tenants. The objective is to attract targeted industries and provide the impetus for initial site development over the short-term.

Westside – the feasibility of establishing a redevelopment project area will be considered by the City and Westside citizens. Such legal designation would provide the resources needed to leverage and implement planned initiatives in various Westside plans. Brownfield reuse efforts will also continue to secure funding for much needed site assessment and remediation activities.

Upper North Avenue – the objective is to transform this area from an oilfield industrial area to a dynamic economic engine. Development efforts will address reuse of the former USA Petroleum site, including and evaluation of the site's potential to emerge as a component of a campus expansion opportunity for Brooks Institute. Keys to this effort are site remediation, compatibility issues, and future annexation to the City.

Downtown – proposed initiatives include well defined design standards in the updated Downtown Specific Plan, enhanced efforts to market the Downtown Cultural District, formation of a downtown management entity, and attracting uses that create "around–the-clock" activity.

Anticipating Our Economic Future – Ventura's economic growth is built on a foundation of concerted efforts that fuel innovation, collaboration, and continuous learning. The focus will be on attracting high technology and knowledge-based businesses including biotechnology, non-durable manufacturing, and business and financial services. Continuous learning opportunities for job seekers, workers, and employers will acknowledge demographic pressures and rapidly changing skill needs. Through specific strategies, the community will develop leaders for tomorrow, and attract and retain new graduates and skilled employees. Critical players will include the Workforce Investment Board, Ventura College, California State Channel Islands, and the Brooks Institute.

The policies and actions in this chapter attempt to provide the means to support these targeted efforts to achieve a stable and balanced economic base.

Policy 2A: Establish a clear economic strategy.

Action 2.1: Track economic indicators for changes that may affect City land resources, tax base, or employment base, such as terms and conditions of sale or lease of available office, retail, and manufacturing space.

Action 2.2: Prepare an economic base analysis that identifies opportunities to capture retail sales in sectors where resident purchasing has leaked to other jurisdictions.

Action 2.3: Maintain and update an Economic Development Strategy to implement City economic goals and objectives.

Policy 2B: Make the local economic climate more supportive of businesses investment.

Action 2.4: Map priority locations for commercial and industrial development and revitalization, including a range of parcel sizes targeted for high-technology, non-durables manufacturing, finance, business services, tourism, and retail uses.

Action 2.5: Share economic and demographic information with organizations that may refer businesses to Ventura.

Action 2.6: Encourage intensification and diversification of uses and properties in districts, corridors, and neighborhood centers, including through assembly of vacant and underutilized parcels.

Action 2.7: Partner with local commerce groups to recruit companies and pursue funding for business development and land re-utilization.

Action 2.8: Carry out Housing Element programs that provide housing to all segments of the local workforce.

Action 2.9: Expedite review for childcare facilities that will provide support to local employees.

Policy 2C: Encourage niche industries.

Action 2.10: Expedite review of the entitlement process for installation of infrastructure necessary to support high technology and multimedia companies.

Action 2.11: Allow mixed-use development in commercial and industrial districts as appropriate.

Action 2.12: Allow uses such as conference centers with resort amenities on appropriately sized and located parcels.

Action 2.13: Market the city to businesses that link agriculture with high technology, such as biotechnology enterprises.

Action 2.14: Partner with local farms to promote farmers markets and high quality locally grown food.

Policy 2D: Expand tourism opportunities.

Action 2.15: Provide incentives for use of waterfront parcels for recreation, visitor-serving commerce, restaurant, marina, and fishing uses.

Action 2.16: Work with the State to create year-round commercial opportunities at the fairgrounds.

Action 2.17: Partner with the Harbor District and National Park Service to promote Channel Islands tours and develop a marine learning center.

Action 2.18: Prioritize uses within the Harbor master plan area as follows: (1) coastal dependent, (2) commercial fishing, (3) coastal access, and (4) visitor serving commercial and recreational uses.

Action 2.19: Partner with hotels and the Chamber of Commerce to promote city golf courses.

Action 2.20: Promote outdoor recreation as part of an enhanced visitor opportunities strategy.

ventura's general plan

OUR WELL PLANNED COMMUNITY

"Communities should be designed to serve the cycle of the day and the cycle of the lifetime."

— Andres Duany
Architect & Town Planner

CITY OF
VENTURA

3. OUR WELL PLANNED & DESIGNED COMMUNITY

Our goal is to protect our hillsides, farmlands and open spaces; enhance Ventura's historic and cultural resources; respect our diverse neighborhoods; reinvest in older areas of our community; and make great places by insisting on the highest standards of quality in architecture, landscaping and urban design.

Our City

Ventura is a unique coastal community, proud of our heritage and dedicated to being a national model for effectively managing growth to protect our natural environment and continue to be a great place for us to live.

It is our public responsibility to plan and shape the physical realm to achieve these goals. Past policies, particularly the 1989 Comprehensive Plan, reined in rapid outward suburban sprawl. The 1992 Downtown Specific Plan set the direction for revitalization of the historic heart of our community. Voter-approved measures clearly underscored a mandate to protect agricultural resources and open space, particularly in our hillsides.

Guided by the Ventura Vision of 2000, the centerpiece for this General Plan is creating a "well-planned and designed community." The policies build on the foundation of the past. This plan also represents an historic commitment to *smart* growth:

1. Mix land uses
2. Take advantage of compact building design
3. Create a range of housing opportunities and choices
4. Create walkable communities
5. Foster distinctive, attractive communities with a strong sense of place
6. Preserve open space, farmland, natural beauty, and critical environmental areas
7. Strengthen and direct development toward existing communities
8. Provide a variety of transportation choices
9. Make development decisions predictable, fair, and cost effective
10. Encourage community and stakeholder collaboration in development decisions

Source: U.S. Environmental Protection Agency

"**Smart growth** is about being good stewards of our communities and of our rural lands, parks, and forests. It is about ensuring that the best of the past is preserved, while creating new communities that are attractive, vital, and enduring."
--Michael Leavitt, EPA Administrator

Infill First

Ventura today is the product of decades of earlier growth and development. These patterns have largely established our community's character and will continue to do so in the future. The passage of SOAR, the Hillside Voter Protection Area, and other land-use constraints, along with natural boundaries, such as the ocean and the rivers, make it abundantly clear that before we expand outward any further, we must pursue an "Infill First" strategy. Such a strategy will help avoid sacrificing farmland and sensitive areas in our hillsides and along our rivers.

Our “Infill First” strategy for Ventura means avoiding suburban sprawl by directing new development to vacant land in the City and Sphere of Influence (with the exception of SOAR land), and by focusing new public and private investment in carefully selected districts, corridors, and neighborhood centers where concentrated development and adaptive reuse will improve the standard of living and quality of life for the entire community.

Recognizing that the rate of future population growth is not subject to City control, this plan has been analyzed (in the accompanying Environmental Impact Report) on the basis of estimates of what new homes and other development might be expected to take place over the next twenty years (see Table 3-2). Looking at the rate of growth over the past decade and recognizing the challenges to "infill" development compared to "greenfield" expansion, a projection of roughly 8,300 additional housing units and approximately 5 million square feet of non-residential development has been used for the plan's 20 year planning horizon. Table 3-2 provides estimates of the amount of development that could reasonably be expected to occur in the City and Sphere of Influence.

The actual distribution of future growth in the City may vary based on market forces and other factors. The districts, corridors, and neighborhood center areas, shown on Figure 3-1 Infill Areas, could accommodate more development and/or a different mix of development than shown in Table 3-2. To demonstrate this, Table 3-1 shows the potential development based on the overall carrying capacity of the land.

Distribution of growth in the districts and corridors is based on the following general assumptions:

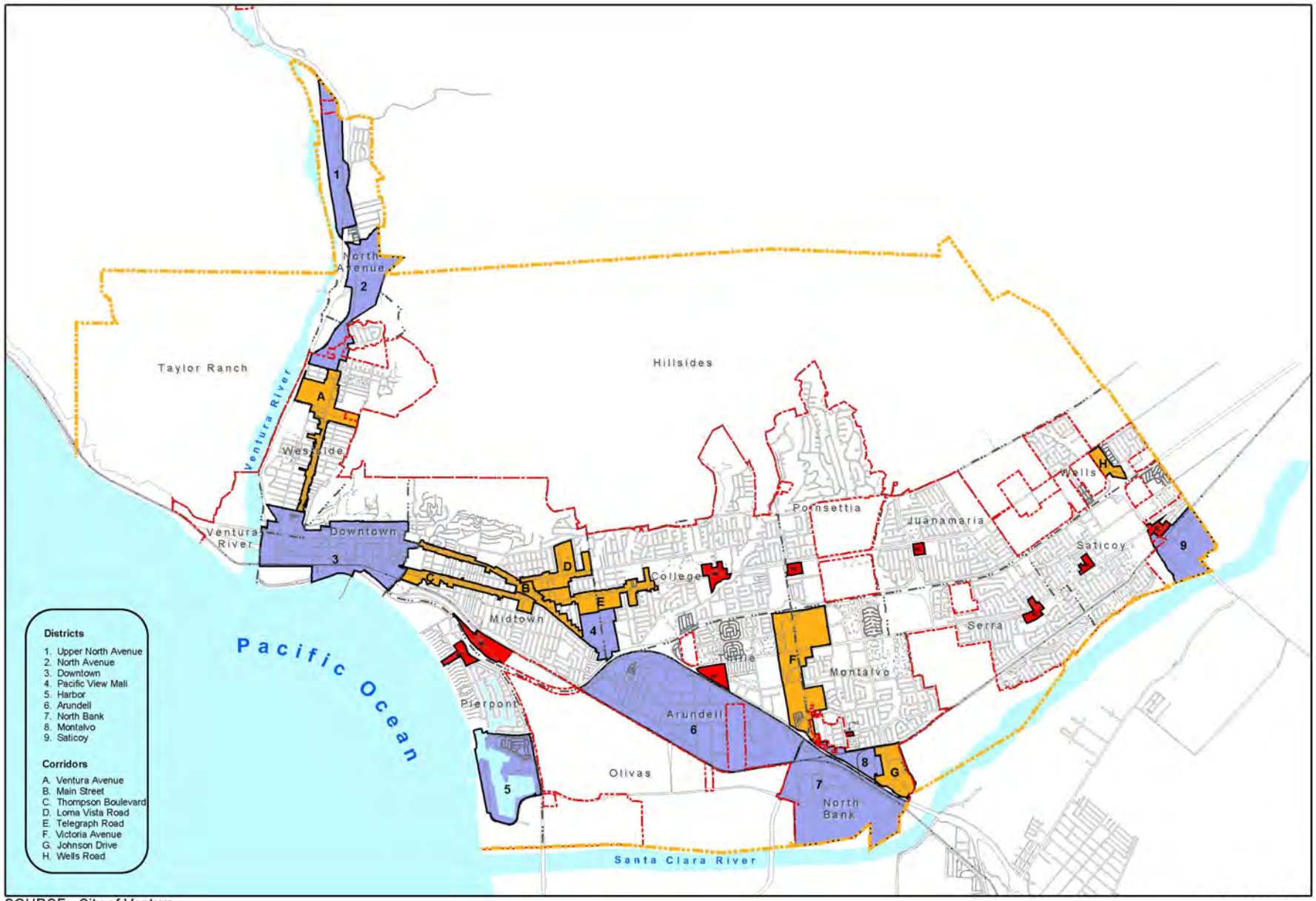
- Development in the Downtown and Harbor Districts will conform to the plans for those areas,
- The Downtown area and, to a lesser extent, the Ventura Avenue corridor will be the focus of future residential and commercial growth, and
- The Arundell, North Avenue, and Upper North Avenue areas will be the focus of future economic growth, potential expansion of the Brooks Institute, with some residential uses.

Table 3-1. Potential Development Based on Carrying Capacity of Land Area

Planning Designation	Allowed Density (du/acre)	Existing Development 2004					General Plan Capacity			
		Single Family Units	Multi Family Units	Comm./Ind. Sq. Ft.	Parcels	Acres	Vacant Parcels	Vacant Acres	Additional Potential[3] Units	Additional Potential[3] Sq. Ft.
Neighborhood Low	0-8	19,425	3,335	49,386	22,511	4,629	108	426	1,221	
Neighborhood Medium	9-20	1,163	8,965	149,513	4,414	1,061	32	116	4,859	
Neighborhood High	21-54	814	2,468	194,143	1,634	303	8	16	8,477	
Commerce[1]		257	490	4,995,248	1,366	808	95	108	7,892	22,328,276
Industry[2]		29	31	8,299,840	1,037	1,401	89	392	4,724	34,215,483
Public & Institutional		4	0	54,422	66	571				
Park & Open Space		6	0	15,491	264	11,693				
Agriculture		4	0	19,550	154	6,857				
Downtown Specific Plan	21-54	332	1,543	1,795,401	1,174	307	45	20	2,500	450,000
Harbor District		0	310	350,160	10	254	1	21	300	876,100
Total		**22,034**	**17,142**	**15,923,154**	**32,630**	**27,884**	**378**	**1099**	**29,910**	**57,869,859**

1. Commerce residential unit capacity is for property within a Corridor, District, or Neighborhood Center and assumes buildout to the maximum FAR and that 25% of floor area would be commercial (with the remainder residential).
2. Industry residential unit capacity is for property within a Corridor, District, or Neighborhood Center and assumes buildout to the maximum FAR and that 75% of floor area would be industrial (with the remainder residential).
3. "Additional Potential" assumes a historic buildout rate of 70% for both residential and non-residential.

Table 3-2. Predicted Development Intensity & Pattern	Residential Development (units)	Non-Residential Development (square feet)				
		Retail	Office	Industrial	Hotel	Total
DISTRICTS						
Upper North Avenue	100	10,000	50,000	150,000	-	210,000
North Avenue	50	10,000	50,000	250,000	-	310,000
Downtown Specific Plan	1,600	100,000	200,000	-	150,000	450,000
Pacific View Mall	25	25,000	-	-	-	25,000
Harbor	300	315,000	-	-	230,000	545,000
Arundell	200	25,000	300,000	1,000,000	-	1,325,000
North Bank	50	300,000	50,000	300,000	-	650,000
Montalvo	50	-	50,000	25,000	-	75,000
Saticoy	50	-	-	25,000	-	25,000
Subtotals (Districts)	**2,425**	**785,000**	**700,000**	**1,750,000**	**380,000**	**3,615,000**
CORRIDORS						
Ventura Avenue	800	40,000	100,000	50,000	-	190,000
Main Street	100	15,000	40,000	-	-	55,000
Thompson Boulevard	300	15,000	40,000	-	-	55,000
Loma Vista Road	25	15,000	40,000	-	-	55,000
Telegraph Road	250	15,000	40,000	-	-	55,000
Victoria Avenue	50	15,000	40,000	-	-	55,000
Johnson Drive	150	50,000	20,000	-	-	70,000
Wells Road	50	15,000	20,000	-	-	35,000
Subtotals (Corridors)	**1,725**	**180,000**	**340,000**	**50,000**	**0**	**570,000**
SPHERE OF INFLUENCE (SOI)/OTHER INFILL/NEIGHBORHOOD CENTERS						
101/126 Agriculture	200	-	-	-	-	-
Wells/Saticoy	1,050	-	-	-	-	-
Pierpont	100	30,000	-	-	-	30,000
Other Neighborhood Centers	100	-	-	-	-	-
Second Units	300	-	-	-	-	-
Underutilized	250	-	-	-	-	-
Vacant	450	165,000	50,000	-	-	215,000
Subtotals (Other Infill)	**2,450**	**195,000**	**50,000**	**0**	**0**	**245,000**
TOTAL INFILL	***6,600***	***1,160,000***	***1,090,000***	***1,800,000***	***380,000***	***4,430,000***
PLANNED AND PENDING DEVELOPMENTS						
Downtown	50	1,072	-	-	150,000	151,072
Ventura Avenue/Westside	238	7,086	-	27,000	-	34,086
Midtown	34	13,751	-	-	-	13,751
College (Telegraph/Loma Vista)	4	2,718	8,843	-	-	11,567
Telephone Road Corridor	256	-	54,785	-	-	54,785
Montalvo/Victoria	296	-	4,300	-	-	4,300
Saticoy/East End	840	7,950	5,600	-	-	13,550
Arundell	-	41,640	42,614	18,080	-	102,334
Olivas	-	7,160	7,066	390,053	-	404,279
Subtotals (Planned/Pending)	**1,718**	**81,377**	**123,214**	**435,133**	**150,000**	**789,724**
TOTAL (Infill+SOI/Other+Pending)	**8,318**	**1,241,377**	**1,213,214**	**2,235,133**	**530,000**	**5,219,724**



SOURCE: City of Ventura

Infill Sites

- Corridor
- Neigborhood Center (NC)
- District
- City Limits
- Planning Boundary
- Planning Neighborhoods

Figure 3-1
Infill Areas

Footnotes for Table 3-2:
Growth estimates for the Arundell community consider the likely development of the 75-acre McGrath property with a mix of uses and development of other vacant lands. Growth estimates for the North Bank area consider the possibility of a large retailer in that area. Estimates of growth in the SOI/Other Infill sites are based on the following general assumptions: (a) 101/126 Orchard site will develop similarly to a project recently proposed for that site; (b) Wells/Saticoy sites will develop in accordance with ongoing planning efforts for those areas; (c) the Pierpont area will develop generally in accordance with a conceptual project recently considered by the City; (d) Second Units will be added at a rate of 15/year; (e) roughly half of underutilized lands identified in the Housing Element will be re-developed over the next 20 years; (f) all vacant lands outside the districts and corridors will be developed in accordance with the proposed planning designations. Planned and Pending Developments based upon the City's 2004 Pending Projects list. Building areas do not include self storage facilities.
The following potential projects not included in the 2004 Planned and Pending Developments list have been included in the future development totals: (1) 150,000 square feet of industrial development in the North Bank area; (2) 165,000 square feet of retail development along Wells Road in the Saticoy area; (3) 50,000 square feet of office development on a 3.5-acre site along Ralston Drive. The Auto Center industrial project is included in the North Bank district; the other two projects are included in the "vacant" category. The square footage associated with these projects has been added to the projections of future growth to provide a conservative analysis of possible future impacts.

Together Table 3-2 and Figure 3-1, Infill Areas, offer a sense of how much growth Ventura might experience by 2025, and a picture of where such change is likely to occur. Precisely how and when development happens and what resources are conserved will be determined by the actions presented in the ten chapters of the *General Plan*, and by the specific land development standards. This plan is one of many tools the City will use to control where and how any future development takes place.

21st Century Tool Kit

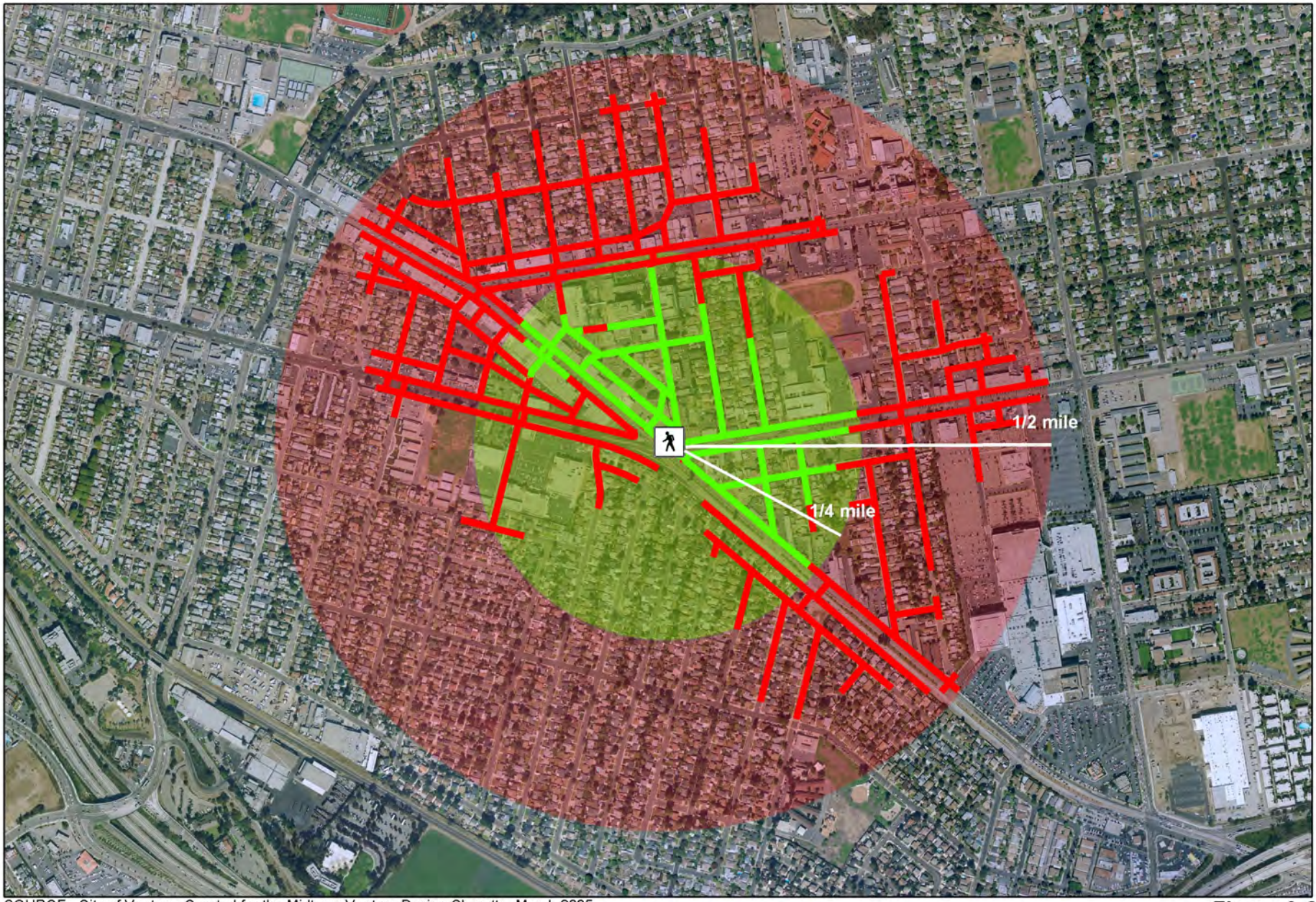
The City has a wide array of tools at its disposal to achieve our "Infill First" strategy in ways that respect Ventura's heritage and result in beautiful buildings, blocks, streetscapes, and public places that enhance and enrich quality of life for the entire community. Shaping the City's physical form in the 21st Century will be achieved most effectively and aesthetically by combining Planning Designations with a transect-based approach, and with a new form-based Development Code. Together these can strongly influence the design and functioning of Ventura's distinct and unique neighborhoods, districts, and corridors.

The policies and actions in this chapter seek to enrich Ventura's urban fabric through appropriate design that showcases the attractive features of neighborhoods, districts, and corridors. To promote high-quality infill, the policies and actions encourage neighborhood centers, pedestrian access, established and desirable building types, and dynamic, neighborhood-serving nodes of mixed-use development along primary streets and corridors. This chapter specifically calls for detailed attention to community design through a form-based approach.

Neighborhoods: The Basic Building Blocks of Community

Like any great city, Ventura has grown around the basic unit of the neighborhood. A true neighborhood is not a subdivision of similar houses disconnected from surrounding places. Instead it is an identifiable area containing a neighborhood center with a pedestrian-friendly mix of uses and a palette of housing types for people in all stages of their lives. Neighborhoods are often defined by a quarter-mile "pedestrian shed" (see Figure 3-2), in which most residents' daily needs can be met within a five-minute walk. The organic nature of neighborhoods and their interdependency is what makes them viable for generations. Neighborhoods are not static places that resist change, but rather evolve naturally through periods of transformation to accommodate new residents' needs and desires.

> "In a neighborhood, everything that is needed is there and everything that is there is needed."
> - Anonymous



SOURCE: City of Ventura, Created for the Midtown Ventura Design Charette, March 2005

Northeast corner of Five Points

Theoretical 5 minute walk (1/4 mile)

Theoretical 10 minute walk (1/2 mile)

Actual 5 minute walk (1/4 mile)

Actual 10 minute walk (1/2 mile)

Figure 3-2
Pedestrian Shed, Theoretical versus Actual

The City is rich in a variety of neighborhoods, most of which are within one of Ventura's distinct communities. A total of 17 communities were identified in the 1989 Comprehensive Plan and have been carried forward, with some modifications to allow for a more detailed approach to describe Ventura's geography. Figure 3-3 illustrates 19 distinct communities, some of which are composed of a group of neighborhoods, each boasting their own unique attractions and potential. The oldest settled area is nearest the ocean, with newer areas found eastward, with the exception of Saticoy. Some of Ventura's communities have neighborhood centers established around parks, community gathering places, or civic buildings, and contain or are near services they share with surrounding areas, such as schools, libraries, post offices, and specialty shopping.

Ventura also has residential subdivisions and commercial and industrial districts that could evolve into true neighborhoods. A long-term strategy should be developed to gradually transform these areas that do not yet follow the neighborhood pattern. Existing subdivisions could be linked by pedestrian routes to new small-scale retail and service centers. Congested commercial areas could be redesigned as mixed-use centers on a grid of streets with walkable blocks that connect with surrounding neighborhoods and central plazas. These streets could be lined with buildings containing upper level housing and lower level commercial, office, and civic spaces that hide internal parking structures. Industrial sites that are fast converting to light industry, high tech manufacturing, and assembly could become factory villages with green space, multiple types of housing, small-scale retail to serve workers, and spin-off businesses.

Ventura's 19 communities (Figure 3-3) can each be enriched by using the *transect* (see discussion page 3-10) as a lens to understanding the ways in which it functions and by applying form-based development controls to respect and enhance its character to ensure that, where appropriate, each community provides one, if not more, walkable neighborhoods.

SOURCE: City of Ventura

----- City Limits

- - - Planning Communities

Figure 3-3
Planning Communities

Taylor Ranch
This area is essentially undeveloped, with agriculture as the primary activity. Taylor Ranch is within the City's Planning Area, including a portion within the Coastal Zone Boundary.

Ventura River
This area includes the Ventura River Basin, is within the Coastal Zone Boundary, and with Emma Wood State Beach Park, its major activity is recreation offering day use and overnight camping. Opportunities exist for passive recreation and nature study.

Hillside Open Space
Within the City's Planning Area, is undeveloped, and designated Open Space. Plant communities include chaparral, riparian willow forest, and oak woodland. This area has tremendous potential for passive recreation including scenic trails with panoramic views. This area is coterminous with the Hillside Voter Participation Area or "HVPA" (see Chapter 1 and Appendix C).

North Avenue
Within the City's Planning Area. Historically, largely oilfield industrial. Includes both the Upper North Avenue and North Avenue districts, and is home to the Brooks Institute, which is world renown for its professional photographic and motion picture education. Opportunities exist to strengthen the economy of this area and provide for the expansion of the Brooks Institute into a campus-village including spin-off businesses with a mix of housing types and transit options for all ages.

Westside
Includes the Ventura Avenue corridor and is home to several neighborhood centers that are surrounded by well-connected neighborhood blocks. Opportunities exist to realize the potential of neighborhood improvements initiated in ongoing and past grassroots efforts, such as the Westside Revitalization Plan. This community includes "Hillside Areas" (see definition in Attachment A), which are subject to the Hillside Management Program that provides necessary development criteria in order to retain the natural qualities and minimize potential hazards.

Downtown
The area is regulated by the Downtown Specific Plan. This community is both an urban core with opportunity to grow economically stronger, and the historic center of the City. Civic uses include City Hall, Seaside Park, Grant Park, the Ventura County Museum, San Buenaventura Mission, and is home to a number of historic sites and landmarks. Additional opportunity to enhance the area's already strong cultural climate, including art, cookery, music, performance, and entertainment. Tremendous potential to create "around-the-clock activity" leading to increased vitality. This community includes "Hillside Areas".

Midtown
Includes the Main, Thompson, and Loma Vista corridors, a portion of the Telegraph corridor, as well as the Seaward/Alessandro neighborhood center. Home to the Pacific View Mall, the City's Bus Transfer Center, Ventura High School. Blanche Reynolds Park, Ocean Avenue Park,

and Memorial Park. Includes a small amount of agriculture. Opportunities exist to realize potential improvements initiated in ongoing and past grassroots efforts, such as Midtown by Design, and more recently the Midtown Urban Design Charrette. This community includes "Hillside Areas".

Pierpont
Within the Coastal Zone Boundary, a unique-beach oriented predominantly residential community, with high-quality beachfront homes. Includes the Harbor district and the Pierpont neighborhood center. Home to the Ventura Harbor, Seaward Elementary School, a mobile home park, and Marina Park. Currently offers highway retail such as motels, hotels, and fast food, but opportunity exists to offer residents and visitors with more attractive and improved neighborhood and coastal oriented services and to develop a specific plan for the Harbor district.

College
Includes a portion of the Telegraph corridor, and the College/Day neighborhood center. Major civic uses are Arroyo Verde and Camino Real Park, Ventura Community College and Buena High School. This community includes "Hillside Areas".

Thille
Includes the Gateway neighborhood center and shares the Victoria corridor with Montalvo to the east. Contains mix of housing types built mostly between 1960 and 1980, with some newer development in the 1990's and early 2000's. Its primary civic use is the County Square Linear Park

Arundell
This community contains the main industrial and warehouse district of Ventura, but also has mixed-use areas with retail, restaurants, and offices within walking distance of many workers. Callens Road, the historic center of this community, has great potential to expand and increase the mix of uses it contains, including residential. A significant vacant parcel, the 75-acre McGrath property, offers great economic opportunity to attract new industry that provides high value, high wage jobs to the City.

Olivas
Predominantly agricultural. Its major civic use is the Olivas Park Golf Course and is home to the Olivas Adobe. Contains some commercial and industrial.

North Bank
This community contains a portion regulated by the Auto Center Specific Plan. Its major civic use the Buenaventura Golf Course. Predominantly industrial, with some agriculture. Opportunity to enhance the area as a regional retail destination, while providing workforce serving retail uses.

Poinsettia
Includes the Victoria Plaza neighborhood center. Its primary civic uses include elementary and middle schools. Predominantly residential, with some housing in the Hillside Area, and a significant amount of agricultural operations.

Montalvo
Includes the Johnson Drive corridor, Bristol neighborhood center, and shares the Victoria corridor with Thille to the west. Its major civic use is the County Government Center (equal size to 12 downtown blocks), but also the Rancho Ventura Linear Park and the Barranca Vista Park. Contains mix of housing types and is home to the Metrolink Station.

Serra
Includes the Telephone/Petit neighborhood center, and is home to the City's newest civic use – the Community Park, set to open Fall 2005. Also includes the Chumash Park, Junipero Serra Park, North Bank Linear Park, and Bristol Bay Linear Park. Contains a significant amount of agricultural land.

Juanamaria
Includes the Kimball/Telegraph neighborhood center. Primary civic use is Hobert Park; this community contains some agricultural land.

Wells
Includes the Wells corridor. The Brown Barranca runs through the northerly portion of this area. Contains agricultural land.

Saticoy
Includes the Telephone/Cachuma and Saticoy neighborhood centers and the Saticoy district. Developed originally as a rural town in the late 1800s, Saticoy has the full range of transect characteristics: from the Santa Clara river and the rural eastern edge, to its neighborhood centers, and a mix of housing types at various intensities. Its major civic uses are the Fritz Huntsinger Youth Sports Complex, Saticoy Regional Golf Course and the Saticoy neighborhood park.

Planning Designations and Transect Zones

Land in the City's Planning Area is divided into eight basic Planning Designations on the General Plan Diagram (page 3-22). Each acknowledges a particular predominant development pattern that exhibits certain desirable characteristics, such as building types and functions that can be measured and described.

The wide range of building forms in Ventura offers great potential for compatible infill and viable mixed-use projects in existing neighborhoods, districts, corridors, and neighborhood centers. The wealth of building types includes attached and detached housing, duplexes, courtyard bungalows, second units (often over garages), lofts (some live-work), urban villas, neighborhood shopfronts, concentrated retail developments, and civic buildings. Public buildings retain special importance by serving as prominent landmarks that shape the visual character of the city.

Streetscapes set the tone for quality of life in Ventura by providing the shared outdoor living space of the community. Although the city's distinct neighborhoods, commercial and industrial districts, and agricultural areas are linked by corridors that have evolved primarily to accommodate motor vehicles, opportunities abound to make those streets more livable and to focus activities in neighborhood centers that emphasize walking, biking, and public gathering, and thereby ease traffic and reinforce community vitality. Accordingly, new development needs to be high quality, compact, and walkable, and it should incorporate design diversity that increases lifestyle choices and bolsters commerce and industry.

Determining which building types are most appropriate in specific locations requires shifting away from conventional zoning that emphasizes use toward a form-based approach that prioritizes function, appearance, and compatibility with surrounding context. A powerful tool for understanding this context is the *Transect*, which depicts the continuum from rural to urban conditions (see Figure 3-4).

The transect is a tool that can be used by the community to understand and describe the full range of unique environmental and built characteristics within each of Ventura's neighborhoods. Using the six parenthetical transect zones to better understand the broad Planning Designations of the General Plan Diagram, a finer-grained (site specific) set of development standards can be created to ensure that new development is in keeping with local preferences for building.

This new Development Code will better accommodate the diversity of lifestyles Ventura desires – from the *rural* farm to the *sub-urban* house and yard to the *urban core* with apartments above shops – and will contribute to the identity and character desired by the community. Common elements that the transect will help measure and describe, and that the Development Code will prescribe, include the types and

arrangements of buildings, their "intensity" of lot coverage, height and mass, the details of streets, public and private frontages and the requirements for and character of open spaces. In general it will prescribe individual neighborhood preferences for urban design and building characteristics, including standards.

In many cases, area specific codes, applying the Planning Designations including districts, corridors, and neighborhood centers, will be developed as part of community or specific plans that establish a detailed strategy for public and private investment and policies to promote the appropriate preservation and development of community desired character.

The following descriptions of the Planning Designations include a parenthetical reference to the transect zones they encompass that will be used as guidance in interpreting the planning designations while drafting detailed plans and codes:

"A **transect** is a geographical cross-section of a region used to reveal a sequence of environments. For human environments, this cross-section can be used to identify a set of habitats that vary by their level and intensity of urban character, a continuum that ranges from rural to urban. In transect planning, this range of environments is the basis for organizing the components of the built world: building, lot, land use, street, and all of the other physical elements of the human habitat."
--SmartCode, Volume 6.5, 2005

"All architecture should be beautiful. All towns should be beautiful. Beauty nurtures the soul and the spirit. It makes life worth living."
-Camillo Sitte

- Neighborhood Low – *(T3 Sub-Urban and T4 General Urban)*
emphasizes detached houses with some attached units in a small mix of building types from 0 up to 8 dwelling units per acre. Predominantly residential, with opportunity for limited home occupation and neighborhood services sensitively located along corridors and at intersections.

- Neighborhood Medium – *(T3 Sub-Urban, T4 General Urban and T5 Urban Center)*
anticipates a mixture of detached and attached dwellings and higher building types at approximately 9 to 20 dwelling units per acre. Predominantly residential with small scale commercial at key locations, primarily at intersections and adjacent to corridors.

- Neighborhood High – *(T3 Sub-Urban through T6 Urban Core)*
accommodates a broader mix of building types, primarily attached, from 21 to 54 dwelling units per acre; A mix of residential, commercial, office, and entertainment that includes mixed-use buildings.

- Commerce – *(T4 General Urban through T6 Urban Core, neighborhood center downtown, regional center, town center or village center)*
encourages a wide range of building types of anywhere from two to six stories (depending on neighborhood characteristics) that house a mix of functions, including commercial, entertainment, office and housing.

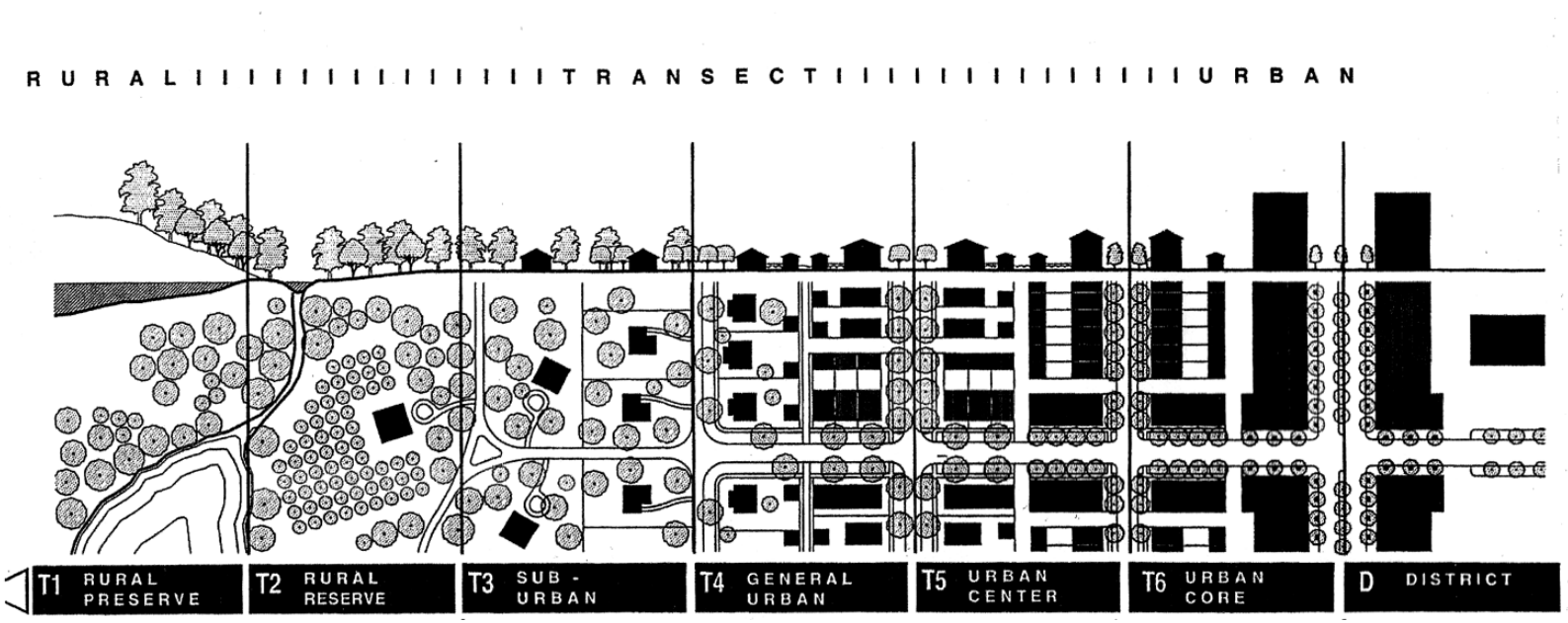
- Industry – *(T2 Rural through T6 Urban Core)*
encourages intensive manufacturing, processing, warehousing and similar uses, as well as light, clean industries and support offices; also encourages workplace-serving retail functions and work-live residences where such secondary functions would complement and be compatible with industrial uses. Primarily large-scale buildings. Also can be developed as Transit Oriented Development, employment center or working village with a mix of uses.

- Public and Institutional – *(T1 Preserve through T6 Urban Core)*
accommodates civic functions such as government offices, hospitals, libraries, schools and public green space.

- Agriculture – *(T2 Rural)*
predominantly commercial cultivation of food and plants and raising of animals.
Pursuant to SOAR: The Agricultural use (not to be considered until after the Year 2030) category identifies those lands that are designated for agricultural use on the General Plan Diagram. The target date of 2030 associated with the Agricultural Use designation indicates a review date after which agriculturally designated lands may be reconsidered for urban uses. However, during the life of this Plan as amended by initiative, it is intended that only agricultural uses are permitted on these lands, except as such lands may be appropriate to public open space and recreational usage. Furthermore, any updates to this Plan are not intended to imply that development would necessarily be appropriate at that time.

- Parks and Open Space – (*T1 Preserve through T6 Urban Core)*
designate lands to public recreation and leisure and visual resources, and can range from neighborhood tot lots and pocket parks to urban squares and plazas and playgrounds to large regional parks and natural preserves.

Figure 3-4. The Transect



Transect: a system of ordering human habitats in a range from the most natural to the most urban. For convenience, the Transect is divided into six zones which describe the physical character of place at any scale, according to the intensity of land use and urbanism. The T-Zones are T1 Natural, T2 Rural, T3 Sub-Urban, T4 General Urban, T5 Urban Center, and T6 Urban Core.

Natural Zone (T1): consists of lands approximating or reverting to a wilderness condition, includes lands unsuitable for settlement due to topography, hydrology, or vegetation.

Rural Zone (T2): consists of lands in open or cultivated state or sparsely settled. These may include woodlands, agricultural lands, grasslands and irrigable deserts.

Sub-Urban Zone (T3): though similar in density to conventional suburban residential areas, differs by its superior connectivity and by allowing home occupations. It is typically adjacent to other urban T-zones. This zone is naturalistic in its planting. Blocks may be large and the roads irregular to accommodate site conditions.

General Urban (T4): has a denser and primary residential urban fabric. Mixed-use is usually confined to certain corner locations. This zone has a wide range of building types: singles, side yard and rowhouses. Setbacks and street tree settings are variable.

Urban Center (T5): is the equivalent of the main street area. This zone includes mixed-use building types that accommodate retail, offices and dwellings, including rowhouses and apartments. This zone is a tight network of streets and blocks with wide sidewalks, steady street tree planting and buildings set close to the frontages.

Urban Core (T6): is the equivalent of a downtown. It contains the densest urbanism – the tallest buildings and the greatest variety of uses, particularly unique ones such as financial districts and important civic buildings. This zone is the least naturalistic of all the zones; street trees are formally arranged or non-existent.

Source: Duany, Plater Zyberk & Company's SmartCode, Volume 6.5, Spring 2005

The General Plan Diagram (page 3-22) also depicts the Downtown, Auto Center, and Saticoy Village Specific Plan areas, which are subject to detailed standards for form and use. In addition, the Diagram identifies Districts, Corridors, and Neighborhood Centers – where the development of housing alongside commercial uses is specifically encouraged. These Districts, Corridors, and Neighborhood Centers make up the growth priority areas as the City's "Infill First" strategy (See Figure 3-1 Infill Areas).

Districts, Corridors, and Neighborhood Centers

One of the primary objectives for infill in Ventura is to produce mixed-use development that places most people's daily needs within walking distance of their dwellings. This may include encouraging "flex space" where a single building functions as both living and working area for the owner, combining housing and commercial uses in the same structures, or sensitively integrating small-scale retail, service, and entertainment within convenient distance of residential areas. Mixed-use places inherently reduce automobile trips and improve the pedestrian experience, resulting in safer neighborhoods, healthier citizens, and better access to everyday needs. The City's corridors and districts already encompass significant mixed-use development. Opportunities exist to augment those areas in ways that complement and enhance existing urban form and streetscapes to better serve Ventura's residents.

Districts

Districts consist of streets or areas emphasizing specific types of activities and exhibiting distinct characteristics. A neighborhood or parts of neighborhoods can form a district. A thoroughfare may also be a district, such as when a major shopping avenue runs between adjoining neighborhoods. The following nine districts are depicted on the General Plan Diagram:

1. Upper North Avenue – home to a mix of industrial uses, including an abandoned oil refinery and Brooks Institute. Tremendous opportunities exist for the remediation and reuse of the former USA Petroleum site, as well as for the expansion of the Brooks Institute as a campus village, surrounded by a green edge to define the upper limits of Ventura.

2. North Avenue – an area with oilfield, industrial, and residential development, which has potential to fully develop into a more balanced mix of building types and uses with unique character, to serve as a major neighborhood anchor for northwest Ventura.

3. Downtown – the most intensely developed area of the city and its urban core. The Downtown Specific Plan regulates this area. Proposed initiatives include well-defined design standards via the Downtown Specific Plan update; enhanced efforts to market the Downtown Cultural District; formation of a

downtown management entity; and attracting uses that create "around–the-clock" activity.

4. Pacific View Mall – an enclosed shopping center and adjacent commercial uses. Large expanses of surface parking paired with significant building mass offer opportunity for the reintroduction of the block pattern and a reinvention of single-use retail into a much more sustainable mix of high intensity uses.

5. Harbor – an area with visitor serving uses, marine facilities, boating and commercial and recreational fishing activities, as well mixed-use places. A specific plan (based on the draft Harbor Master Plan) is being prepared for the Harbor District that will ensure a mix of uses, including residential, and highly defined public frontages and shared civic space for increased accessibility to ocean-front amenities.

6. Arundell – is currently an industrial center with a mix of small-scale industrial uses, business park development, and limited retail services. The McGrath Property – is a 76-acre site of undeveloped land that could provide the catalyst for Ventura's redefinition of 21st Century light industry, manufacturing, research and development, and technological innovation. It is centrally located in the Arundell area, which is ripe for redevelopment into a new form of community plan and building that incorporates large-scale employment, workforce housing and neighborhood commercial in an economically diverse setting.

7. North Bank – a combination of automobile retail, regulated by the Auto Center Specific Plan, and industrial/business park uses. Auto Center – efforts over the short tem will focus on making the area a regional retail destination. The City will strengthen its partnership with Auto Center dealers to realize beautification projects and facilitate land use entitlements for additional dealerships, as well as nurture creative partnerships to discover potential for unique attractions of regional interest.

8. Montalvo – an area of industrial and heavier commercial uses, and currently home to the Metrolink Station. Because of the strategic location of this area between east and west Ventura and it's transportation-rich infrastructure, it needs a strong plan for connectivity and a strategic mix of uses for evolution that is economically sustainable.

9. Saticoy – a mix of homes, older industrial and agricultural operations, and the planned site for the County maintenance yard. The Saticoy Village Specific Plan governs a small portion of this area. A larger effort should ensure Saticoy's seamless connection with adjacent areas, including a greenspace and circulation plan.

Corridors

Corridors, which can be natural or urban, often form boundaries, as well as connections, between neighborhoods and/or districts. Natural corridors can be those such as streams, barrancas, canyons, or green parkways. Urban corridors can be transportation thoroughfares that frequently encompass major access routes, especially ones with commercial destinations, including transit routes and rail lines. The following eight urban corridors are depicted on the General Plan Diagram. Each has the potential to evolve into a vibrant mixed-use City street with a distinct character borrowed from the neighborhoods that share it:

A. Ventura Avenue – a mix of older, small-scale commercial, industrial, and residential uses, with potential to grow even more vibrant by building on existing strengths, including its historic role as a major "working center." Using the warehouse model and diversity of building materials as a cue, "The Avenue" could harness cultural expression and become an eclectic center for the emerging arts and manufacturing crafts.

B. Main Street – currently a commerce-oriented area with a limited amount of mixed use development, this corridor displays the broadest range of architectural types and styles in the city, as well as the widest spectrum of transect characteristics. It has the most potential for increased mixed use and housing with improved streetscape and pedestrian enhancement to slow traffic.

C. Thompson Boulevard – a commercial thoroughfare in need of streetscape improvements and pedestrian amenities, this corridor is much like Main Street in that it boasts tremendous history as a "gateway to Ventura" and epitomizes a beach town character. It is a natural for a major transit or streetcar corridor, where nodes of mixed-use development and pedestrian and bike enhancement could support parallel neighborhoods and increase access to the ocean.

D. Loma Vista Road – a mix of commercial and residential development at varying scales, with a high concentration of medical facilities, this is the ideal place for Ventura to focus on creating a concentration of medical and research-centered business, with a high intensity of workforce housing and services housed in large-scale mixed-use buildings of high-tech character and serviced by increased transit.

E. Telegraph Road – a sub-urban-scale commercial area with some detached homes and multifamily buildings. The City's bus transfer station is located along this corridor, creating the perfect opportunity for a multi-modal connection with an intense node of housing and employment. The streetscape could change character along its length, with a mixture of intensities of development.

F. Victoria Avenue – currently a wide artery with high traffic volumes and shopping centers, Victoria needs effective traffic management

and pedestrian and streetscape improvements with strong attention to additional mobility options. Actions in this General Plan, along with the new Development Code, will call for revitalizing this corridor by redesigning the current array of single-use shopping centers and retail parcels with a mix of building types, uses, and public and private frontages. By eliminating "big box", mega-block, auto-oriented strip development, and the traffic patterns it generates, Victoria Avenue could create tremendous opportunity for healthy economic investment in walkable blocks, connected to better serve surrounding neighborhoods. Creative solutions, including dedicating transit or streetcar lanes, wider sidewalks, and bike lanes could transform Victoria's image into a regional thoroughfare of great and sophisticated diversity. All new commercial development within the Victoria Avenue corridor must follow this approach.

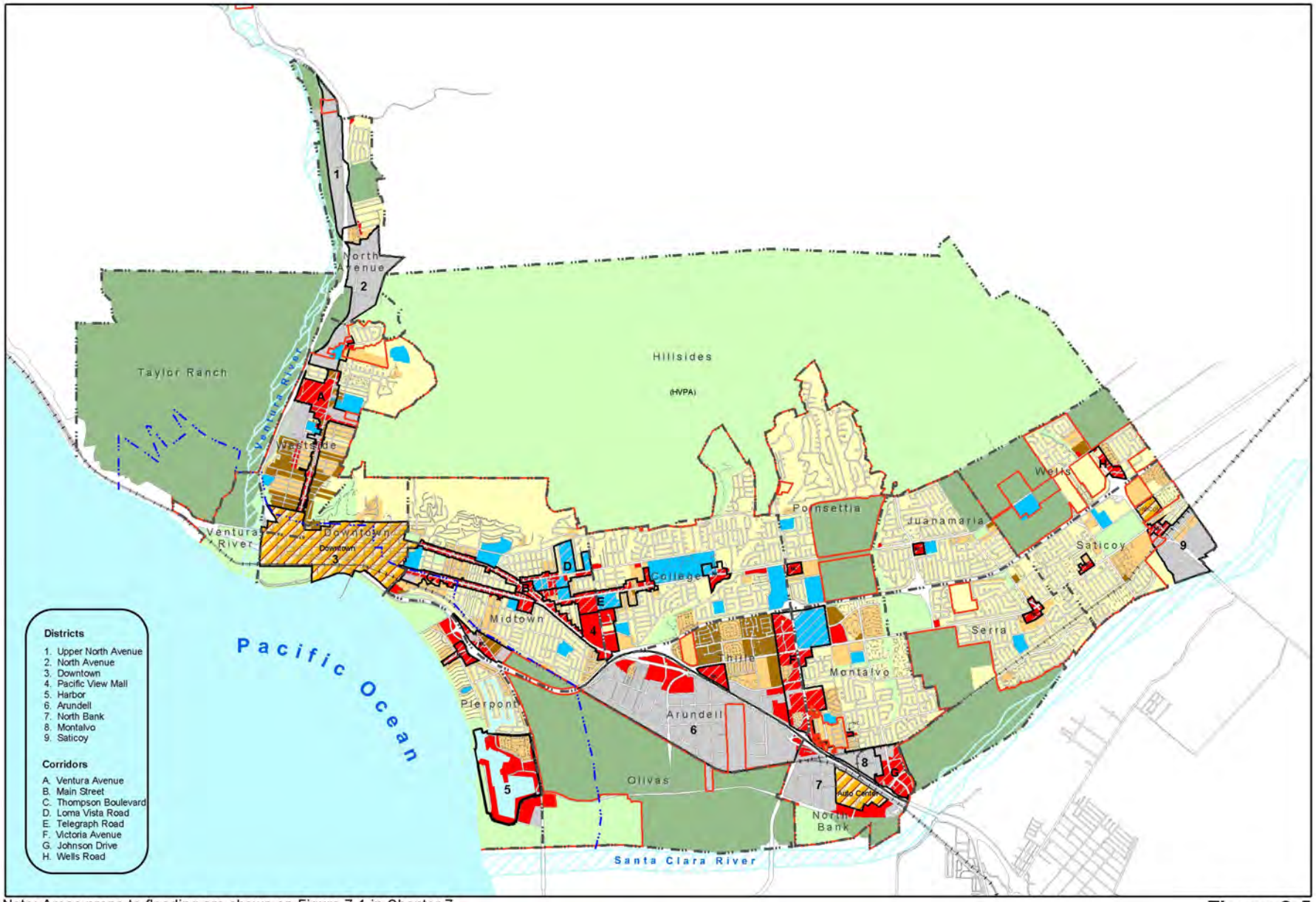
G. Johnson Drive – a connector between eastern Ventura and Highway 101 with sub-urban scale retail. Opportunities exist for high-quality, mixed-uses (such as child-care, restaurants, offices, light industrial, and housing) with ground floor commercial space to strengthen its economic presence and provide a visual gateway.

H. Wells Road – a mix of older industrial uses and newer sub-urban commercial and residential development. Well's Road should be returned to the neighborhoods it serves, so that new development can emulate the country charm that existed prior to its widening. Traffic calming in appropriate locations would encourage neighborhood connectivity, and end the current trend toward walls and buildings that turn their back to the street. This would also encourage redevelopment of the old neighborhood centers.

Neighborhood Centers

Community evolves from individual conversations and the best places to grow community are in individual neighborhoods. Every neighborhood should have at least one center where people can meet by chance at a local coffee shop, market, bookstore, diner, or even hardware store. *Our Involved Community* needs places to gather to have meaningful conversations and share civic information. Ventura's existing neighborhood centers have the opportunity to become such places. The General Plan Diagram identifies 10 neighborhood centers – where the development of housing alongside commercial uses is specifically encouraged. These centers include:

(1) Pierpont, (2) Seaward/Alessandro, (3) College/Day, (4) Gateway Plaza, (5) Victoria Plaza, (6) Bristol, (7) Kimball/Telegraph, (8) Petit/Telephone, (9) Telephone/Cachuma, and (10) Saticoy.



Note: Areas prone to flooding are shown on Figure 7-1 in Chapter 7.

Figure 3-5

GENERAL PLAN DIAGRAM

Neighborhood
- Low (up to 8 du/ac)
- Medium (9-20 du/ac)
- High (21-54 du/ac)

- Commerce
- Industry
- Public and Institutional
- Agriculture
- Parks and Open Space
- Specific Plan Area
- Corridors, Neighborhood Centers (NC)
- Districts
- City Limits
- Planning Communities
- California Coastal Zone Boundary

Special Topics

Agricultural Lands

During the 20th Century, the value of agricultural land in Ventura became secondary to that for development. However, this pattern is not irreversible, and protecting green land to save the aesthetic beauty of open space, preserve the cultural landscape of the community's heritage, and conserve land for environmental quality are high priorities in Ventura. In fact, the land's historic role for food production may soon be more highly valued once again, as prime agricultural areas continue to disappear to development at an astounding rate.

Ventura is fortunate to retain much of its rural landscape. Agriculture still plays an important role in the economy of the City and County of Ventura. Significant yields are made possible by the presence of high quality soils, adequate water supply, favorable climate, long growing season, and level topography. Mechanisms such as the California Land Conservation Act (more popularly known as the Williamson Act), the Save Our Agricultural Resources (SOAR) initiative (see Appendix B), and greenbelt agreements with neighboring jurisdictions continue to help maintain a balance between urban growth and agricultural preservation. The SOAR initiative that was adopted by the voters in 1995, and that, by its own terms, remains in full legal effect until 2030, refers to specific policies from the 1989 Comprehensive Plan that are still in effect and, as such, have been carried forward into this Plan under Policy 3D and Action 3.20 in addition to being incorporated in this General Plan as set forth in Appendix B.

A primary agricultural concern is the potential conflict with adjacent urban uses over pesticides, dust, odors, noise, and the visual impact of large greenhouses. Other issues of importance to agricultural producers include restrictions on farm-related activities, access to water, and provision of farmworker housing. Paralleling these concerns is a community interest in sustainability, the ability to provide for the needs of future generations. The policies and actions in this chapter intend to sustain viable farm operations in areas designated for agricultural use.

Growth Management

Growth management seeks to preserve public good, improve social equity, and minimize adverse impacts of development while still accommodating new housing and business attraction. The effects of growth management policies on housing prices are complex due to the idiosyncrasies of local real estate markets. Properly designed, growth management programs can plan for all development needs, such as open space, access to public transportation, and walkable neighborhoods.

The City's Residential Growth Management Program (originally established in 1979 to ensure that housing development would not outpace needed infrastructure) has not always contributed to housing affordability or quality design. This General Plan calls for revising the Residential

Subsequent to the adoption of the **SOAR** initiative, there have been two general plan amendments, which redesignated individual agricultural properties through a vote of the electorate as required by SOAR. These remain in full legal effect and have been carried forward into this Plan. These include the new Community Park at Kimball Road and the southeast corner of Montgomery and Bristol (see Appendix E and F).

Growth Management Program with an integrated set of growth management tools. Such tools not only include the adoption of a new form-based Development Code, but also community or specific plans based on availability of infrastructure and resources.

Long Term Potential Expansion Strategy

Indeed, the community has indicated that before the City expands any further, the first priority for achieving planning goals should be in the vacant and underutilized areas of the City. Yet, even the most successful effort to achieve community planning goals through infill may need to be supplemented at some point by expanding into areas outside the city limits. Such expansion may not only be necessary to fulfill development objectives; it also may be needed to provide open space, parklands, and natural areas to be preserved and restored. To address this, citizens discussed during the preparation of this General Plan which areas, if any, should be possible expansion areas. These areas were identified because they embody opportunities for achieving a variety of community vision objectives that may not be feasible within existing city limits. The community further went on to agree upon a set of rules about how these areas should be planned. These areas were analyzed in the environmental impact report prepared for this General Plan, and a "long term potential expansion strategy" will be formulated to guide the process of prioritizing any potential future expansion areas to fulfill General Plan objectives that may not be able to be achieved by our "Infill First" approach. Should any areas be selected for future planning, a specific plan, a public vote (if required pursuant to SOAR), and an amendment with the regulatory planning framework would have to occur.

The policies and actions in this chapter call for measured and appropriate growth in Ventura by prioritizing areas appropriate for additional development based on community values and infrastructure potential.

Policy 3A: Sustain and complement cherished community characteristics.

Action 3.1: Preserve the stock of existing homes by carrying out Housing Element programs.

Action 3.2: Enhance the appearance of districts, corridors, and gateways (including views from highways) through controls on building placement, design elements, and signage.

Action 3.3: Require preservation of public view sheds and solar access.

Action: 3.4 Require all shoreline development (including anti-erosion or other protective structures) to provide public access to and along the coast, unless it would duplicate adequate access existing nearby, adversely affect agriculture, or be inconsistent with public safety, military security, or protection of fragile coastal resources.

Action 3.5: Establish land development incentives to upgrade the appearance of poorly maintained or otherwise unattractive sites, and enforce existing land maintenance regulations.

Action 3.6: Expand and maintain the City's urban forest and thoroughfare landscaping, using native species, in accordance with the City's Park and Development Guidelines and Irrigation and Landscape Guidelines.

Action 3.7: Evaluate whether lot coverage standards should be changed based on neighborhood characteristics.

Policy 3B: Integrate uses in building forms that increase choice and encourage community vitality.

Action 3.8: Adopt new development code provisions that designate neighborhood centers, as depicted on the General Plan Diagram, for a mixture of residences and small-scale, local-serving businesses.

Action 3.9: Adopt new development code provisions that designate areas within districts and corridors for mixed-use development that combines businesses with housing, and focuses on the redesign of single-use shopping centers and retails parcels into walkable, well connected blocks, with a mix of building types, uses, and public and private frontages.

Action 3.10: Allow intensification of commercial areas through conversion of surface parking to building area under a district-wide parking management strategy in the Downtown Specific Plan.

Action 3.11: Expand the downtown redevelopment area to include parcels around future transit areas and along freeway frontage.

Action 3.12: The City will work with the hospitals on the new Development Code treatment for the Loma Vista corridor, which includes both hospitals.

Action 3.13: Assess whether the City's Affordable Housing Programs respond to current needs, and modify them as necessary within State mandated Housing Element updates.

Specific Plan Requirements

Specific Plans must include a statement of its relationship to the General Plan and specify all of the following:

1. distribution, location, and extent of uses
2. distribution, location, extent, and intensity of public and private transportation, sewage, water, drainage, solid waste disposal, energy
3. standards and criteria by which development will proceed and standards for conservation, development, and utilization of natural resources
4. program of implementation measures, including regulations, programs, public works projects, and financing
5. any other subjects that are necessary

(§65450-65452)

Policy 3C: Maximize use of land in the city before considering expansion.

Action 3.14: Utilize infill, to the extent possible, development to accommodate the targeted number and type of housing units described in the Housing Element.

Action 3.15: Adopt new development code provisions that ensure compliance with Housing Element objectives.

Action 3.16: Renew and modify greenbelt agreements as necessary to direct development to already urbanized areas.

Action 3.17: Continue to support the Guidelines for Orderly Development as a means of implementing the General Plan, and encourage adherence to these Guidelines by all the cities, the County of Ventura, and the Local Agency Formation Commission (LAFCO); and work with other nearby cities and agencies to avoid urban sprawl and preserve the rural character in areas outside the urban edge.

Action 3.18: Complete community or specific plans, subject to funding, for areas such as Westside, Midtown, Downtown, Wells, Saticoy, Pierpont, Harbor, Loma Vista/Medical District, Victoria Corridor, and others as appropriate. These plans will set clear development standards for public and private investments, foster neighborhood partnerships, and be updated as needed.

Action 3.19: Preparation of the new Development Code will take into account existing or proposed community or specific plans to ensure efficient use of City resources and ample citizen input.

Policy 3D: Continue to preserve agricultural and other open space lands within the City's Planning Area.

Action 3.20: Pursuant to SOAR, adopt development code provisions to "preserve agricultural and open space lands as a desirable means of shaping the City's internal and external form and size, and of serving the needs of the residents.

Action 3.21: Adopt performance standards for non-farm activities in agricultural areas that protect and support farm operations, including requiring non-farm uses to provide all appropriate buffers as determined by the Agriculture Commissioner's Office.

Action 3.22: Offer incentives for agricultural production operations to develop systems of raw product and product processing locally.

Policy 3E: Ensure the appropriateness of urban form through modified development review.

Action 3.23: Develop and adopt a form-based Development Code that emphasizes pedestrian orientation, integration of land uses, treatment of streetscapes as community living space, and environmentally sensitive building design and operation.

Action 3.24: Revise the Residential Growth Management Program (RGMP) with an integrated set of growth management tools including:

- community or specific plans and development codes based on availability of infrastructure and transit that regulate community form and character by directing new residential development to appropriate locations and in ways that integrate with and enhance existing neighborhoods, districts and corridors;
- appropriate mechanisms to ensure that new residential development produces high-quality designs and a range of housing types across all income levels; and,
- numeric limitations linked to the implementation of community or specific plans and development codes and the availability of appropriate infrastructure and resources; within those limitations, the RGMP should provide greater flexibility for timing new residential development.

Action 3.25: Establish first priority growth areas to include the districts, corridors, and neighborhood centers as identified on the General Plan Diagram; and second priority areas to include vacant undeveloped land when a community plan has been prepared for such (within the City limits).

Action 3.26: Establish and administer a system for the gradual growth of the City through identification of areas set aside for long-term preservation, for controlled growth, and for encouraged growth.

Action 3.27: Require the use of techniques such as digital simulation and modeling to assist in project review.

Action 3.28: Revise the planning processes to be more user-friendly to both applicants and neighborhood residents in order to implement City policies more efficiently.

Policies and actions related to the preservation of **historic architecture and resources** are contained in Chapter 9.

2000-2006 HOUSING ELEMENT GOALS AND POLICIES, City Council Adopted Resolution 2004-014. Adopted April 12, 2004

Goal 1

Maintain and improve the quality of existing housing and residential neighborhoods in Ventura.

Policy 1.1 Encourage citizen involvement in addressing the maintenance and improvement of the housing stock and neighborhood quality.

Policy 1.2 Continue to preserve and maintain the City's historical and architecturally significant buildings and neighborhoods.

Policy 1.3 Encourage homeowners and landlords to maintain properties in sound condition through the City's residential rehabilitation assistance programs and code enforcement efforts.

Policy 1.4 Cooperate with housing providers in the acquisition, rehabilitation, and maintenance of older residential properties as long-term affordable housing.

Policy 1.5 Permit the conversion of apartments to condominiums only when such conversion would not adversely affect the overall supply and availability of rental units, particularly units occupied by lower- and moderate-income households.

Policy 1.6 Continue to support the provision of rental assistance to lower-income households, and encourage property owners to list units with the Housing Authority.

Policy 1.7 Continue to preserve the affordability of mobile homes through the Rent Stabilization Ordinance. Support the acquisition and ownership of mobile home parks by non-profit housing providers and resident organizations.

Policy 1.8 Preserve the existing stock of affordable housing, including mobilehomes, through City regulations, as well as financial and other forms of assistance.

Goal 2

Facilitate the provision of a range of housing types to meet the diverse needs of the community.

Policy 2.1 Provide high quality housing for current and future residents with a diverse range of income levels.

Promote housing that is developed under modern sustainable community standards.

Policy 2.2 Provide expanded housing opportunities for the City's workforce. Promote the City's affordable housing programs with employers in Ventura.

Policy 2.3 Continue to offer and promote homeownership assistance programs to lower- and moderate-income households to purchase both new and existing housing. Pursue participation in other homeownership programs available in the private market.

Policy 2.4 Continue to provide financial and regulatory incentives to non-profits, private housing developers, and public agencies for the construction of the types of housing required to meet identified needs.

Policy 2.5 Support the provision of quality rental housing with three or more bedrooms to accommodate large families, and encourage room additions in the existing housing stock to address household overcrowding.

Policy 2.6 Support a variety of housing types to address the needs of agricultural workers, including affordable rentals, mobilehome parks, single room occupancy hotels (SROs), and group housing for migrant laborers.

Policy 2.7 Facilitate the provision of housing to address Ventura's growing senior population, including senior housing with supportive services, assisted living facilities, and second units.

Policy 2.8 Encourage the provision of housing adaptable to the physically disabled through integration of universal design features in new development, and compliance with Title 24 of the California Health and Safety Code.

Policy 2.9 Encourage the provision of supportive housing for persons with mental illness to address the severe shortage of housing for this special needs population.

Policy 2.10 Support efforts by non-profits to expand transitional and emergency housing in Ventura, including support of grant applications and assistance in identification of suitable sites.

Policy 2.11 Evaluate adoption of an inclusionary housing ordinance as a means of integrating affordable units within new residential development: 1) Require affordable units to be provided on or off-site, with allowance for payment of an in-lieu fee at the discretion of the City; 2) Evaluate the financial impact of inclusionary requirements on development, and assess incentive-based alternative strategies for provision of affordable housing.

Policy 2.12 Facilitate the provision of second units as a means of providing affordable rental housing in existing neighborhoods. Ensure compatibility with the primary unit and surrounding neighborhood.

Policy 2.13 Encourage the production of housing that meets the needs of all economic segments, including lower, moderate, and above moderate-income households, to achieve a balanced community.

Policy 2.14 Promote and facilitate non-traditional housing types and options, including co-housing, assisted living facilities, live-work spaces, and artist lofts.

Policy 2.15 Direct City-controlled housing funds towards programs that address the needs of very low- and low-income households.

Policy 2.16 Prioritize affordable housing opportunities and assistance for public service employees.

Policy 2.17 Annually monitor the City's progress in meeting its housing needs for all income levels.

Goal 3

Provide adequate housing sites through appropriate land use and zoning designations to accommodate the City's share of the regional housing needs.

Policy 3.1 Maintain an up-to-date inventory of vacant and underutilized parcels and provide to interested developers in conjunction with information on available development incentives. Within redevelopment project areas, provide assistance in land assembly in support of affordable housing.

Policy 3.2 Implement smart growth principles by rewarding quality infill projects that utilize existing infrastructure.

Policy 3.3 Encourage efficient utilization of the City's limited land resources by encouraging development at the upper end of the permitted Zoning Code/Comprehensive Plan density.

Policy 3.4 Utilize the Urban Infill Overlay Zone and Downtown Specific Plan as a tool to facilitate higher density residential and mixed-use development.

Policy 3.5 Explore residential reuse opportunities on obsolete commercial properties, such as older motels and underutilized historic structures.

Policy 3.6 Pursue use of publicly owned land, such as public parking lots, for development of affordable housing.

Policy 3.7 Identify opportunities for housing development that achieves other community goals such as neighborhood improvement, recreation opportunities, and the preservation of sensitive lands and neighborhood character.

Policy 3.8 Facilitate the development of mixed-use projects in appropriate commercial areas, including stand-alone residential developments (horizontal mixed-use) and housing above ground floor commercial uses (vertical mixed-use).

Policy 3.9 Promote higher density housing as part of mixed-use developments along parts of Thompson Boulevard and Main Street in Midtown Ventura, as well as other areas such as Westside, Downtown and East Ventura.

Policy 3.10 Promote mixed-use developments on the Westside of Ventura.

Policy 3.11 Ensure that the updated Land Use Element designates adequate sites for housing for executives to enhance the City's ability to attract businesses with higher paying jobs.

Goal 4

Mitigate or remove any potential governmental constraints to housing production and affordability.

Policy 4.1 Provide regulatory and/or financial incentives, where appropriate, to offset or reduce the costs of affordable housing development, including density bonuses and flexibility in site development standards.

Policy 4.2 Utilize the Affordable Housing Program to provide incentives for production of affordable units, including streamlined permit processing, reduced fees and exemption from the required competition for RGMP allocations.

Policy 4.3 Amend the City's Residential Growth Management Plan (RGMP) to better facilitate housing production, while discouraging sprawl and maintaining quality of life goals.

Policy 4.4 Undertake a comprehensive review of the City's residential development project review procedures and establish modified procedures as appropriate to streamline processing times, while maintaining adequate levels of public review.

Policy 4.5 Provide flexibility in development standards to accommodate new models and approaches to providing affordable housing, such as co-housing, live/work units and assisted living facilities.

Goal 5

Promote equal opportunity for all residents to reside in the housing of their choice.

Policy 5.1 Continue to enforce fair housing laws prohibiting arbitrary discrimination in the building, financing, selling or renting of housing on the basis of race, religion, family status, national origin, physical or mental disability, or other such factors.

Policy 5.2 Continue to support organizations that offer fair housing and mediation services to Ventura residents.

Policy 5.3 Promote housing that meets the special needs of large families, elderly persons, agricultural workers, and the disabled.

Policy 5.4 Continue to enforce notification and provide relocation assistance for lower-income persons displaced due to demolition, reuse, condominium conversion, or rehabilitation as a result of code enforcement.

ventura's general plan

OUR ACCESSIBLE COMMUNITY

"Restore human legs as a means of travel. Pedestrians rely on food for fuel and need no special parking facilities."

— Lewis Mumford
Author of *The City in History*, 1961

CITY OF
VENTURA

4. OUR ACCESSIBLE COMMUNITY

Our goal is to provide residents with more transportation choices by strengthening and balancing bicycle, pedestrian and transit opportunities in the City and surrounding region.

An Integrated Mobility System

Central to the well-being of Ventura's citizens and visitors is *mobility*, the ability to get from one place to another. Mobility depends on the range, efficiency, and connectivity of the various components that comprise the transportation network – sidewalks, bicycle routes, and thoroughfares, as well as transit services – and that enable people to access the things they need, from the most basic to the extraordinary (See Figures 4-1 Bicycle Facilities, 4-2 Bus and Rail Routes, and 4-3 Roadway Classification Plan). Ventura is a community that recognizes that thoroughfares serve a variety of functions and are not simply conduits for automobile traffic.

Balancing automobile use with other means of travel is essential to maintaining social and physical health. Safe and enjoyable routes for pedestrians and bicyclists should connect every part of the city, and neighborhoods need to be linked by ample and convenient transit service along corridors. Ventura also must be connected to the larger region by a variety of transportation modes.

Thoroughfares have a tremendous effect on neighborhood character and therefore quality of life for both residents and visitors.

Thoroughfares are essentially the stage of public life where a diversity of citizens interact. They can create places of remembrance, chance encounters, and discovery. Ensuring that Ventura thoroughfares are *great places* requires improving design and quality as well as connectivity. In some cases, city thoroughfares are over-engineered to accommodate the worst-case scenario.

Slowing down automobiles, especially in residential neighborhoods, is a desire shared by many residents. Vehicle travel should be directed toward routes that minimize congestion, avoid conflicts with walkers and bicyclists, and keep residential neighborhoods free of excessive cut-through traffic. Additionally, in some areas of the city, suburban patterns have resulted in less connectivity than is desired by the community. Transportation modes and land uses in the city need to be distributed so that residents have close and easy access to meet their basic needs and travel destinations.

Traffic congestion is a major concern among Ventura residents. Although traffic on local roads is generally free-flowing, a few key intersections and road segments experience congestion during peak traffic hours. Simply widening roads to add lanes will not solve traffic congestion. Instead, the system needs integrated solutions that improve mobility for all

The essential qualities of a properly functioning mobility system are:

1. Well connected, interesting components
2. Convenient accessibility
3. Integrated linkage of all modes
4. Comfort and safety
5. Design reflecting natural and urban context

means of travel. While walking, biking, and transit use are already popular, these alternative modes need to be enhanced and better linked. For example, bus and rail systems serve Ventura, but not thoroughly enough to provide a reasonable alternative to auto use for most travelers. And while pedestrian access exists in most areas of Ventura, the network lacks continuous routes in some key locations.

As expressed in the *Ventura Vision,* a top community priority is to minimize automobile use through a fully integrated multi-modal transportation system. The policies and actions in this chapter aim to achieve this objective.

Travel Modes

Walking

Sidewalks are arguably the most important component of the city's mobility system. As with circulation in general, the utility of pedestrian systems is inextricably linked to land use patterns. Combined with urban design elements, land use patterns influence how much walking can safely and effectively occur in the community. Circulation systems that are designed with pedestrians in mind tend to increase outdoor activity and community interaction, while those oriented toward motor vehicles tend to create disincentives to walking.

Ventura's pedestrian system consists of sidewalks, access ramps, crosswalks, linear park paths, and overpasses and tunnels. Special corridors such as the Beachfront Promenade, California Plaza, and Figueroa Plaza have been designated especially for pedestrians. The pedestrian system also includes neighborhood and park path systems, and dedicated trail facilities that are shared with bicyclists and other users.

Pedestrian paths need to be interesting, enjoyable, and lead to a destination, from the most simple – such as a pocket park – to more grand points of arrival, such as major civic spaces. Creating a network of paths that connect key features such as parks, schools, civic facilities, shops, and services is vital to the success of reducing dependence on the automobile. Those most in need of pedestrian access include children, teenagers, and the elderly, as well as those who cannot afford a car or choose not to drive.

The main deficiency of Ventura's pedestrian system is its discontinuity. Some sections of thoroughfares lack sidewalks, and pedestrian connections between some key use areas are in need of repair. Crosswalks are prohibited along some corridors, and pedestrian signal phases are not always long enough for all walkers. Traffic-calming measures also are needed to improve walkability in many neighborhoods. Citizens have placed a high emphasis on improving the pedestrian network, recommending specific improvements such as:

- narrowing selected thoroughfare segments,
- improving sidewalks and road crossings,
- lengthening pedestrian signal phases,
- adding marked crossings at key intersections,
- developing safe and attractive walkways from Downtown and Midtown to the beach,
- ensuring that new development provides ample pedestrian access,
- creating trails along watercourses and through the hillsides, and
- improving pedestrian facilities near schools.

Figure 4-1 illustrates the three State defined classes of bikeway facilities:

- Bike Path (Class I) – Class I bike paths are separated from roads by distance or barriers, and cross-traffic by motor vehicles is minimized.
- Bike Lane (Class II) – Class II bikeways are roadway lanes reserved for bicycles. These lanes are painted with pavement lines and markings and are signed.
- Bike Route (Class III) – Class III bike routes share existing roads and provide continuity to other bikeways or designated preferred routes through high traffic areas. There are no separate lanes, and bike routes are established by placing signs that direct cyclists and warn drivers of the presence of bicyclists.

Policies and actions in this chapter intend to improve pedestrian access through this range of methods.

Biking

Because bicycles are an integral component of the city's mobility system, they are allowed on *all* city thoroughfares. The City has adopted a General Bikeway Plan intended to create a safe, accessible, and interconnected network of bike paths, lanes, and routes that will ensure Ventura becomes and remains a truly bicycle-friendly community. The General Bikeway Plan is a flexible, comprehensive, and long-range guide for bicycle transportation and recreation planning, design, and budget decision-making. Accordingly, it is designed to:

- refine and implement City bicycle-related policies,
- establish bikeway design standards,
- enhance bicycle safety and education programs,
- set priorities and phasing for improvements and amenities depicted on the Select System of Bikeways map, and
- identify funding means and opportunities for interagency cooperation.

The City places high emphasis on improving the local bicycle network by following the recommendations of the General Bikeway Plan, which include:

- connecting schools, parks, activity areas, housing areas, and employment centers with bike paths and lanes, particularly in areas without thoroughfares,
- constructing additional Class I or Class II bikeways in a number of locations, including along the Santa Clara River and the coast to connect to the Ventura River Trail,
- installing bicycle racks,
- updating bicycle facility standards to ensure proper design and maintenance,
- constructing improvements to resolve bicycle/automobile conflicts,
- establishing a highly visible route identification and signage program that fits the character of the community, and
- mitigating impacts on bicyclists from new development and during and following construction of roadway projects.

Policies and actions in this chapter seek to improve bicycle access and safety by carrying out these recommendations.

Public Transit – Bus & Rail

Transit service in Ventura includes bus and rail operations (see Figure 4-2). South Coast Area Transit (SCAT) provides local bus service, Ventura Intercity Transit Authority (VISTA) runs regional routes, and Greyhound offers statewide and national connections. Metrolink provides rail service to and from Los Angeles – although on a very limited schedule, while Amtrak trains that stop in Ventura run between San Luis Obispo and San Diego.

Although local bus routes connect most activity centers, the East End is not well served, and more frequent service is needed to key destinations such as the beach and downtown. Metrolink and Amtrak need to be linked to each other and accessed by local bus routes. An agreement between the City and the Ventura County Transportation Commission calls for identifying a permanent Metrolink site, and the best way to integrate all of these services is with a major multi-modal transit center that also accommodates potential additional future alternative transportation modes.

SCAT buses are equipped with wheelchair lifts and adjustable steps to ensure access for all riders. SCAT also offers discounted fares for seniors and disabled riders, as well as dial-a-ride service. However, seniors and mobility-impaired persons also desire frequent fixed-route service in smaller vehicles, and all riders need upgraded amenities at a number of stops. Bus routes also need increased frequency and stops to make transit a viable alternative to driving.

Other transit system needs include:

- reduced-emission vehicles,
- continued use of schedule synchronization to accommodate route transfers, and
- service to regional destinations such as California State University Channel Islands and airports.

Policies and actions in this Chapter aim to improve transit efficiency, encourage ridesharing, and preserve long-term transit options.

The Automobile and Types of Roadways

The most basic component of the mobility system is the *thoroughfare*, used not only by people who drive, but also by people who ride the bus, bike and walk. Thoroughfares encompass sidewalks, bicycle lanes, travel lanes, and are the most utilized means of travel in Ventura. This system is organized into the following classifications: local thoroughfares, collectors, and arterials (see Figure 4-3, Roadway Classification Plan – also known as "Circulation Plan").

Local Thoroughfares

Local thoroughfares provide mobility within neighborhoods and are generally not shown on the Roadway Classification Plan. Local thoroughfares include *alleys, lanes,* and *"yield" streets*.

Collectors

Collectors serve as links between local thoroughfares. Collectors may front residential and neighborhood-serving commercial uses. Collectors can be configured as *boulevards, avenues, streets,* and *main streets*.

Arterials

Arterials are the primary mechanism for cross-town travel and serve the major centers of activity. These roads typically carry a high proportion of the total urban area travel. Arterials can be configured as *boulevards, avenues,* and *streets*.

Collector and arterial thoroughfare segments in the City are characterized in two ways that describe their physical features: *design* classification and *functional* classification. Design Classification defines the number of travel *lanes* using the following categories: Primary Arterial (6 lanes or more), Secondary Arterial (4 lanes), and Collector (2 lanes), as shown on the Roadway Classification Plan, Figure 4-3. Functional Classification describes how a thoroughfare is used: essentially as a *boulevard*, *avenue*, *street*, or *main street*.

Functional Classification also identifies whether roadways have medians, parking, bike lanes, and other streetscape attributes needed to achieve objectives other than just moving traffic, such as accommodating pedestrians, bicycles, and adjoining land uses and public spaces. Table 4-1 shows the design and functional classifications for thoroughfares in the City.

Ventura is mainly connected by 2-lane and 4-lane thoroughfares. The classification for each type of road segment represents a balance between vehicle capacity, pedestrian and bicycle access, parking requirements, streetscape character, and right-of-way limitations.

Boulevard
A multi-lane and generally urban corridor with a central, planted median.

Avenue
Avenues are typically multi-lane, short distance connectors, with a painted median, used in both residential and commercial areas, and often terminate at prominent buildings or plazas.

Table 4-1 Thoroughfare Sizes and Types

	Street Sizes (Engineering Design Classification)		
	Primary Arterial (6 or more lane roadway)	Secondary Arterial (4 lane roadway)	Collector (2 lane roadway)
Existing			
Future Widening			
Future Extension			
	Thoroughfare Types (Functional Classification)		
	Boulevard	Boulevard	Boulevard
	Avenue	Avenue	Avenue
		Street	Street
			Main Street

Source: Definitions for Design Classifications are the City's modifications to the American Association of State Highway and Transportation Officials (AASHTO) standards. Definitions for Functional Classifications are the City's modifications to the Traditional Neighborhood Development Street Design Guidelines.

Street
Street typically allows two way travel and may be multi-lane and does not have a central median and generally provides access to predominantly residential areas.

Main Street

Main streets have 2 vehicle lanes. Their main purpose is to provide low-speed access to commercial, mixed-uses, and higher density neighborhoods.

Consistency between the design and functional classifications is determined based on the number of through lanes. Temporary improvements, such as restriping to change the number of lanes are allowed, however a permanent improvement that moves the curbs and changes the number of lanes would require an amendment to this plan.

The *Ventura Vision* offers several key recommendations to improve the city thoroughfare system:

- add or enhance north-south arterials;
- consider an additional Santa Clara River bridge, Portola Avenue overcrossing of U.S. 101, and Johnson Drive overcrossing of Route 126; and
- soften the barrier impact of U.S. 101 by working with Caltrans to improve signage, aesthetics, undercrossings, and overcrossings.

Policies, actions, and the Roadway Classification Plan work together to address these recommendations. To improve the safety and functioning of the thoroughfare network and to maintain its compatibility with the character of the community, the policies and actions in this chapter also call for upgrading problem thoroughfares and intersections, improving and constructing freeway ramps, and connecting unfinished roadways. Additional actions intend to protect views from scenic routes, including State-designated scenic highways.

Policy 4A: Ensure that the transportation system is safe and easily accessible to all travelers.

Action 4.1: Direct city transportation investment to efforts that improve user safety and keep the circulation system structurally sound and adequately maintained. First priority for capital funding will go to our pavement management program to return Ventura streets to excellent condition.

Action 4.2: Develop a prioritized list of projects needed to improve safety for all travel modes and provide needed connections and multiple route options.

Action 4.3: Provide transportation services that meet the special mobility needs of the community including youth, elderly, and disabled persons.

Action 4.4: Combine education with enforcement to instill safe and courteous use of the shared public roadway.

Action 4.5: Utilize existing roadways to meet mobility needs, and only consider additional travel lanes when other alternatives are not feasible.

Action 4.6: Require new development to be designed with interconnected transportation modes and routes to complete a grid network.

Action 4.7: Update the traffic mitigation fee program to fund necessary citywide circulation system and mobility improvements needed in conjunction with new development.

Action 4.8: Implement the City's Neighborhood Traffic Management Program and update as necessary to improve livability in residential areas.

Action 4.9: Identify, designate, and enforce truck routes to minimize the impact of truck traffic on residential neighborhoods.

Action 4.10: Modify traffic signal timing to ensure safety and minimize delay for all users.

Action 4.11: Refine level of service standards to encourage use of alternative modes of transportation while meeting state and regional mandates.

Action 4.12: Design roadway improvements and facility modifications to minimize the potential for conflict between pedestrians, bicycles, and automobiles.

Action 4.13: Require project proponents to analyze traffic impacts and provide adequate mitigation in the form of needed improvements, in-lieu fee, or a combination thereof.

Policy 4B: Help reduce dependence on the automobile.

Action 4.14: Provide development incentives to encourage projects that reduce automobile trips.

Action 4.15: Encourage the placement of facilities that house or serve elderly, disabled, or socioeconomically disadvantaged persons in areas with existing public transportation services and pedestrian and bicycle amenities.

Action 4.16: Install roadway, transit, and alternative transportation improvements along existing or planned multi-modal corridors, including primary bike and transit routes, and at land use intensity nodes.

Action 4.17: Prepare and periodically update a Mobility Plan that integrates a variety of travel alternatives to minimize reliance on any single mode.

Action 4.18: Promote the development and use of recreational trails as transportation routes to connect housing with services, entertainment, and employment.

Action 4.19: Adopt new development code provisions that establish vehicle trip reduction requirements for all development.

Action 4.20: Develop a transportation demand management program to shift travel behavior toward alternative modes and services.

Action 4.21: Require new development to provide pedestrian and bicycle access and facilities as appropriate, including connected paths along the shoreline and watercourses.

Action 4.22: Update the General Bikeway Plan as needed to encourage bicycle use as a viable transportation alternative to the automobile and include the bikeway plan as part of a new Mobility Plan.

Action 4.23: Upgrade and add bicycle lanes when conducting roadway maintenance as feasible.

Action 4.24: Require sidewalks wide enough to encourage walking that include ramps and other features needed to ensure access for mobility-impaired persons.

Action 4:25: Adopt new development code provisions that require the construction of sidewalks in all future projects.

Action 4.26: Establish a parking management program to protect the livability of residential neighborhoods, as needed.

Action 4.27: Extend stubbed-end streets through future developments, where appropriate, to provide necessary circulation within a developing area and for adequate internal circulation within and between neighborhoods. Require new developments in the North Avenue area, where applicable, to extend Norway Drive and Floral Drive to connect to Canada Larga Road; and connect the existing segments of Floral Drive. Designate

the extension of Cedar Street between Warner Street and south of Franklin Lane and the linking of the Cameron Street segments in the Westside community as high priority projects.

Policy 4C: Increase transit efficiency and options.

Action 4.28: Require all new development to provide for citywide improvements to transit stops that have sufficient quality and amenities, including shelters and benches, to encourage ridership.

Action 4.29: Develop incentives to encourage City employees and local employers to use transit, rideshare, walk, or bike.

Action 4.30: Work with public transit agencies to provide information to riders at transit stops, libraries, lodging, and event facilities.

Action 4.31: Work with public and private transit providers to enhance public transit service.

Action 4.32: Coordinate with public transit systems for the provision of additional routes as demand and funding allow.

Action 4.33: Work with Amtrak, Metrolink, and Union Pacific to maximize efficiency of passenger and freight rail service to the City and to integrate and coordinate passenger rail service with other transportation modes.

Action 4.34: Lobby for additional transportation funding and changes to Federal, State, and regional transportation policy that support local decision-making.

Action 4.35: The City shall pursue funding and site location for a multi-modal transit facility in coordination with VCTC, SCAT, U.P.R.R., Metrolink, Greyhound Bus Lines, and other forms of transportation.

Policy 4D: Protect views along scenic routes.

Action 4.36: Require development along the following roadways – including noise mitigation, landscaping, and advertising – to respect and preserve views of the community and its natural context.

- State Route 33
- U.S. HWY 101
- Anchors Way
- Brakey Road
- Fairgrounds Loop
- Ferro Drive
- Figueroa Street
- Harbor Boulevard
- Main Street
- Navigator Drive
- North Bank Drive
- Poli Street/Foothill Road
- Olivas Park Drive
- Schooner Drive
- Spinnaker Drive
- Summit Drive

- Telegraph Road – east of Victoria Avenue
- Victoria Avenue – south of U.S. 101
- Wells Road

Action 4.37: Request that State Route 126 and 33, and U.S. HWY 101 be designated as State Scenic Highways.

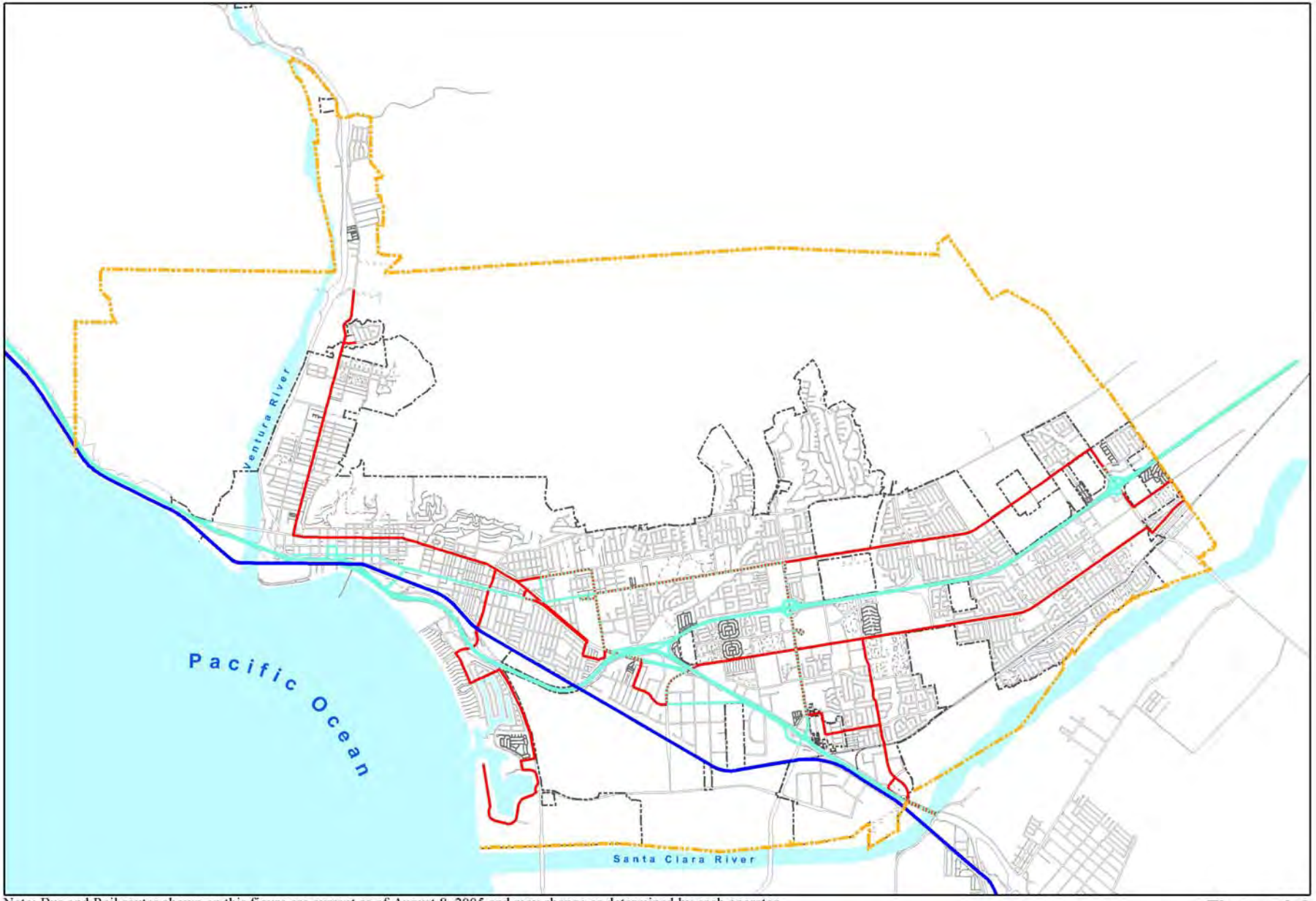
Action 4.38: Continue to work with Caltrans to soften the barrier impact of U.S. HWY 101 by improving signage, aesthetics and undercrossings and overcrossings. 

Action 4.39: Maintain street trees along scenic thoroughfares, and replace unhealthy or missing trees along arterials and collectors throughout the City. 

Note: Bike facilities shown on this figure are taken from the 1999 General Bikeway Plan and may change as updates to the General Bikeway Plan are completed.

Figure 4-1
Bicycle Facilities

	Class 1	Class 2	Class 3	Shoulder	Other
Existing	———	———	———	———	---- City Limits
Future	• • • • •	• • • • •	• • • • •		- - - Planning Boundary
Existing Sidewalk			———		

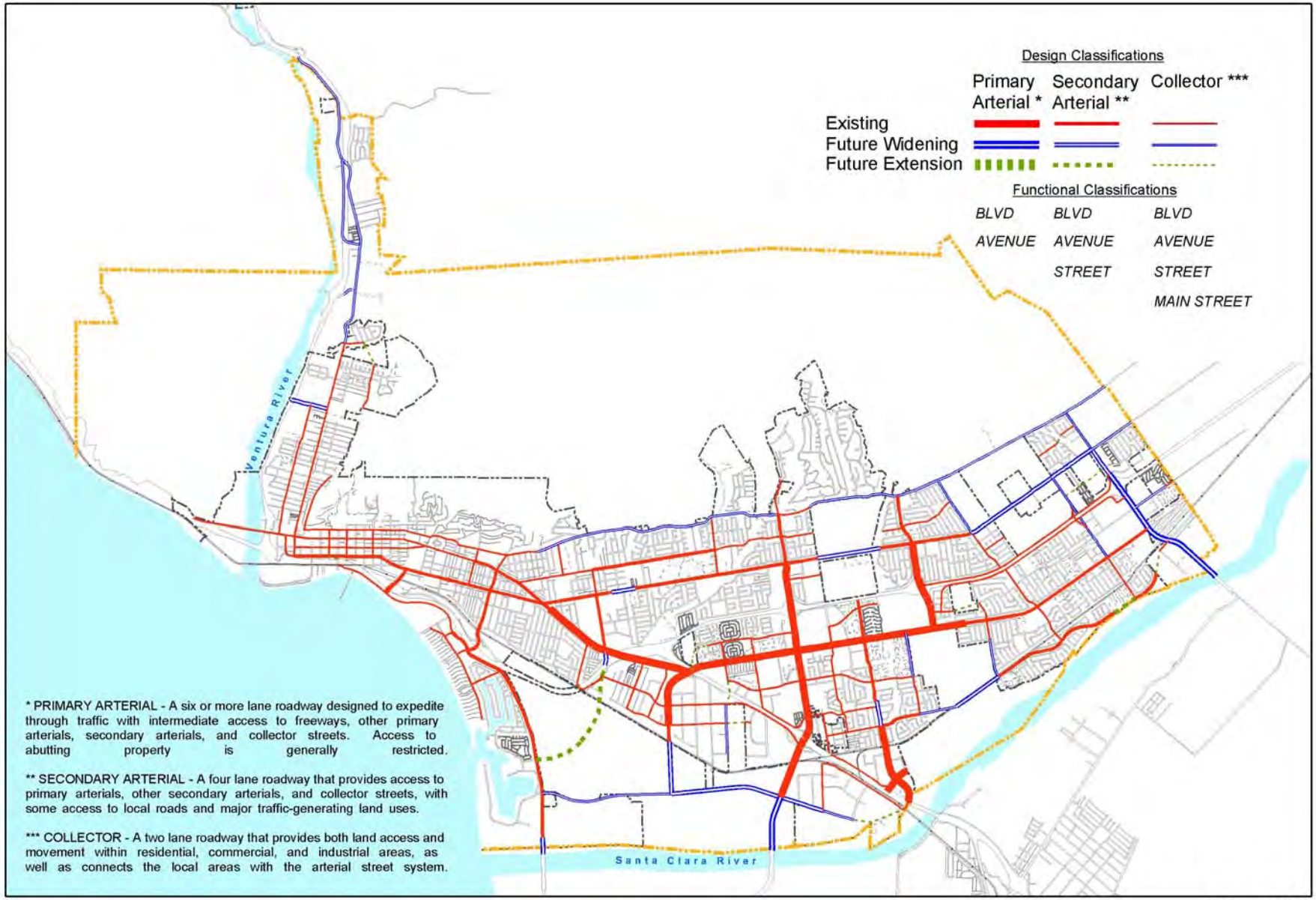


Note: Bus and Rail routes shown on this figure are current as of August 8, 2005 and may change as determined by each operator.

Figure 4-2
Bus and Rail Routes

Routes
- SCAT
- VISTA
- SCAT & VISTA
- RAIL

Other
- City Limits
- Planning Boundary



City Limits

Planning Boundary

Note: Future extensions shown are conceptual in nature, unless a specific alignment has been approved by the City Council.

Figure 4-3
Roadway Classification Plan

ventura's general plan

OUR SUSTAINABLE INFRASTRUCTURE

"Now, I truly believe, that we in this generation, must come to terms with nature, and I think we're challenged as mankind has never been challenged before to prove our maturity and our mastery, not of nature, but of ourselves."

— Rachel Carson
Biologist, Writer; Ecologist 1907-1964

CITY OF
VENTURA

5. OUR SUSTAINABLE INFRASTRUCTURE

Our goal is to safeguard public health, well-being and prosperity by providing and maintaining facilities that enable the community to live in balance with natural systems.

Essential Support Systems

Infrastructure is an extremely important though largely unnoticed foundation of quality of life in Ventura. Efficient water supply, wastewater treatment, and drainage systems are vital to most daily activities. These facilities on which the community depends need regular maintenance, and they frequently require upgrading both to meet the demands of a growing population and to be sensitive to environmental resources.

To ensure that citizens get high-quality drinking water, the City owns and operates a State-certified laboratory where water quality is tested continuously. Each City treatment plant is also run by State-certified operators who monitor water quality. As a result, City water exceeds State and federal water quality requirements.

The City employs conservation measures and emerging technology in its effort to achieve a high standard for wastewater treatment while protecting natural systems. As a result, treatment capability historically has outpaced community needs, with even peak flows typically reaching only 75 percent of plant capacity. Even so, further expanding the use of reclaimed water and reducing water consumption will be vital to maintaining long-term water supplies.

Much of the storm drain system is aging and in need of repair or replacement, especially corrugated metal pipes in some of the older areas of Ventura. Collecting adequate fees that truly reflect the cost of serving development can help support City efforts to preclude additional deficiencies, and relying on and complementing natural drainage features can both help avoid the need for expensive and environmentally damaging channelization and improve the functioning of the overall drainage system.

Water Supply

The City provides drinking water, and water for fire protection, to households and businesses in Ventura through a complex system with more than 500 miles of distribution mains, 3 water treatment plants, 22 booster pump stations, 25 treated water reservoirs, and 13 wells. Five distinct sources provide surface and ground water to the City supply system:

- Casitas Municipal Water District
- Ventura River surface water intake, subsurface water and wells (Foster Park)
- Mound groundwater basin
- Oxnard Plain groundwater basin (Fox Canyon Aquifer)
- Santa Paula groundwater basin

The City also holds a State Water Project entitlement of 10,000 acre-feet per year;

however, new facilities would need to be constructed to transport this water to the City. The City updates its Urban Water Management Plan every two years (instead of every five years as required by State law) as part of its ongoing effort to ensure that City-managed water supplies will continue to accommodate demand in Ventura.

Meeting future water demands requires saving and reusing every drop possible. The City utilizes recycled water from its reclamation facility (a tertiary wastewater treatment plant) near the Harbor to augment the municipal water supply. Recycled water is used to irrigate City and private landscaping in the area and the Buenaventura and Olivas Park municipal golf courses. The remaining effluent is discharged to the Santa Clara River Estuary.

Largely as a result of conservation efforts, water consumption per city resident has generally declined (see Table 5-1). Projections anticipate that the City will continue to be able to meet consumer needs. Policies and actions in this chapter seek to refine demand management practices and conservation programs to further reduce per capita water use so that Ventura can sustain water resources for many more generations.

Table 5-1
Historic and Projected Water Production (Acre Feet)

Year	Estimated Population Served	Per Capita Use[1]	Treated Water Production	Raw Water Production	Total Water Production
Historic					
1980	73,774	0.236	17,381	4,766	22,147
1990	94,856	0.177	16,831	2,317	19,148
1995	99,668	0.165	16,428	1,602	18,030
1996	100,482	0.180	18,038	1,500	19,538
1997	101,096	0.178	18,002	1,829	19,831
1998	101,610	0.165	16,775	1,769	18,544
1999	102,224	0.192	19,658	1,067	20,725
2000	103,238	0.198	20,437	1,129	21,566
2001	104,153	0.173	18,071	889	18,960
2002	105,267	0.180	18,965	968	19,933
2003	106,782	0.183	19,510	846	20,356
Projected					
2005	109,465	0.179	19,594	1,000	20,594
2010	115,774	0.179	20,724	1,000	21,724
2015	122,447	0.179	21,918	1,000	22,918
2020	129,504	0.179	23,181	1,000	24,181

Sources: City of Ventura Urban Water Management Plan, Dec. 2000, City of Ventura 2004 Biennial Water Supply Report, as amended, September 2004.

[1] Per Capita use excludes raw water.

Wastewater Treatment

Ventura residents generate millions of gallons of wastewater each day, which is carried by more than 450 miles of sewer mains and 12 lift stations to the water reclamation facility in the Harbor area near the mouth of the Santa Clara River. While most residents receive sewer service directly from the City, three other sanitary sewer agencies with their own treatment facilities provide service to some citizens in the Montalvo, Saticoy, and North Ventura Avenue areas. As shown in Table 5-2, all local treatment facilities operate well below capacity.

Table 5-2 Treatment Facilities

Treatment Facilities	Treatment Type	Capacity	Average Daily Flow
Ventura Water Reclamation Facility	Tertiary	14 MGD	9.0 MGD (68% capacity)
Montalvo Municipal Improvement District Treatment Plant	Secondary	0.36 MGD	0.242 MGD (67% capacity)
Saticoy Sanitary District Treatment Plant	Secondary[2]	0.25 MGD	0.16 MGD (64% capacity)
Ojai Valley Sanitary District Treatment Plant	Tertiary	3 MGD	2.0 MGD (71% capacity)

[2] Includes nutrient removal prior to percolation.
Source: Individual agencies listed

About two-thirds of the wastewater treated locally is discharged to the Santa Clara River Estuary, as allowed by the Regional Water Quality Control Board. The remaining effluent is either transferred to recycling ponds, where some is delivered as reclaimed water, or it percolates to underground aquifers or evaporates. The policies and actions in this chapter call for improving treatment system efficiency to reclaim and reuse as much water as possible.

Storm Drainage

Storm runoff travels from the hills above Ventura through the City until it is absorbed into the ground or reaches the Ventura River, the Santa Clara River, or the Pacific Ocean. To convey the occasional high flows associated with storms, the Ventura County Flood Control District oversees about 20 natural or concrete lined barrancas that serve as the major drainage courses for local watersheds. The City has about 20 miles of off-street drain system designed to convey runoff from all but the most severe of storms, in which case water also runs off via city streets.

Maintaining the barrancas and other watercourses that are not already lined with concrete as natural flood channels can help reduce peak flows by limiting water velocity. Incorporating natural features into drainage systems rather than hard treatment devices also can improve water quality and reduce maintenance costs. The policies and actions in this chapter seek to prevent increases in future storm water impacts by incorporating natural drainage and flood control features such as wildlife ponds and wetlands – instead of cement retention basins – into the storm drain system where possible. Such less intensive approaches not only cost less, but they also preserve environmental resources and protect water quality.

Policy 5A: Follow an approach that contributes to resource conservation.

Action 5.1: Require low flow fixtures, leak repair, and drought tolerant landscaping (native species if possible), plus emerging water conservation techniques, such as reclamation, as they become available.

Action 5.2: Use natural features such as bioswales, wildlife ponds, and wetlands for flood control and water quality treatment when feasible.

Action 5.3: Demonstrate low water use techniques at community gardens and city-owned facilities.

Action 5.4: Update the Urban Water Management plan as necessary in compliance with the State 1983 Urban Water Management Planning Act.

Action 5.5: Provide incentives for new residences and businesses to incorporate recycling and waste diversion practices, pursuant to guidelines provided by the Environmental Services Office.

Policy 5B: Improve services in ways that respect and even benefit the environment.

Action 5.6: Require project proponents to conduct sewer collection system analyses to determine if downstream facilities are adequate to handle the proposed development.

Action 5.7: Require project proponents to conduct evaluations of the existing water distribution system, pump station, and storage requirements in order to determine if there are any system deficiencies or needed improvements for the proposed development.

Action 5.8: Locate new development in or close to developed areas with adequate public services, where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.

Action 5.9: Update development fee and assessment district requirements as appropriate to cover the true costs associated with development.

Action 5.10: Utilize existing waste source reduction requirements, and continue to expand and improve composting and recycling options.

Action 5.11: Increase emergency water supply capacity through cooperative tie-ins with neighboring suppliers.

Action 5.12: Apply new technologies to increase the efficiency of the wastewater treatment system.

Action 5.13: Increase frequency of city street sweeping, and post schedules at key points within each neighborhood.

Action 5.14: Develop a financing program for the replacement of failing corrugated metal storm drain pipes in the City.

Action 5.15: Establish assessment districts or other financing mechanisms to address storm drain system deficiencies in areas where new development is anticipated and deficiencies exist.

Action 5.16: Require new developments to incorporate stormwater treatment practices that allow percolation to the underlying aquifer and minimize offsite surface runoff utilizing methods such as pervious paving material for parking and other paved areas to facilitate rainwater percolation and retention/detention basins that limit runoff to pre-development levels.

Action 5.17: Require stormwater treatment measures within new development to reduce the amount of urban pollutant runoff in the Ventura and Santa Clara Rivers and other watercourses.

Action 5.18: Work with the Ventura Regional Sanitation District and the County to expand the capacity of existing landfills, site new landfills, and/or develop alternative means of disposal that will provide sufficient capacity for solid waste generated in the City.

"Leave all the afternoon for exercise and recreation, which are as necessary as reading. I will rather say more necessary because health is worth more than learning."

— Thomas Jefferson
3rd President of the United States
1801-1809

CITY OF
VENTURA

OUR ACTIVE COMMUNITY

ventura's general plan

6. OUR ACTIVE COMMUNITY

Our goal is to add to and enhance our parks and open spaces to provide enriching recreation options for the entire community.

Higher Standards

For many people, spending time outdoors and participating in recreational activities represent some of life's most cherished rewards. Ventura's superb public park, open space, and recreation system offers a myriad of ways to partake in these privileges. The city offers 34 developed parks, 45 miles of linear park and trail network, stellar beaches, specialized play and sports facilities and programs, communitywide events, senior and youth activities, and two 18-hole tournament class public golf courses. Figure 6-1 at the end of this chapter shows the locations of various public facilities in the city.

The City is committed to ensuring that its citizens have ample access to high quality spaces for leisure and active recreation. The City's adopted standard of 10 acres per 1,000 residents has created far more park area than would be possible under the basic State level of 3 acres per 1,000, and also tops the more ambitious National Park and Recreation Association benchmarks for specific park types (see Table 6-1). The City continues to create customized facilities like the Community Park (approved by the voters pursuant to SOAR) to expand opportunities for local residents to enjoy healthy, active lifestyles.

Table 6-1 Park Acreage per 1,000 Population

Park Type	Standards	
	City of Ventura	National Park & Recreation Association
Neighborhood	2 acres	1.5 acres
Community	3 acres	2.5 acres
Citywide	5 acres	5 acres
Total	10 acres	9 acres

Sources: City of Ventura, www.nrpa.org.

City Parks and Open Space

The public park and open space system in Ventura includes neighborhood, community, citywide, and linear parks. As shown in Table 6-2, the City oversees nearly 600 acres of developed park facilities, plus the linear park network, which provides important connections among watersheds for both people and wildlife.

As the City continually strives to improve the quality of leisure and recreation opportunities for everyone in the community, it must address a number of challenges such as:

- modernizing existing facilities,
- finding appropriate land for new facilities,
- developing useful and enjoyable public spaces, such as plazas and mini-parks in urban settings,
- formalizing shared use arrangements for non-City facilities like school playfields,
- meeting increasing demand for athletic courts, fields and pools,
- provide opportunities for passive recreation, and
- providing services needed by youth, seniors, and residents with special needs.

Neighborhood Parks
Typically less than 8 acres each, these smaller parks primarily serve specific residential areas in the community. The 18 neighborhood parks in Ventura cover about 73 total acres. Any future development outside the current city limits will have to provide new neighborhood parks to serve the added population.

Community Parks
These parks are designed to offer specialized opportunities and facilities to residents of more than one neighborhood. Amenities in community parks may include formal athletic fields, courts, recreation buildings, preschool and youth play structures, group and individual picnic areas, and landscaped areas for informal activity or leisure.

Citywide Parks
These parks feature recreational opportunities that draw a wide range of age and interest groups from throughout the city. They offer a variety of attractive amenities, such as large open spaces, unique natural resources, interpretive centers, cultural amenities, group picnic areas, sports facilities, and equestrian, bicycling, and hiking trails. The Ventura Community Park also serves some citywide park functions and attracts visitors from outside the city with its high-quality playing fields and aquatic center.

Linear Parks
Ventura's unique linear park network intersperses trails and picnic areas among a mostly undeveloped web of barranca and riverbanks that provide valuable wildlife habitat and migration corridors. The linear parks also merge with a number of neighborhood and community parks, complementing developed recreation areas with natural riparian qualities. Extending trails through the linear park network can create additional opportunities for low-impact contact with nature, and in some cases even provide pleasant non-automobile commuting options.

Table 6-2 City Park Facilities

Park	Park Size (in acres)				
	Neighborhood Parks	Community Parks	Citywide Parks	Special Use Facilities	Total
Albinger Archaeological Museum				0.9	**0.9**
Arroyo Verde Park	2.0	23.0	104.3		**129.3**
Barranca Vista Park	8.7				**8.7**
Blanche Reynolds Park	3.4				**3.4**
Camino Real Park			38.2		**38.2**
Cemetery Memorial Park	7.1				**7.1**
Chumash Park	6.1				**6.1**
Downtown Mini-Park	0.4				**0.4**
Eastwood Park				0.7	**0.7**
Fritz Huntsinger Youth Sports Complex	4.3	14.0			**18.3**
Grant Park			107.3		**107.3**
Harry A. Lyon Park			10.7		**10.7**
Hobert Park	7.1				**7.1**
Juanamaria Park	5.0				**5.0**
Junipero Serra Park	2.7				**2.7**
Linear Park Network				46.0	**46.0**
Marina Park			15.3		**15.3**
Marion Cannon Park	5.0				**5.0**
Mission Park	1.5				**1.5**
Ocean Avenue Park	1.3				**1.3**
Olivas Adobe Historical Park				22.5	**22.5**
Ortega Adobe Historic Residence				0.3	**0.3**
Plaza Park	3.7				**3.7**
Promenade Park	1.0				**1.0**
Seaside Wilderness Park[1, 2]				24.0	**24.0**
Surfers Point at Seaside Park[1]				3.4	**3.4**
Ventura Community Park		100.0			**100.0**
Westpark	1.5	5.8			**7.3**
Total	**60.8**	**142.7**	**275.8**	**97.8**	**577.1**

Sources: City of Ventura, 2004. Note: several parks serve functions in more than one category.
[1] Acreage varies with ocean high levels.
[2] Acreage varies with fluctuations in Ventura River level.

As with most parks in the city, resources for linear park system improvements typically come through conditions placed on adjacent development. City regulations establish standards for park width, landscaping, fencing, lighting, and tree rows that apply specifically along barrancas, freeways, rivers, the shoreline, harbor, hillsides, and utility rights-of-way.

Recreation Programs

The City operates four neighborhood centers where recreation programs and senior services are available: the Ventura Avenue Adult Center, Senior Recreation Center, Barranca Vista Center, and Westpark Community Center. The City also offers a wide range of sports programs, including youth and adult sports programs, classes, aquatics, and corporate games. Other City-sponsored recreational activities include arts and environmental education, community gardening, recreation programs for special needs residents, and after-school activities and summer camps.

A variety of other recreation opportunities are available in Ventura in addition to City programs. Foremost among these are all of the activities possible at State beaches and developed waterfront areas. Other local non-City facilities include the County Fairgrounds and local golf courses. In addition, joint-use agreements allow city residents to use sports fields, pools, and gymnasiums during certain times at public schools and Ventura College.

The policies and actions in this chapter seek to further expand local park and recreation choices by:

- identifying sites for new parks,
- increasing public access to open space, including via linear park trails,
- collaborating with schools and other local agencies and organizations,
- ensuring universal and equal access to parks and recreation facilities, and
- allowing appropriate revenue-generating activities at City parks.

Policy 6A: Expand the park and trail network to link shoreline, hillside, and watershed areas.

Action 6.1: Develop new neighborhood parks, pocket parks, and community gardens as feasible and appropriate to meet citizen needs, and require them in new development.

Action 6.2: Require higher density development to provide pocket parks, tot lots, seating plazas, and other aesthetic green spaces.

Action 6.3: Work with the County to plan and develop trails that link the City with surrounding open space and natural areas, and require development projects to include trails when appropriate.

Action 6.4: Request Flood Control District approval of public access along unchannelized watercourses for hiking.

Action 6.5: Seek landowner permission to allow public access on properties adjacent to open space where needed to connect trails.

Action 6.6: Update plans for and complete the linear park system as resources allow.

Action 6.7: Work with the County of Ventura to initiate efforts to create public trails in the hillsides.

Action 6.8: Update and require periodic reviews of the Park and Recreation Workbook as necessary to reflect City objectives and community needs.

Action 6.9: Require dedication of land identified as part of the City's Linear Park System in conjunction with new development.

Action 6.10: Evaluate and incorporate, as feasible, linear park segments in the General Bikeway Plan.

Action 6.11: Update standards for citywide public parks and open space to include an expanded menu of shared park types, and identify locations and potential funding sources for acquiring new facilities in existing neighborhoods.

Action 6.12: Update and carry out the Grant Park Master Plan.

Action 6.13: Foster the partnership between the City and Fair Board to improve Seaside Park.

Policy 6B: Ensure equal access to facilities and programs.

Action 6.14: Improve facilities at City parks to respond to the requirements of special needs groups.

Action 6.15: Adjust and subsidize fees to ensure that all residents have the opportunity to participate in recreation programs.

Action 6.16: Update the project fee schedule as necessary to ensure that development provides its fair share of park and recreation facilities.

Policy 6C: Provide additional gathering spaces and recreation opportunities.

Action 6.17: Update and create new agreements for joint use of school and City recreational and park facilities.

Action 6.18: Offer programs that highlight natural assets, such as surfing, sailing, kayaking, climbing, gardening, and bird watching.

Action 6.19: Provide additional boating and swimming access as feasible.

Action 6.20: Earmark funds for adequate maintenance and rehabilitation of existing skatepark facilities, and identify locations and funding for new development of advanced level skatepark facilities.

Policy 6D: Increase funding and support for park and recreation programs.

Action 6.21: Promote the use of City facilities for special events, such as festivals, tournaments, and races.

Action 6.22: Enter into concession or service agreements where appropriate to supplement City services.

Figure 6-1
Public Faciities

ventura's general plan

OUR HEALTHY & SAFE COMMUNITY

"A city, like a living thing, is a united and continuous whole."

— Plutarch
ca. 50-120 AD, author of *Moralia*

CITY OF
VENTURA

7. OUR HEALTHY AND SAFE COMMUNITY

Our goal is to build effective community partnerships that protect and improve the social well-being and security of all our citizens.

Community Wellness

Keeping the small town feel of Ventura depends on working together as a community to look out for the well being of all residents, especially those most at risk. Community wellness requires comprehensive preventative care, as well as careful preparation for and response to dangers within the built environment and to risks posed by natural processes (see Figure 7-1).

Adequate shelter, sufficient medical services, walkable neighborhoods, and proper nutrition create an essential foundation for a healthy community. Reducing as much as possible the threat to people and property from earthquakes, landslides, floods, and fires further enhance the collective wellness of the city. In addition, a healthy Ventura community requires thorough protection from crime, and freedom from pollution, unwanted noise, and the threat of hazardous materials.

***Alquist-Priolo** designation requires a geologic investigation prior to the approval of a development permit to determine if a specific site within the zone is threatened by surface displacement from future fault movement.*

Geologic and Flood Hazards

Ventura lies in an active geologic region and is therefore subject to a variety of seismic hazards, including ground shaking, liquefaction, and slope failure. State law requires the City to regulate development in mapped seismic hazard zones. Major faults in the city include the Ventura-Foothill (a State-designated Alquist-Priolo Earthquake Fault Zone), Oak Ridge, McGrath, Red Mountain and Country Club Faults. Areas closest to these faults are most likely to experience ground shaking or rupture in the event of an earthquake. Liquefaction during an earthquake is most likely to occur in areas with loose, granular soils where the water table lies within 50 feet of the surface. As the soil liquefies, buildings and other objects may tilt or sink.

Hillside stability varies based on slope, soil, rock type and groundwater depth. The hills north of Poli Street/Foothill Road have experienced many historic landslides and are prone to future movement. The City Hillside Management Program limits development in the area to minimize dangers from landsliding, erosion, flooding, and fire, and to retain natural and scenic character.

The Federal Emergency Management Agency regulates development along watercourses based on the likelihood of flooding: the basic benchmark – the 100-year flood – has a one percent chance of occurring in any given year. Although the mapped 100-year flood hazard areas for local rivers and barrancas are fairly limited in size, the largest recorded flood events along the Ventura and Santa Clara Rivers, both following heavy rains in 1969, exceeded the 100-year flood zone. The policies and actions in this Chapter intend to limit harm from geologic and flood events by requiring detailed risk analyses and mitigation prior to development of sites in hazard prone areas.

Fire and Emergency Response

The Ventura Fire Department responds to fire, medical, and disaster calls from six stations in the city. The Department's goal is to reach the scene within 4 minutes 90% of the time. The Department has a reciprocal agreement with the County Fire Protection District to ensure that Ventura residents receive the swiftest service possible. The Department also has a responsibility to provide disaster preparedness for the City. Particular fire department concerns in the City include:

- the need for reliable and sustainable source of fire service revenue,
- lengthy response times to areas farthest from existing stations (See Figure 7-2),
- firefighter and support staffing levels that are far below the .98 firefighter per 1,000 population averages of other municipal fire departments with comparable city size, age, and population,
- the threat of wildland fire entering urban area, and
- the lack of fire protection systems in older structures.

The policies and actions in this Chapter aim to optimize firefighting and emergency response capabilities through oversight of new development, improved facilities, and added staff.

Police Protection

Ventura Police response to crimes in progress or alarm soundings averages less than six minutes, and less than sixteen minutes for most other calls. While the local crime rate is slightly higher than State average, the Department hopes to better engage the community in policing efforts to lower crime levels. As part of a Strategic Planning Process, the Department has established the following goals:

- reduce crime and the fear of crime
- improve the quality of life in neighborhoods
- enhance community and police partnerships
- develop personnel
- continued accountability

One-time grant funding has helped add officers dedicated to community crime prevention, gang control, and youth mentoring programs. As these grants end the City must face the challenge of funding these services. Actions in this Chapter seek to improve the full range of police services to maximize community safety by increasing staffing, outreach efforts, and public access to police services.

Noise

Noise is generally defined as unwanted sound. Its effects can range from annoyance to nuisances to health problems. State law requires the City to identify and address noise sources and establish projected noise levels for roadways, railroads, industrial uses, and other significant generators. The Noise Contours map (Figure 7-3) is used to help guide land use in a way that minimizes exposure of residents to excessive noise.

Vehicle traffic is by far the greatest source of noise affecting Ventura residents. Other sources include the Seaside Park raceway, the Grant Park shooting range, and railroad, commercial, and industrial activity. Homes, schools, hotels, and hospitals are considered sensitive receptors where excessive noise can interfere with normal activities.

Noise intensity is customarily measured on the decibel scale, an index of loudness. Sounds as faint as 10 decibels (dB) are barely audible, while noise over 120 dB can be painful or damaging to hearing (Table 7-1 shows some typical noise levels). A sound 10 dB higher than another is perceived as about twice as loud. A 5 dB change is readily noticeable, but a 3 dB difference is barely perceptible.

As shown in Table 7-2, normally acceptable outdoor noise in residential areas may reach 65 decibels. The Ldn label in the table indicates that sound is averaged over time to account for the fact that sources like traffic or aircraft may cause fluctuations of more than 20 dB over a few seconds. CNEL refers to the fact that 5 dB is added to noise after 7 p.m. and 10 dB added from 10 p.m. to 7 a.m., when quieter conditions make sound more noticeable.

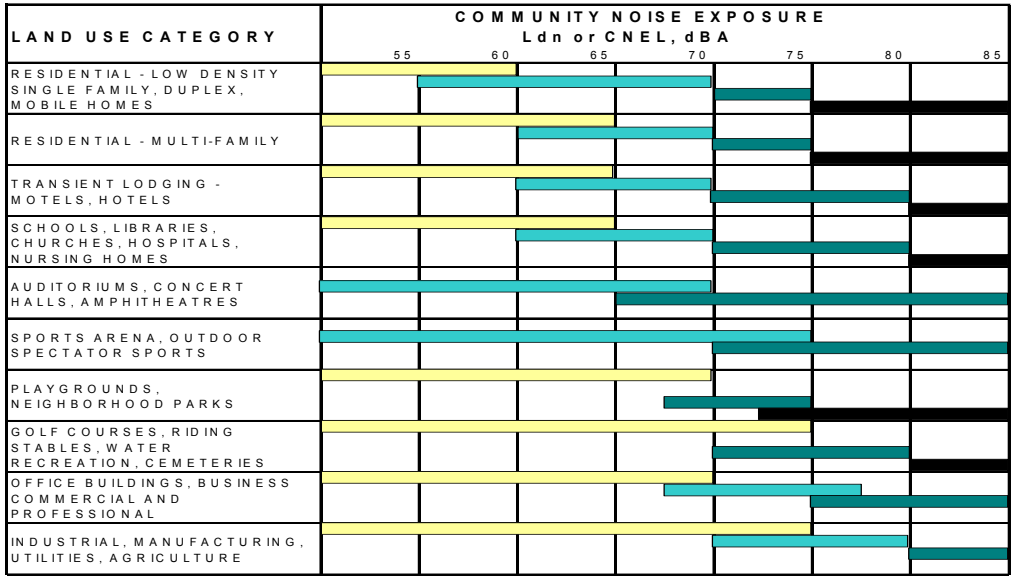
The State Building Code requires an acoustical study whenever outdoor noise would exceed 60 decibels at a proposed duplex, multifamily residence, hotel, motel or other attached dwelling. The study must show that the proposed project design would result in interior noise levels of 45 dB or less.

Although future increases in traffic are not expected to produce a significant change in perceived noise levels, other specific sound generators have been identified as problems in the community. The policies and actions in this chapter look to reduce the exposure of people in Ventura to these noise sources.

Table 7-1. Typical Noise Levels

Type of Noise or Environment	Decibels
Recording Studio	20
Soft Whisper; Quiet Bedroom	30
Busy Open-plan Office	55
Normal Conversation	60-65
Automobile *at 20 mph 25 ft. away*	65
Vacuum Cleaner *10 ft. away*	70
Dump Truck *at 50 mph 50 ft. away*	90
Train Horn *100 ft. away*	105
Claw Hammer; Jet Takeoff *200 ft. away*	120
Shotgun *at shooter's ear*	140

Table 7-2
Acceptable Noise Levels



NORMALLY ACCEPTABLE
Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

NORMALLY UNACCEPTABLE
New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design

CONDITIONALLY ACCEPTABLE
New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

CLEARLY UNACCEPTABLE
New construction or development should generally not be undertaken.

Source: General Plan Guidelines, California Office of Planning and Research

Hazardous Materials

Hazardous materials include medical and industrial wastes, pesticides, herbicides, radioactive materials, and combustible fuels. Improper use, storage, transport, or disposal of these materials may result in harm to humans, surface or ground water degradation, air pollution, fire, or explosion. Most of the several hundred facilities in Ventura that use or store hazardous materials lie along Ventura Avenue or in the Arundell industrial district.

The Fire Department maintains a team specially trained and equipped to respond to hazardous materials emergencies. Additional equipment and personnel for large-scale hazardous materials incidents is available from the County Fire Protection District, the City of Oxnard, and the U.S. Naval Construction Battalion Center in Port Hueneme.

The Westside and North Avenue neighborhoods include about 30 brownfields: sites that may possess contaminated soils but also have potential for reuse. Cleanup of these sites will make them more attractive for redevelopment that can improve the neighborhoods and generate employment and tax revenue. The City has established a Brownfield Assessment Demonstration Pilot Program to fund site assessments and initiate remediation. The policies and actions in this chapter intend to minimize the risk of adverse health effects of hazardous materials by regulating their location and seeking funding for cleanup of brownfield sites to encourage their reuse.

Policy 7A: Encourage wellness through care and prevention.

Action 7.1: Work with interested parties to identify appropriate locations for assisted-living, hospice, and other care-provision facilities.

Action 7.2: Provide technical assistance to local organizations that deliver health and social services to seniors, homeless persons, low-income citizens, and other groups with special needs.

Action 7.3: Participate in school and agency programs to:

- provide healthy meals,
- combat tobacco, alcohol, and drug dependency,
- distribute city park and recreation materials through the schools, and
- distribute information about the benefits of proper nutrition and exercise.

Action 7.4: Enhance or create ordinances which increase control over ABC licensed premises.

Action 7.5: Investigate the creation of new land use fees to enhance funding of alcohol related enforcement, prevention and training efforts.

Policy 7B: Minimize risks from geologic and flood hazards.

Action 7.6: Adopt updated editions of the California Construction Codes and International Codes as published by the State of California and the International Code Council respectively.

Action 7.7: Require project proponents to perform geotechnical evaluations and implement mitigation prior to development of any site:

- with slopes greater than 10 percent or that otherwise have potential for landsliding,
- along bluffs, dunes, beaches, or other coastal features
- in an Alquist-Priolo earthquake fault zone or within 100 feet of an identified active or potentially active fault,
- in areas mapped as having moderate or high risk of liquefaction, subsidence, or expansive soils,
- in areas within 100-year flood zones, in conformance with all Federal Emergency Management Agency regulations.

Action 7.8: To the extent feasible, require new critical facilities (hospital, police, fire, and emergency service facilities, and utility "lifeline" facilities) to be located outside of fault and tsunami hazard zones, and require critical facilities within hazard zones to incorporate construction principles that resist damage and facilitate evacuation on short notice.

Action 7.9: Maintain and implement the Standardized Emergency Management System (SEMS) Multihazard Functional Response Plan.

Action 7.10: Require proponents of any new developments within the 100-year floodplain to implement measures, as identified in the Flood Plain Ordinance, to protect structures from 100-year flood hazards (e.g., by raising the finished floor elevation outside the floodplain).

Action 7.11: Prohibit grading for vehicle access and parking or operation of vehicles within any floodway.

Policy 7C: Optimize firefighting and emergency response capabilities.

Action 7.12: Refer development plans to the Fire Department to assure adequacy of structural fire protection, access for firefighting, water supply, and vegetation clearance.

Action 7.13: Resolve extended response time problems by:

- adding a fire station at the Pierpont/Harbor area,
- relocating Fire Station #4 to the Community Park site,
- increasing firefighting and support staff resources,
- reviewing and conditioning annexations and development applications, and
- require the funding of new services from fees, assessments, or taxes as new subdivisions are developed.

Action 7.14: Educate and reinforce City staff understanding of the Standardized Emergency Management System for the State of California.

Policy 7D: Improve community safety through enhanced police service.

Action 7.15: Increase public access to police services by:

- increasing police staffing to coincide with increasing population, development, and calls for service,
- increasing community participation by creating a Volunteers in Policing Program, and,
- require the funding of new services from fees, assessments, or taxes as new subdivisions are developed.

Action 7.16: Provide education about specific safety concerns such as gang activity, senior-targeted fraud, and property crimes.

Action: 7.17: Establish a nexus between police department resources and increased demands associated with new development.

Action 7.18: Continue to operate the Downtown police storefront.

Action 7.19: Expand Police Department headquarters as necessary to accommodate staff growth.

Policy 7D: Minimize exposure to air pollution and hazardous substances.

Action 7.20: Require air pollution point sources to be located at safe distances from sensitive sites such as homes and schools.

Action 7.21: Require analysis of individual development projects in accordance with the most current version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines and, when significant impacts are

identified, require implementation of air pollutant mitigation measures determined to be feasible at the time of project approval.

Action 7.22: In accordance with Ordinance 93-37, require payment of fees to fund regional transportation demand management (TDM) programs for all projects generating emissions in excess of Ventura County Air Pollution Control District adopted levels.

Action 7.23: Require individual contractors to implement the construction mitigation measures included in the most recent version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines.

Action 7.24: Only approve projects involving sensitive land uses (such as residences, schools, daycare centers, playgrounds, medical facilities) within or adjacent to industrially designated areas if an analysis provided by the proponent demonstrates that the health risk will not be significant.

Action 7.25: Adopt new development code provisions that ensure uses in mixed-use projects do not pose significant health effects.

Action 7.26: Seek funding for cleanup of sites within the Brownfield Assessment Demonstration Pilot Program and other contaminated areas in West Ventura.

Action 7.27: Require proponents of projects on or immediately adjacent to lands in industrial, commercial, or agricultural use to perform soil and groundwater contamination assessments in accordance with American Society for Testing and Materials standards, and if contamination exceeds regulatory action levels, require the proponent to undertake remediation procedures prior to grading and development under the supervision of the County Environmental Health Division, County Department of Toxic Substances Control, or Regional Water Quality Control Board (depending upon the nature of any identified contamination).

Action 7.28: Educate residents and businesses about how to reduce or eliminate the use of hazardous materials, including by using safer non-toxic equivalents.

Action 7.29: Require non-agricultural development to provide all necessary buffers, as determined by the Agriculture Commissioner's Office, from agricultural operations to minimize the potential for pesticide drift.

Action 7.30: Require all users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they store, use, or transport, and to notify the appropriate City, County, State and Federal agencies in the event of a violation.

Action 7.31: Work toward voluntary reduction or elimination of aerial and synthetic chemical application in cooperation with local agricultural interests and the Ventura County agricultural commissioner.

Policy 7E: Minimize the harmful effects of noise.

Action 7.32: Require acoustical analyses for new residential developments within the mapped 60 decibel (dBA) CNEL contour, or within any area designated for commercial or industrial use, and require mitigation necessary to ensure that:

- Exterior noise in exterior spaces of new residences and other noise sensitive uses that are used for recreation (such as patios and gardens) does not exceed 65 dBA CNEL, and
- Interior noise in habitable rooms of new residences does not exceed 45 dBA CNEL with all windows closed.

Action 7.33: As funding becomes available, construct sound walls along U.S. 101, SR 126, and SR 33 in areas where existing residences are exposed to exterior noise exceeding 65 dBA CNEL.

Action 7.34: Request that sound levels associated with concerts at the County Fairgrounds be limited to 70 dBA at the eastern edge of that property.

Action 7.35: Request the termination of auto racing at the County fairgrounds.

Action 7.36: Amend the noise ordinance to restrict leaf blowing, amplified music, trash collection, and other activities that generate complaints.

Action 7.37: Use rubberized asphalt or other sound reducing material for paving and re-paving of City streets.

Action 7.38: Update the Noise Ordinance to provide standards for residential projects and residential components of mixed-use projects within commercial and industrial districts.

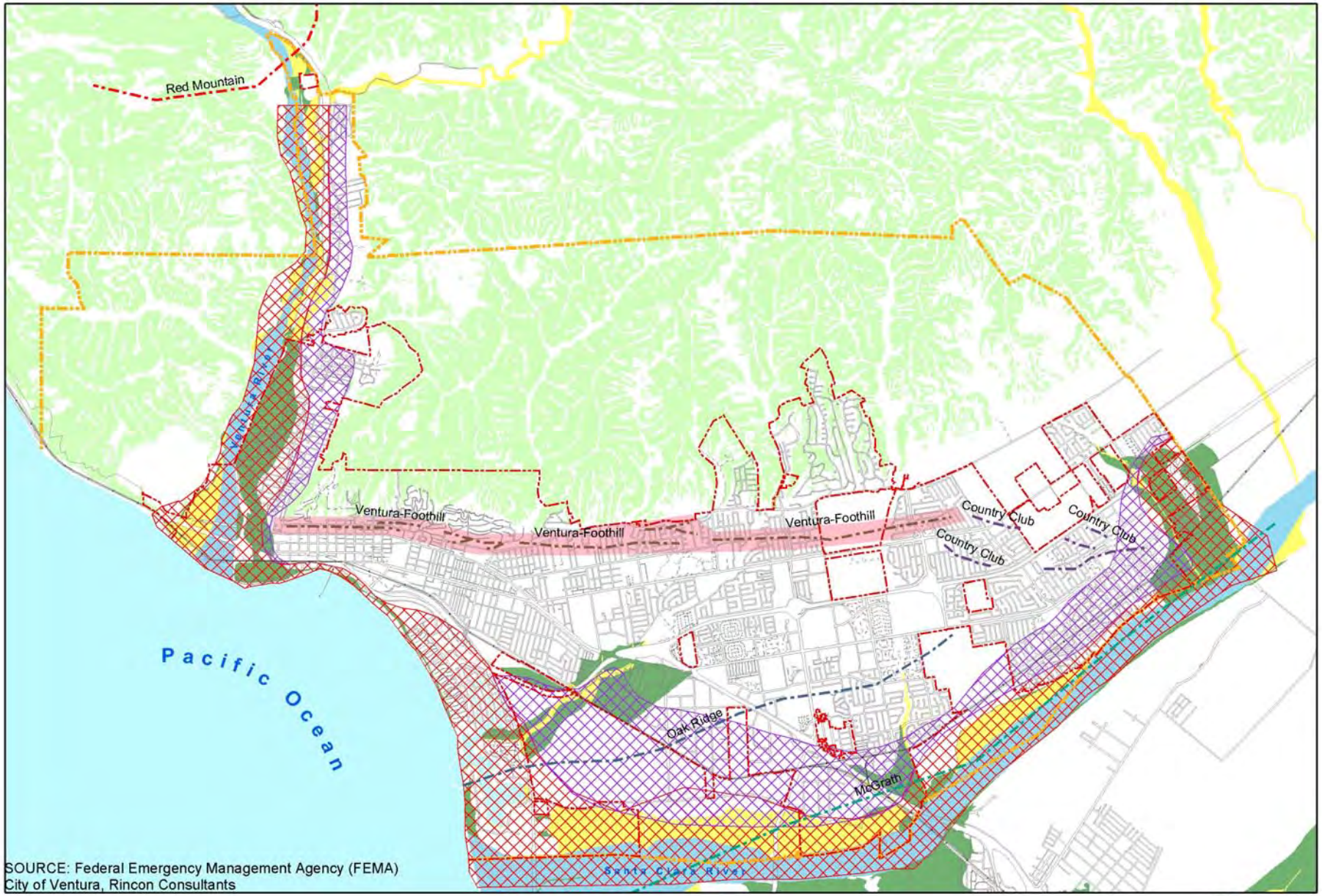


Figure 7-1
Natural Hazards

FEMA Flood Hazard Zones
- A (100-yr floodzone)
- B (500-yr floodzone)
- Floodway

Liquefaction Zones
- High Water Table
- Low Water Table

Major Fault Systems
- Country Club
- McGrath
- Oak Ridge
- Red Mountain
- Ventura-Foothill

Other
- City Limits
- Planning Boundary
- >30% Slope

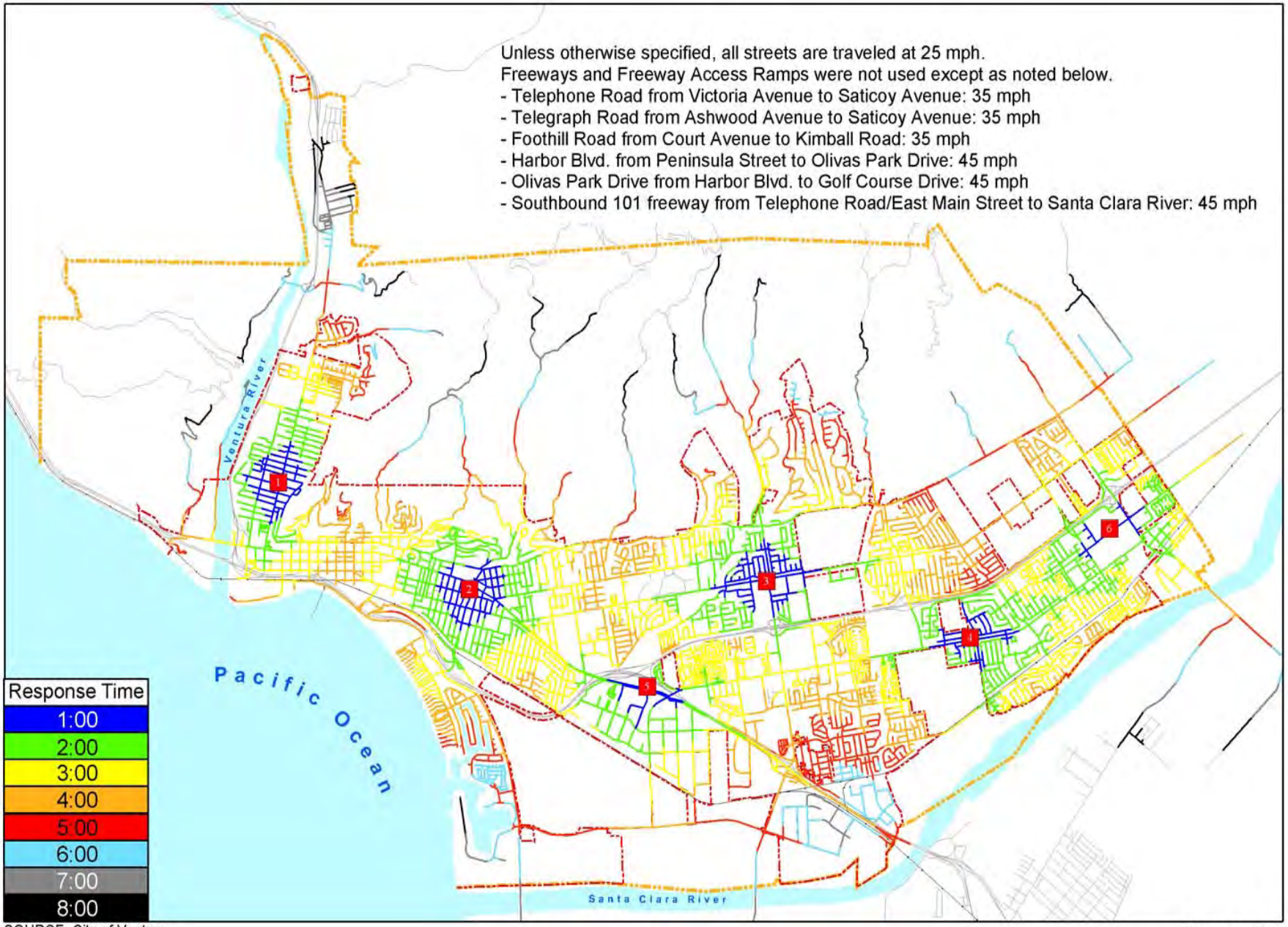


Figure 7-2
Fire Response Time

Figure 7-3
Noise Contours

OUR EDUCATED COMMUNITY

ventura's general plan

"A vigorous culture capable of making corrective, stabilizing changes depends heavily on its educated people, and especially upon their critical capacities and depth of understanding."

— Jane Jacobs
Dark Age Ahead

CITY OF
VENTURA

8. OUR EDUCATED COMMUNITY

Our goal is to encourage academic excellence and life-long learning resources to promote a highly-educated citizenry.

Lifelong Learning

Education is more important than ever before as the foundation for the vitality of informed community participation in Ventura. The *Ventura Vision* calls for the city to be "a community dedicated to educational excellence and an emphasis on lifelong learning." A truly educated community is key to achieving most of the goals in this General Plan because:

- In the 21st Century information economy a highly educated and skilled workforce is vital to community prosperity,
- Education and the institutions that provide it are critical to achieving environmental and cultural leadership, and
- An educated and informed citizenry is essential to sound planning and decision-making.

While Ventura has a comparatively well-educated population (see Table 8-1), the high costs of doing business and finding housing in the city will force even greater emphasis on businesses and jobs that require ever-higher levels of skill. The need and desire for lifelong learning will require relentlessly expanding educational resources and access to them in the years ahead. Plus, the assets that strong educational institutions provide are necessary to bring a rich cultural life to the community as well.

Ventura can build on an impressive base of well-regarded public schools, array of private alternatives, major community college, satellite university campuses, expanding media-training institute, law school, and three branch libraries, among other educational resources. The key to becoming renowned as a local "learning community" lies in creating stronger linkages between these existing resources and integrating them into the physical and social landscape of our community.

Leveraging our Assets

Excellence in public education is the top priority for the Ventura Unified School District (whose boundaries extend beyond the city). In Ventura, the District manages 16 elementary schools, four middle schools, three high schools, and one continuation high school, plus independent study and adult education programs.

In addition to District schools, the city also is home to more than a dozen private schools (see Table 8-2), serving 13 percent of elementary and high school students living in Ventura, according to the 2000 Census. Figure 6-1 shows school locations in the city.

Table 8-1
Education Level

Schooling Completed	Percent of Population
High School	21.7
Some College	28.2
Associate Degree only	9.6
Bachelors Degree only	15.4
Graduate Degree	9.3
High School Diploma & Above	***84.1***
Associate Degree & Above	***34.2***

Source: 2001 Ventura County Economic Outlook

Table 8-2
Private Schools

School	Grades
First Baptist Day	K-5
St. Augustine Academy	4-12
Sacred Heart	K-8
Ventura Missionary Christian Day	K-8
College Heights Christian	K-8
St. Bonaventure High School	9-12
Holy Cross	K-8
Our Lady of The Assumption	K-8
St. Paul's Parish Day	K-8
Grace Lutheran Christian Day	K-6
Jameson	K-12
Ventura County Christian	K-12
Hill Road Montessori Preschool	K-3
Wells Road Baptist Academy	K-12

Most public schools operate at or near capacity (see Table 8-3), and continuing growth in Ventura requires the District to search for sites for new schools (see Table 8-4). Developers of new projects are required to dedicate land or pay fees for school purposes, and any major annexation of land outside the city is likely to have to provide a school site to serve new resident children. Still, the scarcity and cost of suitable sites means that greater thought will need to be given to shared facility use and other non-traditional approaches to expanding capacity.

Table 8-3. Ventura Unified School District Enrollment

Schools – No.	Students	Capacity
Elementary – 17	8,093	95%
Middle – 4	4,304	93%
High - 3	4,820	85%
TOTAL	**17,217**	**92%**

Source: Ventura Unified School District, 2003

Table 8-4. Public School Demand

School Type	Students/ School	School Needs	Acres Needed[1]
Elementary	600	4	40
Middle	1,000	1	20
High	2,000	1	40
TOTAL		**6**	**100**

1. Assumes 10 acres for elementary schools, 20 acres for middle schools, and 40 acres for high schools.

Source: Ventura Unified School District, 2003

Ventura is increasingly becoming recognized as a center for higher education. Ventura College is a highly respected two-year school with more than 12,000 students, providing everything from a distinguished transfer opportunity for the University of California to certificates and associates degrees in important fields such as manufacturing and nursing. Students also can obtain four-year degrees in certain fields at the UCSB Ventura Center. Brooks Institute of Photography provides education in photojournalism, filmmaking, and related fields, providing the city with a significant cultural asset. Residents can earn graduate degrees in law, public policy, and education at the Ventura campuses of California Lutheran University, Azusa Pacific University, the Ventura College of Law, and the Southern California Institute of Law. The opening of the nearby California State University Channel Islands has drawn many students and faculty to live in Ventura, especially those in creative fields.

Combined, these institutions of higher learning provide Ventura with tremendous educational assets. Through the policies and actions in this chapter, the City is committed to nurturing these institutions, creating synergy among them, and instilling both cultural and economic opportunities.

Libraries of the Future

The County public library system in Ventura currently operates three branch libraries that serve about 200,000 visits annually (see Table 8-5). But in a digital age where more and more content is available online, the traditional book borrowing function is becoming outmoded. Library administrators and staff, the City's Library Advisory Commission, and patrons have all pointed to needs for adding library space, extending operating hours, and updating and expanding learning resources.

At a more fundamental level, the ideas of what constitutes a library and how it fits the patterns of a learning community need to be reexamined. Integration with school libraries, including the Ventura College Learning Center, is a top priority for this reevaluation, as embodied in the policies and actions in this chapter.

City and Community Programs

Traditional classroom settings alone cannot provide the complete set of educational skills and experience needed by people of all ages. The City provides a variety of learning opportunities, including youth and adult art programs, environmental education, adaptive recreation programs, youth after-school activities, and summer camps. Community organizations also provide a range of classes and experiences, including tours, museums, lectures, and hands-on activities. Expanding venues for such activities and promoting participation in them are key challenges.

Policies and actions in this chapter seek to expand lifelong learning opportunities for everyone in the community.

Table 8-5. Local Libraries

Library	Card-Holders	2003-2004 Patronage	Hours Open Weekly	Facility Size (sq. ft.)
E. P. Foster	48,195	366,134	54	31,000
H. P. Wright			39	12,000
Avenue			25	3,000

Source: Ventura County Library Administration, 2005

Policy 8A: Reach out to institutions and educators to advance lifelong learning.

Action 8.1: Work closely with schools, colleges, and libraries to provide input into site and facility planning.

Action 8.2: Organize a regional education summit to generate interest in and ideas about learning opportunities.

Action 8.3: Adopt joint-use agreements with libraries, schools, and other institutions to maximize use of educational facilities.

Action 8.4: Distribute information about local educational programs.

Policy 8B: Increase the availability and diversity of learning resources.

Action 8.5: Install infrastructure for wireless technology and computer networking in City facilities.

Action 8.6: Establish educational centers at City parks.

Action 8.7: Work with the State Parks Department to establish a marine learning center at the Harbor.

Action 8.8: Work with the Ventura Unified School District to ensure that school facilities can be provided to serve new development.

Policy 8C: Reshape public libraries as 21st Century learning centers.

Action 8.9: Complete a new analysis of community needs, rethinking the role of public libraries in light of the ongoing advances in information technology and the changing ways that individuals and families seek out information and life-long learning opportunities.

Action 8.10: Reassess the formal and informal relationships between our current three branch public libraries and school libraries – including the new Ventura College Learning Resource Center – as well as joint use of facilities for a broader range or compatible public, cultural, and educational uses.

Action 8.11: Develop a Master Plan for Facilities, Programs, and Partnerships to create an accessible, robust, and vibrant library for the 21st Century system, taking into consideration that circulation of books is no longer the dominant function but will continue to be an important part of a linked network of learning centers.

Action 8.12: Develop formal partnerships, funding, capital strategies, and joint use agreements to implement the new libraries Master Plan.

ventura's general plan

OUR CREATIVE COMMUNITY

"Whatever you can do, or dream you can, begin it. Boldness has genius, power and magic in it."

— Johann Wolfgang von Goethe

CITY OF
VENTURA

9. OUR CREATIVE COMMUNITY

Our goal is to become a vibrant cultural center by weaving the arts and local heritage into everyday life.

A Rich Foundation

Local history, artistic expression, and cultural diversity play vital roles in making Ventura a vibrant and interesting place. The heritage of Chumash civilization, which developed over the course of about 9,000 years, and influences of Mexican settlement establish a rich tableau for the modern development of the city. Art in museums, galleries, and public places, as well as space and energy devoted to the creation of artwork and crafts connect the community in complex and fundamental ways. Cultural expression in the form of festivals and informal gatherings provide additional and essential bonds that strengthen the community.

Historic Context

Abundant food and water, temperate climate, and ample material for tool manufacturing attracted early local inhabitants. Chumash peoples were living in a string of coastal villages when Spanish explorers arrived in 1542. Shisholop village (at the south end of present-day Figueroa Street) was a thriving Chumash provincial capital at the time of the Spanish arrival. Other Chumash villages and burial sites have been found in what are now the North Avenue and Saticoy neighborhoods, as well as north of the Ventura River. Mexican settlers began to arrive in earnest after the founding of Mission San Buenaventura in 1782.

Table 9-1
Key Historical and Cultural Sites

Site	Description
Albinger Museum	Artifacts spanning 3,500 years excavated from a site next to the Mission are on display in this former adobe at 113 East Main Street.
Downtown	Downtown Ventura is home to a variety of 19th Century buildings that house restaurants and retail establishments in a small-town setting with a variety of cultural amenities.
Olivas Adobe Park	Completed in 1849 for the Raymundo ranching family, the well-preserved hacienda at 4200 Olivas Park Road is utilized as concert and banquet facility.
Ortega Adobe	Built in 1857, the adobe is only remaining example of the middle class homes that once lined West Main Street. The building has since been used as a police station and restaurant.
San Buenaventura Mission	Built in 1782, the Mission anchors the western part of the downtown area and is still used for regular Catholic services.
Santa Gertrudis Chapel	The Chapel was originally completed around 1809. The site is located along Highway 33 near Foster Park.
San Miguel Chapel	The site is located at Thompson Boulevard and Palm Street. The original chapel dated back to the early 1800s.
Ventura County Museum of History and Art	The museum at 100 East Main Street houses exhibits featuring local artists and historical artifacts. Expansion plans include a 200-seat auditorium and a gallery with touring exhibits.

Source: City of Ventura

More than 90 historic sites have been identified in the planning area (which includes areas outside the city). Notable ones include the Mission, the Ortega and Olivas Adobes, and the locations of the Santa Gertrudis and San Miguel Chapels (See Table 9-1 and Figure 9-1). Many of the existing buildings in Ventura were constructed between 1880 and 1940, a period that coincided with development of the railroads and harbor. City

Hall (formerly the County Courthouse) and the Mission aqueduct are listed as landmarks on the National Register of Historic Places, and structures in the following historic districts are protected by City architectural controls:

- the grounds within the Mission District,
- the Mitchell block (south of Thompson Boulevard between Chestnut and Fir Streets),
- the Selwyn Shaw block (north of Poli Street between Ann and Hemlock Streets), and
- the Simpson Tract (west of Ventura Avenue between Simpson and Prospect Streets).

Arts and Culture

When the City first adopted a Community Cultural Plan in 1992, Ventura's creative community was in its fledgling stage. Few of the now-thriving professional art and cultural organizations existed (see Table 9-2). A burgeoning visual artist community had made the city its home, but was fairly invisible except to the more intrepid arts supporters and collectors.

Since completion of that plan, the City has either implemented or initiated all of its recommendations, which were developed through extensive public involvement. As a result, the growth of the cultural community has been extraordinary. Now Ventura is home to a wealth of active artists and arts organizations. From 1994-2004, the budgets of arts organizations in Downtown Ventura alone increased from $500,000 to more than $4 million.

Ventura also now has a complement of major cultural institutions unique for a city of its size, including the Ventura Music Festival, the Rubicon Theatre Company, the Ventura County Museum of History and Art, and Focus on the Masters. The individual artists who live and work in the city continue to comprise a major part of its cultural fabric, and are highlighted in popular cultural events like the Downtown ArtWalks.

A strong focus of the City's general is to build the arts infrastructure of Ventura. A strong cultural infrastructure is the foundation of a healthy arts ecosystem: this includes *places* (for arts creation, sales, exhibition, performance, rehearsal, living), *people* (artists, audiences, patrons), and *organizations* (production, support, and presentation).

In keeping with the community's respect for its roots, the Ventura arts scene remains authentic, no small feat in today's competitive environment. While many communities focus on importing Broadway shows or big-name art exhibits to increase their profile, Ventura successfully continues to highlight local artists, architecture, culture, history, and the environment – the unique threads that together comprise the rich tapestry of the Ventura community. Policies and actions in this chapter call for continuing to build the cultural foundations of the community by involving everyone in the production, support, and presentation of art and cultural programs, installing art in public places, providing working and display space for local artists, and identifying a site for an arts and cultural center.

Table 9-2
Art and Cultural Institutions

Name	Description	Years in Operation	Annual Patronage
Buenaventura Arts Association	Fine art gallery in downtown Ventura.	50	5,000
Channelaire Chorus	Women's chorus	42	2,500
City of Ventura Cultural Affairs Division	Supports local arts organizations; produces cultural programs (ArtWalks, Street Fairs, Music Under the Stars, Arts Education classes, grants, public art, etc.)	13	132,000
Focus on the Masters	Documentation of extraordinary artists (photographs, audio and video interviews)	10	15,000
Kids' Art	Ongoing, free kids' creative arts programs	12	350
Music 4 Kids	After school music instruction at Boys & Girls Clubs	4	800
Plexus Dance Theater	Professional modern dance performances	20	1,400
Rubicon Theater	Regional theater – classic and contemporary	6	37,000
San Buenaventura Foundation for the Arts	Arts umbrella organization - supports development of the Cultural Center and produces Arts Explosion	5	5,900
Ventura Area Theater Sports	Live improvisational theater in downtown Ventura	15	5,000
Ventura Artists' Union	Art gallery and weekly arts shows on California Plaza	15	17,000
Ventura College Opera Workshop	Opera and theater company at Ventura College	21	4,500
Ventura County Ballet	Ballet school with twice annual performances	6	11,000
Ventura County Master Chorale	Professional vocal music ensemble	23	6,000
Ventura County Museum of History and Art	Museum featuring exhibits on the history and art of Ventura County	26	55,000
Ventura Music Festival	Annual concert festival presenting international and local performers	11	9,000

Policy 9A: Increase public art and cultural expression throughout the community.

Action 9.1: Require works of art in public spaces per the City's Public Art Program Ordinance.

Action 9.2: Sponsor and organize local art exhibits, performances, festivals, cultural events, and forums for local arts organizations and artists.

Action 9.3: Expand outreach and publicity by:

- promoting locally produced art and local cultural programs
- publishing a monthly calendar of local art and cultural features,
- distributing the *State of the Arts* quarterly report, and
- offering free or subsidized tickets to events.

Action 9.4: Support the creative sector through training and other professional development opportunities.

Action 9.5: Work with the schools to integrate arts education into the core curriculum.

Action 9.6: Promote the cultural and artistic expressions of Ventura's underrepresented cultural groups.

Action 9.7: Offer ticket subsidy and distribution programs and facilitate transportation to cultural offerings.

Policy 9B: Meet diverse needs for performance, exhibition, and workspace.

Action 9.8: Increase the amount of live-work development, and allow its use for production, display, and sale of art.

Action 9.9: Work with community groups to locate sites for venues for theater, dance, music, and children's programming.

Policy 9C: Integrate local history and heritage into urban form and daily life.

Action 9.10: Provide incentives for preserving structures and sites that are representative of the various periods of the city's social and physical development.

Action 9.11: Organize and promote multi-cultural programs and events that celebrate local history and diversity.

Action 9.12: Allow adaptive reuse of historic buildings.

Action 9.13: Work with community groups to identify locations for facilities that celebrate local cultural heritage, such as a living history Chumash village and an agricultural history museum.

Policy 9D: Ensure proper treatment of archeological and historic resources.

Action 9.14: Require archaeological assessments for projects proposed in the Coastal Zone and other areas where cultural resources are likely to be located.

Action 9.15: Suspend development activity when archaeological resources are discovered, and require the developer to retain a qualified archaeologist to oversee handling of the resources in coordination with the Ventura County Archaeological Society and local Native American organizations as appropriate.

Action 9.16: Pursue funding to preserve historic resources.

Action 9.17: Provide incentives to owners of eligible structures to seek historic landmark status and invest in restoration efforts.

Action 9.18: Require that modifications to historically-designated buildings maintain their character.

Action 9.19: For any project in a historic district or that would affect any potential historic resource or structure more than 40 years old, require an assessment of eligibility for State and federal register and landmark status and appropriate mitigation to protect the resource.

Action 9.20: Seek input from the City's Historic Preservation Commission on any proposed development that may affect any designated or potential landmark.

Action 9.21: Update the inventory of historic properties.

Action 9.22: Create a set of guidelines and/or policies directing staff, private property owners, developers, and the public regarding treatment of historic resources that will be readily available at the counter.

Action 9.23: Complete and maintain historic resource surveys containing all the present and future components of the historic fabric within the built, natural, and cultural environments.

Action 9.24: Create a historic preservation element.

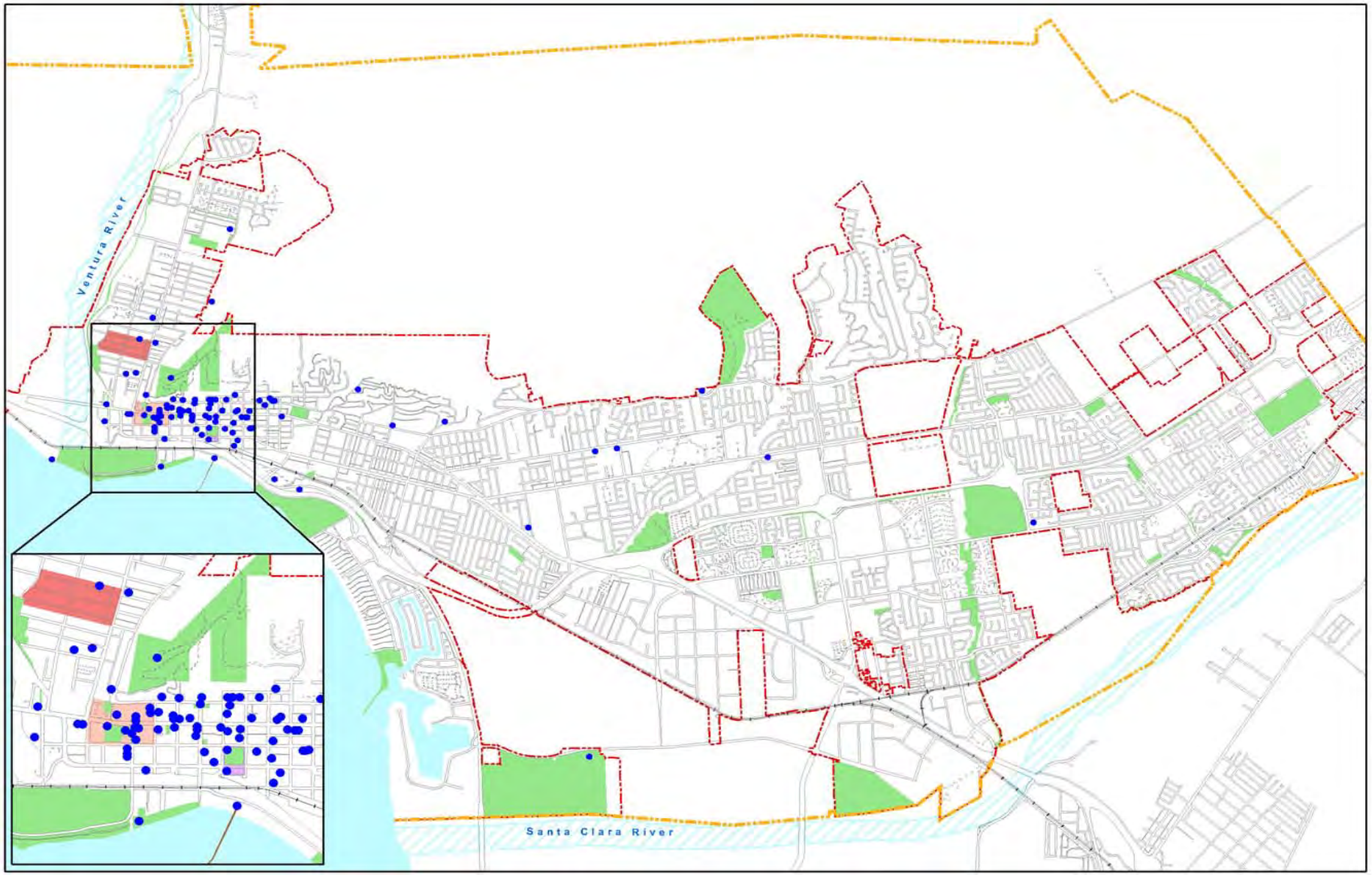


Figure 9-1
Historic Districts and Sites

OUR INVOLVED COMMUNITY

ventura's general plan

"Never believe that a few caring people can't change the world. For indeed, that's all who ever have."

— Margaret Mead
Renowned Anthropologist

CITY OF
VENTURA

10. OUR INVOLVED COMMUNITY

Our goal is to strive to work together as a community to achieve the Ventura Vision through civic engagement, partnerships, and volunteer service.

Civic Engagement

It is not enough to have a vision of smart growth for Ventura. Achieving that vision requires the active and ongoing participation of an engaged and active community. Fortunately, Ventura builds on a strong foundation: thousands of Ventura citizens are involved in their schools and places of worship and give their time to civic, cultural, and charitable organizations. City Commissions, the Community Councils, the Chamber of Commerce and other well-established avenues provide opportunities for community leadership.

This is what Alexis De Toqueville celebrated in his famous book, *Democracy in America*, calling our nation, "the one country in the world, day in and day out, that makes use of an unlimited freedom of association." Yet today in Ventura, as all across America, there is concern about the health of our democracy. Sociologist Robert Putnam gained national attention with his research showing that "by almost every measure, Americans' direct engagement in politics and government has fallen steadily and sharply over the last generation."

Among the symptoms in Ventura have been a decline in voter turnout in recent local elections – (a 36% drop from 1995 through 2003.) Over those years, the ability to build consensus about future development has been undermined by sharply polarized divisions, showdowns at the ballot box, and often rancorous public hearings. The complaint often recurs that planning decisions are made without adequate notice or consideration of the views of those affected. Many citizens criticize the City decision-making process as convoluted and counterproductive.

Moreover, ongoing participation of an engaged community requires civic places where citizens can come together. It is not insignificant that a decline in public participation and the quality of civic discourse has paralleled the loss of civic places in our cities. Historically, governments provided open spaces and buildings that were at the center of a community, physically and symbolically. Town squares and plazas, often faced by a hall for formal gathering and civic engagement, have all but disappeared. The poverty of American public places was apparent after the Columbine High School shooting in Colorado, when citizens gathered to mourn, not in a shared place for people, but in a parking lot.

Nearly everyone agrees we can and should do better. The best model for doing this was the citywide effort to craft the *Ventura Vision*. Thousands participated in a year-long partnership encompassing City government, non-profit organizations, community groups, business,

schools and individual residents to chart the community's future.

The vision of an "involved community" was described in the *Ventura Vision* report as: seeking "broad community collaboration; more widely publicizing city government services, planning processes and policies; better involvement of typically under-represented groups such as youth, seniors and ethnic minorities in community planning; and developing public parks, plazas, neighborhood greenways and other spaces that promote civic interaction and events."

Since that vision was adopted by the City Council in 2000, the City has worked to implement it, building on existing community assets and strengthening the linkages and interconnections that already exist among people, organizations, and shared community goals. A remarkable example of broad community collaboration earned attention throughout Southern California in late 2004. Facing the prospect of winter flooding, the City undertook to evacuate homeless people living in the channel of the Ventura River. This was accomplished by a partnership involving non-profit social service agencies, faith-based organizations, City staff, business leaders, community volunteers and the affected homeless population.

There are many more models of successful community collaboration in Ventura, including: the restoration of the pier, the community's rich array of after-school programs, the implementation of the 1992 Cultural Plan, the 2004 Downtown Charrette, the 2005 Midtown Design Charrette and the establishment of conservancies to preserve the Grant Park cross and Ventura's cherished hillsides.

City government has learned from these efforts to reach broadly and deeply into the community. Civic engagement and trust are built when City representatives actively seek to involve everyone in positive and transparent partnerships. That goal requires a continually evolving effort to promote participation:

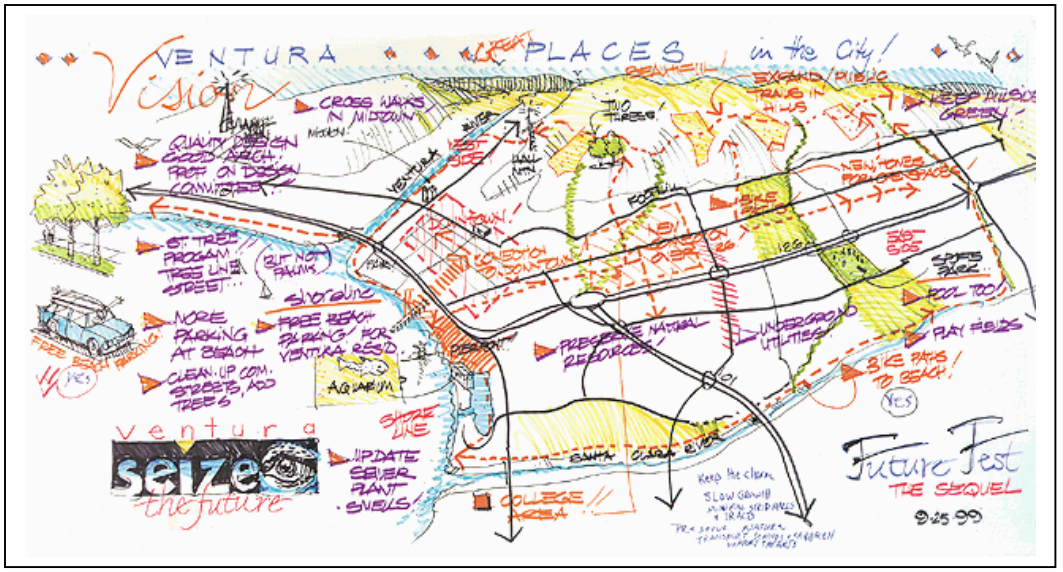
- through proactive and interactive media outreach in the press, on the web, on radio and television,
- by striving to include everyone in decision making and making it convenient for them to participate by seeking them out in their neighborhoods and gathering places like schools, houses of worship and public spaces, and
- through community dialogues, workshops, charrettes, town hall forums, and community councils, in addition to formal public hearings.

More effort needs to be put into building consensus about future growth and change upfront through community planning, rather than waiting until specific development projects are proposed. That effort will continue with the work to craft a citywide "form-based code" and concentrated planning efforts for specific neighborhoods and districts.

Focused attention should be paid to making our public decision-making processes easier to understand and participate in. Citizens have little time or patience for complicated planning and entitlement processes that drag on for years. By establishing clearer rules and public processes for applying them, the policies and actions in this chapter will enable more citizens to feel that they will be heard and their contributions valued. By involving a wider range of the community in clearly setting Ventura's planning goals and standards of quality, we can devote more time to achieving those goals and less time wrangling over specific proposals.

Ventura also needs to reestablish places for civic discourse. While the City will continue to encourage the use of our beautiful City Hall for its historic role of government by and for the people, we also need a hierarchy of civic spaces citywide that are strategically located in neighborhood centers and accessible by pedestrians (see Chapter Three, Action 3.8). Every neighborhood should have access to a physical location designated for public gathering and civic purposes.

Our long-range vision is to build an ethic and a fabric of robust civic engagement – what De Toqueville called "the habits of the heart." His phrase evokes what the Ventura Vision called "direct engagement in public affairs" through "participation, hard work and collaboration . . . sustaining Ventura as an exceptional place." The policies and actions in this chapter aim to do just that.



Policy 10A: Work collaboratively to increase citizen participation in public affairs.

Action 10.1: Conduct focused outreach efforts to encourage all members of the community – including youth, seniors, special needs groups, and non-English speakers – to participate in City activities.

Action 10.2: Obtain public participation by seeking out citizens in their neighborhoods and gathering places such as schools, houses of worship and public spaces.

Action 10.3: Invite civic, neighborhood, and non-profit groups to assist with City project and program planning and implementation.

Action 10.4: Provide incentives for City staff to participate in community and volunteer activities.

Action 10.5: Invite seniors to mentor youth and serve as guides at historical sites.

Action 10.6: Offer internships in City governance, and include youth representatives on public bodies.

Action 10.7: Continue to offer the Ambassadors program to obtain citizens assistance with City projects.

Policy 10B: Raise awareness of City operations and be clear about City objectives.

Action 10.8: Utilize the City website as a key source of information and expand it to serve as a tool for civic engagement.

Action 10.9: Publish an annual report that evaluates City performance in such areas as conservation, housing, and economic development.

Action 10.10: Continue to improve the user-friendliness of the media that communicate information about the City, including the website, cable channels, newsletters, kiosks, and water billing statements.

Policy 10 C: Work at the neighborhood level to promote citizen engagement.

Action 10.11: Establish a clear policy toward the scope, role, boundaries, and jurisdiction of neighborhood Community Councils citywide, with the objectives of strengthening their roles in decision-making.

Action 10.12: Establish stronger partnerships with neighborhood Community Councils to set area priorities for capital investment, community policing, City services, commercial investment, physical planning, education, and other concerns, to guide both City policies and day-to-day cooperation and problem-solving.

Action 10.13: Recognizing that neighborhood empowerment must be balanced and sustained by overall City policies and citywide vision and resources – establish a citywide Neighborhood Community Congress where local neighborhood Community Councils can collaborate and learn from each other.

Action 10.14: Establish clear liaison relationships to foster communication, training, and involvement efforts between the City, neighborhood Community Councils and other community partners, including the Ventura Unified School District and business, civic, cultural and religious groups.

ventura's general plan

APPENDICES

"Individual commitment to a group effort, that is what makes a team work, a company work, a society work, a civilization work."

— Vince Lombardi
Author of *What it Takes To Be #1*, 2001

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KEY TO ABBREVIATIONS	
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= Action included in the Land Use Plan of the City's Local Coastal Program	

Number	Action	Lead Entity	Timeframe
1.1	Adhere to the policies and directives of the California Coastal Act in reviewing and permitting any proposed development in the Coastal Zone.	CD [CP]	Ongoing
1.2	Prohibit non-coastal-dependent energy facilities within the Coastal Zone, and require any coastal-dependent facilities including pipelines and public utility structures to avoid coastal resources (including recreation, habitat, and archaeological areas) to the extent feasible, or to minimize any impacts if development in such areas is unavoidable.	CD [CP]	Ongoing
1.3	Work with the State Department of Parks and Recreation, Ventura County Watershed Protection Agency, and the Ventura Port District to determine and carry out appropriate methods for protecting and restoring coastal resources, including by supplying sand at beaches under the Beach Erosion Authority for Control Operations and Nourishment (BEACON) South Central Coast Beach Enhancement program.	PW [E]	Ongoing
1.4	Require new coastal development to provide non-structural shoreline protection that avoids adverse impacts to coastal processes and nearby beaches.	CD [CP]	Ongoing
1.5	Collect suitable material from dredging and development, and add it to beaches as needed and feasible.	PW [E]	Ongoing
1.6	Support continued efforts to decommission Matilija Dam to improve the sand supply to local beaches.	PW [U]	Long-term
1.7	Update the Hillside Management Program to address and be consistent with the Planning Designations as defined and depicted on the General Plan Diagram.	CD [LRP]	Short-term

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Number	Action	Lead Entity	Timeframe
1.8	Buffer barrancas and creeks that retain natural soil slopes from development according to state and Federal guidelines.	CD [LD]	Ongoing
1.9	Prohibit placement of material in watercourses other than native plants and required flood control structures, and remove debris periodically.	PW [MS/P]	Ongoing
1.10	Remove concrete channel structures as funding allows, and where doing so will fit the context of the surrounding area and not create unacceptable flood or erosion potential.	PW [MS/P]	Long-term
1.11	Require that sensitive wetland and coastal areas be preserved as undeveloped open space wherever feasible and that future developments result in no net loss of wetlands or "natural" areas.	CD [LRP]	Short-term
1.12	Update the provisions of the Hillside Management Program as necessary to ensure protection of open space lands.	CD [LRP]	Mid-term
1.13	Recommend that the City's Sphere of Influence be coterminous with existing City limits in the hillsides in order to preserve the hillsides as open space.	CD [LRP]	Short-term
1.14	Work with established land conservation organizations toward establishing a Ventura hillsides preserve.	PW [P]	Long-term
1.15	Actively seek local, state, and Federal funding sources to achieve preservation of the hillsides.	PW [P]	Mid-term
1.16	Comply with directives from regulatory authorities to update and enforce stormwater quality and watershed protection measures that limit impacts to aquatic ecosystems and that preserve and restore the beneficial uses of natural watercourses and wetlands in the city.	PW	Ongoing

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Number		Action	Lead Entity	Timeframe
1.17		Require development to mitigate its impacts on wildlife through the development review process.	CD [CP]	Ongoing
1.18		Require new development adjacent to rivers, creeks, and barrancas to use native or non-invasive plant species, preferably drought tolerant, for landscaping.	CD [CP] PW [P]	Ongoing
1.19		Require projects near watercourses, shoreline areas, and other sensitive habitat areas to include surveys for State and/or federally listed sensitive species and to provide appropriate buffers and other mitigation necessary to protect habitat for listed species.	CD [LRP]	Long-term
1.20		Conduct coastal dredging in accordance with the U.S. Army Corps of Engineers and California Department of Fish and Game requirements in order to avoid impacts to sensitive fish and bird species.	PW [E]	Ongoing
1.21		Work with State Parks on restoring the Alessandro Lagoon and pursue funding cooperatively.	PW [P]	Long-term
1.22		Adopt development code provisions to protect mature trees as defined by minimum height, canopy, and/or tree trunk diameter.	CD [LRP]	Short-term
1.23		Require, where appropriate, the preservation of healthy tree windrows associated with current and former agricultural uses, and incorporate trees into the design of new developments.	CD [CP]	Short-term
1.24		Require new development to maintain all indigenous tree species or provide adequately sized replacement native trees on a 3:1 basis.	CD [CP]	Ongoing
1.25		Purchase and use recycled materials and alternative and renewable energy sources as feasible in	AS [P]	Ongoing

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Number	Action	Lead Entity	Timeframe
	City operations.		
1.26	Reduce pesticide use in City operations.	PW [P]	Mid-term
1.27	Utilize green waste as biomass/compost in City operations.	PW [P]	Mid-term
1.28	Purchase low-emission City vehicles, and convert existing gasoline-powered fleet vehicles to cleaner fuels as technology becomes available.	PW [MS]	Mid-term
1.29	Require all City funded projects that enter design and construction after January 1, 2006 to meet a design construction standard equivalent to the minimum U.S. Green Building Council LEED™ Certified rating in accordance with the City's Green Building Standards for Private and Municipal Construction Projects.	FD [IS]	Short-term
1.30	Provide information to businesses about how to reduce waste and pollution and conserve resources.	PW [MS]	Short-term
1.31	Provide incentives for green building projects in both the public and private sectors to comply with either the LEED™ Rating System, California Green Builder, or the Residential Built Green program and to pursue registration and certification; incentives include "Head-of-the-Line" discretionary processing and "Head-of-the-Line" building permit processing.	FD [IS]	Short-term
1.32	Apply for grants, rebates, and other funding to install solar panels on all City-owned structures to provide at least half of their electric energy requirements.	PW	Ongoing

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Number	Action	Lead Entity	Timeframe
1.33	Publicly acknowledge individuals and businesses that implement green construction and building practices.	FD [IS]	Ongoing
2.1	Track economic indicators for changes that may affect City land resources, tax base, or employment base, such as terms and conditions of sale or lease of available office, retail, and manufacturing space.	CD [ED]	Ongoing
2.2	Prepare an economic base analysis that identifies opportunities to capture retail sales in sectors where resident purchasing has leaked to other jurisdictions.	CD [ED]	Short-term
2.3	Maintain and update an Economic Development Strategy to implement City economic goals and objectives.	CD [ED]	Ongoing
2.4	Map priority locations for commercial and industrial development and revitalization, including a range of parcel sizes targeted for high-technology, non-durables manufacturing, finance, business services, tourism, and retail uses.	CD	Short-term
2.5	Share economic and demographic information with organizations that may refer businesses to Ventura.	CD [ED]	Ongoing
2.6	Encourage intensification and diversification of uses and properties in districts, corridors, and neighborhood centers, including through assembly of vacant and underutilized parcels.	CD [ED]	Ongoing

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Number	Action	Lead Entity	Timeframe
2.7	Partner with local commerce groups to recruit companies and pursue funding for business development and land re-utilization.	CD [ED]	Ongoing
2.8	Carry out Housing Element programs that provide housing to all segments of the local workforce.	CD	Ongoing
2.9	Expedite review for childcare facilities that will provide support to local employees.	CD [CP]	Short-term
2.10	Expedite review of the entitlement process for installation of infrastructure necessary to support high technology and multimedia companies.	CA	Mid-term
2.11	Allow mixed-use development in commercial and industrial districts as appropriate.	CD [LRP]	Short-term
2.12	Allow uses such as conference centers with resort amenities on appropriately sized and located parcels.	CD [LRP]	Short-term
2.13	Market the city to businesses that link agriculture with high technology, such as biotechnology enterprises.	CD [ED]	Ongoing
2.14	Partner with local farms to promote farmers markets and high quality locally grown food.	CS	Ongoing
2.15	Provide incentives for use of waterfront parcels for recreation, visitor-serving commerce, restaurant, marina, and fishing uses.	CD [ED]	Short-term
2.16	Work with the State to create year-round commercial opportunities at the fairgrounds.	CD [ED]	Long-term

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2.17	Partner with the Harbor District and National Park Service to promote Channel Islands tours and develop a marine learning center.	CS	Long-term
2.18	Prioritize uses within the Harbor Specific Plan area as follows: (1) coastal dependent, (2) commercial fishing, (3) coastal access, and (4) visitor serving commercial and recreational uses.	CD	Short-term
2.19	Partner with hotels and the Chamber of Commerce to promote city golf courses.	CS [GS/AS]	Long-term
2.20	Promote outdoor recreation as part of an enhanced visitor opportunity strategy.	CS	Mid-term
3.1	Preserve the stock of existing homes by carrying out Housing Element programs.	CD	Ongoing
3.2	Enhance the appearance of districts, corridors, and gateways (including views from highways) through controls on building placement, design elements, and signage.	CD [LRP]	Short-term
3.3	Require preservation of public view sheds and solar access.	CD [CP]	Short-term
3.4	Require all shoreline development (including anti-erosion or other protective structures) to provide public access to and along the coast, unless it would duplicate adequate access existing nearby, adversely affect agriculture, or be inconsistent with public safety, military security, or protection of fragile coastal resources.	CD [CP]	Ongoing
3.5	Establish land development incentives to upgrade the appearance of poorly maintained or	FD [IS]	Mid-term

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	otherwise unattractive sites, and enforce existing land maintenance regulations.		
3.6	Expand and maintain the City's urban forest and thoroughfare landscaping, using native species, in accordance with the City's Park and Development Guidelines and Irrigation and Landscape Guidelines.	PW [P]	Ongoing
3.7	Evaluate whether lot coverage standards should be changed based on neighborhood character.	CD [LRP]	Short-term
3.8	Adopt new development code provisions that designate neighborhood centers, as depicted on the General Plan Diagram, for a mixture of residences and small-scale, local-serving businesses.	CD [LRP]	Short-term
3.9	Adopt new development code provisions that designate areas within districts and corridors for mixed-use development that combines businesses with housing and focuses on the redesign of single-use shopping centers and retail parcels into walkable, well connected blocks, with a mix of building types, uses, and public and private frontages.	CD [LRP]	Short-term
3.10	Allow intensification of commercial areas through conversion of surface parking to building area under a districtwide parking management strategy in the Downtown Specific Plan.	CD [LRP]	Short-term
3.11	Expand the downtown redevelopment area to include parcels around future transit areas and along freeway frontage.	CD [RDA]	Mid-term
3.12	The City will work with the hospitals on the new Development Code treatment for the Loma Vista corridor, which includes both hospitals.	CD [LRP]	Short-term

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3.13	Assess whether the City's Affordable Housing Programs respond to current needs, and modify them as necessary within State mandated Housing Element updates	CD	Ongoing
3.14	Utilize infill development, to the extent possible, to accommodate the targeted number and type of housing units described in the Housing Element	CD [LRP]	Ongoing
3.15	Adopt new development code provisions that ensure compliance with Housing Element objectives.	CD [LRP]	Short-term
3.16	Renew and modify greenbelt agreements as necessary to direct development to already urbanized areas.	CD [LRP]	Long-term
3.17	Continue to support the Guidelines for Orderly Development as a means of implementing the General Plan, and encourage adherence to these Guidelines by all the cities, the County of Ventura, and the Local Agency Formation Commission (LAFCO); and work with other nearby cities and agencies to avoid sprawl and preserve the rural character in areas outside the urban edge.	CD [LRP]	Ongoing
3.18	Complete community or specific plans, subject to funding, for areas such as Westside, Midtown, Downtown, Wells, Saticoy, Pierpont, Harbor, Loma Vista/Medical District, Victoria Corridor, and others as appropriate. These plans will set clear development standards for public and private investments, foster neighborhood partnerships, and be updated as needed.	CD [LRP]	Ongoing
3.19	Preparation of the new Development Code will take into account existing or proposed community or specific plans to ensure efficient use of City resources and ample citizen input.	CD [LRP]	Short-term

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3.20	Pursuant to SOAR, adopt development code provisions to "preserve agricultural and open space lands as a desirable means of shaping the City's internal and external form and size, and of serving the needs of the residents."	CD [LRP]	Short-term
3.21	Adopt performance standards for non-farm activities in agricultural areas that protect and support farm operations, including requiring non-farm uses to provide all necessary buffers as determined by the Agriculture Commissioner's Office.	CD [LRP]	Short-term
3.22	Offer incentives for agricultural production operations to develop systems of raw product and product processing locally.	CD [ED]	Mid-term
3.23	Develop and adopt a form-based Development Code that emphasizes pedestrian orientation, integration of land uses, treatment of streetscapes as community living space, and environmentally sensitive building design and operation.	CD [LRP]	Short-term
3.24	Revise the Residential Growth Management Program (RGMP) with an integrated set of growth management tools including: • Community or specific plans and development codes based on availability of infrastructure and transit that regulate community form and character by directing new residential development to appropriate locations and in ways that integrate with and enhance existing neighborhoods, districts and corridors; • appropriate mechanisms to ensure that new residential development produces high-quality	CD [LRP]	Short-term

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	designs and a range of housing types across all income levels; and, • numeric limitations linked to the implementation of community or specific plans and development codes and the availability of appropriate infrastructure and resources; within those limitations, the RGMP should provide greater flexibility for timing new residential development.		
3.25	Establish first priority growth areas to include the districts, corridors, and neighborhood centers as identified on the General Plan Diagram; and second priority areas to include vacant undeveloped land when a community plan has been prepared for such (within the City limits).	CD [LRP]	Short-term
3.26	Establish and administer a system for the gradual growth of the City through identification of areas set aside for long-term preservation, for controlled growth, and for encouraged growth.	CD [LRP]	Mid-term
3.27	Require the use of techniques such as digital simulation and modeling to assist in project review.	CD [CP]	Short-term
3.28	Revise the planning processes to be more user-friendly to both applicants and neighborhood residents in order to implement City policies more efficiently.	CD [CP]	Short-term
4. OUR ACCESSIBLE COMMUNITY			
4.1	Direct city transportation investment to efforts that improve user safety and keep the circulation system structurally sound and adequately maintained. First priority for capital funding will go to our pavement management program to return Ventura streets to excellent conditions.	PW [E]	Ongoing

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4.2	Develop a prioritized list of projects needed to improve safety for all travel modes and provide needed connections and multiple route options.	PW [E]	Short-term
4.3	Provide transportation services that meet the special mobility needs of the community including youth, elderly, and disabled persons.	PW [E]	Ongoing
4.4	Combine education with enforcement to instill safe and courteous use of the shared public roadway.	CS	Ongoing
4.5	Utilize existing roadways to meet mobility needs, and only consider additional travel lanes when other alternatives are not feasible.	CD [LRP]	Ongoing
4.6	Require new development to be designed with interconnected transportation modes and routes to complete a grid network.	CD [CP]	Short-term
4.7	Update the traffic mitigation fee program to fund necessary citywide circulation system and mobility improvements needed in conjunction with new development.	CD [LD]	Short-term
4.8	Implement the City's Neighborhood Traffic Management Program and update as necessary to improve livability in residential areas.	PW [E]	Ongoing
4.9	Identify, designate, and enforce truck routes to minimize the impact of truck traffic on residential neighborhoods.	PW [E]	Ongoing
4.10	Modify traffic signal timing to ensure safety and minimize delay for all users.	PW [E]	Short-term

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4.11	Refine level of service standards to encourage use of alternative modes of transportation while meeting state and regional mandates.	PW [E]	Short-term
4.12	Design roadway improvements and facility modifications to minimize the potential for conflict between pedestrians, bicycles, and automobiles.	PW [E]	Ongoing
4.13	Require project proponents to analyze traffic impacts and provide adequate mitigation in the form of needed improvements, in-lieu fee, or a combination thereof.	CD [LD]	Ongoing
4.14	Provide development incentives to encourage projects that reduce automobile trips.	CD [CP]	Short-term
4.15	Encourage the placement of facilities that house or serve elderly, disabled, or socioeconomically disadvantaged persons in areas with existing public transportation services and pedestrian and bicycle amenities.	CD [CP]	Ongoing
4.16	Install roadway, transit, and alternative transportation improvements along existing or planned multi-modal corridors, including primary bike and transit routes, and at land use intensity nodes.	PW [E]	Ongoing
4.17	Prepare and periodically update a Mobility Plan that integrates a variety of travel alternatives to minimize reliance on any single mode.	CD [LRP]	Short-term
4.18	Promote the development and use of recreational trails as transportation routes to connect housing with services, entertainment, and employment.	PW [P]	Ongoing
4.19	Adopt new development code provisions that establish vehicle trip reduction requirements for all development.	CD [LRP]	Short-term

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4.20	Develop a transportation demand management program to shift travel behavior toward alternative modes and services.	PW [E]	Mid-term
4.21	Require new development to provide pedestrian and bicycle access and facilities as appropriate, including connected paths along the shoreline and watercourses.	PW [E/P]	Short-term
4.22	Update the General Bikeway Plan as needed to encourage bicycle use as a viable transportation alternative to the automobile and include the bikeway plan as part of a new Mobility Plan.	PW [E]	Mid-term
4.23	Upgrade and add bicycle lanes when conducting roadway maintenance as feasible.	PW [E]	Ongoing
4.24	Require sidewalks wide enough to encourage walking that include ramps and other features needed to ensure access for mobility-impaired persons.	PW [E]	Short-term
4.25	Adopt new development code provisions that require the construction of sidewalks in all future projects, where appropriate.	CD [LRP]	Short-term
4.26	Establish a parking management program to protect the livability of residential neighborhoods, as needed.	CD [LRP]	Short-term
4.27	Extend stubbed-end streets through future developments, where appropriate, to provide necessary circulation within a developing area and for adequate internal circulation within and between neighborhoods. Require new developments in the North Avenue area, where applicable, to extend Norway Drive and Floral Drive to connect to Canada Larga Road; and connect the existing segments of Floral Drive. Designate the extension of Cedar Street between Warner Street and	PW [E]	Mid-term

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	south of Franklin Lane and the linking of the Cameron Street segments in the Westside community as high priority projects.		
4.28	Require all new development to provide for citywide improvements to transit stops that have sufficient quality and amenities, including shelters and benches, to encourage ridership.	PW [E]	Short-term
4.29	Develop incentives to encourage City employees and local employers to use transit, rideshare, walk, or bike.	HR	Mid-term
4.30	Work with public transit agencies to provide information to riders at transit stops, libraries, lodging, and event facilities.	PW [E]	Ongoing
4.31	Work with public and private transit providers to enhance public transit service.	PW [E]	Mid-term
4.32	Coordinate with public transit systems for the provision of additional routes as demand and funding allow.	PW [E]	Long-term
4.33	Work with Amtrak, Metrolink, and Union Pacific to maximize efficiency of passenger and freight rail service to the City and to integrate and coordinate passenger rail service with other transportation modes.	PW [E]	Mid-term
4.34	Lobby for additional transportation funding and changes to Federal, State, and regional transportation policy that support local decision-making.	PW [E]	Ongoing
4.35	The City shall pursue funding and site location for a multi-modal transit facility in coordination with VCTC, SCAT, U.P.R.R., Metrolink, Greyhound Bus Lines, and other forms of	PW [E]	Mid-term

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Number	Action	Lead Entity	Timeframe
	transportation.		
4.36	Require development along the following roadways – including noise mitigation, landscaping, and advertising – to respect and preserve views of the community and its natural context. • State Route 33 • U.S. HWY 101 • Anchors Way • Brakey Road • Fairgrounds Loop • Ferro Drive • Figueroa Street • Harbor Boulevard • Main Street • Navigator Drive • North Bank Drive • Poli Street/Foothill Road • Olivas Park Drive • Schooner Drive	CD [CP]	Ongoing

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	• Spinnaker Drive • Summit Drive • Telegraph Road – east of Victoria Avenue • Victoria Avenue – south of U.S. 101 • Wells Road		
4.37	Request that State Route 126 and 33, and U.S. HWY 101 be designated as State Scenic Highways.	CD [LRP]	Short-term
4.38	Continue to work with Caltrans to soften the barrier impact of U.S. HWY 101 by improving signage, aesthetics and undercrossings and overcrossings.	PW [E/P]	Ongoing
4.39	Maintain street trees along scenic thoroughfares, and replace unhealthy or missing trees along arterials and collectors throughout the City.	PW [P]	Ongoing
5. OUR SUSTAINABLE INFRASTRUCTURE			
5.1	Require low flow fixtures, leak repair, and drought tolerant landscaping (native species if possible), plus emerging water conservation techniques, such as reclamation, as they become available.	CD [CP]	Ongoing
5.2	Use natural features such as bioswales, wildlife ponds, and wetlands for flood control and water quality treatment when feasible.	PW [MS/P]	Ongoing
5.3	Demonstrate low water use techniques at community gardens and city-owned facilities.	PW [U/P]	Mid-term

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5.4	Update the Urban Water Management plan as necessary in compliance with the State 1983 Urban Water Management Planning Act.	PW [U]	Ongoing
5.5	Provide incentives for new residences and businesses to incorporate recycling and waste diversion practices, pursuant to guidelines provided by the Environmental Services Office.	PW [MS]	Ongoing
5.6	Require project proponents to conduct sewer collection system analyses to determine if downstream facilities are adequate to handle the proposed development.	PW [U]	Ongoing
5.7	Require project proponents to conduct evaluations of the existing water distribution system, pump station, and storage requirements in order to determine if there are any system deficiencies or needed improvements for the proposed development.	PW [U]	Ongoing
5.8	Locate new development in or close to developed areas with adequate public services, where it will not have significant adverse effects, either individually or cumulatively, on coastal resources.	CD [LRP]	Ongoing
5.9	Update development fee and assessment district requirements as appropriate to cover the true costs associated with development.	AS	Mid-term
5.10	Utilize existing waste source reduction requirements, and continue to expand and improve composting and recycling options.	PW [MS]	Mid-term
5.11	Increase emergency water supply capacity through cooperative tie-ins with neighboring suppliers.	PW [U]	Mid-term
5.12	Apply new technologies to increase the efficiency of the wastewater treatment system.	PW [U]	Mid-term

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5.13	Increase frequency of city street sweeping, and post schedules at key points within each neighborhood.	PW [MS]	Mid-term
5.14	Develop a financing program for the replacement of failing corrugated metal storm drain pipes in the City.	PW [MS]	Short-term
5.15	Establish assessment districts or other financing mechanisms to address storm drain system deficiencies in areas where new development is anticipated and deficiencies exist.	PW [MS]	Mid-term
5.16	Require new developments to incorporate stormwater treatment practices that allow percolation to the underlying aquifer and minimize offsite surface runoff utilizing methods such as pervious paving material for parking and other paved areas to facilitate rainwater percolation and retention/detention basins that limit runoff to pre-development levels.	CD [LD]	Ongoing
5.17	Require stormwater treatment measures within new development to reduce the amount of urban pollutant runoff in the Ventura and Santa Clara Rivers and other watercourses.	CD [LD]	Ongoing
5.18	Work with the Ventura Regional Sanitation District and the County to expand the capacity of existing landfills, site new landfills, and/or develop alternative means of disposal that will provide sufficient capacity for solid waste generated in the City.	PW [MS]	Long-term

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6. OUR ACTIVE COMMUNITY			
6.1	Develop new neighborhood parks, pocket parks, and community gardens as feasible and appropriate to meet citizen needs, and require them in new development.	PW [P]	Long-term
6.2	Require higher density development to provide pocket parks, tot lots, seating plazas, and other aesthetic green spaces.	CD [CP]	Short-term
6.3	Work with the County to plan and develop trails that link the City with surrounding open space and natural areas, and require development projects to include trails when appropriate.	PW [P]	Ongoing
6.4	Request Flood Control District approval of public access to unchannelized watercourses for hiking.	PW [P]	Mid-term
6.5	Seek landowner permission to allow public access on properties adjacent to open space where needed to connect trails.	PW [P]	Ongoing
6.6	Update plans for and complete the linear park system as resources allow.	PW [P]	Long-term
6.7	Work with the County of Ventura to initiate efforts to create public trails in the hillside area.	PW [P]	Mid-term
6.8	Update and require periodic reviews of the Park and Recreation Workbook as necessary to reflect City objectives and community needs.	PW [P]	Mid-term
6.9	Require dedication of land identified as part of the City's Linear Park System in conjunction with new development.	PW [P]	Ongoing

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Number	Action	Lead Entity	Timeframe
6.10	Evaluate and incorporate, as feasible, linear park segments in the General Bikeway Plan.	PW [E]	Ongoing
6.11	Update standards for citywide public parks and open space to include an expanded menu of shared park types, and identify locations and potential funding sources for acquiring new facilities in existing neighborhoods.	PW [P]	Short-term
6.12	Update and carry out the Grant Park Master Plan.	PW [P]	Mid-term
6.13	Foster the partnership between the City and Fair Board to improve Seaside Park.	CD [ED]	Ongoing
6.14	Improve facilities at City parks to respond to the requirements of special needs groups.	PW [P]	Mid-term
6.15	Adjust and subsidize fees to ensure that all residents have the opportunity to participate in recreation programs.	CS [CR]	Short-term
6.16	Update the project fee schedule as necessary to ensure that development provides its fair share of park and recreation facilities.	PW [P]	Short-term
6.17	Update and create new agreements for joint use of school and City recreational and park facilities.	CS [CR] PW [P]	Mid-term
6.18	Offer programs that highlight natural assets, such as surfing, sailing, kayaking, climbing, gardening, and bird watching.	CS [CR]	Ongoing
6.19	Provide additional boating and swimming access as feasible.	PW	Long-term

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6.20	Earmark funds for adequate maintenance and rehabilitation of existing skatepark facilities, and identify locations and funding for new development of advanced level skatepark facilities.	PW [P]	Mid-term
6.21	Promote the use of City facilities for special events, such as festivals, tournaments, and races.	CS [CA]	Ongoing
6.22	Enter into concession or service agreements where appropriate to supplement City services.	PW	Ongoing
7. OUR HEALTHY AND SAFE COMMUNITY			
7.1	Work with interested parties to identify appropriate locations for assisted-living, hospice, and other care-provision facilities.	CS [SS]	Short-term
7.2	Provide technical assistance to local organizations that deliver health and social services to seniors, homeless persons, low-income citizens, and other groups with special needs.	CS [SS]	Ongoing
7.3	Participate in school and agency programs to: ♦ provide healthy meals, ♦ combat tobacco, alcohol, and drug dependency, ♦ distribute city park and recreation materials through schools, and ♦ distribute information about the benefits of proper nutrition and exercise.	CS [SS]	Ongoing
7.4	Enhance or create ordinances which increase control over ABC licensed premises.	PD	Mid-term
7.5	Investigate the creation of new land use fees to enhance funding of alcohol related enforcement, prevention and training efforts.	PD	Mid-term

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7.6	Adopt updated editions of the California Construction Codes and International Codes as published by the State of California and the International Code Council respectively.	FD [IS]	Ongoing
7.7	Require project proponents to perform geotechnical evaluations and implement mitigation prior to development of any site: • with slopes greater than 10 percent or that otherwise have potential for landsliding, • along bluffs, dunes, beaches, or other coastal features • in an Alquist-Priolo earthquake fault zone or within 100 feet of an identified active or potentially active fault, • in areas mapped as having moderate or high risk of liquefaction, subsidence, or expansive soils, • in areas within 100-year flood zones, in conformance with all Federal Emergency Management Agency regulations.	CD [CP/LD]	Ongoing
7.8	To the extent feasible, require new critical facilities (hospital, police, fire, and emergency service facilities, and utility "lifeline" facilities) to be located outside of fault and tsunami hazard zones, and require critical facilities within hazard zones to incorporate construction principles that resist damage and facilitate evacuation on short notice.	FD	Ongoing
7.9	Maintain and implement the Standardized Emergency Management System (SEMS) Multihazard Functional Response Plan.	FD	Ongoing

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7.10	Require proponents of any new developments within the 100-year floodplain to implement measures, as identified in the Floodplain Ordinance, to protect structures from 100-year flood hazards (e.g., by raising the finished floor elevation outside the floodplain).	FD [IS]	Ongoing
7.11	Prohibit grading for vehicle access and parking or operation of vehicles within any floodway.	FD [IS]	Ongoing
7.12	Refer development plans to the Fire Department to assure adequacy of structural fire protection, access for firefighting, water supply, and vegetation clearance.	CD [CP]	Ongoing
7.13	Resolve extended response time problems by: • adding a fire station at the Pierpont/Harbor area, • relocating Fire Station #4 to the Community Park site, • increasing firefighting and support staff resources, • reviewing and conditioning annexations and development applications, and • require the funding of new services from fees, assessments, or taxes as new subdivisions are developed.	FD	Long-term
7.14	Educate and reinforce City staff understanding of the Standardized Emergency Management System for the State of California.	FD	Ongoing
7.15	Increase public access to police services by: • increasing police staffing to coincide with increasing population, development, and calls for	PD	Ongoing

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Number	Action	Lead Entity	Timeframe
	service, • increasing community participation by creating a Volunteers in Policing Program, and • require the funding of new services from fees, assessments, or taxes as new subdivisions are developed.		
7.16	Provide education about specific safety concerns such as gang activity, senior-targeted fraud, and property crimes.	PD	Ongoing
7.17	Establish a nexus between police department resources and increased service demands associated with new development.	PD	Mid-term
7.18	Continue to operate the Downtown police storefront.	PD	Ongoing
7.19	Expand Police Department headquarters as necessary to accommodate staff growth	PD	Mid-term
7.20	Require air pollution point sources to be located at safe distances from sensitive sites such as homes and schools.	FD [IS]	Short-term
7.21	Require analysis of individual development projects in accordance with the most current version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines and, when significant impacts are identified, require implementation of air pollutant mitigation measures determined to be feasible at the time of project approval.	FD [IS]	Ongoing
7.22	In accordance with Ordinance 93-37, require payment of fees to fund regional transportation demand	CD [LD]	Ongoing

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Number	Action	Lead Entity	Timeframe
	management (TDM) programs for all projects generating emissions in excess of Ventura County Air Pollution Control District adopted levels.		
7.23	Require individual contractors to implement the construction mitigation measures included in the most recent version of the Ventura County Air Pollution Control District Air Quality Assessment Guidelines.	PW [E]	Ongoing
7.24	Only approve projects involving sensitive land uses (such as residences, schools, daycare centers, playgrounds, medical facilities) within or adjacent to industrially designated areas if an analysis provided by the proponent demonstrates that the health risk will not be significant.	CD [CP]	Ongoing
7.25	Adopt new development code provisions that ensure uses in mixed-use projects do not pose significant health effects.	CD [LRP]	Short-term
7.26	Seek funding for cleanup of sites within the Brownfield Assessment Demonstration Pilot Program and other contaminated areas in West Ventura.	CD [ED]	Mid-term
7.27	Require proponents of projects on or immediately adjacent to lands in industrial, commercial, or agricultural use to perform soil and groundwater contamination assessments in accordance with American Society for Testing and Materials standards, and if contamination exceeds regulatory action levels, require the proponent to undertake remediation procedures prior to grading and development under the supervision of the County Environmental Health Division, County Department of Toxic Substances Control, or Regional Water Quality Control Board (depending	FD [IS]	Ongoing

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Number	Action	Lead Entity	Timeframe
	upon the nature of any identified contamination).		
7.28	Educate residents and businesses about how to reduce or eliminate the use of hazardous materials, including by using safer non-toxic equivalents.	PW [MS]	Ongoing
7.29	Require non-agricultural development to provide buffers, as determined by the Agriculture Commissioner's Office, from agricultural operations to minimize the potential for pesticide drift.	CD [CP]	Short-term
7.30	Require all users, producers, and transporters of hazardous materials and wastes to clearly identify the materials that they store, use, or transport, and to notify the appropriate City, County, State and Federal agencies in the event of a violation.	FD [IS]	Ongoing
7.31	Work toward voluntary reduction or elimination of aerial and synthetic chemical application in cooperation with local agricultural interests and the Ventura County agricultural commissioner.	FD [IS]	Mid-term
7.32	Require acoustical analyses for new residential developments within the mapped 60 decibel (dBA) CNEL contour, or within any area designated for commercial or industrial use, and require mitigation necessary to ensure that: • Exterior noise in exterior spaces of new residences and other noise sensitive uses that are used for recreation (such as patios and gardens) does not exceed 65 dBA CNEL, and • Interior noise in habitable rooms of new residences does not exceed 45 dBA CNEL with all windows closed.	FD [IS]	Ongoing

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Number	Action	Lead Entity	Timeframe
7.33	As funding becomes available, construct sound walls along U.S. 101, SR 126, and SR 33 in areas where existing residences are exposed to exterior noise exceeding 65 dBA CNEL.	PW [E]	Long-term
7.34	Request that sound levels associated with concerts at the County Fairgrounds be limited to 70 dBA at the eastern edge of that property.	CS	Short-term
7.35	Request the termination of auto racing at the County fairgrounds	CS	Short-term
7.36	Amend the noise ordinance to restrict leaf blowing, amplified music, trash collection, and other activities that generate complaints.	FD [IS]	Short-term
7.37	Use rubberized asphalt or other sound reducing material for paving and re-paving of City streets.	PW [E]	Ongoing
7.38	Update the Noise Ordinance to provide standards for residential projects and residential components of mixed-use projects within commercial and industrial districts.	CD [LRP]	Short-term
8.1	Work closely with schools, colleges, and libraries to provide input into site and facility planning.	CS	Ongoing
8.2	Organize a regional education summit to generate interest in and ideas about learning opportunities.	CS	Mid-term
8.3	Adopt joint-use agreements with libraries, schools, and other institutions to maximize use of educational facilities.	CS	Mid-term
8.4	Distribute information about local educational programs.	CS	Mid-term

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Number	Action	Lead Entity	Timeframe
8.5	Install infrastructure for wireless technology and computer networking in City facilities.	AS	Short-term
8.6	Establish educational centers at City parks.	PW [P] CS	Mid-term
8.7	Work with the State Parks Department to establish a marine learning center at the Harbor.	PW [P]	Long-term
8.8	Work with the Ventura Unified School District to ensure that school facilities can be provided to serve new development.	CD [LRP]	Ongoing
8.9	Complete a new analysis of community needs, rethinking the role of public libraries in light of the ongoing advances in information technology and the changing ways that individuals and families seek out information and life-long learning opportunities.	CS	Mid-term
8.10	Reassess the formal and informal relationships between our current three branch public libraries and school libraries – including the new Ventura College Learning Resource Center – as well as joint use of facilities for a broader range or compatible public, cultural, and educational uses.	CS	Mid-term
8.11	Develop a Master Plan for Facilities, Programs, and Partnerships to create an accessible, robust, and vibrant library for the 21st Century system, taking into consideration that circulation of books is no longer the dominant function but will continue to be an important part of a linked network of learning centers.	CS	Mid-term
8.12	Develop formal partnerships, funding, capital strategies, and joint use agreements to implement the	CS	Ongoing

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Number	Action	Lead Entity	Timeframe
	new libraries Master Plan.		
9. OUR CREATIVE COMMUNITY			
9.1	Require works of art in public spaces per the City's Public Art Program Ordinance.	CD [CP]	Mid-term
9.2	Sponsor and organize local art exhibits, performances, festivals, cultural events, and forums for local arts organizations and artists.	CS	Ongoing
9.3	Expand outreach and publicity by: ♦ promoting locally produced art and local cultural programs, ♦ publishing a monthly calendar of local art and cultural features, ♦ distributing the *State of the Arts* quarterly report, and ♦ offering free or subsidized tickets to events.	CS	Ongoing
9.4	Support the creative sector through training and other professional development opportunities.	CS	Short-term
9.5	Work with the schools to integrate arts education into the core curriculum	CS	Short-term
9.6	Promote the cultural and artistic expressions of Ventura's underrepresented cultural groups.	CS	Mid-term
9.7	Offer ticket subsidy and distribution programs and facilitate transportation to cultural offerings.	CS	Ongoing
9.8	Increase the amount of live-work development, and allow its use for production, display, and sale of	CD [LRP]	Ongoing

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Number	Action	Lead Entity	Timeframe
	art.		
9.9	Work with community groups to locate sites for venues for theater, dance, music, and children's programming.	CS [CR]	Mid-term
9.10	Provide incentives for preserving structures and sites that are representative of the various periods of the city's social and physical development.	CD [LRP]	Mid-term
9.11	Organize and promote multi-cultural programs and events that celebrate local history and diversity.	CS [CA]	Ongoing
9.12	Allow adaptive reuse of historic buildings.	CD [LRP]	Short-term
9.13	Work with community groups to identify locations for facilities that celebrate local cultural heritage, such as a living history Chumash village and an agricultural history museum.	CS [CA]	Long-term
9.14	Require archaeological assessments for projects proposed in the Coastal Zone and other areas where cultural resources are likely to be located.	CD [CP]	Ongoing
9.15	Suspend development activity when archaeological resources are discovered, and require the developer to retain a qualified archaeologist to oversee handling of the resources in coordination with the Ventura County Archaeological Society and local Native American organizations as appropriate.	CD [CP]	Ongoing
9.16	Pursue funding to preserve historic resources.	CS	Ongoing

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Number	Action	Lead Entity	Timeframe
9.17	Provide incentives to owners of eligible structures to seek historic landmark status and invest in restoration efforts.	CD [LRP]	Short-term
9.18	Require that modifications to historically-designated buildings maintain their character.	CD [CP]	Ongoing
9.19	For any project in a historic district or that would affect any potential historic resource or structure more than 40 years old, require an assessment of eligibility for State and federal register and landmark status and appropriate mitigation to protect the resource.	CD [CP]	Ongoing
9.20	Seek input from the City's Historic Preservation Commission on any proposed development that may affect any designated or potential landmark.	CD [CP]	Ongoing
9.21	Update the inventory of historic properties.	CD [LRP]	Ongoing
9.22	Create a set of guidelines and/or policies directing staff, private property owners, developers, and the public regarding treatment of historic resources that will be readily available at the counter.	CD [LRP]	Short-term
9.23	Complete and maintain historic resource surveys containing all the present and future components of the historic fabric within the built, natural, and cultural environments.	CD [LRP]	Ongoing
9.24	Create a historic preservation element.	CD [LRP]	Long-term
10. OUR INVOLVED COMMUNITY			
10.1	Conduct focused outreach efforts to encourage all members of the community – including youth, seniors, special needs groups, and non-English speakers – to participate in City activities.	CM [CE]	Short-term

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Number	Action	Lead Entity	Timeframe
10.2	Obtain public participation by seeking out citizens in their neighborhoods and gathering places such as schools, houses of worship and public spaces.	CM [CE]	Ongoing
10.3	Invite civic, neighborhood, and non-profit groups to assist with City project and program planning and implementation.	CD	Ongoing
10.4	Provide incentives for City staff to participate in community and volunteer activities.	HR	Short-term
10.5	Invite seniors to mentor youth and serve as guides at historical sites.	CS	Short-term
10.6	Offer internships in City governance, and include youth representatives on public bodies.	CS	Mid-term
10.7	Continue to offer the Ambassadors program to obtain citizens assistance with City projects.	PW	Ongoing
10.8	Utilize the City website as a key source of information and expand it to serve as a tool for civic engagement.	CM [CE]	Short-term
10.9	Publish an annual report that evaluates City performance in such areas as conservation, housing, and economic development.	CD	Mid-term
10.10	Continue to improve the user-friendliness of the media that communicate information about the City, including the website, cable channels, newsletters, kiosks, and water billing statements.	CM [CE]	Short-term
10.11	Establish a clear policy toward the scope, role, boundaries, and jurisdiction of neighborhood Community Councils citywide, with the objectives of strengthening their roles in decision-making.	CD [LRP]	Mid-term

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Number	Action	Lead Entity	Timeframe
10.12	Establish stronger partnerships with neighborhood Community Councils to set area priorities for capital investment, community policing, City services, commercial investment, physical planning, education, and other concerns, to guide both City policies and day-to-day cooperation and problem-solving.	CD [LRP]	Ongoing
10.13	Recognizing that neighborhood empowerment must be balanced and sustained by overall City policies and citywide vision and resources – establish a citywide Neighborhood Community Congress where local neighborhood Community Councils can collaborate and learn from each other.	CM[CE]	Mid-term
10.14	Establish clear liaison relationships to foster communication, training, and involvement efforts between the City, neighborhood Community Councils and other community partners, including the Ventura Unified School District and business, civic, cultural and religious groups.	CM [CE]	Short-term

ORDINANCE NO. 95-33

AN ORDINANCE OF THE PEOPLE OF THE CITY OF SAN BUENAVENTURA ADOPTING AN ORDINANCE AMENDING THE COMPREHENSIVE PLAN WITH RESPECT TO THE PRESERVATION OF AGRICULTURAL LANDS.

The people of the City of San Buenaventura do hereby ordain as follows:

Section 1. Findings and Purpose.

A. The protection of existing agricultural and watershed lands is of critical importance to present and future residents of the City of San Buenaventura (City of Ventura). Agriculture has been and remains the major contributor to the economy of the City and County of Ventura, creating employment for many people, directly and indirectly, and generating substantial tax revenues for the City.

B. In particular, the City of Ventura and surrounding area, with its unique combination of soils, micro-climate and hydrology, has become one of the finest growing regions in the world. Vegetable and fruit production from the County of Ventura and in particular production from the soils and silt from the Santa Clara and Ventura rivers have achieved international acclaim, enhancing the City's economy and reputation.

C. Uncontrolled urban encroachment into agricultural and watershed areas will impair agriculture and threaten the public health, safety and welfare by causing increased traffic congestion, associated air pollution, and potentially serious water problems, such as pollution, depletion, and sedimentation of available water resources. Such urban encroachment would eventually result in both the unnecessary, expensive extension of public services and facilities and inevitable conflicts between urban and agricultural uses.

D. The unique character of the City of Ventura and quality of life of City residents depend on the protection of a substantial amount of open space lands. The protection of such lands not only ensures the continued viability of agriculture, but also protects the available water supply and contributes to flood control and the protection of wildlife, environmentally sensitive areas, and irreplaceable natural resources.

E. The Resolution by which the City of Ventura adopted its Comprehensive Plan on August 28, 1989, Resolution No. 89-103, at page 4, contains in part the following "mitigation measures" in recognition of the importance of preserving agriculture resources:

> "Any potential significant adverse impacts are mitigated by substantially limiting the amount of agricultural land converted from an agricultural land use designation limiting the amount of prime farmland converted, and by making the various agricultural land areas designated for potential development subject to conditions which narrowly limit the possible land use."

F. The Comprehensive Plan sets out as Objective 4 (at II-9) the desire to:

"Continue to preserve agricultural and other open space lands within the City's Planning Area."

And, the Comprehensive Plan describes as the first Goal of its Resource Element (at II-3) the objective to:

> "Preserve agricultural and open space lands as a desirable means of shaping the City's internal and external form and size, and of serving the needs of residents."

G. The purpose of this initiative is to ensure that the Goals and Objectives of the Comprehensive Plan are inviolable by transitory short-term political decisions and that agricultural, watershed and open space lands are not prematurely or unnecessarily converted to other non-agricultural or non-open space uses without public debate and a vote of the people. Accordingly, the initiative ensures that until December 31, 2030, the general plan provisions governing agricultural land use designation and intent may not be change except by vote of the people. In addition, the initiative provides that any lands designated as "Agriculture Use", referring to both "Agricultural Use (not to be reconsidered until after the Year 2010" and Agricultural/Institutional" on the City of Ventura's General Plan "Land Use Plan Map" adopted by the City Council by Resolution 89-103 on August 28, 1989, as amended through February 1, 1995, will remain designated as Agricultural Use until December 31, 2030, unless the land is redesignated to another land use category by vote of the people, or redesignated by the City Council for the City of San Buenaventura pursuant to the procedures set forth in this initiative.

H. This initiative allows the City Council to redesignate agriculture lands only if certain if certain findings can be made, including (among other things) that the land is proven to be unsuitable for any form of agriculture and redesignation is necessary to avoid an unconstitutional taking of property without just compensation.

Section 2. General Plan Amendment.

The Agricultural Lands Preservation Initiative hereby reaffirms and readopts until December 31, 2030, The "Agricultural Use" designations as defined in the City of San Buenaventura Comprehensive Plan adopted August 28, 1989, as amended through February 1, 1995, at pages III-25 and III-26, with the modification that the "target date" is extended from 2010 until after December 31, 2030.

The following terminology shall replace the current "Agricultural Use" designation defined at page III-25 of The Plan:

Agricultural Use

The Agricultural Use (not to be reconsidered until after the Year 2030) category identifies those lands that are designated for agricultural use on the Land Use Plan Map.

The target date of 2030 associated with the Agricultural Use designation indicates a review date after which agriculturally designated lands may be reconsidered for urban uses. However, during the life of this plan as amended by initiative, it is intended that only agricultural uses are permitted on these lands, except as such lands may be appropriate to public open space and recreational usage. Furthermore, any updates to this Plan are not intended to imply that development would necessarily be appropriate at hat time.

In addition, the initiative hereby reaffirms and readopts until December 31, 2030, the "Agricultural" designations set forth on the of the City of Ventura Comprehensive Plan "Land Use Plan Map" adopted by the City Council on August 28, 1989, as amended through February 1, 1995, which map is incorporated herein by reference, modified, as appropriate, to delete the reference year 2010 and replace it with the reference year 2030.

Finally, the text of the Amendment Procedures of the City of Ventura Comprehensive Plan adopted August 28, 1989, as amended through February 1, 1995, (at XI-I) shall be amended to add a new subsection which provides:

Limitation on General Plan Amendments Relating to "Agricultural Use"

a) Until December 31, 2030, the provisions and designations governing the intent for lands designated "Agricultural Use" of the Land Use Element and Resource Element adopted on August 28, 1989, as amended through February 1, 1995, shall not be amended unless such amendment is approved by vote of the people.

b) All those lands designated as "Agricultural Use" in the City of Ventura Comprehensive Plan "Land Use Plan Map" adopted by the City Council on August 28, 1989 as amended through February 1, 1995, shall remain so designated until December 31, 2030 unless redesignated to another general plan land use category by vote of the people, or redesignated by the City Council pursuant to the procedures set forth in subsections c) or d), below.

c) Except as provided in subsection d), below, land designated as "Agricultural Use" may be redesignated by the City Council to a land use other than "Agricultural Use" as defined by the Comprehensive Plan adopted by the City Council on August 28, 1989, as amended through February 1, 1995, only if the City Council makes all of the following findings supported by the evidence:

   i) The land is immediately adjacent to areas developed in a manner comparable to the proposed use;

   ii) Adequate public services and facilities are available and have the capacity and capability to accommodate the proposed use;

   iii) The proposed use is compatible with agricultural uses, does not interfere with accepted agricultural practices, and does not adversely affect the stability of land use patterns in the area;

   iv) The land proposed for redesignation has not been used for agricultural purposes in the past 2 years and is unusable for agriculture due to its topography, drainage, flooding, adverse soil conditions or other physical reasons; and

v) The land proposed for redesignation pursuant to this subsection (c) does not exceed 40 acres for any one landowner in any calendar year, and one landowner may not obtain redesignation in the Comprehensive Plan of "Agricultural Use" land pursuant to this subsection (c) more often than every other year. Landowners with any unity of interest are considered one landowner for purposes of this limitation.

d) Land designated as "Agricultural Use" on the Land Use Plan Map may be redesignated to another land use category by the City Council if each of the following conditions are satisfied:

i) The City Council makes a finding that the application of the provisions of Section 2 (a) would constitute an unconstitutional taking of the landowners' property; and

ii) In permitting the redesignation, the City Council allows additional land uses only to the extent necessary to avoid said unconstitutional taking of the landowner's property.

e) Approval by a vote of the people is accomplished when a Comprehensive Plan amendment is placed on the ballot through any procedure provided for in the Election Code, and a majority of the voters vote in favor of it. Whenever the City Council adopts an amendment requiring approval by a vote of the people pursuant to the provisions of this subsection, the City Council's action shall have no effect until after such a vote is held and a majority of the voters vote in favor of it. The City Council shall follow the provisions of the Election Code in all matters pertaining to such an election.

Section 3. Implementation.

A. Upon the effective date of this initiative, the initiative shall be deemed inserted in the City of Ventura's Comprehensive Plan as an amendment thereof; except, that if the four amendments of the mandatory elements of the general plan permitted by state law for any given calendar year have already been utilized in 1995, prior to the effective date of this initiative, this Comprehensive Plan amendment shall be deemed inserted in the City's General Plan on January 1, 1996. At such time as this Comprehensive Plan amendment is deemed inserted in the City's Comprehensive Plan (hereinafter, the "insertion date") any provisions of the City's Zoning Ordinance inconsistent with that amendment shall not be enforced to the extent of the inconsistency. Within 180 days of the insertion date, the City shall complete

such revisions of its Comprehensive Plan, including, but not limited to, the Comprehensive Plan Land Use Plan Map adopted by the City Council on August 28, 1989, (as amended through February 1, 1995) and accompanying test, as are necessary to achieve consistency with all provisions of this initiative. Also, within 180 days of the insertion date, the City Council shall complete such revisions of its Zoning Ordinance and other land use regulations as are necessary to conform to and be consistent with all provisions of this initiative.

B. The provisions of this initiative shall prevail over any revisions to the City of Ventura's Comprehensive Plan as amended through February 1, 1995, or to the City of Ventura's Land Use Plan Map as amended through February 1, 1995 which conflict with the initiative. Except as provided in Section 4 below, upon the specific plans, tentative or final subdivision maps, parcel maps, conditional use permits, building permits or other ministerial or discretionary entitlements for use not yet approved or issued shall not be approved or issued unless consistent with the policies and provisions of this initiative.

Section 4. Exemptions for Certain Projects.

This initiative shall not apply to or affect any property owner whose property has acquired any of the following prior to its effective date:

A. A vested right pursuant to state law;

B. A validly approved and fully executed development agreement with the City; or

C. Approval of a vesting tentative map.

Section 5. Severability.

If any portion of this initiative is declared invalid by a court, the remaining portions are to be considered valid.

Section 6. Amendment or Repeal.

This initiative may be amended or repealed only by the voters at a general election.

STATE OF CALIFORNIA)
COUNTY OF VENTURA) ss
CITY OF SAN BUENAVENTURA)

I, BARBARA J. KAM, City Clerk of the City of San Buenaventura, California, do hereby certify that the foregoing Ordinance was adopted by the voters of the City of San Buenaventura at the General Municipal Election held on November 7, 1995 and subsequently declared adopted by the City Council of the City of San Buenaventura on November 27, 1995. The Ordinance shall take effect December 7, 1995. This ordinance shall not be repealed or amended except by a vote of the people, unless provision is otherwise made in the original ordinance.

Dated this 30th day of November, 1995.

Barbara J. Kam, CMC
City Clerk

Ventura Hillside Voter Participation Measure

The people of the City of San Buenaventura do ordain as follows:

Section 1. Title

This measure shall be known as the Ventura Hillside Voter Participation Measure.

Section 2. Purpose

The overall purpose of this measure is to allow City voters to participate in the review process relating to non-exempt development projects that may be proposed in a certain portion of the "Hillside Area" of the City as defined in the City's Comprehensive Plan Update to the Year 2010 (hereafter the "Comprehensive Plan"). The portion of the Hillside Area under consideration lies generally north of the City, constitutes an area approximately 9108 acres in size, and is further depicted as the "Hillside Voter Participation Area" indicated in Exhibit "A" attached hereto and made a part hereof. The proposed Hillside Voter Participation Area (also referred to from time to time hereafter as "HVP Area" or "HVPA") is outside the Ventura City limits, but it is within the "Planning Area" of the City of San Buenaventura as further indicated on Exhibit "A." The Comprehensive Plan Land Use Map currently designates the properties within the proposed Hillside Voter Participation Area as "Hillside Planned Residential" or "HPR" rather than "Agricultural" and, therefore, these properties are not subject to the Save Our Agricultural Resources ("SOAR") Initiative adopted by the voters in 1995.

In the recent past, some property owners within the proposed Hillside Voter Participation Area have publicly presented initial proposals to develop those properties with a combination of residential uses and open space and recreational areas proposed to include, among other things, hiking and equestrian trails for use by the public. In the course of public meetings and informational workshops discussing these proposals, it has become apparent that there is a high level of public concern over potential issues of scenic resource protection, open space and recreational opportunities, infrastructure needs, traffic circulation, and other development-related issues arising from any proposed changes in the use of this important part of the City's Planning Area. This measure, in recognition of this heightened public concern, is intended to provide the electorate of the City of San Buenaventura with an opportunity to vote on the approval of any such development proposals or any similar proposals to extend urban services to the Hillside Voter Participation Area or develop property in the Hillside Voter Participation Area with urbanized land uses.

More particularly, this measure proposes to amend the Comprehensive Plan of the City of San Buenaventura by adding a requirement that approvals for extensions of "urban services" (defined in the City's Hillside Management Program as the provision of domestic water and sewers) or any proposed "urbanized uses of land" (as defined herein) in the Hillside Voter Participation Area cannot be granted without prior approval by a majority vote of the electorate.

Section 3. Comprehensive Plan Amendment

The following text shall be inserted into the Land Use Element of the Comprehensive Plan at page 111-8 thereof:

Hillside Voter Participation Area

The electorate of the City of Ventura has adopted a Hillside Voter Participation Area (Ventura HVP Area). Its purpose, principles, implementation procedures, and methodologies for amendment are set forth in this Comprehensive Plan amendment.

A. PURPOSE

The City of Ventura Hillside Area, with its unique topography, viewsheds, watershed lands; its unique microclimate and hydrology, and its diversity of plant and wildlife resources, is one of the finest scenic resources in the Southern California region. The Comprehensive Plan recognizes the unique and important qualities and potential of the Hillside Area in, among other provisions, the declaration of specialized Objectives and Policies for the Hillside Area in the Resources Element of the Plan and the Plan's requirements for continuing operation of, and compliance with, the City's Hillside Management Program.

This Comprehensive Plan amendment is intended to provide for an increased level of public awareness and participation in the development review process applicable to that portion of the Hillside Area described and depicted in Exhibit "A" as the "Hillside Voter Participation Area." It is further intended to provide assurance to the public that any proposed development in the Hillside Voter Participation Area appropriately takes into account the Area's unique combination of viewshed, watershed, open space, scenic area, and environmentally sensitive habitat, and that agricultural, viewshed, watershed, and open space lands in the Hillside Voter Participation Area are not converted to urban or other non-open space uses without public discussion and a vote of the people. Increasing citizen participation in the development review process through the establishment of a Hillside Voter Participation Area enhances the City's sense of community, allows for development unique to the City of Ventura, and promotes the efficient use of the City's infrastructure.

More specifically, this Comprehensive Plan amendment is intended to provide an opportunity for the public to be involved in insuring that any development projects proposed in the Hillside Voter Participation Area, shall, at a minimum:

1. Maintain the scenic character of the hillsides in areas of future development, by preserving significant natural landmarks and scenic ridgelines and slopes.

2. Provide increased recreational opportunities for existing and future hillside and other City residents, by improving access to existing parks and establishing additional parks or open, non-developed areas in conjunction with future hillside development.

3. Maximize public access to hillside open space and recreation areas, by establishing a system of linear parks and hiking trails along scenic ridges and barrancas.

4. Minimize the impact of hillside development on sensitive natural habitats and historical or archaeological resources.

B. PRINCIPLES

Inappropriate urban encroachment into Hillside open space, viewshed, watershed, scenic areas, and biological resource areas would have the potential to impact sensitive environmental areas, unwarrantedly intrude on open space, diminish the quality of life and threaten the public health, safety and welfare by leading to increased traffic congestion, associated air pollution, erosion, alteration of sensitive lands in watershed areas and causing potentially serious water problems, such as pollution, depletion and sedimentation of available water resources not only for the City of Ventura, but for its jurisdictional neighbors. Inappropriate urban encroachment could further result in the unwarranted extension of public services and facilities into sensitive areas.

The unique character of the City of Ventura and quality of life of City residents depends on the appropriate protection of the Hillside Area's substantial amount of open space, viewshed, watershed, scenic resources, and biological resources. The increased public awareness and involvement in the fate of such lands through the implementation of this Comprehensive Plan amendment will provide the public a special opportunity to assure that future generations of Ventura citizens will not be deprived of the benefits of access to a viable water supply, flood and erosion control, protection of viewsheds, wildlife, environmentally sensitive areas, open space and recreational areas, and irreplaceable natural resources.

C. IMPLEMENTATION

(1) There is hereby established a Ventura Hillside Voter Participation Area (Ventura HVP Area). The Ventura HVP Area is that portion of the Hillside Area delineated and depicted in Exhibit "A" of this Comprehensive Plan amendment (hereafter, the "HVP Area Map"). As shown on the HVP Area Map, the southern boundary of the HVP Area generally follows the northern segment of the City's incorporated limit as established by the Local Agency Formation Commission for the City of Ventura, except as the HVP boundary line runs northerly of some small residential lots on or near Foothill Road west of Arroyo Verde Park as further depicted on Exhibit "A." East of Harmon Barranca, the HVP Area boundary generally follows the alignment of Foothill Road eastward to the boundary of the City's Planning Area. The northerly boundary of the HVP Area continues, generally, as the northern boundary of the City's Planning Area. The westerly boundary of the HVP Area alternately follows the City limit boundary or Sphere of Influence boundary easterly of the North Avenue area. The foregoing narrative description is intended to be general in nature and all of the foregoing is more particularly depicted and described in Exhibit "A'

Insofar as the HVP Area boundary described and depicted in this Comprehensive Plan amendment, including Exhibit "A" hereto, is said or shown to be coterminous with either the City's incorporated limit or the City's Sphere of Influence boundary, or with the boundary of the City's Planning Area, such references are intended to be, and shall be construed to be, the location of the City limit boundary or Sphere of Influence boundary or boundary of the City's Planning Area. as applicable, as each of those boundaries are established for the City of Ventura as of January 1, 2001. Although the HVP Area boundary is established, in part, in generally the same location as the City limit boundary, or in some instances, the Sphere of Influence boundary, the establishment of the HVP Area boundary is not intended to and shall in no way inhibit the Local Agency Formation Commission from changing or altering the City limit boundary or Sphere of Influence boundary in accordance with State law. The boundary of the HVP Area, although incidentally coterminous as of one point in time with the City limit boundary or Sphere of Influence boundary or boundary of the City's Planning Area, is independent from these boundaries in legal significance and purpose. While the City limit boundary or Sphere of Influence boundary may be, from time to time, altered by the Local Agency Formation Commission, or the boundary of the City's Planning Area may be changed, the HVP Area boundary shall not be changed except as provided herein.

(2) Until December 31, 2030, the City of Ventura shall not extend urban services into, and shall not authorize urbanized uses of land within, the Ventura Hillside Voter Participation Area unless otherwise authorized by a vote of the people, except for the purpose of construction of public potable water facilities, public parks or other city government facilities or as otherwise provided or excepted herein. Upon the effective date of this Hillside Voter Participation Area Comprehensive

Plan amendment, the City and its departments, boards, commissions, officers and employees shall not grant, or by inaction allow to be approved by operation of law, any Comprehensive Plan amendment, rezoning, specific plan, subdivision map, conditional use permit, building permit or any other ministerial or discretionary entitlement, which is inconsistent with the purposes of this Comprehensive Plan amendment, unless in accordance with the amendment procedures of Section 4 of this Comprehensive Plan amendment.

(3) "Urbanized uses of land" shall mean any development that would require the establishment of new community sewer systems or the significant expansion of existing community sewer systems; or, would result in the creation of residential densities greater than one primary residential unit per 40 acres in area; or, would result in the establishment of commercial or industrial uses that are neither agriculturally-related nor related to the production of mineral resources.

(4) The Land Use Map is amended to reflect the existence of the Ventura Hillside Voter Participation Area as generally described in paragraph (1) above and as depicted in Exhibit "A," attached hereto.

(5) The Hillside Voter Participation Area, as defined herein, may not be amended, altered, revoked or otherwise changed prior to December 31, 2030, except by vote of the people or by the City Council pursuant to the procedures set forth in Section 4 of this Comprehensive Plan amendment. For purposes of this Ordinance, approval by a vote of the people is accomplished when a Comprehensive Plan amendment is placed on the ballot through any procedure provided for in the Election Code, and a majority of the voters vote in favor of it. Whenever the City Council adopts an amendment requiring approval by a vote of the people pursuant to the provisions of this subsection, the City Council's action shall have no effect until after such a vote is held and a majority of the voters vote in favor of it. The City Council shall follow the provisions of the Election Code in all matters pertaining to such an election.

Section 4. Changes to Area: Procedures.

Until December 31, 2030, the foregoing Purposes, Principles and Implementation provisions of this Comprehensive Plan amendment, and the Hillside Voter Participation Area may be amended only by a vote of the people commenced pursuant to the initiative process by the public, or pursuant to the procedures set forth below:

A. The City Council may amend the boundary of the Hillside Voter Participation Area depicted on Exhibit "A" if it finds such amendment to be in the public interest, provided that the amended boundary enlarges said Hillside Voter Participation Area established by this Comprehensive Plan amendment.

B. The City Council, following at least one public hearing for presentation by an applicant and the public, and after compliance with the California Environmental Quality Act, may amend the Hillside Voter Participation Area described herein, based on substantial evidence in the record, if the City Council makes each of the following findings:

(1) Application of the provisions of subsections (A) or (B) of the amendment procedures set forth in this Section 4 are unworkable and failure to amend the Hillside Voter Participation Area would constitute an unconstitutional taking of a landowner's property for which compensation would be required or would deprive the landowner of a vested right; and

(2) The amendment and associated land use designations will allow additional land uses only to the minimum extent necessary to avoid said
unconstitutional taking of the landowner's property or to give effect to the vested right.

C. The City Council, following at least one public hearing for presentations by an applicant and the public, and after compliance with the California Environmental Quality Act, may place any amendment to the Hillside Voter Participation Area or the provisions of this Comprehensive Plan amendment on the ballot pursuant to the mechanisms provided by state law.

D. The Comprehensive Plan may be reorganized and individual provisions, including the provisions of this ordinance, maybe renumbered or reordered in the course of ongoing updates of the Comprehensive Plan in accordance with the requirements of state law.

Section 5. No Changes to Save Our Agricultural Resources Initiative

Any restrictions imposed upon the City of San Buenaventura limiting the City's ability to redesignate, or allow development of, property designated "Agricultural" that are in effect as a result of the "SOAR" initiative approved by the voters in 1995 and adopted by the City Council as Ordinance No. 95-33 shall remain in full force and effect and shall not be amended, modified, altered, or abridged by the adoption of this ordinance.

Section 6. Exemptions:

The provisions of this ordinance do not apply to:

A. Construction or reconstruction of, or related to, public potable water facilities, public: parks or other city government facilities; or

B. Construction or reconstruction of no more than one residential dwelling unit, and incidental uses or structures related thereto, on an individual parcel of land that is lawfully established of record as of the effective date of this Comprehensive Plan amendment and that is contiguous to the City's incorporation boundary but only to the extent that such a legally established parcel is developed with, or proposed to be developed with, no more than one residential dwelling unit; or

C. Any development that would result in the creation of residential densities equal to or less than one primary residential unit per 40 acres in area; or, would result in the establishment of commercial or industrial uses that are agriculturally-related or related to the production of mineral resources; or

D. Any development project that has obtained, as of the effective date of this Comprehensive Plan amendment, a vested right pursuant to state or local law; or

E. Uses that are "incidental' (as the City's Zoning Ordinance defines "incidental uses") to uses lawfully established as of the effective date of this Comprehensive Plan amendment.

Section 7. Interpretation

This ordinance shall be broadly construed in order to achieve the purposes stated in this ordinance. It is the intent of the voters that the provisions of this measure shall be interpreted by the City and others in a manner that promotes public participation in decision-making relating to future development proposals within in the Hillside Voter Participation Area.

Section 8. Insertion Date

A. Upon the effective date of this ordinance, Sections 3, 4, 5, 6, and 7 of this ordinance shall be deemed inserted in the Comprehensive Plan and the Land Use Map referred to in Part C of Section 3 shall be deemed amended even though the reprinting may not occur until it can be carried out by the staff of the City of San Buenaventura.

B. The Comprehensive Plan in effect at the time the City Council decided to place this measure on the ballot, and the Comprehensive Plan as amended by this ordinance, comprise an integrated, internally consistent and compatible statement of policies for the City of San Buenaventura. In order to ensure that the Comprehensive Plan remains an integrated, internally consistent and compatible statement of policies and to ensure that the actions of the voters in enacting this ordinance are given effect, any provision of the Comprehensive Plan that is adopted between July 23, 2001 and the effective date of this ordinance, to the extent that such provision is inconsistent with this ordinance, shall be amended as soon as possible and in the manner and time required by state law to ensure consistency between such provision and Section 3 of this ordinance. In the alternative, such interim-enacted inconsistent provisions shall be repealed.

Section 9. Amendment or Repeal

This ordinance may be amended or repealed only by the voters of the City of San Buenaventura at an election held in accordance with state law, except as expressly provided by Section 4 herein.

The people of the City of San Buenaventura do ordain as follows:

Section 1. Title

This measure shall be known as the Ventura Community Park SOAR Amendment.

Section 2. Purpose

The purpose of this measure is to allow the City to develop a Community Park on a parcel of property located at the northwest corner of the intersection of Kimball Road and Telephone Road. The subject property, which is approximately 100 acres in size, is further described in Exhibit "A," attached hereto and made a part hereof, and is hereafter referred to as the "Property." Most of the Property is outside the Ventura City limits but within the "Planning Area" of the City of San Buenaventura and therefore covered by the City's Comprehensive Plan Update to the Year 2010 (hereafter the "Comprehensive Plan"). The Property is currently designated "Agricultural" under the Comprehensive Plan and, therefore, also subject to the 1995 Save Our Agricultural Resources ("SOAR") Initiative.

The City is proposing to develop the Property with community-oriented public park facilities that may include, among other things, athletic fields, an aquatic facility, a community center and other related buildings and structures for use by the public. If this measure is approved, the City may also construct and operate a fire station on a portion of the Property.

This initiative proposes to amend the Comprehensive Plan of the City of San Buenaventura, by changing the designation of the Property in the Comprehensive Plan Land Use Plan Map from "Agricultural" (or "A") to "Parks" (or "P"). This will allow the City of San Buenaventura to potentially develop the Property with a Community Park without being restricted by the SOAR Initiative.

Section 3. Comprehensive Plan Amendment

Part A.

The following paragraph titled “Parks Uses” is hereby added to the Land Use Element of the Comprehensive Plan, more particularly, to the provisions of the Serra Community Intent and Rationale Statement on page III-96, to read as follows:

“Parks Uses: The Parks Land Use Plan designation is applied to an approximately 100-acre site at the northwest corner of Kimball Road and Telephone Road for the purpose of developing a multi-purpose community-oriented public park on this site. It is further intended that this site should be zoned to the “P” (Parks) zone if and when it is annexed to the City. Design Review should be carried out by the City's Planning Commission prior to the development of any Recreation Services use types on the site to assure that the range of community park uses potentially permitted on the site by the "P" zone are well integrated on the site and compatible with adjacent land uses.”

Part B.

The Property is deleted from the discussion of “Agricultural Uses” in the Serra Community provisions of the Land Use Element of the Comprehensive Plan. To that end, the final paragraph with the heading “Agricultural Use” beginning at the bottom of page III-95 and ending at the top of page III-96 is hereby revised to read as follows:

“Agricultural Use: A 297-acre area between Telephone Road and the Southern Pacific Railroad and a 172-acre area between Bristol Road and the Santa Clara River are designated Agricultural Use, not to be reconsidered until after the Year 2010, to preserve their existing agricultural character.”

Part C.

The Land Use Plan Map incorporated in the Comprehensive Plan is hereby amended, and official copies thereof shall be revised by City staff, to reflect the foregoing amendments to the text of the Land Use Element.

Section 4. Zoning

Upon annexation to the City of San Buenaventura, the zoning classification for the Property shall be "P" (Parks) and the Official Zoning District Map incorporated in the Zoning Ordinance shall, by this Measure, be amended, and official copies thereof shall be revised by City staff, to reflect the foregoing zone change to the Property.

Section 5. Save Open-Space and Agricultural Resources

Any restrictions imposed upon the City of San Buenaventura limiting the City's ability to redesignate, or allow development of, property designated "Agricultural" that are in effect on the day that this Initiative is approved by the voters shall remain in full force and effect except as to the Property. The City of San Buenaventura may allow development of a community park on the Property in accordance with this ordinance.

Section 6. Interpretation

This ordinance shall be broadly construed in order to achieve the purposes stated in this ordinance. It is the intent of the voters that the provisions of this ordinance shall be interpreted by the City of San Buenaventura and others in a manner that facilitates the development of a community park on the Property in accordance with the purposes of this ordinance.

Section 7. Insertion Date

Part A. Upon the effective date of this ordinance, Part A and Part B of Section 3 of this ordinance shall be deemed inserted in the Comprehensive Plan and the Land Use Map referred to in Part C of Section 3 shall be deemed amended even though the reprinting may not occur until it can be carried out by the staff of the City of San Buenaventura.

Part B. The Comprehensive Plan in effect at the time the City Council decided to place this measure on the ballot, and the Comprehensive Plan as amended by this ordinance, comprise an integrated, internally consistent and compatible statement of policies for the City of San Buenaventura.

In order to ensure that the Comprehensive Plan remains an integrated, internally consistent and compatible statement of policies and to ensure that the actions of the voters in enacting this ordinance are given effect, any provision of the Comprehensive Plan that is adopted between [the date the City Council decided to place this measure on the ballot] and the effective date of this ordinance, to the extent that such provision is inconsistent with this ordinance, shall be amended as soon as possible and in the manner and time required by state law to ensure consistency between such provision and Section 3 of this ordinance. In the alternative, such interim-enacted inconsistent provisions shall be repealed.

Section 8. Amendment or Repeal

Section 3 and Section 4 of this ordinance may be amended or repealed only by the voters of the City of San Buenaventura at an election held in accordance with state law.

The people of the City of San Buenaventura do ordain as follows:

Section 1. Title

This ordinance shall be known as the First Assembly of God Land Initiative.

Section 2. Purpose

The purpose of this ordinance is to allow the First Assembly of God (hereafter "Church") to develop a property located at the northwest corner of the intersection of Montgomery Avenue and Northbank Drive. Such property is 25.59 acres and is further described in Exhibit A, attached hereto and made a part hereof, and is hereafter referred to as "Property". The Church wishes to develop the Property in accordance with City of San Buenaventura Ordinance No 95-33 (commonly known as "SOAR") guidelines for a sanctuary, related Church buildings, and athletic fields for use by the community of San Buenaventura.

Since the Property is within the sphere of influence of the City of San Buenaventura, this ordinance (1) amends the Comprehensive Plan Update to the Year 2010 (hereafter the "General Plan") of the City of San Buenaventura, and (2) prezones the Property to the R-1 Single Family zone with a subzone of R-1-1AC. This will allow the City of San Buenaventura to annex the Property with a restricted land use that is compatible with the Church's development of the Property.

Section 3. General Plan Amendment

Part A.

The second paragraph under the heading "Residential Uses" appearing on page III-94 of the General Plan describes the areas that may be used for low-density, single family homes in the Serra Community area of the City of San Buenaventura. The single family use (designated as SF in the General Plan) is the most restrictive land use that will allow the Church to build a sanctuary, related church buildings, and athletic fields. Section 4 of this initiative will further restrict the Property by pre-zoning the Property and requiring a minimum of one acre for each parcel. This will make the Property unattractive for single family development but still acceptable for the Church sanctuary, related Church buildings, and athletic fields. This ordinance adds the Church's 25.59 acre parcel to the SF land use.

The second paragraph under the heading "Residential Uses" appearing on page III-94 of the General Plan is hereby amended to read as follows:

"The SF category is applied to an approximately 3-acre site at the southeast corner of Henderson and Petit Avenue, a 1.7-acre site southerly of Darling Road extended, and a 25.59-acre site located at the northwest corner of Montgomery Avenue and Northbank Drive."

Part B.

The final paragraph with the heading "Agricultural Use" beginning at the bottom of page III-95 and ending at the top of page III-96 of the General Plan describes that portion of the Serra Community area of the City of San Buenaventura which may only be used for agricultural uses. This ordinance deletes the Church's 25.59 acre parcel from the agricultural use category.

The final paragraph with the heading "Agricultural Use" beginning at the bottom of page III-95 and ending at the top of page III-96 of the General Plan is hereby amended to read as follows:

"Agricultural Use: A 100-acre site at the northwest corner of Kimball Road and Telephone, a 297-acre area between Telephone Road and the Southern Pacific Railroad except for the 25.59-acre site located at the northwest corner of Montgomery Avenue and Northbank Drive, and a 172-acre area between Bristol Road and the Santa Clara River are designated Agricultural Use, not to be reconsidered until after the Year 2010, to preserve their existing agricultural character."

Part C.

The map of the Land Use Plan contained in the General Plan shall be redrafted to reflect the foregoing amendments.

Section 4. Zoning

The most restrictive zoning in the City of San Buenaventura which will allow the Church to build a sanctuary, related Church buildings, and athletic fields on the Property is an R-1 Single Family zone with a subzone of R-1-1AC. The R-1-1AC subzone restricts the Property by requiring a minimum of one acre for each parcel. This will make the Property unattractive for single family development but still acceptable for the Church's sanctuary, related Church buildings, and athletic fields.

Therefore, upon annexation of the Property to the City of San Buenaventura the zoning designation for the Property shall be the R-1 Single Family zone with a subzone of R-1-1AC.

Section 5. Save Open-Space and Agricultural Resources

Any restrictions imposed upon he City of San Buenaventura limiting the City's ability to annex property and allow development of such property shall remain in full force and effect except as to the 25.59-acres of the Property.

Section 6. Construction

This ordinance shall be broadly construed in order to achieve the purposes stated in this ordinance. It is the intent of the voters that the provisions of this ordinance shall be interpreted by the City of San Buenaventura and others in a manner that facilitates the development of the Property in accordance with the purposes of this ordinance.

Section 7. Insertion Date

Part A. Upon the effective date of this ordinance, Part A and Part B of Section 3 of this ordinance shall be deemed inserted in the General Plan and the Land Use Map referred to in Part C of Section 3 shall be deemed amended even though the reprinting may not occur until deemed convenient by the City of San Buenaventura.

Part B. The General Plan in effect at the time the Notice of Intention to circulate this initiative was submitted to the City Clerk of the City of San Buenaventura, and the General Plan as amended by this ordinance, comprise an integrated, internally consistent and compatible statement of policies for the City of San Buenaventura. In order to ensure that the General Plan remains an integrated, internally consistent and compatible statement of policies and to ensure that the actions of the voters in enacting this ordinance are given effect, any provision of the General Plan that is adopted between the Notice of Intention and the effective date of this ordinance, to the extent that such provision is inconsistent with this ordinance, shall be amended as soon as possible and in the manner and time required by state law to ensure consistency between such provision and Section 3 of this ordinance. In the alternative, such interim-enacted inconsistent provisions shall be repealed.

Section 8. Amendment or Repeal

Section 3 and Section 4 of this ordinance may be amended or repealed only by the voters of the City of San Buenaventura at an election held in accordance with state law.

EXHIBIT "A"

PARCEL 1:

That portion of Subdivision 98 of Rancho Santa Paula y Saticoy, in the county of Ventura, state of California, as per map recorded in book "A" pag3 290 of Miscellaneous Records (Transcribed Records from Santa Barbara County), in the office of the county recorder of said county, described as follows:

Beginning at the point of intersection of the centerline of the right of way of the Southern Pacific Railroad and the boundary line between Subdivisions 98 and 99 of said Rancho Santa Paula y Saticoy; thence from said point of beginning,

1st: - North 10° 30' West 9.482 chains, more or less, to the southeast corner of that certain Parcel of land conveyed to Charles H. Fowler, by deed dated March 18, 1892, recorded in book 36 page 86 of Deeds; thence,

2nd: - South 79º 30' West 19.25 chains, along the south line of said lands of Charles H. Fowler, to the northeast corner of that certain Parcel of land as conveyed to Emma J. Tyler, by deed dated June 20, 1894, recorded in book 43 page 90 of Deeds; thence,

3rd: - South 10º 30' East 18.982 chains, more or less, along the east line of said lands of Emma J. Tyler, to a point in the centerline of the right of way of the Southern Pacific Railroad; thence along same,

4th: - North 53º 15' East 22.57 chains, more or less, to the point of beginning.

EXCEPT a strip of parcel of land 50 feet wide lying adjoining and immediately west of the east line of the above described land, conveyed to the County of Ventura, as a public highway, by deed recorded July 12, 1889, in book 28 page 338 of Deeds.

ALSO EXCEPT that portion thereof conveyed to the Southern Pacific Railroad Company by deed recorded January 27, 1887 in book 18 page 146 of Deeds.

RESERVING unto the grantor herein, all oil, gas and mineral rights in and to said land, without however, any right of surface entry in and to a depth of 500 feet.

PARCEL 3:

That certain parcel in Lot 99 of the Rancho Santa Paula y Saticoy, marked “not a part of this subdivision” on the map of Tract No. 1333-1, in the City of San Buenaventura, county of Ventura, state of California, as per map recorded in book 30 page 51 of Maps, in the office of the county recorder of said county, and lying northwesterly of the Southern Pacific Railroad right of way, easterly of Bristol Road and southwesterly of Montgomery Avenue, as shown on said map.

RESERVING unto the grantor herein, all oil, gas and mineral rights in and to said land, without however, any right of surface entry in and to a depth of 500 feet from the surface thereof.

ventura's general plan

ATTACHMENTS

"The desire for community is a constant of human nature."

— Steven Price
Urban Advantage
Berkeley, California

CITY OF
VENTURA

21ST CENTURY TOOL KIT

Prelude

The 2005 Ventura General Plan envisions a new direction to protect and preserve its citizens' quality of life. This direction is based on the recognition that zoning and land development, as practiced for the past several decades, has not served our citizens, our city, or our environment as well as it should.

Currently, the two most successful movements created to alleviate this situation are "Smart Growth" and "New Urbanism." Smart Growth is a government initiated approach against sprawl that addresses underlying policy from the top-down, and is primarily marketed by government and similar agencies. New Urbanism is a grass roots, market response to outdated zoning and land use policy as it impacts development and the physical properties of the public realm. Its chief advocates are architects and town designers.

Smart Growth grew out of early New Urbanist work, and both are concerned with the real outcomes of the built environment and how it affects communities environmentally, economically, culturally, and socially.

The Ahwahnee Principles and the Charter for the New Urbanism, listed below, were created early on as "constitutions" that governed these movements. Both are valuable tools that Ventura would be wise to include in it's 21st Century Tool Kit to understand and solve long-standing problems associated with growth and change.

AHWAHNEE PRINCIPLES

Preamble:

Existing patterns of urban and suburban development seriously impair our quality of life. The symptoms are: more congestion and air pollution resulting from our increased dependence on automobiles, the loss of precious open space, the need for costly improvements to roads and public services, the inequitable distribution of economic resources, and the loss of a sense of community. By drawing upon the best from the past and the present, we can plan communities that will more successfully serve the needs of those who live and work within them. Such planning should adhere to certain fundamental principles.

Community Principles

1. All planning should be in the form of complete and integrated communities containing housing, shops, work places, schools, parks and civic facilities essential to the daily life of the residents.

2. Community size should be designed so that housing, jobs, daily needs and other activities are within easy walking distance of each other.
3. As many activities as possible should be located within easy walking distance of transit stops.
4. A community should contain a diversity of housing types to enable citizens from a wide range of economic levels and age groups to live within its boundaries.
5. Businesses within the community should provide a range of job types for the community's residents.
6. The location and character of the community should be consistent with a larger transit network.
7. The community should have a center focus that combines commercial, civic, cultural and recreational uses.
8. The community should contain an ample supply of specialized open space in the form of squares, greens and parks whose frequent use is encouraged through placement and design.
9. Public spaces should be designed to encourage the attention and presence of people at all hours of the day and night.
10. Each community or cluster of communities should have a well-defined edge, such as agricultural greenbelts or wildlife corridors, permanently protected from development.
11. Streets, pedestrian paths and bike paths should contribute to a system of fully-connected and interesting routes to all destinations. Their design should encourage pedestrian and bicycle use by being small and spatially defined by buildings, trees and lighting; and by discouraging high speed traffic.
12. Wherever possible, the natural terrain, drainage and vegetation of the community should be preserved with superior examples contained within parks or greenbelts.
13. The community design should help conserve resources and minimize waste.
14. Communities should provide for the efficient use of water through the use of natural drainage, drought tolerant landscaping and recycling.
15. The street orientation, the placement of buildings and the use of shading should contribute to the energy efficiency of the community.

Regional Principles

1. The regional land-use planning structure should be integrated within a larger transportation network built around transit rather than freeways.
2. Regions should be bounded by and provide a continuous system of greenbelt/wildlife corridors to be determined by natural conditions.
3. Regional institutions and services (government, stadiums, museums, etc.) should be located in the urban core.
4. Materials and methods of construction should be specific to the region, exhibiting a continuity of history and culture and compatibility with the climate to encourage the development of local character and community identity.

Implementation Principles

1. The general plan should be updated to incorporate the above principles.
2. Rather than allowing developer-initiated, piecemeal development, local governments should take charge of the planning process. General plans should designate where new growth, infill or redevelopment will be allowed to occur.

3. Prior to any development, a specific plan should be prepared based on these planning principles.
4. Plans should be developed through an open process and participants in the process should be provided visual models of all planning proposals.

CONGRESS FOR THE NEW URBANISM

THE CONGRESS FOR THE NEW URBANISM views disinvestment in central cities, the spread of placeless sprawl, increasing separation by race and income, environmental deterioration, loss of agricultural lands and wilderness, and the erosion of society's built heritage as one interrelated community building challenge.

WE STAND for the restoration of existing urban centers and towns within coherent metropolitan regions, the reconfiguration of sprawling suburbs into communities of real neighborhoods and diverse districts, the conservation of natural environments, and the preservation of our built legacy.

WE RECOGNIZE that physical solutions by themselves will not solve social and economic problems, but neither can economic vitality, community stability, and environmental health be sustained without a coherent supportive physical framework.

WE ADVOCATE the restructuring of public policy and development practices to support the following principles: neighborhoods should be diverse in use and population; communities should be designed for the pedestrian and transit as well as the car; cities and towns should be shaped by physically defined and universally accessible public spaces and community institutions; urban places should be framed by architecture and landscape design that celebrate local history, climate, ecology, and building practice.

WE REPRESENT a broad-based citizenry, composed of public and private sector leaders, community activists, and multidisciplinary professionals. We are committed to reestablishing the relationship between the art of building and the making of community, through citizen-based participatory planning and design.

WE DEDICATE ourselves to reclaiming our homes, blocks, streets, parks, neighborhoods, districts, towns, cities, regions, and environment.

We assert the following principles to guide public policy, development practice, urban planning, and design:

The region: Metropolis, city, and town

1. Metropolitan regions are finite places with geographic boundaries derived from topography, watersheds, coastlines, farmlands, regional parks, and river basins. The metropolis is made of multiple centers that are cities, towns, and villages, each with its own identifiable center and edges.

2. The metropolitan region is a fundamental economic unit of the contemporary world. Governmental cooperation, public policy, physical planning, and economic strategies must reflect this new reality.

3. The metropolis has a necessary and fragile relationship to its agrarian hinterland and natural landscapes. The relationship is environmental, economic, and cultural. Farmland and nature are as important to the metropolis as the garden is to the house.

4. Development patterns should not blur or eradicate the edges of the metropolis. Infill development within existing urban areas conserves environmental resources, economic investment, and social fabric, while reclaiming marginal and abandoned areas. Metropolitan regions should develop strategies to encourage such infill development over peripheral expansion.

5. Where appropriate, new development contiguous to urban boundaries should be organized as neighborhoods and districts, and be integrated with the existing urban pattern. Noncontiguous development should be organized as towns and villages with their own urban edges, and planned for a jobs/housing balance, not as bedroom suburbs.

6. The development and redevelopment of towns and cities should respect historical patterns, precedents, and boundaries.

7. Cities and towns should bring into proximity a broad spectrum of public and private uses to support a regional economy that benefits people of all incomes. Affordable housing should be distributed throughout the region to match job opportunities and to avoid concentrations of poverty.

8. The physical organization of the region should be supported by a framework of transportation alternatives. Transit, pedestrian, and bicycle systems should maximize access and mobility throughout the region while reducing dependence upon the automobile.

9. Revenues and resources can be shared more cooperatively among the municipalities and centers within regions to avoid destructive competition for tax base and to promote rational coordination of transportation, recreation, public services, housing, and community institutions.

The neighborhood, the district, and the corridor

1. The neighborhood, the district, and the corridor are the essential elements of development and redevelopment in the metropolis. They form identifiable areas that encourage citizens to take responsibility for their maintenance and evolution.

2. Neighborhoods should be compact, pedestrian-friendly, and mixed-use. Districts generally emphasize a special single use, and should follow the principles of neighborhood design when possible. Corridors are regional connectors of neighborhoods and districts; they range from boulevards and rail lines to rivers and parkways.

3. Many activities of daily living should occur within walking distance, allowing independence to those who do not drive, especially the elderly and the young. Interconnected networks of streets should be designed to encourage walking, reduce the number and length of automobile trips, and conserve energy.

4. Within neighborhoods, a broad range of housing types and price levels can bring people of diverse ages, races, and incomes into daily interaction, strengthening the personal and civic bonds essential to an authentic community.

5. Transit corridors, when properly planned and coordinated, can help organize metropolitan structure and revitalize urban centers. In contrast, highway corridors should not displace investment from existing centers.

6. Appropriate building densities and land uses should be within walking distance of transit stops, permitting public transit to become a viable alternative to the automobile.

7. Concentrations of civic, institutional, and commercial activity should be embedded in neighborhoods, and districts, not isolated in remote, single-use complexes. Schools should be sized and located to enable children to walk or bicycle to them.

8. The economic health and harmonious evolution of neighborhoods, districts, and corridors can be improved through graphic urban design codes that serve as predictable guides for change.

9. A range of parks, from tot-lots and village greens to ball fields and community gardens, should be distributed within neighborhoods. Conservation areas and open lands should be used to define and connect different neighborhoods and districts.

The block, the street, and the building

1. A primary task of all urban architecture and landscape design is the physical definition of streets and public spaces as places of shared use.

2. Individual architectural projects should be seamlessly linked to their surroundings. This issue transcends style.

3. The revitalization of urban places depends on safety and security. The design of streets and buildings should reinforce safe environments, but not at the expense of accessibility and openness.

4. In the contemporary metropolis, development must adequately accommodate automobiles. It should do so in ways that respect the pedestrian and the form of public space.

5. Streets and squares should be safe, comfortable, and interesting to the pedestrian. Properly configured, they encourage walking and enable neighbors to know each other and protect their communities.

6. Architecture and landscape design should grow from local climate, topography, history, and building practice.

7. Civic buildings and public gathering places require important sites to reinforce community identity and the culture of democracy. They deserve distinctive form, because their role is different from that of other buildings and places that constitute the fabric of the city.

8. All buildings should provide their inhabitants with a clear sense of location, weather and time. Natural methods of heating and cooling can be more resource-efficient than mechanical systems.

9. Preservation and renewal of historic buildings, districts, and landscapes affirm the continuity and evolution of urban society.

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For information, visit www.cnu.org

GLOSSARY OF TERMS IN THE 2005 VENTURA GENERAL PLAN

Abbreviations

ADT: Average number of vehicle trips per day
CEQA: California Environmental Quality Act
CIP: Capital Improvements Program
CNEL: Community Noise Equivalent Level
dB: Decibel
DOF: California Department of Finance
EIR: Environmental Impact Report
FAR: Floor Area Ratio
FEMA: Federal Emergency Management Agency
LAFCo: Local Agency Formation Commission
Ldn: Day and Night Average Sound Level
Leq: Sound Energy Equivalent Level
LOS: Traffic Intersection Level of Service
RDA: City of Ventura Redevelopment Agency
SCAG: Southern California Association of Governments
SOI: Sphere of Influence
TDM: Transportation Demand Management
TOD: Transit-Oriented Development
VCOG: Ventura County Council of Governments

Definitions

Acre: Approximately 43,560 square feet.

Acres, Gross: The entire acreage of a site calculated to the centerline of proposed bounding streets and to the edge of the right-of-way of existing or dedicated streets.

Acres, Net: The portion of a site that can actually be built upon. The following generally are not included in the net acreage of a site**:** public or private road rights-of-way, public open space, and flood ways.

Action: A strategy carried out in response to adopted policy to achieve a specific goal or objective. Policies and action statements establish the "who," "how" and "when" for carrying out the "what" and "where" of goals and objectives.

Adaptive Reuse: The conversion of obsolescent or historic buildings from their original or most recent use to a new use; for example, the conversion of former hospital or school buildings to residential use, or the conversion of a historic single-family home to office use.

Affordable Housing: Housing capable of being purchased or rented by a household with very low, low, or moderate income, based on a household's ability to make monthly payments necessary to obtain housing. Housing is considered affordable when a household pays less than 30 percent of its gross monthly income (GMI) for housing including utilities.

Alley: A narrow service way, either public or private, which provides a permanently reserved but secondary means of public access not intended for general traffic circulation. Alleys typically are located along rear property lines.

Ambient: Surrounding on all sides; used to describe measurements of existing conditions with respect to traffic, noise, air and other environments.

Annex, *v*: To incorporate a land area into an existing district or municipality, with a resulting change in the boundaries of the annexing jurisdiction.

Aquifer: An underground, water-bearing layer of earth, porous rock, sand, or gravel, through which water can seep or be held in natural storage. Aquifers generally hold sufficient water to be used as a water supply.

Arterial: Medium-speed (30-40 mph), medium-capacity (10,000-35,000 average daily trips) roadway that provides intra-community travel and access to the county-wide highway system. Access to community arterials should be provided at collector roads and local streets, but direct access from parcels to existing arterials is common.

Bicycle Lane (Class II): A corridor expressly reserved for bicycles, existing on a street or roadway in addition to any lanes for use by motorized vehicles.

Bicycle Path (Class I): A paved route not on a street or roadway and expressly reserved for bicycles traversing an otherwise unpaved area. Bicycle paths may parallel roads but typically are separated from them by landscaping.

Bicycle Route (Class III): A facility shared with motorists and identified only by signs, a bicycle route has no pavement markings or lane stripes.

Buffer: An area of land separating two distinct land uses that acts to soften or mitigate the effects of one land use on the other.

Building: Any structure used or intended for supporting or sheltering any use or occupancy.

Building Type: a structure category determined by function, disposition on the lot, and configuration, including frontage and height. For example, a rowhouse is a type, not a style.

Buildout: Development of land to its full potential or theoretical capacity as permitted under current or proposed planning or zoning designations.

California Environmental Quality Act (CEQA): Law requiring State and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an Environmental Impact Report (EIR) must be prepared and certified before taking action on the proposed project.

Capital Improvements Program (CIP): A program that schedules permanent City improvements at least five years ahead to fit projected fiscal capability. The CIP is reviewed annually.

Channelization: The straightening and/or deepening of a watercourse for purposes of runoff control or ease of navigation; often includes lining banks with retaining material such as concrete.

Character: Special physical characteristics of a structure or area that set it apart from its surroundings and contribute to its individuality.

Charrette: An interactive, multi-day public process in which the community works together with planning and design professionals and City staff and officials to create and support a feasible plan for a specific area of the City that will produce positive and transformative community change.

City: When capitalized, refers to the governmental entity; "city" refers to the geographic area.

Civic: the term defining not-for-profit organizations dedicated to the arts, culture, education, recreation, government, transit, and municipal parking.

Clustered Development: Buildings placed close together with the purpose of retaining open space area.

Co-housing: A residential development with dwelling units for grouped around a common kitchen, gathering room, and child-care facilities. Co-housing developments normally are organized as condominiums.

Collector: Relatively-low-speed (25-30 mph), relatively low-volume (5,000-10,000 average daily trips) street that provides circulation within and between neighborhoods. Collectors usually serve short trips and are intended for collecting trips from local streets and distributing them to the arterial network.

Commerce; Commercial: The buying and selling of commodities and services.

Community Noise Equivalent Level (CNEL): A 24-hour energy equivalent level derived from a variety of single-noise events, with weighting factors of 5 and 10 dBA applied to the evening (7 PM to 10 PM) and nighttime (10 PM to 7 AM) periods, respectively, to allow for the greater sensitivity to noise during these hours.

Community Park: Land with full public access intended to provide recreation opportunities beyond those supplied by neighborhood parks. Community parks are larger in scale than neighborhood parks but smaller than regional parks.

Corridor: Linear features that may form boundaries, as well as connections, between neighborhoods. Corridors frequently encompass major access routes, especially ones with commercial destinations. Corridors also can incorporate parks or natural features such as streams or canyons.

dB: Decibel; a unit used to express the relative intensity of a sound as it is heard by the human ear.

dBA: The "A-weighted" scale for measuring sound in decibels; weighs or reduces the effects of low and high frequencies in order to simulate human hearing. Every increase of 10 dBA doubles the perceived loudness though the noise is actually ten times more intense.

Dedication: The turning over by an owner or developer of private land for public use, and the acceptance of land for such use by the governmental agency having jurisdiction over the public function for which it will be used. Dedications for roads, parks, school sites, or other public uses often are made conditions for approval of a development by a city or county.

Density, Residential: The number of permanent residential dwelling units per gross acres of land.

Density Bonus: The allocation of development rights that allow a parcel to accommodate additional square footage or additional residential units beyond the maximum for which the parcel is zoned, usually in exchange for the provision or preservation of an amenity at the same site or at another location. Under California law, a housing development that provides 20 percent of its units for lower income households, or 10 percent of its units for very low-income households, or 50 percent of its units for seniors, is entitled to a density bonus.

Design Review: The comprehensive evaluation of a development and its impact on neighboring properties and the community as a whole, from the standpoint of site and landscape design, architecture, materials, colors, lighting, and signs, in accordance with a set of adopted criteria and standards.

Detention Basin: A structure constructed to retard flood runoff and minimize the effect of sudden floods. Water is temporarily stored and released through an outlet structure at a rate that will not exceed the carrying capacity of the channel downstream. Basins often are planted with grass and used for open space or recreation in periods of dry weather.

Developer: An individual or business that prepares raw land for the construction of buildings or causes to be built physical space for use primarily by others, and in which the preparation of the land or the creation of the building space is in itself a business and is not incidental to another business or activity.

Development: The physical extension and/or construction of urban land uses, including: subdivision of land; construction or alteration of structures, roads, utilities, and other facilities; installation of septic systems; grading; deposit of refuse, debris, or fill materials; and clearing of natural vegetative cover (with the exception of agricultural activities). Routine repair and maintenance activities are exempted.

Development Fee: (See "Impact Fee.")

District: An area of the city that has a unique character identifiable as different from surrounding areas because of distinctive architecture, streets, geographic features, culture, landmarks, activities, and/or land uses. A neighborhood or parts of neighborhoods can form a district. Districts consist of streets or areas emphasizing specific types of activities. A corridor may also be a district, as when a major shopping avenue runs between adjoining neighborhoods.

Dwelling Unit: A room or group of rooms (including sleeping, eating, cooking, and sanitation facilities, but not more than one kitchen), which constitutes an independent housekeeping unit, occupied or intended for occupancy by one household on a long-term basis.

Encourage, *v*: To stimulate or foster a particular condition through direct or indirect action by the private sector or government agencies.

Enhance, *v*: To improve existing conditions by increasing the quantity or quality of beneficial uses or features.

Environment: The existing physical conditions in an area that will be affected by a proposed project, including land, air, water, mineral, flora, fauna, noise, and objects of historic or aesthetic significance.

Environmental Impact Report (EIR): A report required by CEQA that assesses all the environmental characteristics of an area and determines what effects or impacts will result if the area is altered or disturbed by a proposed action.

Fault: A fracture in the earth's crust forming a boundary between rock masses that have shifted.

Flood, 100-Year: The magnitude of a flood expected to occur on the average every 100 years, based on historical data. The 100-year flood has a one percent chance of occurring in any given year.

Floodplain: The relatively level land area on either side of the banks of a stream regularly subject to flooding. That part of the flood plain subject to a one percent chance of flooding in any given year is designated as an "area of special flood hazard" by the Federal Insurance Administration.

Floodway: The channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the "base flood" without cumulatively increasing the water surface elevation more than one foot. No development is allowed in floodways.

General Plan: A compendium of city or county policies regarding its long-term development, in the form of maps and accompanying text. The General Plan is a legal document required by the State of California Government Code Section 65301 and adopted by the City Council.

Gateway: A point along the edge of a city at which a person gains a sense of having left the environs and entered the city.

Goal: A general, overall, and ultimate purpose, aim, or end toward which the City will direct effort.

Green: A whole-building and systems approach to siting, design, construction, and operation that employs techniques that minimize environmental impacts and reduce the energy consumption of buildings while contributing to the health and productivity of occupants.

Hazardous Material: Any substance that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. The term includes, but is not limited to, hazardous substances and hazardous wastes.

Hillside Area: All that area north of Foothill and Poli Street, and east of Cedar Street and within City limits. This area is subject to the Hillside Management Program.

Hillside Open Space: One of the 19 distinct communities within the City's Planning Area; coterminous with the Hillside Voter Participation Area; generally referred to as "hillsides".

Hillside Voter Participation Area or HVPA: The area subject to the "Hillside Voter Participation Act" (also known as Measure "P") as set forth in Appendix X and coterminous with the "Hillside Open Space" area depicted on the Land Use Diagram.

Hillsides: Synonymous and coterminous with HVPA and "Hillside Open Space".

Historic: Noteworthy for significance in local, state, or national history or culture, architecture or design, or housing works of art, memorabilia, or artifacts.

Household: Persons who occupy a housing unit.

Housing Element: A separately published State-mandated general plan element that assesses existing and projected housing needs of all economic segments of the community, identifies potential sites adequate to provide the amount and kind of housing needed, and contains adopted goals, policies, and implementation programs for the preservation, improvement, and development of housing. The Housing Elements is updated every five years.

Housing Unit: A rooms or a rooms intended for occupancy, separate from any other living space, with direct access from outside or through a common area.

Impact: The direct or indirect effect of human action on existing physical, social, or economic conditions.

Impact or Development Fee: A fee levied on the developer of a project as compensation for otherwise-unmitigated impacts the project will produce, not to exceed the estimated reasonable cost of providing the service for which the fee is charged.

Industry/Industrial: The manufacture, production, and processing of consumer goods. Industrial is often divided into "heavy industrial" uses, such as construction yards, quarrying, and factories; and "light industrial" uses, such as research and development and less intensive warehousing and manufacturing.

Infill: Development of vacant and/or underutilized land within areas already largely developed with urban uses.

Infrastructure: Public services and facilities, such as sewage-disposal systems, water-supply systems, and other utilities.

In-lieu Fee: Payment that substitutes for required dedication of land or provision of structures or amenities.

Institutional: Uses such as hospitals, museums, schools, places of worship, and nonprofit activities of a welfare, educational, or philanthropic nature that cannot be considered residential, commercial, or industrial activities.

Landmark: (1) A building, site, object, structure, or significant tree, having historical, architectural, social, or cultural significance and marked for preservation by the local, state, or federal government. (2) A visually prominent or outstanding structure or natural feature that functions as a point of orientation or identification.

Ldn: Day-Night Average Sound Level. The A-weighted average sound level for a given area (measured in decibels) during a 24-hour period with a 10 dB weighting applied to night-time sound levels. The Ldn is approximately numerically equal to the CNEL for most environmental settings.

Leq: The energy equivalent level, defined as the average sound level on the basis of sound energy (or sound pressure squared). The Leq is a "dosage" type measure and is the basis for the descriptors used in current standards, such as the 24-hour CNEL used by the State of California.

Lease: A contractual agreement by which an owner of real property (the lessor) gives the right of possession to another (a lessee) for a specified period of time (term) and for a specified consideration (rent).

Level of Service, Intersection (LOS): A scale that measures the amount of traffic an intersection is capable of handling. Levels range from A, representing free-flow, to F corresponding to significant stoppage.

Liquefaction: The transformation of loose water-saturated granular materials (such as sand or silt) from a solid into a liquid state, which can lead to ground failure during an earthquake.

Live-Work: A dwelling unit that contains, to a limited extent, a commercial component. A live-work unit is a fee-simple unit on its own lot with the commercial component limited to the ground level. (see Work-Live)

Local Agency Formation Commission (LAFCo): A commission in each county that reviews and evaluates proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. LAFCo members include two county supervisors, two city council members, and one member representing the general public.

Local Coastal Program (LCP): A combination of City land use plans, zoning regulations, and zoning district maps that control land use in the Coastal Zone established under the California Coastal Act of 1976.

Local Street: Relatively low-volume, low-speed streets (not shown on the Roadway Classifications map), whose primary purpose is to provide access to fronting properties.

Lot: A legally-recognized parcel with frontage on a public or City-approved private street.

Low Income: Households with annual income 80 percent of the County median or less.

Maintain: Keep in an existing state. (See “Preserve.”)

Median: The dividing area between opposing lanes of traffic.

Mitigate: Alleviate or avoid to the extent feasible.

Mixed Use: Properties on which various uses, such as office, commercial, and institutional, are combined with residences in a single building or site in an integrated development project with significant functional interrelationships and a coherent physical design. A single site may include contiguous properties.

Neighborhood: The basic building blocks of a community that together comprise the city. Each neighborhood is limited in physical area, with a defined edge and a center. The size of a neighborhood is usually based on the distance that a person can walk in five minutes from the center to the edge – a quarter-mile. Neighborhoods have a fine-grained mix of land uses, providing places to live, work, shop, and be entertained.

Neighborhood Center: The focal point of a neighborhood, commonly featuring places for work, shopping, services, entertainment, leisure, recreation, and social and civic interaction.

Neighborhood Park: A facility intended to serve the recreation needs of people living or working within a one-half mile radius of the park.

Noise: Sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying.

Noise Contour: A line connecting points of equal noise level as measured on the same scale. Noise levels greater than the 60 Ldn contour (measured in dBA) require mitigation in residential development.

Office: Professional or consulting services in fields such as accounting, architecture, design, engineering, finance, law, insurance, medicine, real estate, and similar types of work.

Open Space: An area of land or water that is essentially unimproved and devoted to outdoor recreation and/or the preservation of natural resources.

Outdoor Recreation: Recreation in an urbanized outdoor setting (active recreation) or open-space outdoor setting (passive recreation).

(a) *Active outdoor recreation* includes participant sports or other activities conducted in open or partially enclosed or screened recreational activities facilities. Typical uses include driving ranges, miniature golf courses, golf courses, amusement parks, swimming pools, and tennis courts and usually rely on permanent above-ground improvements, including, but not limited to, playing fields or courts, restrooms, and tables.

(b) *Passive outdoor recreation* includes recreational activities, usually of an individual or small group nature, such as sunbathing, walking, hiking, bird watching, or nature study, conducted in an open-space setting and which, generally, do not rely on the use of permanent aboveground improvements or involve motorized vehicle use.

Parcel: A lot, or contiguous group of lots, in single ownership or under single control, usually considered a unit for purposes of development.

Parks: Open space lands whose primary purpose is recreation.

Parkway: The area between curb and sidewalk, usually planted with ground cover and/or trees.

Pedestrian Shed: an area defined by the average distance that may be traversed at and easy walking pace from its edge to its center. This distance is applied to determine the size of a neighborhood or extent of a community. A standard Pedestrian Shed is one quarter of a mile radius or 1,320 feet. With transit available or proposed, a long Pedestrian Shed has an average walking distance of ½-mile or 2,640 feet. Pedestrian Sheds should be conceived as oriented toward a central destination containing one or more important intersections, meeting places, civic spaces, civic buildings, and the capacity to accommodate a T5 Transect Zone in the future. Sometimes called a Walkshed.

Planning Area: The land area addressed by the General Plan, which includes the City Limits, potentially annexable land in the Sphere of Influence, and neighboring open space and agricultural areas of Ventura County that the City desires to remain in rural condition.

Policy: A statement of principle that anticipates specific actions to be undertaken to meet City goals.

Pollution: The presence of matter or energy whose nature, location, or quantity produces undesired environmental effects.

Preserve: Keep intact and safe from destruction or decay.

Protect: Maintain and preserve beneficial uses in their present condition.

Public and Quasi-public Facilities: Institutional, academic, governmental and community service uses, either publicly owned or operated by non-profit organizations.

Public Art: Signs, other monuments, sculptures, murals, statues, fountains, and other artistic installations in spaces accessible to the general public that accentuate or draw attention to a particular place or feature of the city, provide a focal point for public gathering, and/or serve a specific function, such as to provide seating.

Recreation, Active: A type of recreation that requires organized play areas, such as softball, baseball, football and soccer fields, tennis and basketball courts and various forms of children's play equipment.

Recreation, Passive: Recreation that does not require organized play areas.

Recycling: The process of extracting and reusing materials from waste products.

Redevelop: To demolish existing buildings, or increase the overall floor area existing on a property, or both, irrespective of whether a change occurs in land use.

Redevelopment Agency: The City division created under California Redevelopment Law for the purpose of planning, developing, re-planning, redesigning, clearing, reconstructing, and/or rehabilitating all or part of a specified area with residential, commercial, industrial, and/or public (including recreational) structures and facilities.

Regional: Pertaining to activities or economies at a scale greater than that of a single jurisdiction and affecting a broad geographic area.

Regional Park: A park typically 150-500 acres in size focusing on activities and natural features not included in most other types of parks and often based on a specific scenic or recreational opportunity.

Restore: Renew, rebuild, or reconstruct to a former state.

Ridesharing: Vehicle travel other than driving alone.

Ridgeline: A line connecting the highest points along a ridge and separating drainage basins or small-scale drainage systems from one another.

Right-of-way: Land intended to be occupied by transportation and public use facilities such as roadways, railroads, and utility lines.

Riparian: Areas adjacent to perennial and intermittent streams delineated by the existence of plant species normally found near fresh water.

Runoff: The portion of precipitation that does not percolate into the ground.

Seismic: Caused by or subject to earthquakes or earth vibrations.

Sidewalk: the paved layer of the public frontage dedicated exclusively to pedestrian activity.

Specific Plan: A legal tool allowed by State Government Code Section 65450 et seq. that prescribes detailed regulations, conditions, programs, and/or proposed legislation for a defined area of the city.

Sphere of Influence: The probable ultimate physical boundaries and service area of the city, as determined by LAFCo.

Streetscape: the urban element that establishes the major part of the public realm. The streetscape is composed of thoroughfares (travel lanes for vehicles and bicycles, parking lanes for cars, and sidewalks or paths for pedestrians) as well as the visible private frontages (building facades and elevations, porches, yards, fences, awnings, etc.), and the amenities of the public frontages (street trees and plantings, benches, and streetlights, etc.).

Structure: Anything constructed or erected that requires location on the ground (excluding swimming pools, fences, and walls used as fences).

Subdivision: The division of a land into defined lots or condominiums that can be separately conveyed by sale or lease.

Sustainable: Meeting the needs of the present without compromising the ability of future generations to meet their needs, and successfully balancing economic, environmental, and social equity concerns.

Tourism: The business of providing services for persons traveling for pleasure.

Transect: a system of ordering human habitats in a range from the most natural to the most urban. Based upon six Transect Zones that describe the physical character of place at any scale, according to the density and intensity of land use and urbanism.

Transit-Oriented Development (TOD): Relatively high-density development located within an easy walk of a major transit stop, generally with a mix of residential, employment, and shopping designed primarily for pedestrians.

Transit, Public: A system of regularly-scheduled buses and/or trains available to the public on a fee-per-ride basis.

Transportation Demand Management (TDM): Strategies for reducing the number of vehicle trips by increasing ridesharing, transit use, walking, and biking.

Trip: A one-way journey that proceeds from an origin to a destination via a single mode of transportation.

Truck Route: A route required for all vehicles exceeding set weight or axle limits, which follows major arterials through commercial or industrial areas and avoids sensitive areas.

Underutilized: Non-vacant properties that have not been fully developed with improvements that reach the allowed density and/or floor area.

Urban Design: The attempt to give form, in terms of both beauty and function, to selected urban areas or to whole cities. Urban design is concerned with the location, mass, and design of various urban components and combines elements of urban planning, architecture, and landscape architecture.

Use Permit: The discretionary and conditional review of an activity or function or operation on a site or in a building or facility.

Very Low Income: Households with annual income 50 percent of the County median or less.

View Corridor: The line of sight of an observer looking toward an object of significance (e.g., ridgeline, river, historic building, etc.).

Viewshed: The area within view from a defined point.

Watercourse: Presently or once naturally perennially or intermittently flowing water, including rivers, streams, barrancas, and creeks. Includes waterways that have been channelized, but not ditches or underground drainage and sewage systems.

Watershed: The total area above a given point on a watercourse that contributes water to its flow; also, the entire region drained by a watercourse.

Wetlands: Transitional areas between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Federal agencies establish hydrology, vegetation, and soil criteria to define wetlands.

Work-Live: A dwelling unit that contains a commercial component. A Work-Live unit is a fee-simple unit on a lot with the commercial component anywhere within the unit. (see Live-Work)

Yield Street: A street whereby by two vehicles, going in opposite directions, one car will often have to pull over slightly and yield to the other vehicle, depending on how many cars are parked on the street. A standard residential street.

Zoning: The regulation of building forms and land uses throughout the city.

EMERGENCY
OPERATIONS PLAN

2021

CITY OF
VENTURA
EMERGENCY SERVICES

Emergency Operations Center (EOC)

TABLE OF CONTENTS

INTRODUCTION

Acknowledgements

The City of Ventura's Emergency Response plan is the result of departments within the City pulling together a comprehensive plan to address emergencies. The following documents were used as reference information in putting this plan together:

- Federal Emergency Management Agency
- Federal Emergency Management Agency: Guide for All-Hazard Emergency Operations Planning
- OES: "Local Government Emergency Planning Guidance"
- California Governor's Office of Emergency Services: Standardized Emergency Management System
- City of San Buenaventura Emergency Operations Plan, 2013
- City of Ventura General Plan, August 2005 (under revision)

The recommendations and suggestions included in this plan are intended to improve emergency preparedness, response, and recovery, and standardize the emergency management system requirements presented in Title 19 of the California Code of Regulations and the National Incident Management System. This Emergency Operations Plan does not guarantee the safety of any individual, structure, or organization in a disaster. The City of Ventura assumes no liability for deaths, injuries, or property damage resulting from a disaster.

Foreword

This Emergency Operations Plan (EOP) addresses the City of San Buenaventura's planned response to significant emergencies. The plan does not address routine day-to-day emergencies. Instead, the operational concepts reflected in this plan focus on large-scale disasters that exceed the City of Ventura's resources and require an emergency response.

This plan is designed to be read, understood, and exercised before an emergency. It is designed to include the City of San Buenaventura as part of the California Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS).

Each element of the emergency management organization is responsible for assuring the preparation and maintenance of appropriate and current Standard Operating Procedures (SOPs) resource lists and checklists that detail how assigned responsibilities are performed to support implementation of the EOP and to ensure an effective response during a disaster. Such SOPs should include the specific emergency authorities that designated officials and their successors can assume during emergencies.

Assumptions

- The City of San Buenaventura is primarily responsible for emergency actions and will commit all available resources to save lives, minimize injury to persons, minimize property damage, and protect the environment.

- The City of San Buenaventura utilizes the precepts of the Incident Command System (ICS), SEMS, and NIMS in emergency response operations.
- The Director of Disaster Services, City Manager, will coordinate the City's disaster response in conformance with its Emergency Services Ordinance (Municipal Code Section 2.370.050).
- The City of San Buenaventura will support and be supported by the Ventura County Operational Area.
- The City of San Buenaventura's resources will be made available to local agencies and citizens to cope with disasters affecting the area.
- The City will commit its resources to a reasonable degree before requesting mutual aid assistance.
- Mutual aid assistance will be requested when disaster relief requirements exceed the City's ability to meet them.

Emergency Management Goals

- Provide effective life safety measures
- Provide a structure for the response
- Protect the environment.
- Provide for the rapid recovery of impacted businesses and community services.
- Provide accurate documentation and records required for cost recovery efforts.

Organization of the Plan

- **Part One** - Basic Plan. Overall organizational and operational concepts relative to response and recovery, and an overview of identified/potential hazards.
- **Part Two** - Emergency Response Organization Functions. Description of the emergency response organization and emergency action checklists and reference material.
- **Annexes** – Specific Plans that augment the EOP, i.e., Evacuation Plan, Tsunami Response Plan, and Public Information Officer's Plan.
- **Appendix** – A restricted-use document - contains the emergency/disaster organization's notification numbers, other essential numbers, and secure and sensitive information. To maintain up-to-date information, the appendices shall be updated independently of the body of the plan and are considered confidential documents.

Activation of the Plan

- On the order of the City Manager as designated by the City of San Buenaventura Municipal Code, Chapter 2.370, provided that the existence or threatened existence of a Local Emergency has been proclaimed in accordance with the ordinance.
- When the Governor has proclaimed a State of Emergency, which includes this jurisdiction.
- Automatically on the proclamation of a State of War Emergency as defined in California Emergency Services Act (Chapter 7, Division 1, Title 2, California Government Code).
- When there has been a Presidential declaration of a National Emergency.
- Automatically on receipt of an attack warning or the observation of a nuclear detonation.

Approval and Promulgation

This plan will be reviewed by all departments/agencies assigned a primary function in the Emergency Operations Center Organizational Matrix (Part Two, Chart 1). Upon completion of the review and written concurrence by these departments/agencies, the EOP will be submitted to the California Office of Emergency Services (Cal OES) for review and then to the City Council for review and approval. Upon concurrence by the City Council, the plan will be officially adopted and promulgated.

Maintenance of the EOP

The Emergency Services Manager is responsible for coordination and scheduling of training and exercising of this plan. The City of Ventura will conduct regular exercises of this plan to train all necessary City staff in the proper response to disaster situations.

The EOP will be reviewed annually to ensure that plan elements are valid and current. Each responsible department or agency will review and upgrade its portion of the EOP and/or modify its SOP/EOP as required based on identified deficiencies experienced in drills, exercises, or actual occurrences. Changes in government structure and emergency response organizations will also be considered in the EOP revisions. The Emergency Services Manager is responsible for making revisions to the EOP that will enhance response and recovery operations. Emergency Services Manager will prepare, coordinate, publish and distribute any necessary changes to the plan to all City departments and other agencies as shown on the distribution list on page 8 of this EOP.

Legal Counsel to the City of Ventura will also review documents that provide the legal basis for emergency planning to ensure conformance to SEMS and NIMS requirements and modify as necessary.

Letter of Promulgation

TO: OFFICIALS, EMPLOYEES, AND CITIZENS OF CITY OF SAN BUENAVENTURA

The preservation of life and property is an inherent responsibility of local, state, and federal governments. The City of San Buenaventura has prepared this Emergency Operations Plan (EOP) to ensure the most effective allocation of resources for the maximum benefit and protection of the population during the emergency.

While no plan can prevent death and destruction, good plans carried out by knowledgeable and well-trained personnel can and will minimize losses. This plan establishes the emergency organization, assigns tasks, specifies policies, general procedures, and provides for coordination of planning efforts of the various emergency staff utilizing the Standardized Emergency Management System (SEMS)/National Incident Management System (NIMS). This plan supersedes all previous City of San Buenaventura Emergency Operations Plans.

This plan aims to incorporate and coordinate all the facilities and personnel of the City into an efficient organization capable of responding to an emergency.

This Emergency Operations Plan is an extension of the California Emergency Plan. It will be reviewed and exercised periodically and revised as necessary to meet changing conditions.

The City Council gives its full support to this plan and urges all officials, employees, and citizens, individually and collectively, to do their share in emergencies or disasters within the City of San Buenaventura.

This EOP will become effective on approval by the City Council.

Adopted on May 10, 2021.

Record of Revisions

Change #	Date	Summary of Change	Page Numbers	Entered By
001	1-13-21	Comprehensive content edits	1-404	Daniel Wall
002	1-25-21	Executive team review/approval		Daniel Wall
003	2-10-21	Graphics/Templates applied		Peter Graves

Distribution List

Departments/Agencies Receiving Copies of the EOP:	# Copies
California Office of Emergency Services, Southern Region (Digital copy)	1
Ventura County Operational Area - Ventura County Sheriff's OES	1
Mayor and City Council	7
City Manager (Director of Disaster Services)	1
Emergency Services Manager	1
City Attorney	1
Police Department	1
EOC	6
Public Works Department	1
Ventura Water	1
Community Development Department	1
County Health Officer	1
Finance & Technology Department	1
Human Resources Department	1
Department of Parks, Recreation & Community Partnerships	1
Fire Department	2
Ventura Unified School District	1
Cal OES	1
Ventura County OES	1
EOC POTENTIAL STAFF MEMBERS (Electronic Copy)	32

Department/Agency Concurrence

DEPARTMENT	TITLE	CONTACT NAME
City Manager	City Manager	Alex McIntyre
City Attorney	City Attorney	Gregory Diaz
Fire Department	Fire Chief	David Endaya
Police Department	Police Chief	Darin Schindler
Public Works	Director	Phillip Nelson
Ventura Water	General Manager	Susan Rungren
Parks & Recreation	Director	Nancy O'Conner
Community Development	Director	Peter Gilli
Human Resources	Director	Danielle Keys
Risk Management	Risk Manager	Lisa Oland
Finance & Technology	Interim Director	Michael Coon

Ventura County Sheriff's Office of Emergency Services	Assistant Director	Patrick Maynard
American Red Cross Ventura County	Disaster Services	Scott O'Connell
California Office of Emergency Services	Emergency Services Coordinator	Jenny Novak

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SECTION ONE - OVERVIEW

Purpose

The Plan addresses the City's response to emergencies associated with natural disasters and technological incidents. It provides an overview of operational concepts, identifies components of the City's emergency management organization within the Standardized Emergency Management System (SEMS), National Incident Management System (NIMS), and describes the overall responsibilities of the federal, state, local entities for protecting life and property and assuring the overall wellbeing of the population.

Scope

This Emergency Operations Plan (EOP):

- Defines the scope of preparedness and incident management activities
- Describes the organizational structures, roles, and responsibilities, policies, and protocols for providing emergency support
- Facilitates response and short-term recovery activities
- Is flexible enough for use in all emergencies/disasters
- Describes the purpose, situation, and assumptions, the concept of operations, organization and assignment of responsibilities, administration and logistics, plan development and maintenance and authorities and references
- Pre-designates City representatives to functional positions within the City's emergency management organization
- Includes pre-incident and post-incident public awareness, education and communications plans and protocols

Concept of Operations

During emergencies or disasters, operations involve a full spectrum of activities from a minor incident, to a major earthquake, to a nuclear detonation. There are several similarities in operational concepts for emergencies. Some emergencies will be preceded by a build-up or warning period, providing sufficient time to warn the population and implement mitigation measures designed to reduce loss of life and property damage. Other emergencies occur with little or no warning, requiring immediate activation of the emergency operations plan and commitment of resources. All departments must be prepared to respond promptly and effectively to any foreseeable emergency, including providing and utilizing mutual aid (see Part One - Section Six- Mutual Aid).

Emergency management activities are often associated with the four emergency management phases indicated below. However, not every disaster necessarily includes all indicated phases.

Preparedness Phase

The preparedness phase involves activities engaged in advance of an emergency. These activities develop operational capabilities and effective responses to a disaster. These actions might include mitigation activities, emergency/disaster planning, training and exercises, and public education. Those identified in this plan as having either a primary or support mission relative to response and recovery should prepare Standard Operating Procedures (SOPs) and checklists detailing personnel assignments, policies, notification rosters, and resource lists. Personnel should be acquainted with these SOPs and checklists through periodic training in the activation procedures.

Increased Readiness

Increased readiness actions will be initiated by the receipt of a warning or the observation that an emergency is imminent or likely to occur soon. Actions to be accomplished include, but are not necessarily limited to:

- Review and update emergency plans, SOPs, and resources listings
- Dissemination of accurate and timely emergency public information
- Accelerated training of permanent and auxiliary staff
- Inspection of critical facilities
- Recruitment of additional staff and Disaster Services Workers
- Mobilization of resources
- Testing warning and communications systems

Response Phase

Pre-Emergency

When a disaster is inevitable, actions are precautionary and emphasize the protection of life. Typical responses might be:

- Evacuation of threatened populations to safe areas
- Advising threatened populations of the emergency and apprising them of safety measures to be implemented
- Notify the Ventura County Operational Area of the emergency
- Identifying the need for mutual aid and requesting through the Ventura County Operational Area
- Proclamation of a Local Emergency by local authorities.

Emergency Response

During this phase, the emphasis is placed on saving lives and property, controlling the situation, and minimizing the effects of the disaster. Immediate response is accomplished within the affected area by local government agencies and segments of the private sector.

One of the following conditions will apply to the City during this phase:

- The situation can be controlled without mutual aid assistance
- Evacuation of portions of the City is required due to uncontrollable immediate and ensuing threats
- Mutual aid from outside the City is required
- The City is either minimally impacted or not impacted at all and is requested to provide mutual aid to other jurisdictions.

The emergency management organization will give priority to the following operations:

- Dissemination of accurate and timely emergency public information and warning to the public
- Situation analysis
- Resource allocation and control
- Evacuation and rescue operations
- Care and shelter operations
- Access and perimeter control
- Public health operations
- Restoration of vital services and utilities

When local resources are completely committed and additional resources are required, mutual aid requests will be initiated through the Ventura County Operational Area. Any action which involves financial outlay by the jurisdiction, or a request for military assistance, must be authorized by the appropriate local official.

Depending on the severity of the emergency, a Local Emergency may be proclaimed, the local Emergency Operating Center (EOC) may be activated, and Ventura County Operational Area will be advised. The Director of the California Office of Emergency Services (Cal OES) may request a gubernatorial proclamation of a State of Emergency. Should a State of Emergency be proclaimed, state agencies will, to the extent possible, respond to requests for assistance. These activities will be coordinated with the Cal OES Director.

Cal OES may also activate the State Operations Center (SOC) in Sacramento to support Cal OES Regions, state agencies, and other entities in the affected areas and to ensure the effectiveness of the state's SEMS. The State Regional EOC (REOC) in Los Alamitos, or an alternate location, will support the Ventura County Operational Area.

If the Governor requests and receives a Presidential declaration of an Emergency or a Major Disaster under Public Law 93288, he will appoint a State Coordinating Officer (SCO). The SCO and an appointed Federal Coordinating Officer (FCO) will coordinate and control state and federal recovery efforts in supporting local operations. The REOC will coordinate all emergency response efforts and initial recovery support.

Sustained Emergency

In addition to continuing life, property, and environment protection operations, the following activities will be initiated: mass care, relocation, registration of displaced persons, and damage assessment operations.

Recovery Phase

As soon as possible, the Director of OES, operating through the VCSO representatives of the American Red Cross, to coordinate the implementation of assistance programs and establish support priorities. Local Assistance Centers (LACs) or telephonic centers may also be established, providing a "one-stop" service to initiate the process of receiving federal, state, and local recovery assistance.

The recovery period has primary objectives that may overlap, including:

- Reinstatement of family autonomy
- Provision of essential public services
- Permanent restoration of private and public property
- Identification of residual hazards
- Plans to mitigate future hazards
- Recovery of costs associated with response and recovery efforts

Mitigation Phase[1]

Mitigation includes activities that provide a critical foundation in the effort to reduce the loss of life and property from natural and/or man-made disasters by avoiding or lessening the impact of a disaster and providing value to the public by creating safer communities.[2] Mitigation seeks to break the cycle of disaster damage, reconstruction, and repeated damage. Mitigation efforts occur both before and following disaster events. Post-disaster mitigation is part of the recovery process. Mitigation tools include:

- Local ordinances and statutes (zoning ordinance, building codes and enforcement, etc.)
- Structural measures
- Tax levy or abatements
- Public information and community relations
- Land use planning
- Professional training

Public Awareness and Education

The public's response to any emergency/disaster is based on an understanding of the nature of the emergency/disaster, the potential hazards, the likely response of emergency services, and what individuals and groups should do to increase their chances of survival and recovery.

Pre-disaster awareness and education programs must be viewed as equal in importance to all other preparations for emergencies and receive an adequate level of planning. These programs must be coordinated among local, state, and federal officials to ensure their contribution to emergency preparedness and response operations. The City of San Buenaventura has a public awareness and education program that includes public preparedness training and presentations to the community and building the City's Community Emergency Response Team (CERT). Emergency Public Information procedures are addressed in Part Two, Management Section Support Documentation.

ADA Requirements

Emergency preparedness and response programs must be made accessible to people with disabilities or access and functional needs and is required by the Americans with Disabilities Act or 1990 (ADA). Disabilities would include but not be limited to mobility, vision, hearing, cognitive disorders, mental illnesses and language barriers.

Included in the City's planning efforts for those with disabilities are:

- Notification and warning procedures
- Evacuation considerations
- Emergency transportation issues
- Sheltering requirements
- Accessibility to medications, refrigeration and back-up power
- Accessibility to mobility devices or service animals while in transit or at shelter
- Accessibility to information

Refer to Part Two, Operations Supporting Documentation, Access and Functional Needs Considerations for additional issues.

Disaster Animal Care Considerations

The PETS Act (Pets Evacuation and Transportation Standards Act of 2006) directs that state and local emergency preparedness plans to address the needs of people with pets and service animals after a major disaster, including the rescue, care and sheltering of animals. The needs of animals during a disaster have been incorporated into this plan, especially in the areas of transportation and care and shelter activities.

Training and Exercises

The City's emergency management staff will conduct regular training and exercising of city staff in the use of this plan and other specific training as required for compliance with both SEMS and NIMS. The Emergency Services Manager is responsible for coordinating, scheduling and documenting the training and exercises

The objective is to train and educate public officials, emergency/disaster response personnel and volunteers. Both training and exercises are important components to prepare personnel for managing disaster response operations.

Training includes classroom instruction and drills. All staff who may participate in emergency response in the EOC, in department operating centers, or at the field level must receive appropriate SEMS/NIMS/ICS training.

Regular exercises are necessary to maintain the readiness of operational procedures. Exercises provide personnel with an opportunity to become thoroughly familiar with the procedures, facilities and systems that will be used in a disaster. Annual exercises are required by both SEMS and NIMS. There are several forms of exercises:

- **Tabletop exercises** designed to evaluate policy, plans and procedures and resolve coordination and responsibilities. Such exercises are a good way to see if policies and procedures exist to handle certain issues.
- **Functional exercises** usually take place in the EOC and simulate an emergency in the most realistic manner possible, without field activities. They are used to test or evaluate the capabilities of one or more functions, such as evacuation, communications, public information or overall city response.
- **Full-scale exercises** simulate an actual emergency, typically involving personnel in both the field and EOC levels and are designed to evaluate operational capabilities.

The City uses the Homeland Security Exercise Evaluation Program (HSEEP) building block concept in the development of its exercise program. Exercises are planned in a cycle that increases in complexity to train and strengthen EOC personnel to specific target capabilities.

Alerting and Warning

Warning is the process of alerting governmental forces and the general public to the threat of imminent extraordinary danger. Dependent upon the nature of the threat and the population group at risk, warning can originate at any level of government.

Success in saving lives and property depends on the timely dissemination of warning and emergency information to persons in threatened areas. Local government is responsible for warning the populace of the jurisdiction. The City will utilize various modes to alert and warn the community.

Special attention will be paid to those population groups that may need additional alerting and warning assistance, i.e. hard of hearing, hearing and visually impaired. The various systems are described and the "Emergency Conditions and Warning Actions" through which these systems may be accessed is in Part Two, Management Section Support Documentation.

SECTION TWO - STANDARDIZED EMERGENCY MANAGEMENT SYSTEM (SEMS)

GENERAL

The Standardized Emergency Management System (SEMS) has been adopted by the City of San Buenaventura to manage a response to multi-agency and multi-jurisdiction emergencies and to facilitate communications and coordination between all levels of the system and among all responding agencies. SEMS (Government Code Section 8607(a)) incorporates the use of the Incident Command System (ICS), the Master Mutual Aid Agreement and existing mutual aid systems, the Operational Area Concept, and multi-agency or inter-agency coordination. Local governments must use SEMS to be eligible for funding of their personnel-related costs under state disaster assistance programs.

The National Incident Management System (NIMS) was adopted by the State of California and is integrated into the existing SEMS. NIMS is further discussed in **Part One, Section Three.**

SEMS consists of five levels: field response, local government, operational areas (countywide), Cal OES Mutual Aid Regions, and state government.

Field Response

The field response level is where emergency response personnel and resources, under the command of an appropriate authority, carry out tactical decisions and activities in direct response to an incident or threat. SEMS regulations require the use of the Incident Command System (ICS) at the field response level of an incident. The ICS field functions are command, operations, planning/intelligence, logistics, and finance/administration.

Local Government Response

Local governments include cities, counties, and special districts. Local governments manage and coordinate the overall emergency response and recovery activities within their jurisdiction. Local governments are required to use SEMS when their emergency operations center is activated or a local emergency is proclaimed in order to be eligible for state funding of response-related personnel costs. Local governmental levels shall provide the following functions: management, operations, planning/intelligence, logistics, and finance/administration. Local jurisdictions are responsible for the overall direction of personnel and equipment provided for emergency operations through mutual aid (Government Code Section 8618). Additional details relative to the organization and responsibilities of the SEMS elements at each of the levels are provided in **Part Two, Management Section.**

Cities are responsible for emergency response within their boundaries, although some cities contract for some municipal services from other agencies.

Special districts are primarily responsible in emergencies for the restoration of services that they usually provide. They may also be responsible for the safety of people at their facilities or on their property and for warning of hazards from their facilities or operations. Some special districts may assist other local governments in the emergency response.

All local governments are responsible for coordinating with other local governments, the field response level, and the operational area. Local governments are also responsible for providing mutual aid within their capabilities.

Operational Area

Under SEMS, the operational area is defined in the Emergency Services Act as an intermediate level of the state's emergency services organization consisting of a county and all political subdivisions within the county area. Political subdivisions include cities, a city and county, counties, district or other local governmental agency, or public agency as authorized by law. The operational area is responsible for:

- Coordinating information, resources and priorities among local governments within the operational area,
- Coordinating information, resources and priorities between the regional level and the local government level, and
- Using multi-agency or inter-agency coordination to facilitate decisions for overall operational area level emergency response activities.

SEMS regulations specify that all local governments within a county geographic area be organized into a single operational area and that the county board of supervisors is responsible for its establishment. On November 21, 1995, the Ventura County Board of Supervisors adopted a formal resolution establishing the Ventura County Operational Area. The Ventura County Sheriff's Office of Emergency Services is the lead agency for the Ventura County Operational Area which includes the City of Ventura.

When the Ventura County Operational Area EOC is activated, the Sheriff of Ventura County, designated by County Ordinance, is the Operational Area Coordinator and has the overall responsibility for coordinating and supporting emergency/disaster operations within the County. The Operational Area is the focal point for information sharing and support requests by cities within the County. The Operational Area Coordinator and supporting staff constitutes the Operational Area Emergency Management Staff. The Operational Area Staff submits all requests for support that cannot be obtained within the County, and other relevant information, to Cal OES Southern Region, Mutual Aid Region I.

The Ventura County Sheriff's EOC will fulfill the role of the Operational Area EOC. Activation of the Operational Area EOC during a State of Emergency or a Local Emergency is required by SEMS regulations under the following conditions:

1. A local government within the operational area has activated its EOC and requested activation of the operational area EOC to support their emergency operations.
2. Two or more cities within the operational area have proclaimed a local emergency.
3. The county and one or more cities have proclaimed a local emergency.
4. A city, city and county, or county has requested a governor's proclamation of a state of emergency, as defined in the Government Code Section 8558(b).
5. A state of emergency is proclaimed by the governor for the county or two or more cities within the operational area.

6. The operational area requests resources from outside its boundaries. This does not include resources used in normal day-to-day operations which are obtained through existing mutual aid agreements.
7. The operational area has received resource requests from outside its boundaries. This does not include resources used in normal day-to-day operations which are obtained through existing mutual aid agreements.

Regional

Because of its size and geography, the state has been divided into six mutual aid regions. The purpose of a mutual aid region is to provide for the more effective application and coordination of mutual aid and other emergency-related activities.

Cal OES has also established three Administrative Regions (Coastal, Inland, and Southern). These Administrative Regions are how Cal OES maintains day-to-day contact with emergency services organizations at local, county, and private sector organizations.

In SEMS, the regional level manages and coordinates information and resources among operational areas within the mutual aid region and between the operational areas and the state level. The regional level also coordinates overall state agency support for emergency response activities within the region.

The City of San Buenaventura is within Cal OES's Southern Administrative Region and Region 1 mutual aid region (Region 1A for law enforcement mutual aid).

State

The state-level of SEMS manages state resources in response to the emergency needs of the other levels and coordinates mutual aid among the mutual aid regions and between the regional level and state level. The state-level also serves as the coordination and communication link between the state and the federal disaster response system.

Federal

Department of Homeland Security (DHS), Federal Emergency Management Agency (FEMA)

DHS/FEMA serves as the primary federal government contact during disasters and national security emergencies. In a disaster, different federal agencies may be involved in the response and recovery operations. Federal disaster assistance is organized under the concept of the Emergency Support Functions (ESFs) as defined in the National Response Framework. All contact with DHS/FEMA and other federal agencies must be made through the Operational Area during the response phase. During the recovery phase, there may be direct city contact with DHS/FEMA and other federal agencies.

SEMS REQUIREMENTS

The City of San Buenaventura will comply with SEMS regulations in order to be eligible for state funding of response-related personnel costs and will:

1. Use SEMS when
    - A local emergency is proclaimed, or
    - The City EOC is activated.
2. Establish coordination and communications with Incident Commanders either
    - Through departmental operating centers (DOCs) to the EOC, when activated, or
    - Directly to the EOC, when activated.
3. Use existing mutual aid systems for coordinating fire and law enforcement resources.
4. Establish coordination and communications between the City of San Buenaventura's EOC when activated, and any state or local emergency response agency having jurisdiction at an incident within the city's boundaries.
5. Use multi-agency or inter-agency coordination to facilitate decisions for overall local government level emergency response activities.

RESPONSIBILITIES UNDER SEMS

The development of SEMS will be a cooperative effort of all departments and agencies within the City of San Buenaventura with an emergency response role. The City's Emergency Services Manager has the lead staff responsibility for emergency management compliance with responsibilities for:

- Communicating information within the City of San Buenaventura on emergency management requirements and guidelines.
- Coordinating SEMS development among departments and agencies.
- Incorporating SEMS into the City of San Buenaventura's EOP and procedures.
- Incorporating SEMS into the City of San Buenaventura's emergency ordinances, agreements, memorandum of understandings, etc.
- Identification of special districts that operate or provide services within the boundaries of the City of San Buenaventura. The emergency role of these special districts should be determined, and provisions made for coordination during emergencies.
- Identification of local volunteer and private agencies that have an emergency response role. Contacts should be made to develop arrangements for coordination in emergencies.

The City of San Buenaventura will participate in the Ventura County Operational Area organization and system for coordination and communication within the operational area.

All city staff who may participate in emergencies in the EOC, department operations centers (DOCs), or at the field level must receive appropriate SEMS training as required by SEMS regulations. New personnel should be trained as they are hired.

In addition to the training, the City ensures that EOC staff regularly participates in emergency management exercises to improve preparedness, response, and recovery activities.

SEMS EOC ORGANIZATION

SEMS regulations require local governments to provide for five functions: management, operations, planning/intelligence, logistics and finance/administration. These functions are the basis for structuring the EOC organization.

- **Management:** Responsible for overall emergency policy and coordination through the joint efforts of governmental agencies and private organizations.
- **Operations:** Responsible for coordinating all city operations in support of the emergency response through implementation of the City's EOC Action Plan
- **Planning/Intelligence:** Responsible for collecting, evaluating and disseminating information; developing the EOC Action Plan and After-Action/Corrective Action Report in coordination with other functions; and maintaining documentation.
- **Logistics:** Responsible for providing facilities, services, personnel, equipment and materials.
- **Finance/Administration:** Responsible for financial activities and other administrative aspects.

The EOC organization should include representatives from special districts, volunteer agencies, and private agencies with significant response roles.

MAJOR SEMS COMPONENTS

Organization Flexibility - Modular Organization

The SEMS organization is modular and can be expanded or contracted as the situation develops. The types of activated functions and their relationship to one another will depend upon the size and nature of the incident. Only those functional elements that are required to meet current objectives will be activated. Those functions that are needed but not staffed will be the responsibility of the next higher element in the organization.

Management of Personnel - Hierarchy of Command and Span-of-Control

Each activated function will have a person in charge of it, but a supervisor may be in charge of more than one functional element. Every individual will have a supervisor and each supervisor will generally be responsible for no more than seven employees, with the ideal span-of-control being one supervisor to ever five persons or units.

Incident Action Plans

At local, operational area, regional and state levels, the use of Incident action plans provide designated personnel with knowledge of the objectives to be achieved and the steps required for achievement. Action plans not only provide direction, but they also serve to provide a basis for measuring achievement of objectives and overall system performance. Action planning is an important management tool that involves:

- A process for identifying priorities and objectives for emergency response or recovery efforts,
- Documentation of the priorities and objectives, the tasks and personnel assignments associated with meeting them.

The action planning process should include all EOC functions and other agency representatives, as needed. The Planning/Intelligence Section is responsible for coordinating the development of the action plan and for facilitation of action planning meetings.

Action plans are developed for a specified operational period which may range from a few hours to 24 hours. The operational period is determined by first establishing a set of priority actions that need to be performed. A reasonable timeframe is then established for accomplishing those actions. The action plans need not be complex but should be sufficiently detailed to guide EOC elements in implementing the priority actions. Guidelines for developing action plans and example action plan formats are contained in **Part Two - Planning/Intelligence Support Documentation --Action Planning.**

SEMS COORDINATION

Multi-Agency or Inter-Agency Coordination at the Local Government Level

Emergency response is coordinated at the EOC through representatives from city departments and agencies, outside agencies, volunteer agencies and private organizations.

Multi-agency or inter-agency coordination is important for:

- Establishing priorities for response
- Allocating critical resources
- Developing strategies for handling multi-agency response problems
- Sharing information
- Facilitating communications

The City may participate with other local governments and agencies in a multi-agency coordination group organized by another local government.

Coordination with the Field Response Level

Coordination among SEMS levels is clearly necessary for effective emergency response. In a major emergency, the City of San Buenaventura's EOC may be activated to coordinate the overall response while the Incident Command System is used by field responders. Incident Commanders may report to department operations centers (DOCs) which in turn will coordinate with the EOC. If a DOC is not activated, the Incident Commanders may report directly to the EOC, usually to their counterpart in the Operations Section.

Coordination with Ventura County Operational Area Level

Coordination and communications should be established between the City's EOC and the operational area. The communications links are telephone, satellite phone, radio, data and amateur radio, the Ventura County Auxiliary Communication Services (ACS) radio system, runner, etc.

Ventura County uses an Operational Area Inter Agency Coordinating Group concept when developing response and recovery operations. When and where possible, the County will include jurisdictional representatives in planning for jurisdictional support.

Coordination with Special Districts

Special districts are defined as local governments in SEMS. The emergency response role of special districts is generally focused on normal services. During disasters, some types of special districts will be more extensively involved in the emergency response by assisting other local governments.

The City of San Buenaventura has various special districts but only a few that may have a shared role in an effective response and recovery to a disaster affecting the City:

- Casitas Municipal Water District – provides wholesale and retail water to most of the Ojai Valley, Ventura River Valley, and the western part of the City
- Gold Coast Transit - Owns, operates, manages, and maintains a public transit system and associated facilities, within all unincorporated areas of Ventura County, and the cities of Ojai, Oxnard, Port Hueneme, and Ventura
- Ventura Port District - Owns and operates the Ventura Harbor
- Ventura Unified School District – Serves the City of San Buenaventura by providing K through 12 public education through 15 elementary schools, 2 K-8 schools, 4 middle schools, 3 comprehensive high schools, 1 independent study high school and 1 continuation high school[3]

Coordination with Volunteer and Private Agencies

City EOCs will generally be a focal point for coordination of response activities with many non-governmental agencies. The City of San Buenaventura's EOC will establish and practice communications with private and volunteer agencies providing services within the city. In Collaboration with the following groups: such as the American Red Cross, Community Emergency Response Team (CERT), and Auxiliary Communication Services (ACS).

Agencies that play key roles in the response should have representatives at the EOC. If an agency supports several functions and has only one representative at the EOC, the agency representative should be located at the liaison area. If an agency is supporting one function only, its representative may be located with that functional element. Some agencies may have several personnel participating in functional elements in the EOC. For example, American Red Cross personnel may be part of the staffing for the Care and Shelter element of the EOC.

Agencies that have countywide response roles and cannot respond to numerous city EOCs should be represented at the operational area level.

Cities served by many private and volunteer agencies may not be able to accommodate representatives in the EOC from all agencies that have important response roles. Cities should develop alternate means of communicating with these agencies when liaison representation is not practical.

Coordination with volunteer and private agencies that do not have representatives at the EOC may be accomplished through telecommunications, liaison with community councils that represent several agencies or involvement of agencies in special multi-agency groups on specific issues.

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SECTION THREE - NATIONAL INCIDENT MANAGEMENT SYSTEM

In addition to SEMS, the City of San Buenaventura recognizes and has incorporated the National Incident Management System (NIMS) into the EOP, training, and exercises.

NIMS COMPONENTS

Fundamental and Concepts

- **Flexibility** - NIMS components are adaptable to any situation, from planned special events to routine local incidents to incidents involving interstate mutual aid or Federal assistance. Some incidents need multiagency, multijurisdictional, and/or multidisciplinary coordination. Flexibility allows NIMS to be scalable and, therefore, applicable for incidents that vary widely in terms of hazard, geography, demographics, climate, cultural, and organizational authorities.
- **Standardization** - Standardization is essential to interoperability among multiple organizations in incident response. NIMS defines standard organizational structures that improve integration and connectivity among jurisdictions and organizations. NIMS defines standard practices that allow incident personnel to work together effectively and foster cohesion among the various organizations involved. NIMS also includes common terminology, which enables effective communication.
- **Unity of Effort** - Unity of effort means coordinating activities among various organizations to achieve common objectives. Unity of effort enables organizations with specific jurisdictional responsibilities to support each other while maintaining their authorities.

Resource Management

NIMS resource management guidance enables many organizational elements to collaborate and coordinate to systematically manage resources—personnel, teams, facilities, equipment, and supplies. Most jurisdictions or organizations do not own and maintain all the resources necessary to address all potential threats and hazards. Therefore, effective resource management includes leveraging each jurisdiction's resources, engaging private sector resources, involving volunteer organizations, and encouraging further development of mutual aid agreements.

This component includes three sections:

- **Resource Management Preparedness** - involves: identifying and typing resources; qualifying, certifying, and credentialing personnel; planning for resources; and acquiring, storing, and inventorying resources.
- **Resource Management During an Incident** - The resource management process during an incident includes standard methods to identify, order, mobilize, and track resources.
- **Mutual Aid** - Mutual aid involves sharing resources and services between jurisdictions or organizations. Mutual aid occurs routinely to meet the resource needs identified by the requesting organization.

Command and Coordination

NIMS standard incident command structures are based on the following key organizational systems:

- **The ICS** - ICS is a standardized, on-scene, all-hazard incident management concept. Its organizational structure allows its users to match the complexities and demands of single or multiple incidents without being hindered by jurisdictional boundaries.
- **Emergency Operations Centers (EOC)** - EOCs are locations where staff from multiple agencies typically come together to address imminent threats and hazards and to provide coordinated support to incident command, on-scene personnel, and/or other EOCs. EOCs may be fixed locations, temporary facilities, or virtual structures with staff participating remotely.
- **Multi-Agency Coordination Group (MAC)** - Groups, sometimes called policy groups, are part of the off-site incident management structure of NIMS. MAC Groups consist of representatives from stakeholder agencies or organizations. They are established and organized to make cooperative multiagency decisions. MAC Groups act as policy-level bodies during incidents, supporting resource prioritization and allocation, and enabling decision making among elected and appointed officials and those responsible for managing the incident (e.g., the Incident Commander). In some instances, EOC staff also carry out this activity.
- **Joint Information System (JIS)** - JISs consist of the processes, procedures, and tools to enable communication to the public, incident personnel, the media, and other stakeholders.

Communications and Information Management

The Communications and Information Management component describes systems and methods that help to ensure that incident personnel and other decision makers have the means and information they need to make and communicate decisions. The four key principles are: 1) Interoperability; 2) Reliability, Scalability, and Portability; 3) Resilience and Redundancy; and 4) Security.

- **Communications Management** – Includes communications management practices and considerations such as Standardized Communication Types, Policy and Planning, Agreements, Equipment Standards and Training to assist incident personnel from different disciplines, jurisdictions, organizations and agencies communicate with each other effectively during incidents.
- **Incident Information** - During an incident, personnel need timely and accurate information to make decisions. Incident Reports (Situation Reports and Status Reports) enhance situational awareness and help ensure that personnel have easier access to essential information. Incident Action Plans (IAPs) contain the incident objectives that the Incident Commander or Unified Command establishes and address tactics for the planned operational period, generally 12 to 24 hours. Personnel should collect data in a manner that observes standard data collection techniques and definitions, analyze the data, and share it through the appropriate channels.
- **Communications Standards and Formats** – NIMS requires the use of Common Terminology, Plain Language, Data Interoperability and the incorporation of technology (radio, telephone system, public warning and notification systems, hardware and software, Geographic Information Systems and Social Media) as a mechanism to offer increased situational awareness to jurisdictions involved in the incident and/or the public.

SECTION FOUR - EMERGENCY MANAGEMENT ORGANIZATION

This section establishes policies and procedures and assigns responsibilities to ensure the effective management of emergency operations under the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). This section also provides information on the City of San Buenaventura's emergency management structure and how the emergency management team is activated.

CONCEPT OF OPERATIONS

City emergency/disaster response and recovery operations will be managed in one of three modes, depending on the magnitude of the emergency/disaster as outlined in the State of California Emergency Plan[5].

Activation Level		Description	Staffing
4	**Normal Operations**	• Routine monitoring of situation • No event or incident anticipated	• Duty Officer only
3	**Enhanced Operations**	• A situation or threat has developed that requires enhanced monitoring and coordination between jurisdictions or agencies	• Duty Officer plus a few essential personnel focused on situational awareness
2	**Partial Activation**	• A situation or threat has developed that requires coordination extending beyond the normal workday	• EOC is partially staffed; limited or partial liaison support (based upon the needs of the incident)
1	**Full Activation**	• Incident of such magnitude that it requires or may require extensive response and recovery efforts and significant resources • A situation or threat has developed that requires 24/7 coordination, monitoring and support	• All General Staff positions activated; including applicable liaison positions • Operations being conducted on a 24-hour basis

ORGANIZATION AND RESPONSIBILITIES

The City of San Buenaventura's emergency management organization (including emergency response and recovery) will be directed by the City Manager, who serves as the Director of Disaster Services. The Director of Disaster Services is responsible to the City Council and Disaster Council per Chapter No. 2.370.050 of the City of San Buenaventura's Municipal Code. The Disaster Services Director is responsible for implementing the Emergency Operations Plan (EOP). While serving as the Director of Disaster Services during an actual emergency, this position will be referred to as the EOC Director.

The Director of Disaster Services/EOC Director is supported by the emergency management organization and has overall responsibility for:

- Organizing, staffing, and operating the Emergency Operations Center (EOC).
- Operating communications and warning systems.
- Providing information and guidance to the public.
- Maintaining information on the status of resources, services, and operations.
- Directing overall operations.
- Obtaining support for the City of San Buenaventura and providing support to other jurisdictions as required.
- Identifying and analyzing potential hazards and recommending appropriate countermeasures.
- Collecting, evaluating, and disseminating damage assessment and additional essential information.
- Providing status and other reports to the Ventura County Operational Area (Ventura County Sheriff's Department, Office of Emergency Services.

The City of San Buenaventura's Emergency Operations Center (EOC) Organizational Matrix is contained in **Chart 1**.

Ventura County Operational Area (See Chart 2)

If the Ventura County Operational Area is activated, the Sheriff of Ventura County, designated by County Ordinance, will function as the Operational Area Coordinator and will have the overall responsibility for coordinating and supporting emergency operations within the County. The Operational Area will also be the focal point for information transfer and support requests by cities within the County. The Operational Area Coordinator and supporting staff will constitute the Operational Area Emergency Management Staff. The Operational Area staff will submit all requests for support that cannot be obtained within the county, and other relevant information, to Cal OES Mutual Aid Region I.

The City of Ventura requests all mutual aid (except fire and law) through the Ventura County Operational Area EOC. The Ventura County Operational Area then requests non-fire and law mutual aid through its regular channels (See Chart 3). Fire mutual aid and Law Enforcement mutual aid are coordinated through the designated Regional Fire and Law Enforcement Coordinators.

Reporting to the Ventura County Operational Area

City reports and notifications are to be made to the Ventura County Operational Area via the Ventura County Sheriff's Office of Emergency Services. These reports and notifications include:

- Activation of the City EOC
- Proclamation of a Local Emergency **(See Local and State Proclamations in the Management Support Documentation)**
- Reconnaissance Reports
- City Status Reports
- Initial Damage Estimates
- Incident Reports
- Resource Requests

Mutual Aid Region Emergency Management

The City of San Buenaventura is within Cal OES Mutual Aid Region I (Mutual Aid for law enforcement is Region 1A) and the CAL OES Southern Administrative Region. The primary mission of Southern Region's emergency management organization is to support Operational Area response and recovery operations and to coordinate non-law and non-fire Mutual Aid Regional response and recovery operations through the Regional EOC (REOC).

State Emergency Management

The Governor, through Cal OES and its Mutual Aid Regions, will coordinate statewide operations to include the provision of mutual aid and other support to local jurisdictions and the redirection of essential supplies and other resources as required. The Cal OES Director or, assisted by State agency directors and their staffs and identified volunteer agency staff, will constitute the State emergency management staff.

The State of California Emergency Organization Chart is contained in **Chart 4.**

CHART 1 - EOC ORGANIZATIONAL MATRIX

P = Primary S = Support

		City Clerk	City Council	City Managers Office	City Attorney	City Treasurer	Community Dev.	Finance & Technology	Fire Dept.	Human Resources	Police Dept.	Public Works	Parks, Rec & Comm	Ventura Water	Vent. Co. Agencies	Utilities	Special Districts	Volunteer Agencies	Hospitals/Clinics
MANAGEMENT	Multi Agency Coord Group	S	S	P	S		S	S	S	S	S	S		S					
	EOC. Director			P					S		S	S							
	Public Information Officer			P					S		S	S		S					
	Liaison Officer								P										
	Emergency Manager			P					S		S								
	Legal Advisor				P														
	Safety Officer									P									
	Security Officer										P								
	City Rep to County EOC				P														
OPERATIONS	Ops. Coordinator			S					P		P	P							
	Fire/Medical/Health Branch								P						S				
	Law Enforcement Branch										P				S				
	Care and Shelter Branch						P						S					S	
	Infrastructure Branch											P		S	S	S			
	Building and Safety Branch						P								S				
PLANNING	Plans/Intel. Coord.			S			P												
	Resources Unit						P												
	Situation Status Unit						P												
	Documentation Unit	P		S			S												
	Advance Planning Unit						P												
	Recovery Planning Unit						P	S											
	Demobilization Unit			P			S												
LOGISTICS	Logistics Coord.			S				S		P									
	Info. Systems Branch							P											
	Transportation Unit										S	P							
	Personnel Unit									P									
	Facilities Unit							P											
	Procurement/Purchasing Unit							P											
FINANCE	Finance Coord.			S				P											
	Cost Recovery Unit				S	S		P											
	Time Keeping Unit							P											
	Compensation/Claims Unit				S		P												
	Cost Analysis Unit							P											

CHART 2 - OPERATIONAL AREA ORGANIZATION MATRIX

P = Principal Agency S = Support Agency

	Ventura County EOC Organization Matrix	Animal Services	Auditor	Assessor	BOS	CEO	Clerk/Recorder	Coroner	County Counsel	Fire	General Services	Harbor	Health Care Agency	Human Resources	Human Services. Agency	Info. Systems	Public Works	Purchasing	Resource Mgmt. Agency
MANAGEMENT	Policy				S	P			S										
	EOC. Dir.								S										
	Liaison Officer					P							S						
	P.I.O.					S				S									
	Legal Advisor								P										
	EOC Coordinator																		
	Safety Officer																		S
	Security Officer										S								
OPERATIONS	Ops. Coordinator									S			S				S		
	Fire/Haz Mat/Rescue									P									
	Law Enforcement							S											
	Infrastructure												S			S	P		
	Care & Shelter	P											S		P				
	Med./Pub. Hlth./Coroner Branch							P					P		S				
	Bldg & Safety																		P
PLANNING	Plans/Intel. Coord.						S			S	S		S		S				S
	Resources									S									
	Situation Status									S									
	Damage Assess									S									
	Documentation									S									
	Advance Planning									S									
	Recovery Planning									S									
	GIS Unit									S						P			
	Demobilization									S									
LOGISTICS	Logistics Coord.										P	S			S				
	Procurement																	S	P
	Personnel													P					
	Facilities										S								
	Transportation										P								
	Info Systems															P			
FINANCE	Finance Coord.		P								S			S					
	Purchasing																	P	S
	Comp./Claims																		
	Cost Recovery	S						S		S	S	S	S	S	S	S	S		S
	Time																		
	Cost Analysis																		
RECOVERY					S	P			S		S		S	S	S	S	S	S	S

CHART 3[6] - OPERATIONAL AREA COORDINATION

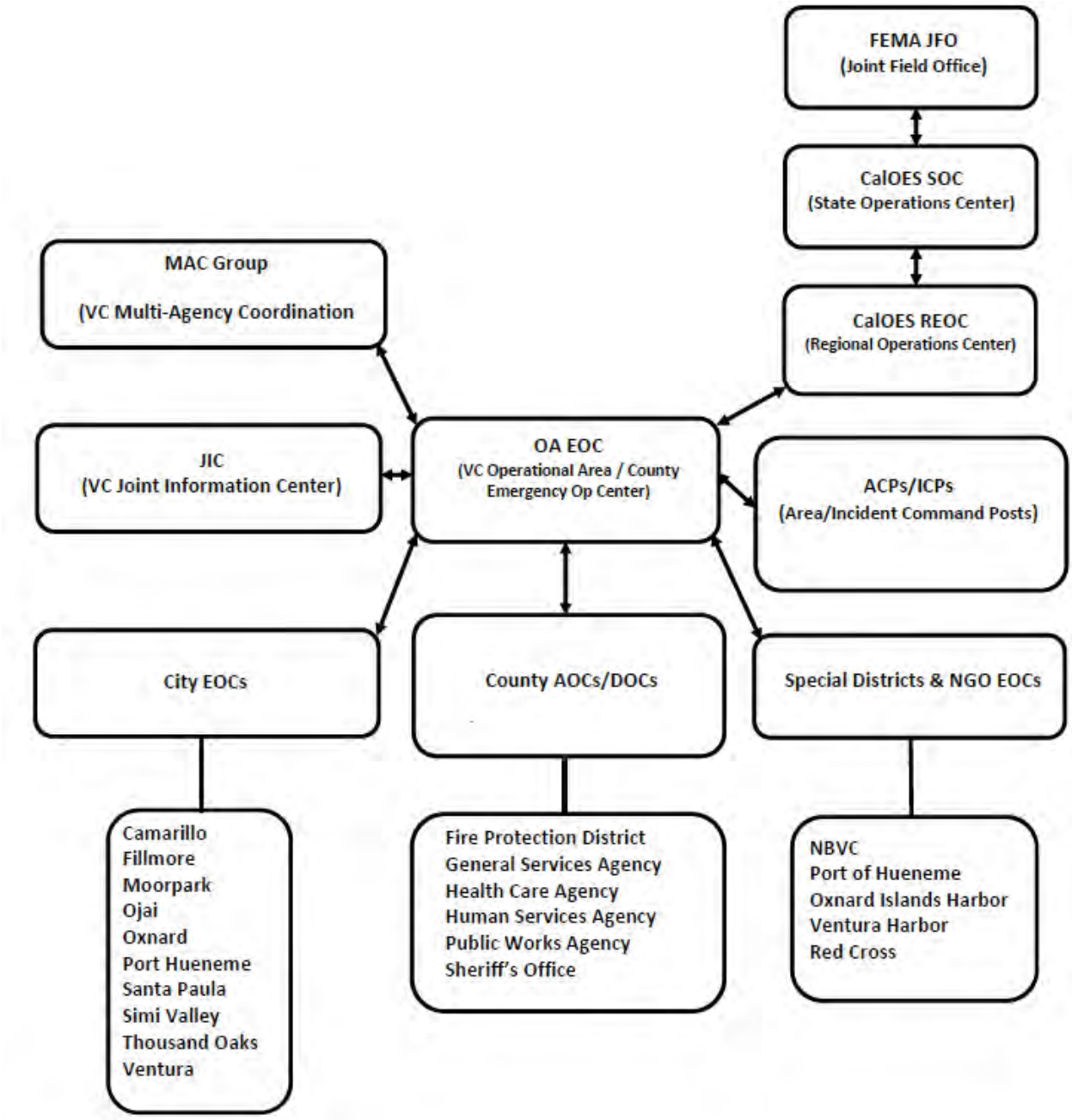
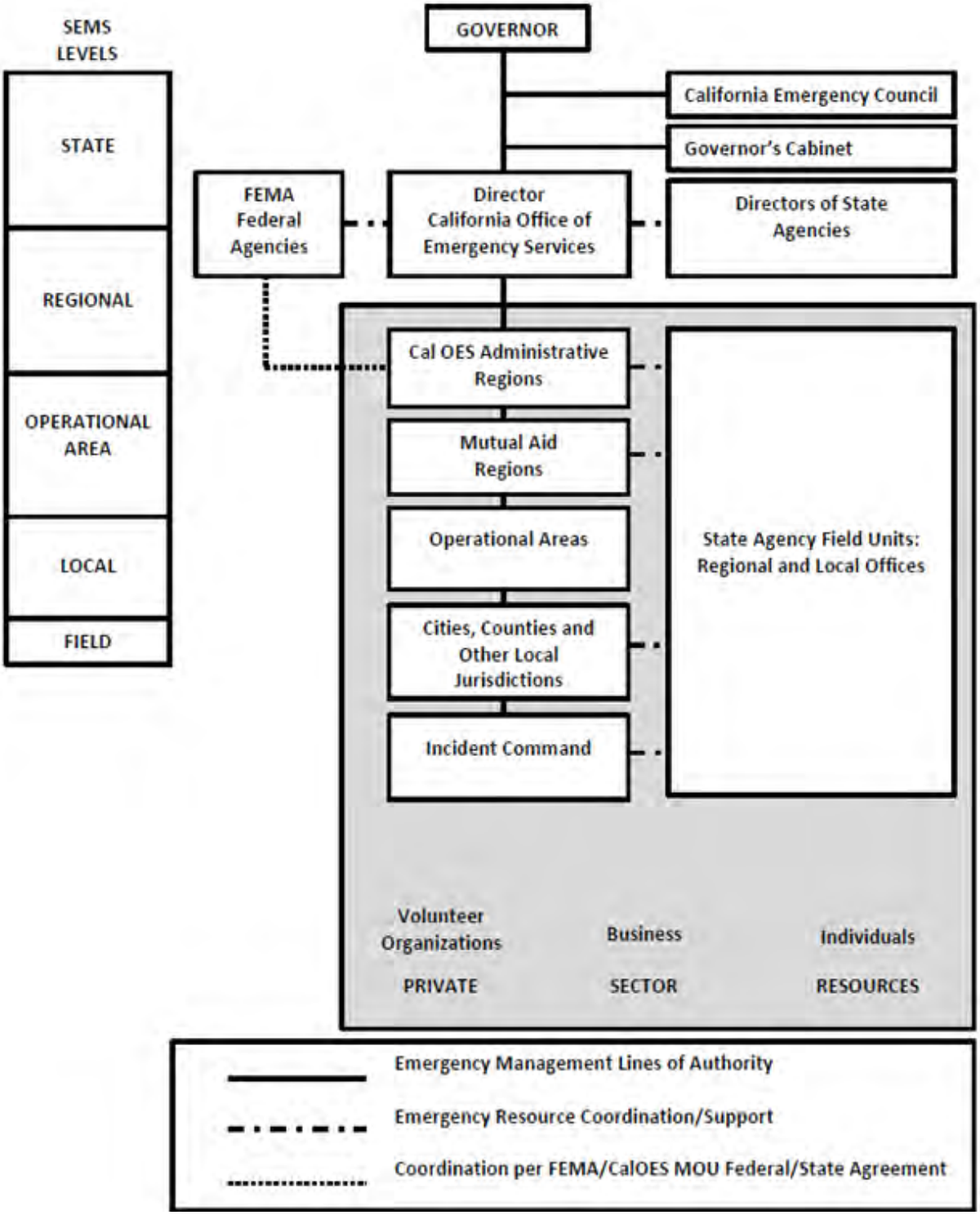


CHART 4 - STATE EMERGENCY ORGANIZATION



CITY - EMERGENCY OPERATIONS CENTER (EOC)

Day-to-day operations are conducted from departments and agencies that are widely dispersed throughout the City. An EOC is a location from which centralized emergency management can be performed during a major emergency or disaster. This centralized location facilitates a coordinated response by the Disaster Services Director, emergency management staff, and representatives from organizations who are assigned emergency management responsibilities. The level of EOC staffing will vary with the specific emergency.

An EOC provides a central location of authority and information and allows for face-to-face coordination among personnel who must make emergency decisions. The following functions are performed in the City of San Buenaventura's EOC:

- Managing and coordinating emergency operations.
- Receiving and disseminating warning information.
- Developing emergency policies and procedures.
- Collecting intelligence from, and disseminating information to, the various EOC representatives, and, as appropriate, to County and State agencies, military, and federal agencies.
- Preparing intelligence/information summaries, situation reports, operational reports, and other reports as required.
- Maintaining general and specific maps, information display boards, and other data pertaining to emergency operations.
- Continuing analysis and evaluation of all data pertaining to emergency operations.
- Controlling and coordinating, within established policy, the operational and logistical support of departmental resources committed to the emergency.
- Maintaining contact and coordination with support DOCs, other local government EOCs, and the Ventura County Operational Area.
- Providing emergency information and instructions to the public, making official releases to the news media and the scheduling of press conferences as necessary.

Location and Description

Due to the sensitive nature of the location of the EOC, this information regarding the primary and the alternate EOC is found in the Appendix of this plan, a confidential/security document.

Description

The EOC totals approximately 2,200 square feet. While not a dedicated EOC, this facility provides a working environment for the City's emergency response management team, and a centralized location for communications and information management critical to decision-making resource allocation. A diesel generator provides emergency power. The emergency fuel reserve is sufficient for 48 hours. Resupply of emergency fuel will be obtained through local distributors. Power will provide for lighting panels, selected wall circuits, telephones, and radios. On-site services include kitchens and bathrooms. Arrangement for food and sleeping accommodations will be made as needed.

The alternate EOC will be activated only when the primary EOC is damaged, inaccessible, and/or evacuation of EOC staff members becomes necessary. When the use of an alternate EOC becomes essential, those occupying the primary EOC will be asked to relocate to the alternate EOC site. If the primary EOC is unusable before its activation, staff members will be asked to report to the alternate EOC site. The Logistics Section will arrange for the relocation of EOC staff members to the alternate EOC. Direction and control authority will be transferred from the primary EOC to an alternate EOC when necessary by the EOC Director. All Section Coordinators will advise their emergency response field forces of the transition to the alternate EOC.

The operational capabilities of the alternate EOC are like those of the primary EOC.

Emergency power is provided by a diesel generator. Emergency fuel is enough for 48hours. Resupply of fuel is obtained through local distributors. Power will provide for EOC room electrical operations, including wall circuits, lighting panels, telephones, radios, etc. On-site services include restrooms, locker rooms with showers, and kitchen areas.

All EOC supplies, including phones, laptops, reference manuals, and hard copies of display charts, boards, and materials, are kept in the EOC storage closet adjacent to the main EOC room. If necessary, all EOC equipment can be relocated to the alternate EOC.

Displays

Because the EOC's major purpose is accumulating and sharing information to ensure coordinated and timely emergency response, status boards for tracking emergency activities will be made available for use in both the primary and alternate EOCs. All EOC sections must maintain display devices so that other sections can quickly comprehend what actions have been taken, what resources are available, and to track the damage in the city resulting from the disaster. The Planning/Intelligence Section is responsible for coordinating display of information. All display charts, boards, and materials are stored in the storage room of the EOC.

At the onset of any disaster, a significant events log should also be compiled for the duration of the emergency. Key disaster related information will be recorded in the log; i.e., casualty information, health concerns, property damage, fire status, size of risk area, scope of the hazard to the public, number of evacuees, etc. The posting of the significant events log is the responsibility of the Planning/Intelligence Section.

Communications

Communications are provided in the Public Safety Building and include Police Dispatch, telephones, cell phones, satellite phones, radios, VC Alert (reverse 9-1-1) and amateur radio communications provided by Auxiliary Communications Services (ACS). While Fire related incidents are initially received from the public in the Police Command Center (911 PSAP), Fire dispatch is provided through the Ventura County Fire Protection Dispatch Center in Camarillo. Communication facilities will be continuously staffed during emergencies, either by volunteers or city staff. The Logistics Section is responsible for communications.

EOC ACTIVATION POLICY

The City EOC is activated when field response agencies need support, a citywide perspective is needed, or multi-departments need to coordinate. The EOC may be partially or fully staffed to meet the demands of the situation.

EOC set up procedures are contained in the **Appendix – EOC Set-Up Procedures (Restricted Use).**

The Ventura County Operational Area should be notified when the City of Ventura's EOC is activated.

When to Activate

- An emergency situation that has occurred or might occur of such a magnitude that it will require a large commitment of resources from two or more City Departments over an extended period of time.
- On the order of the City Manager or designee, provided that the existence or threatened existence of a Local Emergency has been proclaimed
- When the Governor has proclaimed a State of Emergency in an area which includes the City of San Buenaventura;
- Automatically upon the proclamation of a "State of War Emergency" as defined by the California Emergency Services Act **(See Local and State Proclamations in the Management Support Documentation);**
- By a Presidential Declaration of a National Emergency;
- Automatically upon receipt of an attack warning or the observation of a nuclear detonation.
- Upon notification of an uncontrolled release or failure of Matilija, Casitas, Santa Felicia, Castaic, Pyramid or Bouquet Canyon Dam(s).

Who can Activate

The following individuals, either acting as the EOC Director or on behalf of the EOC Director, or their appointed representatives **(as referenced in Part Two – Management - Continuity of Government Lines of Succession)** are authorized to activate the EOC:

- City Manager
- Fire Command Staff
- Police Command Staff

How to Activate

- EOC Director or designee will direct the level of EOC Activation. (see Local Government EOC Staffing Guide)
- EOC Director or designee will designate personnel to set up the EOC.
- All available forms of communication will be utilized to notify affected EOC staff of the activation including but not limited to phone (VC Alert) and personal notification.
- During the notification the emergency/disaster situation will be described.

Deactivation

Section Coordinators and the EOC Director will authorize EOC deactivation by position and function.

EMPLOYEE RESPONSE

Ultimately, all employees must be prepared to report to the EOC if requested, provided they are physically able to do so (per Rule VII, Section 11 of the City of Ventura Personnel Rules and Regulations or as otherwise outlined in the Labor Memorandum of Understanding). If the telephone system has failed and no other means of communication is available, employees are encouraged to listen to the radio, as the City may utilize the designated Emergency Alert System (EAS) radio station for Ventura County (KVTA 1590 AM, KHAY 100.7 FM and KMLA 103.7 FM to broadcast information relative to City employees.

The City will utilize a telephonic system to quickly recall EOC personnel. The system dials home, work, cell, and texts until it reaches the person.

All city personnel need to realize as disaster service workers they may need to use good judgment and "self-activate" to your job site if the situation warrants and all means of communication is down.

EOC STAFFING GUIDE

Event/Situation	Activation Level	Minimum Staffing
• Unusual occurrences or advance notice of possible events that may impact the health and safety of the public and/or environment. Heightened awareness is desired.	**Alert**	Designated staff members. The EOC will not be activated.
• Unusual occurrences with severe potential impacts on the health and safety of the public and/or environment • Severe Weather Issuances (see Operations Support Documentation -NWS) • Significant incidents involving 2 or more departments • Earthquake Advisory/Prediction Level One • Power outages and Stage 1 and 2 power emergencies.	**Three**	EOC Director Other Designees **Note: May be limited to Department Operations Center activation.**
• Earthquake with damage reported • Earthquake Advisory/Prediction Level Two or Three • Major wind or rain storm • Two or more large incidents involving 2 or more departments • Wildfire affecting developed area • Major scheduled event • Severe hazardous materials incident involving large-scale or possible large-scale evacuations • Unusual occurrences with severe potential impacts on the health and safety of the public and/or environment • Large scale power outages and Stage 3 power emergencies	**Two**	EOC Director Section Coordinators, Branches and Units as appropriate to situation Liaison/Agency representatives as appropriate. Public Information Officer
• Major city or regional emergency-multiple departments with heavy resource involvement • Earthquake with damage in City or adjacent cities. • Unusual occurrences with severe potential impacts on the health and safety of the public and/or environment	**One**	All EOC positions

SECTION FIVE - CONTINUITY OF GOVERNMENT (COG)

Purpose

A major disaster or national security emergency could result in the death or injury of key government officials and/or the partial or complete destruction of established seats of government and public and private records essential to continued operations of government and industry. The government is responsible for providing continuity of effective leadership, authority, and adequate direction of emergency and recovery operations. The California Government Code Section 8643(b) and the Constitution of California provide the authority for state and local government to reconstitute itself in the event incumbents are unable to serve.

Responsibilities

The government is responsible for providing continuity of effective leadership, authority, and adequate direction of emergency and recovery operations (preparedness, response, recovery, and mitigation). Under California's concept of mutual aid, local officials remain in control of their jurisdiction's emergency operations while other jurisdictions may provide additional resources upon request. A key aspect of this control is to be able to communicate official requests, situation reports, and emergency information during any disaster a community might face.

Preservation of Local Government

The California Government Code Section 8643(b) and the Constitution of California provide the authority for state and local government to reconstitute itself in the event incumbents are unable to serve.

Article 15 of the California Emergency Services Act (CESA, Chapter 7 of Division 1 of Title 2 of the Government Code) provides the authority, and the procedures to be employed, to ensure the continued functioning of political subdivisions within the State of California. Generally, Article 15 permits the appointment of up to three standby officers for each member of the governing body and up to three standby officers for the chief executive, if not a member of the governing body. Article 15 provides for the succession of officers who head departments responsible for maintaining law and order or in furnishing public services relating to health and safety.

Article 15 also outlines procedures to assure continued functioning of political subdivisions if the governing body, including standby officers, is unavailable to serve.

The CESA provides for the preservation of city government in peacetime or national security emergency.

Lines of Succession

The first step in assuring government continuity is to have personnel who are authorized and prepared to carry out emergency actions for the government in the event of a natural, technological, or national security disaster.

Governing Body

Article 15, Section 8638 of the CESA authorizes governing bodies to designate and appoint three standby officers for each member of the governing body and the chief executive, if not a member of the governing body. Standby officers may be residents or officers of a political subdivision other than that to which they are appointed. Standby officers take the same oath as regular officers and are designated Number 1, 2, or 3.

The City Council appoints a successor for the position of Disaster Services Director. The succession occurs:

- Should the Director be unavailable or unable to serve, the positions listed below, in order, shall act as the Director of Disaster Services.
- Should these positions be unavailable or unable to serve, the individuals who hold permanent appointments to the following positions in the city will automatically serve as acting director in the order shown. The individual who serves as acting director shall have the authority and powers of the Director and will serve until the Director is again able to serve or until a successor has been appointed by the City Council.

First Alternate: Fire Chief
Second Alternate: Police Chief
Third Alternate: Public Works Director

Notification of any successor changes shall be made through the established chain of command.

Article 15, Section 8637 of the CESA authorizes political subdivisions to provide for the succession of officers (department heads) having duties related to law and order and/or health and safety. **(See Lines of Succession list for city departments at the end of this Section.)**

Article 15, Section 8644 of the CESA establishes a method for reconstituting the governing body. It authorizes that, should all members, including all standbys, be unavailable, temporary officers shall be appointed as follows:

- By the chairman of the board of the county in which the political subdivision is located, or
- By the chairman of the board of any other county within 150 miles (nearest and most populated down to farthest and least populated).
- By the mayor of any city within 150 miles (nearest and most populated down to farthest and least populated).

Article 15, Section 8642 CESA authorizes local governing bodies to convene as soon as possible whenever a State of War Emergency, State of Emergency, or Local Emergency exists, and at a place not necessarily within the political subdivision.

Article 15, Section 8643 CESA describes the duties of a governing body during emergencies as follows:

- Ascertain the damage to the jurisdiction and its personnel and property.
- Reconstitute itself and any subdivisions.
- Perform functions in preserving law and order and furnishing local services.

Temporary Council / Alternate City Government Location

Section 8642 of the CESA authorizes the City Council to meet at a place not necessarily within the City in the event of State of War Emergency, State of Emergency, or Local Emergency.

Section 54954 of the Brown Act provides that if a fire, flood, earthquake, or other emergency makes it unsafe to meet in the place designated for holding regular City Council meetings, the presiding officer of the City Council, or his or her designee, can designate the place that regular meetings will be held for the duration of the emergency. The presiding officer's designation of a meeting place, under those circumstances must be:

- Made in a notice to the local media that have requested notice according to Section 54956 of the Government Code, and
- By the most rapid means of communication available at the time. (Section 54954(e))

If City Hall is not usable because of emergency conditions, the temporary office of the city government will be as follows:

1st Alternate: Police/Fire Administration, 1425 Dowell Drive
2nd Alternate: Maintenance Yard, 336 San Jon Road

Preservation of Vital Records

In the City of San Buenaventura, the City Clerk is responsible for the preservation of vital records. If the City Clerk is unavailable, the Assistant City Clerk will be responsible for preserving vital records.

Vital records are defined as those records that are essential to:

- Protect and preserve the rights and interests of individuals, governments, corporations, and other entities. Examples include statistics, land and tax records, license registers, and articles of incorporation.
- Conduct emergency response and recovery operations. Records of this type include utility system maps, locations of emergency supplies and equipment, emergency operations plans and procedures, personnel rosters, etc.
- Reestablish normal governmental functions and protect the rights and interests of the government. Constitutions and charters, statutes and ordinances, court records, official proceedings, and financial records would be included here.

Please refer to the Appendix Section of this Plan (a confidential/security document) to see where vital records of the City of San Buenaventura are routinely stored.

Each department within the city should identify, maintain and protect its essential records.

Lines of Succession for Department Heads

SERVICE/DEPARTMENT	TITLE/POSITION	
City Manager (Director of Disaster Services)	1	City Manager
	2	Assistant City Manager
	3	Deputy City Manager
City Attorney	1	City Attorney
	2	Sr. Asst. City Attorney
	3	Assistant City Attorney
Community Development	1	Director
	2	Planning Manager
	3	Chief Building Official
Finance & Technology	1	Chief Financial Officer
	2	Asst. Chief Financial Officer
	3	Financial Service Manager
Fire	1	Fire Chief
	2	Assistant Chief/Operations
	3	Training Battalion Chief
Human Resources	1	Director
	2	Assistant Human Resource Director
	3	Human Resources Principal Analyst
Parks & Recreation	1	Director
	2	Community Partnership Manager
	3	Community Recreation Manager
Police	1	Police Chief
	2	Assistant Chief/Operations
	3	Commander/Special Operations
Public Works	1	Director
	2	Deputy Director
	3	Deputy City Engineer
Ventura Water	1	General Manager
	2	Assistant General Manager, Operations
	3	Assistant General Manager, Water Resources

SECTION SIX - MUTUAL AID

Introduction

Mutual aid is designed to ensure that adequate resources, facilities, and other support are provided to jurisdictions whenever their resources prove inadequate to cope with a given situation(s).
The basis for the system is the California Disaster and Civil Defense Master Mutual Aid Agreement, as provided for in the California Emergency Services Act **(see Part Two Management Support Documentation-Legal Documents).** This Agreement was developed in 1950 and has been adopted by the state, all 58 counties, and most incorporated cities in California. The Master Mutual Aid Agreement creates a formal structure wherein each jurisdiction retains control of its own facilities, personnel, and resources but may also receive or assist other jurisdictions within the state. The state government is obligated to provide available resources to assist local jurisdictions in emergencies. It is the responsibility of the local jurisdiction to negotiate, coordinate and prepare mutual aid agreements. Mutual aid agreements exist in law enforcement, fire services, building and safety, medical and public works, and emergency managers (EMMA). In addition to the Mutual Aid agreements in place within the state of California, more recently, the Governor signed (September 2005) the Emergency Management Assistance Compact (EMAC) that allows the state of California to participate with 50 other states in a nationwide mutual aid system.

Mutual Aid System

A statewide mutual aid system, operating within the framework of the Master Mutual Aid Agreement, allows for the progressive mobilization of resources to and from emergency response agencies, local governments, operational areas, regions, and states with the intent to provide requesting agencies with adequate resources. The general flow of mutual aid resource requests and resources within mutual aid systems are depicted in the diagram in Chart 1.

The statewide mutual aid system includes several discipline-specific mutual aid systems, such as fire and rescue, law, medical, and public works. The adoption of SEMS and NIMS does not alter existing mutual aid systems. These systems work through local government, operational area, regional, and state levels consistent with SEMS.

Mutual aid may also be obtained from other states via the Emergency Management Assistance Compact.

Mutual Aid Regions

Mutual aid regions are established under the Emergency Services Act. Six mutual aid regions numbered I-VI have been established within California. The City of San Buenaventura is within Region 1 (Region 1A for Law Enforcement). Each mutual aid region consists of designated counties. Region 1 and 1A is in the Cal OES Southern Administrative Region **(See Chart 3).**

Mutual Aid Coordinators

Discipline-specific mutual aid systems work through designated mutual aid coordinators at the operational area, regional and state levels. A mutual aid coordinator's primary role is to receive mutual aid requests, coordinate the provision of resources from within the coordinator's geographic area of responsibility and pass on unfilled requests to the next level.

Mutual aid requests that do not fall into one of the discipline-specific mutual aid systems are handled through the emergency services mutual aid system by emergency management staff at the local government, operational area, regional, and state levels. The flow of resource requests and information among mutual aid coordinators is illustrated in **Chart 2.**

Mutual aid coordinators may function from an EOC, their normal departmental location, or other locations depending on the circumstances.

Volunteer and Private Agencies

Volunteer agencies and private agencies may participate in the mutual aid system along with governmental agencies. For example, the disaster medical mutual aid system relies heavily on private sector involvement for medical/health resources. Some volunteer agencies such as the American Red Cross, Salvation Army, Auxiliary Communication Services, Community Emergency Response Teams, faith-based organizations, and others are an essential element of the statewide emergency response to meet the needs of disaster victims. Volunteer agencies mobilize volunteers and other resources through their own systems. They also may identify resource needs that are not met within their own systems that would be requested through the mutual aid system. Volunteer agencies with extensive involvement in the emergency response should be represented in EOCs.

Some private agencies have established mutual aid arrangements to assist other private agencies within their functional area. For example, electric and gas utilities have mutual aid agreements within their industry and established procedures for coordinating with governmental EOCs. In some functional areas, services are provided by a mix of special district, municipal and private agencies. Mutual aid arrangements may include both governmental and private agencies.

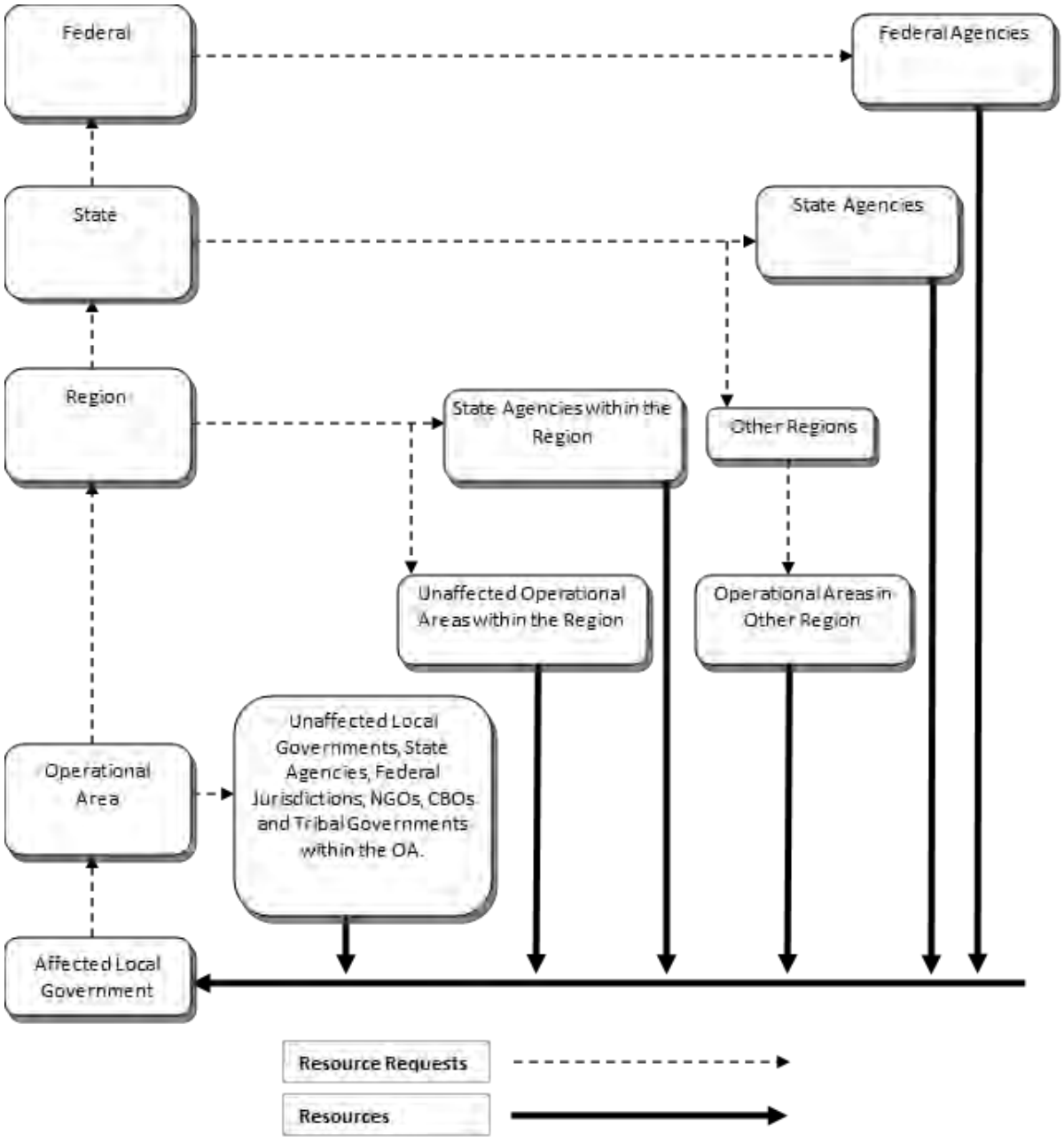
Liaison should be established between activated EOCs and private agencies involved in a response. Where there is a need for extensive coordination and information exchange, private agencies should be represented in activated EOCs at the appropriate SEMS level.

Policies and Procedures

- Mutual aid resources will be provided and utilized in accordance with the California Master Mutual Aid Agreement.
- During a proclaimed emergency, inter-jurisdictional mutual aid will be coordinated at the county, operational area, or mutual aid regional level.
- Because different radio frequencies are in use among most agencies, local agencies should provide incoming mutual aid forces with portable radios having local frequencies.
- The City of San Buenaventura will make non-law and non-fire mutual aid requests via the Ventura County Operational Area via the Ventura County Sheriff's Office of Emergency Services. Requests should specify, at a minimum:

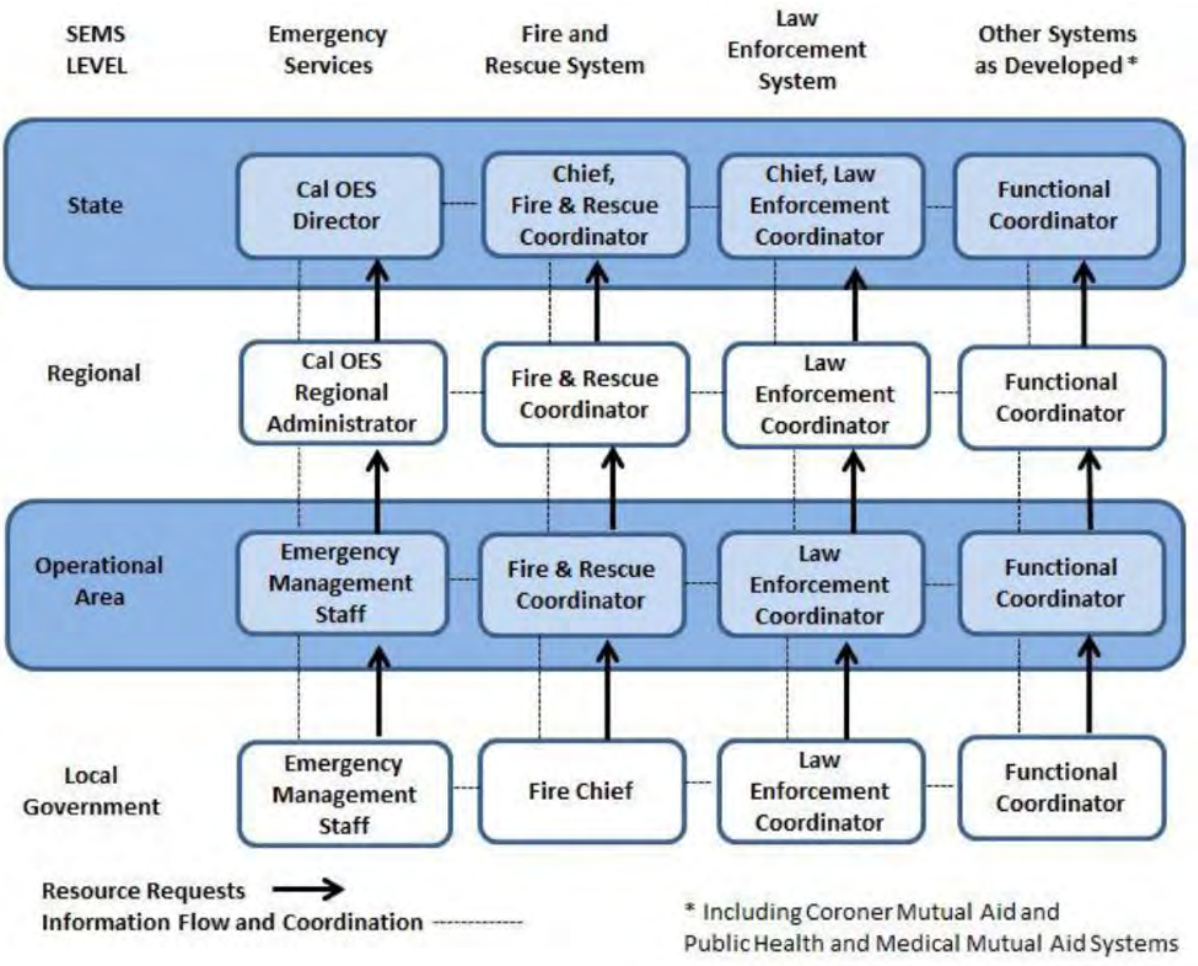
- Number and type of personnel needed
- Type and amount of equipment needed
- Reporting time and location
- Authority to whom forces should report
- Access routes
- Estimated duration of operations
- Risks and hazards

Chart 1 - MUTUAL AID SYSTEM FLOW CHART[7]



[7] California Governor's Office of Emergency Services, *State of California Emergency Plan*, October 2017, page 65

Chart 2 - DISCIPLINE - SPECIFIC MUTUAL AID SYSTEMS[8]



[8] California Governor's Office of Emergency Services, *State of California Emergency Plan*, October 2017, page 64

CHART 3 - STATE MUTUAL AID REGION MAP[9]

[9] California Governor's Office of Emergency Services, *State of California Emergency Plan*, October 2017, page 60

SECTION SEVEN - AUTHORITIES AND REFERENCES

General

California Emergency Services Act (CESA) (Chapter 7 of Division 1 of Title 2 of the Government Code), hereafter referred to as the Act, provides the basic authorities for conducting emergency operations following a proclamation of Local Emergency, State of Emergency, or State of War Emergency by the Governor and/or appropriate local authorities, consistent with the provisions of the Act.

Standardized Emergency Management System (SEMS) Regulations (Chapter 1 of Division 2 of Title 19 of the California Code of Regulations), hereafter referred to as SEMS, establishes SEMS, which incorporates the use of the Incident Command System (ICS), the Master Mutual Aid Agreement and existing mutual aid systems, the Operational Area concept and multi-agency or inter-agency coordination.

California Emergency Plan (CEP), which is promulgated by the Governor, is published in accordance with the Act and provides overall statewide authorities and responsibilities and describes the functions and operations of government at all levels during emergencies or disasters. Section 8568 of the Act states, in part, that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." Local emergency plans are, therefore, considered to be extensions of the California Emergency Plan.

National Incident Management System (NIMS) was mandated by Homeland Security Presidential Directive (HSPD) - 5 and is based on the Incident Command System and the multi-agency coordination system.

National Response Framework (NRF)is a guide as to how the nation conducts all-hazards incident response. It is built upon flexible, scalable, and adaptable coordinating structures to align key roles and responsibilities across the country, linking all levels of government and private sector businesses and non-governmental organizations.

The federal government does not assume command for local emergency management but rather provides support to local agencies. This Framework is based on the premise that incidents are typically managed at the lowest possible geographic, organizational and jurisdictional level.

Authorities

The following provides emergency authorities for conducting and/or supporting emergency operations:

Federal

- Americans with Disabilities Act of 1990 (A.D.A)
- Emergency Planning and Community Right-To-Know Act of 1986, also known as the Superfund Amendments and Reauthorization Act of 1986, Title III (42 U.S.C. §§ 11001-11050)
- Federal Civil Defense Act of 1950, Public Law 920, as amended
- Homeland Security Act, Public Law 107-296, as amended (6 U.S.C. §101-557)

- Homeland Security Presidential Directive #5, February 28, 2003
- Homeland Security Presidential Directive #8, December 17, 2005
- Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, Public Law 93288, as amended
- Volunteer Protection Act of 1997, Public Law 105-19 (42 U.S.C. §§ 14501-14505)
- Emergency Management Assistance Compact (EMAC), 2005
- Post-Katrina Emergency Management Reform Act of 2006
- Sandy Recovery Improvement Act of 2013

State

- California Emergency Services Act, Ch. 7 of Div. 1 of Title 2 of the Government Code
- California Disaster Assistance Act (CDAA), Title 19, Chapter 6 of the California Code of Regulations
- California Health and Safety Code, Division 20, Chapter 6.5, Sections 25115 and 25117, Chapter 6.95, Sections 2550 et seq., Chapter 7, Sections 25600 through 25610, dealing with hazardous materials
- California Code of Regulations, Title 19 (Public Safety), Division 2 (CAL OES) Emergency and Major Disasters, Subchapter 3, Disaster Services Worker Volunteer Program
- Standardized Emergency Management System (SEMS) Regulations, Chapter 1 of Division 2 of Title 19 of the California Code of Regulations and Government Code Section 8607(a)
- California Master Mutual Aid Agreement
- Executive Order S-2-05, National Incident Management System Integration into the State of California
- “Good Samaritan” Liability
- Orders and Regulations Promulgated by the Governor to Take Effect upon the Existence of a State of War Emergency
- Orders and Regulations which may be Selectively Promulgated by the Governor during a State of Emergency

Local

County

- County of Ventura Resolution No. 236 adopting the Master Mutual Aid Agreement, dated March 11, 1958 (Located in Sheriff’s OES)(New Version dated 2021 circulating for comment)
- County of Ventura Resolution No. 239 establishing policy for emergency actions by Public Works forces, dated January 21, 1969 (Located in Public Works)
- County of Ventura Sandbag Policy, adopted by the Board of Supervisors on February 10, 1981 (Located in Public Works)
- Ventura County Law Enforcement Agencies Mutual Consent Agreement, May 16, 1972

- Ventura County Operational Area Organization Agreement adopted November 21, 1995. (Located in Sheriff's OES)
- Resolution Adopting the National Incident Management System, R-06, October 4, 2005.
- Ventura County Ordinance No. 4410 pertaining to public emergency adopted February 9, 2009 (Located in Sheriff's OES and Clerk of the Board)

City

- City of Ventura's Emergency Services Ordinance No. 1694, dated December 13, 1971
- City of Ventura's City Emergency Organization and Functions, Ordinance No 2004-003, dated February 2, 2004 (conforming to the Standardized Emergency Management System)
- The City of Ventura adopted the Master Mutual Aid Agreement
- Ventura adopted Worker's Compensation Benefits for Disaster Service Workers
- The City of Buenaventura Resolution No. 2006-060 adopting the National Incident Management System adopted September 18, 2006
- Ventura County/Cities Mutual Aid Agreement for Emergency Building and Safety Services adopted July 11, 1995
- City of Ventura Fire Department Mutual Aid Agreement with City of Santa Paula, June 6, 1977
- City of Ventura Fire Department Mutual Aid Agreement with City of Oxnard, May 9, 1977
- City of Ventura Fire Department Mutual Aid Agreement with Ventura County Fire Protection District, June 29, 1970
- City of Ventura Fire Department Mutual Aid Agreement with Port Hueneme Naval Construction Battalion Center, January 6, 1986
- City of Ventura Fire Department Mutual Aid Agreement with Point Mugu NMTC, January 6, 1986
- City of Ventura Resolution No. 95-65, adopting the Emergency Operations Plan, 2013

References

Federal

- Hazardous Materials Emergency Planning Guide, NRT-1 and Plan Review Guide, NRT-1A: (Environmental Protection Agency's National Response Team)
- National Fire Protection Association (NFPA) Standard 1600
- National Incident Management System (NIMS): U.S. Department of Homeland Security
- National Response Framework: U.S. Department of Homeland Security, 2016
- National Disaster Recovery Framework: U.S. Department of Homeland Security, 2016
- Pre-Disaster Recovery Planning Guide for Local Governments: U.S. Department of Homeland Security, 2017
- NIMS Emergency Operations Plan (EOP) Compliance Checklist
- U.S. Dept. of Homeland Security: Local and Tribal NIMS Integration

State

- Disaster Assistance Procedure Manual (Cal OES).
- California Emergency Plan, 2017
- California (CAL OES) Emergency Planning Guidance for Local Government and Crosswalk (Checklist for Reviewing Emergency Plans)
- California Emergency Resources Management Plan
- California Fire and Rescue Operations Plan
- California Hazardous Materials Incident Contingency Plan
- Standardized Emergency Management System (SEMS) Guidelines
- California (CAL OES) Implementation Guidelines for the National Incident Management System (NIMS)
- California Law Enforcement Mutual Aid Plan

Local

- Ventura County Dam Failure Response Plan
- Ventura County Energy Shortage Emergency Response Plan, 2020
- Ventura County Oil Spill Response Plan, revised November 2011
- Ventura County Hazard Materials Area Plan, 2010
- Ventura County Operational Area Tsunami Evacuation Plan, June 2011
- Ventura County Animal Regulation Department Emergency Operations Plan, 2009
- Ventura Nuclear Response Plan, 2012
- Ventura County Hazard Mitigation Plan, 2015 (includes the City of Ventura)
- Ventura County Emergency Operations Plan, 2021

SECTION EIGHT – OVERVIEW AND THREAT SUMMARIES

Overview

This section of the Basic Plan (Part One) provides a summary of threats based on the Ventura County Multi-Hazard Mitigation Plan (2015), which includes hazard information for the City of Ventura and the City of Ventura's General Plan (especially Chapter 7, "Our Healthy and Safe Community"). The General Plan was last updated in August of 2005 (next 2021). The purpose is to describe the area at risk, and the anticipated nature of the situation, which could result should the event threaten or occur.

The City of Ventura is located within Ventura County, Region I, Southern Administrative Region of California Office of Emergency Services. The City lies on the coast of the Pacific Ocean. It has a residential population of 106,43310 and consists of 21.66 square miles11. Major arterials serving the City include U.S. Highway 101, State Routes 33 and 126.

- An earthquake could impact major segments of or the total population.
- The City has some industry and faces the potential for hazardous materials incidents from the stationary hazardous materials users and transportation accidents, pipeline ruptures, and illegal dumping.
- There are six dams that could have a direct impact on the City.
- A portion of the City may be subject to flooding due to flash flooding, urban flooding (storm drain failure/infrastructure breakdown), river channel overflow, downstream flooding, etc.)
- A transportation incident such as a major air crash, train derailment, or trucking or shipping incidents could impact areas within the City.
- A civil unrest incident could impact areas within the City or the entire City.
- The entire Ventura County basin is considered as a risk area for an act of terrorism; therefore, both sheltering and evacuation should be considered. Neither the City nor the County of Ventura County has the capability to plan for the organized evacuation of the basin; therefore, the extent of planning at this time is restricted to assisting and expediting spontaneous evacuation. In the increased readiness stage, expedient shelters will be utilized as appropriate, and information will be provided to the public.

The City has its own police department and fire department and utilizes local volunteer organizations such as the Auxiliary Communication Services (ACS), Community Emergency Response Team (CERT), and Police and Fire volunteers for assistance in emergency communications and other necessary emergency services.

The City is served by two major medical facilities within the city boundaries: Ventura County Medical Center (a 223-bed general acute care hospital and Level II Trauma Center) and Community Memorial Hospital (a 242-bed general acute care hospital).

City staff has been designated to coordinate all SEMS/NIMS functions.

During the response phase, the City's EOC is the coordination and communication point and the access to the Ventura Operational Area.

The City of San Buenaventura maintains a Disaster Hotline (805-477-3711) and participates in the County's emergency notification system (VC Alert).

Threat Summaries

The City of San Buenaventura is vulnerable to the following hazards:

Earthquake

The City of Ventura is in the vicinity of several known active and potentially active earthquake faults, including the San Andreas Fault, Malibu-Santa Monica-Raymond Fault System, Red Mountain-San Cayetano-Santa Susana-San Fernando Fault, Oakridge Fault, Ventura Fault, McGrath Fault, and the Country Club Fault. New faults within the region are continuously being discovered. Scientists have identified almost 100 faults in the Ventura County area known to be capable of a magnitude 6.0 or greater earthquake.

A major earthquake occurring in or near this jurisdiction may cause many deaths and casualties, extensive property damage, fires, hazardous material spills, and other ensuing hazards. The effects could be aggravated by aftershocks and by the secondary effects of fire and hazardous material/chemical accidents. The time of day and season of the year would have a profound effect on the number of dead and injured and the amount of property damage sustained. Such an earthquake would be catastrophic in its affect upon the population and could exceed the response capabilities of the City, Ventura County Operational Area and the State of California Office Emergency Services. Damage control and disaster relief support may be required from other local governmental and private organizations, and from the state and federal governments.

Extensive search and rescue operations would be required to assist trapped or injured persons. Emergency medical care, food, and temporary shelter could be required by injured or displaced persons. Identification and burial of many dead persons could pose difficult problems; public health would be a significant concern. Mass evacuation may be essential to save lives downwind from hazardous material releases. Many families would be separated, particularly if the earthquake should occur during working hours. Emergency operations could be seriously hampered by the loss of communications and damage to transportation routes within and to and from the disaster area and by the disruption of public utilities and services.

As a result of an earthquake, the City may be vulnerable to liquefaction and landslides. Liquefaction is a phenomenon involving the loss of shear strength of the soil. The shear strength loss results from the increase of poor water pressure caused by the rearrangement of soil particles induced by shaking or vibration. Few areas of significant liquefaction susceptibility exist in the City of San Buenaventura. These few areas are located along the beaches and rivers (Ventura River and Santa Clara River).

Landslides may also occur during aftershocks in areas already weakened by the first shock. Large boulders and/or soft soil could be jarred loose.

Wildfire

In general, wildfire hazard exists in the hillside and canyon areas north of the City that are covered with natural vegetation. This high wildfire hazard area encompasses much of the area within one mile of the Wildland/Urban Interface (WUI). Numerous residential areas are in and adjacent to the hazardous wildfire area and could be exposed to wildfires and related damage. These include the residential developments located on and adjacent to hillsides in the Poinsettia, Arroyo Verde, Catalina, Downtown, and Avenue communities.12

Windstorm

Severe windstorms pose a significant risk to life and property by creating conditions that disrupt essential systems such as public utilities, telecommunications, and transportation routes. High winds have the potential to cause damage to homes and businesses from falling trees and debris. Also, windstorms increase the risk of wildfire as the moisture content decreases in brush and vegetation on hillsides, especially in urban interface areas.

Landslide

A landslide is the perceptible downslope movement of earth mass. It is part of the continuous, natural, gravity-induced movement of soil, rock, and debris. Land sliding can range from the downslope creep of soil and rock material to sudden failure of entire hillsides. Landslides include rockfalls, slumps, block glides, mudslides, debris flows, and mudflows. Land sliding or slope instability may be caused by natural factors such as fractured or weak bedrock, heavy rainfall, erosion, earthquake activity, and fire, as well as by human alteration of topography and water content in the soil. The hillsides north of Poli Street/Foothill Road and east of Ventura Avenue and Cedar Street contain several existing landslides and are likely to experience future landslide activity. Although landslides generally occur on slopes 30% or steeper, they may also occur on slopes that are less steep. Slope stability conditions vary locally in the hillside area based on soil and rock type and groundwater depth.13

Terrorism

Terrorism is a continuing threat throughout the world and within the United States. There is no history of terrorist acts or terrorist groups operating in the City. Consequently, the probability of a terrorist attack is considered low. Nevertheless, it is still essential to consider the potential for terrorist activities, especially since there are various political, social, religious, cultural, and economic factors that underlie the broad term “terrorist.”

In response to a growing concern about terrorism at the federal, state, and local level, the City of Ventura regularly participates and is an active member of the County’s Terrorism Early Warning Group, Terrorism Working Group and, the Joint Regional Information Center.

Following is a general overview of potential terrorist targets in Ventura County and specifically the City:

- Facilities that store, manufacture, or transport hazardous materials
- Highways and freeways

- Telecommunications facilities
- Federal, state, county, and city offices
- Shopping malls
- Schools, churches & religious centers
- Research facilities
- Electrical facilities
- Water and wastewater facilities, dams
- Bridges and overpasses

Dam Inundation

Dam failures can result from several natural or manmade causes such as earthquakes, erosion of the face or foundation, improper sitting, rapidly rising floodwaters, and structural/design flaws. There are three general types of dams: earth and rockfill, concrete arch or hydraulic fill, and concrete gravity. All the dams, except for one, that may impact the City are earth and rockfill design. The exception is Matilija Dam which is a concrete arch design. The earth-rockfill dam will fail gradually due to erosion of the breach; a flood wave will build gradually to a peak and then decline until the reservoir is empty.

The City of Ventura could be affected by dam failure from six dams: Bouquet Canyon Reservoir, Casitas Dam, Castaic Reservoir, Matilija Dam, Pyramid Reservoir and, Santa Felicia Dam.

Flooding

The magnitude of a flood is measured in terms of its peak discharge, the maximum volume of water passing a point along a channel. Floods are usually referred to in terms of their frequency of occurrence, 50 or 100 years.

The primary effect of flooding is the threat to life and property. People and animals may drown; structures and their contents may be washed away or destroyed; roads, bridges, and railroad tracks may be washed out; and crops may be destroyed.

Floods may also create health hazards due to the discharge of raw sewage from damaged septic tank leach fields, sewer lines, and sewage treatment plants and due to flammable, explosive, or toxic materials carried off by floodwaters. In addition, vital public services may be disrupted.

The Federal Emergency Management Agency has identified a localized area subject to flooding during a 100-year flood. The 100-year flood hazard area for the Ventura River is relatively small due to a levee constructed along the east bank of the river by the Army Corps of Engineers. Therefore, the 100-year flood hazard from the Ventura River is confined to an area west of the levee and near the River mouth. A 100-year flood along the Santa Clara River would affect a limited area of the City located just north of the river, in the vicinity of the Olivas Park and Buenaventura golf courses. Other areas of the City that could potentially experience flooding impacts as a result of a 100-year flood include areas adjacent to the Arundel Barranca south of Main Street; the Harmon Barranca generally south of Telegraph Road, and in the beach area along the Pierpont Lanes.14

Tsunami

Tsunamis are large ocean surges that are generated by submarine landslides, volcanic eruptions, or earthquakes. Tsunamis originate in deep water and have a long wavelength (distance from the crest of one wave to the crest of the succeeding wave), normally over 100 miles, and a very low amplitude (height from crest to trough). As these waves approach shallow water, the speed decreases from over 600 mph to less than 30 mph as they move across the beach. The wave energy is transferred from wave speed (velocity) to wave height (amplitude), and waves as high as 100 feet can be formed.

Although the arrival time of a wave generated far out at sea can be predicted quite accurately, the intensity of the wave when it reaches the shore is difficult to predict. The duration of a tsunami threat can sometimes last up to ten to twelve hours.

The tsunami threat is mainly confined to immediate beach areas and river channels. Beach areas have historically been affected up to a mile or more inland in very flat areas. Tsunamis can also travel considerable distances inland on waterways, particularly those with shallow gradients. The effects of the tsunami are most noticeable on manmade features, but the waves can also change river channels and modify coastal landforms.15

Hazardous Materials

The City could be affected by hazardous materials incidents. The spills/releases of material can result from both stationary and mobile sources. The level of exposure from stationary sources is considered very low due to the types of businesses and industries conducted within the area. The Ventura City Fire Department responds to all hazardous materials calls within the City of Ventura. The City Fire Department maintains a hazardous materials (HAZMAT) response team specially trained and equipped to respond to emergencies involving potentially hazardous materials. As partners to a region-wide Hazardous Materials Response Plan, additional fire protection equipment and staffing specifically designed for hazardous materials incidents is available from the City of Oxnard, the Ventura County Fire Department, and the U.S. Naval Base Ventura County.

The threat of a major hazardous material incident in Ventura exists from commercial vehicles and rail, fixed facilities, petroleum pipelines, and clandestine dumping.

Major Air Crash

The airports nearest to the City that handle the greatest amount of air traffic that could cause a risk to the City include Los Angeles International Airport and Burbank Bob Hope Airport. In addition, there are smaller airports: Oxnard Airport, Camarillo Airport, and the Naval Air Weapons Station Point Mugu Airport. If an aircraft were to crash, the impact would be limited to a localized area.

Civil Unrest

Civil Unrest is the spontaneous disruption of routine, orderly conduct, and activities in urban areas or outbreak of rioting or violence. Civil Unrest can be the result of long-term disfavor with authority. Civil Unrest is usually noted by the fact that normal on-duty police and safety forces cannot adequately deal with the situation until additional resources can be acquired, or it may require deeper long-term solutions to prevent the problem from happening again in the future.

Public Health Emergency

A pandemic is a global disease outbreak. A flu pandemic occurs when a new influenza virus emerges for which people have little or no immunity and for which there is no vaccine. The disease spreads easily person-to-person, causes serious illness, and can sweep across the country and around the world in a very short time. The City will take public health direction and guidance from the Ventura County Health Care Agency.

Cyber-Related Incidents

A cyber-related incident may take many forms: an organized cyber-attack, an uncontrolled exploit such as a virus or worm, a natural disaster with significant cyber consequences, or other incidents capable of causing extensive damage to critical infrastructure or key assets.

The City's EOP stakeholder group has prioritized the top four hazards that may impact the City using the Calculated Priority Risk Index Rating as:

1. Earthquake
2. Fire
3. Hazardous Materials
4. Flooding

For additional hazard-specific information and details for each of these hazards, please refer to the City of Ventura's General Plan and the Ventura County Multi-Hazard Mitigation Plan (the City of Ventura is part of this plan).

SECTION NINE - LIST OF ACRONYMS AND ABBREVIATIONS

AC	Area Command
ACS	Auxiliary Communications Services
ADA	Americans with Disabilities Act
AFN	Access and Functional Needs
ARC	American Red Cross
CalTrans	California Department of Transportation
CAL FIRE	California Department of Forestry and Fire Protection
Cal OES	California Office of Emergency Services
CALWAS	California Warning System
CCP	Casualty Collection Points
CDAA	California Disaster Assistance Act
CDC	Centers for Disease Control, U.S. Public Health Service
CERT	Community Emergency Response Team
CESFRS	California Emergency Service Fire Radio System
CESRS	California Emergency Services Radio System
CHP	California Highway Patrol
CIKR	Critical Infrastructure, Key Resources
CLEMARS	California Law Enforcement Mutual Aid Radio System
CLERS	California Law Enforcement Radio System
CLETS	California Law Enforcement Telecommunications System
CMAS	Commercial Mobile Alert System
COE	Corps of Engineers (US Army)
DFO	Disaster Field Office
DHS	Department of Homeland Security
DMAT	Disaster Medical Assistance Team
DMORT	Disaster Mortuary Operational Response Team
DOC	Department Operations Center
EAS	Emergency Alert System
EDIS	Emergency Digital Information System
EMAC	Emergency Management Assistance Compact
EMMA	Emergency Managers Mutual Aid
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPI	Emergency Public Information
ESF	Emergency Support Functions
FBI	Federal Bureau of Investigation
FCC	Federal Communications Commission
FCO	Federal Coordinating Officer
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTS	Field Treatment Sites
GAR	Governor's Authorized Representative
GIS	Geographic Information System
HAZMAT	Hazardous Materials
HSC	Homeland Security Council
HSOC	Homeland Security Operations Center
HSPD	Homeland Security Presidential Directive
IAP	Incident Action Plan
IC	Incident Commander
ICP	Incident Command Post
ICS	Incident Command System

IDE	Initial Damage Estimate
IMT	Incident Management Team
IPAWS	Integrated Public Alert and Warning System
JFO	Joint Field Office
JPA	Joint Powers Agreement
JIC	Joint Information Center
JIS	Joint Information System
JOC	Joint Operations Center
JTTF	Joint Terrorism Task Force
LAC	Local Assistance Center
MACS	Multi-Agency Coordination System
MARAC	Mutual Aid Regional Advisory Committee
MARS	U.S. Army Military Affiliate Radio System
MMRS	Metropolitan Medical Response Team
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NAWAS	National Warning System
NDMS	National Disaster Medical System
NFIP	National Flood Insurance Program
NICC	National Interagency Coordinating Center National Infrastructure Coordination Center
NIFCC	National Interagency Fire Coordination Center
NIMS	National Incident Management System
NMRT	National Medical Response Team
NOAA	National Oceanic and Atmospheric Administration
NOC	National Operations Center
NRF	National Response Framework
NRT	National Response Team
NSC	National Security Council
NSSE	National Special Security Event
NTAS	National Terrorism Advisory System
NVOAD	National Voluntary Organizations Active in Disaster
NWS	National Weather Service
OA	Operational Area
OASIS	Operational Area Satellite Information System
OEM	Office of Emergency Management
OSC	On-Scene Coordinator
PA	Public Affairs
PAO	Public Affairs Officer
PA	Public Assistance
PA/O	Public Assistance Officer
PA#	Project Application Number
PDA	Preliminary Damage Assessment
PDD	Presidential Decision Directive
PFO	Principal Federal Officer
PIO	Public Information Officer
PNP	Private Nonprofit Organization
PW	Project Worksheet
REOC	Regional Emergency Operations Center
ROC	Regional Operations Center
RRCC	Regional Response Coordinating Center
SAR	Search and Rescue
SARA	Superfund Amendment Reauthorization Act (Title III)
SBA	Small Business Administration
SCO	State Coordinating Officer
SEMS	Standardized Emergency Management System
SFLEO	Senior Federal Law Enforcement Officer
SFO	Senior Federal Officer

SHMO	State Hazard Mitigation Officer
SHPO	State Historic Preservation Officer
SITREP	Situation Report
SLPS	State and Local Programs and Support Directorate (FEMA)
SNAP	Special Needs Awareness Program
SOC	State Operations Center
SOP	Standard Operating Procedure
TEWG	Terrorism Early Warning Group
TWG	Terrorism Working Group
USACE	United States Army Corps of Engineers
USAR	Urban Search and Rescue
USDA	U.S. Department of Agriculture
USFA	United States Fire Administration
USGS	United States Geological Survey
VOAD	Volunteer Organizations Active in Disaster
WMD	Weapons of Mass Destruction

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SECTION TEN - GLOSSARY OF TERMS

This Glossary contains definitions of terms commonly used in the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS)

Action Plan: "Action Plan" means the plan prepared in the EOC containing the emergency response objectives of that SEMS level reflecting overall priorities and supporting activities for a designated period. The plan is shared with supporting agencies.

After Action Report: A report covering response actions, application of SEMS and NIMS, modifications to plans and procedures, training needs, and recovery activities. After action reports are required under SEMS after any emergency which requires a declaration of an emergency. Reports are required within 90 days.

Agency Representative: An individual assigned to an incident or to an EOC from an assisting or cooperating agency who has delegated authority to make decisions on matters affecting that agency's participation at the incident or at the EOC. Agency Representatives report to the Liaison Officer.

Area Command: An organization established to: 1) oversee the management of multiple incidents that are each being handled by an Incident Command System organization; or 2) to oversee the management of a very large incident that has multiple Incident Management Teams assigned to it. Area Command has the responsibility to set overall strategy and priorities, allocate critical resources based on priorities, ensure that incidents are properly managed, and ensure that objectives are met and strategies followed.

Assessment: The evaluation and interpretation of measurements and other information to provide a basis for decision-making.

Assignments: Tasks given to resources to perform within a given operational period, based upon tactical objectives in the Incident or EOC Action Plan.

Assistant: Title for subordinates of the Command Staff positions at the Field SEMS level. The title indicates a level of technical capability, qualifications, and responsibility subordinate to the primary positions. Assistants may also be used to supervise unit activities at camps.

Assisting Agency: An agency directly contributing tactical or service resources to another agency.

Available Resources: Incident-based resources which are available for immediate assignment.

Base: The location at an incident at which primary logistics functions for an incident are coordinated and administered. There is only one Base per incident. (Incident name or other designator will be added to the term "Base.") The Incident Command Post may be collocated with the Base.

Base Flood: A term used in the National Flood Insurance Program to indicate the minimum size flood to be used by a community as a basis for its floodplain management regulations. The Base Flood is a flood which has a one-percent chance of being equaled or exceeded in any given year. The Base Flood is also known as a 100-year flood or one-percent chance flood.

Base Flood Elevation (BFE): The elevation for which there is a one-percent chance in any given year that flood levels will equal or exceed it. The BFE is determined by statistical analysis for each local area and designated on the Flood Insurance Rate Map. It is also known as the 100-Year Flood.

Branch: The organizational level at the SEMS Field Level having functional or geographic responsibility for major parts of incident operations. The Branch level is organizationally between Section and Division/Group in the Operations Section, and between Section and Units in the Logistics Section. Branches are identified by the use of Roman Numerals or by functional name (e.g., medical, security, etc.). Branches are also used in the same sequences at the SEMS EOC Levels.

Branch Director: The ICS title for individuals responsible for supervision of a Branch at the Field Level. At SEMS EOC levels, the title Branch Coordinator is preferred.

Camp: A geographical site, within the general incident area, separate from the Incident Base, equipped and staffed to provide sleeping, food, water, and sanitary services to the incident personnel.

Care and Shelter: A phase of operations that meets the food, clothing, and shelter needs of people on a mass care basis.

Chain of Command: A series of management positions in order of authority.

Check-in: The process whereby resources first report to an incident or into an EOC/Check-in locations at the SEMS Field level include: Incident Command Post (Resources Unit), Incident Base, Camps, Staging Areas, Helibases, Heli spots, and Division Supervisors (for direct line assignments).

Civil Air Patrol: A civilian auxiliary of the United Stated Air Force which provides personnel, services, and equipment for specified missions in support of state and local emergency operations.

Clear Text: The use of plain English in radio communications transmissions. No Ten Codes or agency specific codes are used when utilizing Clear Text.

CLERS: California Law Enforcement Radio System. The State's radio system dedicated to public safety/law enforcement purposes that run of the State's microwave backbone. Local CLERS VHF channels provide State EAS audio to broadcasters.

CLETS: California Law Enforcement Telecommunications System. CLETS terminals can be permissioned to originate EDIS messages. Please see EDIS definition below.

Command: The act of directing, and/or controlling resources at an incident by virtue of explicit legal, agency, or delegated authority. May also refer to the Incident Commander.

Command Post: (See Incident Command Post)

Command Staff: The Command Staff at the Field level consists of the Information Officer, Safety Officer, and Liaison Officer. They report directly to the Incident Commander and may have an assistant or assistants, as needed. These functions may also be found at the EOC levels and would be referred to as Management Staff.

Common Operating Picture: A broad view of the overall situation as reflected by situation reports, aerial photography, and other information or intelligence.

Communications Unit: An organizational unit in the Logistics Section responsible for providing communication services at an incident or an EOC. A communications Unit may also be a facility (e.g. a trailer or mobile van) used to provide the major part of an Incident Communications Center.

Compensation Unit/Claims Unit: Functional unit within the Finance/Administration Section responsible for financial concerns resulting from property damage, injuries or fatalities at the incident or within an EOC.

Continuity of Government (COG): All measures that may be taken to ensure the

continuity of essential functions of governments in the event of emergency conditions, including line-of succession for key decision makers.

Cooperating Agency: An agency supplying assistance other than direct tactical or support functions or resources to the incident control effort (e.g., American Red Cross telephone company, etc.).

Cost Sharing Agreements: Agreements between agencies or jurisdictions to share designated costs related to incidents. Cost sharing agreements are normally written but may also be verbal between authorized agency or jurisdictional representatives at the incident.

Cost Unit: Functional unit within the Finance/Administration Section responsible for tracking costs, analyzing cost data, making cost estimates, and recommending cost-saving measures.

Damage Assessment: The process utilized to determine the magnitude of damage and the unmet needs of individuals, businesses, the public sector, and the community caused by a disaster or emergency event.

Declaration: The formal action by the President to make a State eligible for major disaster or emergency assistance under the Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 3-288, as amended (the Stafford Act).

Declaration Process: When a disaster strikes, local authorities and individuals request help from private relief organizations and their State government, which give all assistance possible. If assistance is beyond their capability, the Governor requests a Presidential declaration of a major disaster or an emergency.

Delegation of Authority: A statement provided to the Incident Commander by the Agency Executive delegating authority and assigning responsibility. The Delegation of Authority can include objectives, priorities, expectations, constraints and other considerations or guidelines as needed. Many agencies require written Delegation of Authority to be given to Incident Commanders prior to their assuming command on larger incidents.

Demobilization Unit: Functional unit within the Planning Section responsible for assuring orderly, safe and efficient demobilization of incident or EOC assigned resources.

Department Operations Center: A facility used by a distinct discipline, such as fire, medical, hazardous material, or a unit, such as Department of Public Works, Department of Health or local water district. Department operations centers may be used at all SEMS levels above the field response level depending upon the impacts of the emergency.

Deputy Incident Commander (Section Chief or Branch Director): A fully qualified individual who, in the absence of a superior, could be delegated the authority to manage a functional operation or perform a specific task. In some cases, a Deputy could act as relief for a superior and therefore must be fully qualified in the position. Deputies may also be found as necessary at all SEMS EOC levels.

Direction and Control (Emergency Management): The provision of overall operational control and/or coordination of emergency operations at each level of the Statewide Emergency Organization, whether it be the actual direction of field forces or the coordination of joint efforts of governmental and private agencies in supporting such operations.

Disaster Assistance Program: A program that provides state funding or reimbursement for local government response related personnel costs incurred in response to an incident as defined in Section 2402 (i).

Disaster Service Worker: Includes public employees and any unregistered person impressed into service during a State of War emergency, a State of emergency, or a Local Emergency by a person having authority to

command the aid of citizens in the execution of his duties. It does not include anyone registered as an active firefighting member of any regularly organized volunteer fire department, having official recognition, and full or partial support of the county, city, town or district in which such fire department is located.

Division: Divisions are used to divide an incident into geographical areas of operation. Divisions are identified by alphabetic characters for horizontal applications and, often, by numbers when used in buildings. Divisions are also used at SEMS EOC levels and are found organizationally between Branches and Units.

Division or Group Supervisor: The position title for individuals responsible for command of a Division or Group at an Incident. At EOC level, the title is Division Coordinator.

Documentation Unit: Functional unit within the Planning Section responsible for collecting, recording and safeguarding all documents relevant to an incident or within an EOC.

EDIS: Emergency Digital Information Service. The "government wireless service" provided by the State and carried locally on 39.32 MHz. that is used for longer form text emergency information, along with a website at [www.edis.ca.gov]. Plans are underway for EDIS to be linked with EAS to help TV stations put text on screen faster to better serve the needs of the hearing impaired.

Emergency: A condition of disaster or of extreme peril to the safety of persons and property caused by such conditions as air pollution, fire, flood, hazardous material incident, storm, epidemic, riot, drought, sudden and severe energy shortage, plant or animal infestations or disease, the Governor's warning of an earthquake or volcanic prediction, or an earthquake or other conditions, other than conditions resulting from a labor controversy.

Emergency Alert System: A system that enables the President and federal, state, and local governments to communicate through commercial radio and television broadcast stations with the general public in the event of a disaster.

Emergency Management (Direction and Control): The provision of overall operational control and/or coordination of emergency operations at each level of the Statewide Emergency Organization, whether it be the actual direction of field forces or the coordination of joint efforts of governmental and private agencies in supporting such operations.

Emergency Management Coordinator: The individual within each jurisdiction that is delegated the day-to-day responsibility for the development and maintenance of all emergency management coordination efforts.

Emergency Operations Center (EOC): A location from which centralized emergency management can be performed. EOC facilities are established by an agency or jurisdiction to coordinate the overall agency or jurisdictional response and support to an emergency.

Emergency Operations Plan: The plan that each jurisdiction has and maintains for responding to appropriate hazards.

Emergency Public Information (EPI): Information disseminated to the public by official sources during an emergency, using broadcast and print media. EPI includes: (1) instructions on survival and health preservation actions to take (what to do, what not to do, evacuation procedures, etc.), (2) status information on the disaster situation (number of deaths, injuries, property damage, etc.), and (3) other useful information (state/federal assistance available).

Emergency Public Information System: The network of information officers and their staffs who operate from EPICs (Centers) at all levels of government within the state. The system also includes the news media through which emergency information is released to the public.

Emergency Support Function: A grouping of government and certain private-sector capabilities into an organizational structure to provide the support, resources, program implementation, and services that are most likely to be needed to save lives, protect property and the environment, restore essential services and critical infrastructure, and help victims and communities return to normal, when feasible, following domestic incidents. The ESFs serve as the primary operational-level mechanism to provide assistance to State, local, and tribal governments or to Federal departments and agencies conducting missions of primary Federal responsibility.

EOC Action Plan: The plan developed at SEMS EOC levels which contains objectives, actions to be taken, assignments and supporting information for the next operational period.

Essential Facilities: Facilities that are essential for maintaining the health, safety, and overall well-being of the public following a disaster (e.g., hospitals, law enforcement and fire department buildings, utility facilities, etc.). May also include buildings that have been designated for use as mass care facilities (e.g., schools, churches, etc.).

Evacuation: Organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas, and their reception and care in safe areas.

Exercise: Maneuver or simulated emergency condition involving planning, preparation, and execution; carried out for the purpose of testing, evaluating, planning, developing, training, and/or demonstrating emergency management systems and individual components and capabilities, to identify areas of strength and weakness for improvement of an emergency operations plan (EOP).

Expedient Shelter: Any shelter constructed in an emergency or crisis period on a "crash basis" by individuals, single families, or small groups of families.

Facilities Unit: Functional unit within the Support Branch of the Logistics Section at the SEMS Field Response Level that provides fixed facilities for the incident. These facilities may include the Incident Base, feeding areas, sleeping areas, sanitary facilities, etc.

Federal Coordinating Officer (FCO): The person appointed by the President to coordinate federal assistance following an emergency or major disaster declaration.

Federal Disaster Assistance: Provides in-kind and monetary assistance to disaster victims, state, or local government by federal agencies under the provision of the Federal Disaster Relief Act and other statutory authorities of federal agencies.

Federal Disaster Relief Act: Public Law 93-288, as amended, that gives the President broad powers to supplement the efforts and available resources of state and local governments in carrying out their responsibilities to alleviate suffering and damage resulting from major (peacetime) disasters.

Federal Emergency Management Agency: This agency was created in 1979 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response, and recovery.

Federal Hazard Mitigation Officer (FHMO): The FEMA employee responsible for representing the agency for each declaration in carrying out the overall responsibilities for hazard mitigation and for Subpart M, including coordinating post-disaster hazard mitigation actions with other agencies of government at all levels.

Federal Coordinating Officer (FCO): (1) The person appointed by the FEMA Director, or in his/her absence, the FEMA Deputy Director, or alternatively the FEMA Associate Director for

Response and Recovery, following a declaration of a major disaster or of an emergency by the President, to coordinate Federal assistance.

Federal On-Scene Commander (OSC) : The FBI official designated upon JOC activation to ensure appropriate coordination of the overall United States government response with Federal, State and local authorities, until such time as the Attorney General transfers the LFA role to FEMA.

Field Coordination Center: A temporary facility established by Cal OES within or adjacent to areas affected by a disaster. It functions under the operational control of the Cal OES mutual aid regional manager and is supported by mobile communications and personnel provided by Cal OES and other state agencies.

Field Treatment Site: Temporary sites utilized for emergencies when permanent medical facilities are not available or adequate to meet emergency medical care needs. The FTS is designed to provide triage and medical care for up to 48 hours or until new patients are no longer arriving at the site. The Medical/Health Branch has the authority to activate an FTS and determine the number and location of FTSs.

Finance/Administration Section: One of the five primary functions found at all SEMS levels which is responsible for all costs and financial considerations. At the incident the Section can include the Time Unit, Procurement Unit, Compensation/Claims Unit and Cost Unit.

Flood Hazard Boundary Map (FHBM): the official map of a community that shows the boundaries of the flood plain and special flood hazard areas that have been designated. It is prepared by FEMA, using the best flood data available at the time a community enters the emergency phase of the NFIP. It is superseded by the FIRM after a more detailed study has been completed.

Flood Insurance: The insurance coverage provided under the National Flood Insurance Program.

Flood Insurance Rate Map (FIRM): The official map of a community prepared by FEMA, which shows the base flood elevation, along with the special hazard areas and the risk premium zones. The study is funded by FEMA and is based on detailed surveys and analysis of the site-specific hydrologic characteristics.

Food Unit: Functional unit within the Service Branch of the Logistics Section responsible for providing meals for incident and EOC personnel.

Function: In ICS, function refers to the five major activities in the ICS, i.e., Command, Operations, Planning, Logistics and Finance/Administration. The same five functions also are found at all SEMS EOC levels. At the EOC, the term Management replaces Command. The term function is also used when describing the activity involved, e.g., "the planning function."

Functional Element: Refers to a part of the incident, EOC or DOC organization such as section, branch, group or unit.

General Staff: The group of management personnel reporting to the Incident Commander or to the EOC Director. They may each have a deputy, as needed. At the Field SEMS level, the General Staff consists of: Operations Section Chief, Planning/Intelligence Section Chief, Logistics Section Chief and the Finance/Administration Section Chief

Group: Groups are established to divide the incident into functional areas of operation. Groups are composed of resources assembled to perform a special function not necessarily within a single geographic division. (See Division.) Groups are located between Branches (when activated) and Resources in the Operations Section.

Hazard: Any source of danger or element of risk to people or property.

Hazard Mitigation: A cost effective measure that will reduce the potential for damage to a facility from a disaster event.

Hazard Mitigation Assistance Program: Authorized under Section 404 of the Stafford Act. Provided funding for hazard mitigation projects that are cost effective and complement existing post-disaster mitigation programs and activities by providing funding for beneficial mitigation measures that are not funded through other programs.

Hazard Mitigation Plan: The plan resulting from a systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards present in society that includes the actions needed to minimize future vulnerability to hazards.

Incident: An occurrence or event, either human-caused or by natural phenomena, that requires action by emergency response personnel to prevent or minimize loss of life or damage to property and/or natural resources.

Incident Action Plan: The plan developed at the field response level which contains objectives reflecting the overall incident strategy and specific tactical actions and supporting information for the next operational period. The plan may be oral or written.

Incident Base: Location at the incident where the primary logistics functions are coordinated and administered. (Incident name or other designator will be added to the term "Base.") the Incident Command Post may be collocated with the Base. There is only one Base per incident.

Incident Commander: The individual responsible for the command of all functions at the field response level.

Incident Command Post (ICP): The location at which the primary command functions are executed. The ICP may be collocated with the incident base or other incident facilities.

Incident Command System (ICS): The nationally used standardized on-scene emergency management concept specifically designed to allow its user(s) to adopt an integrated organizational structure equal to the complexity and demands of single or multiple incidents without being hindered by jurisdictional boundaries. ICS is the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure, with responsibility for the management of resources to effectively accomplish stated objectives pertinent to an incident.

Incident Management Team: The Incident commander and appropriate General and Command Staff personnel assigned to an incident.

Incident Objectives: Statements of guidance and direction necessary for the selection of appropriate strategy(s) and the tactical direction of resources. Incident objectives are based on realistic expectations of what can be accomplished when all allocated resources have been effectively deployed. Incident objectives must be achievable and measurable, yet flexible enough to allow for strategic and tactical alternatives.

Individual Assistance (IA): Supplementary Federal assistance provided under the Stafford Act to individuals and families adversely affected by a major disaster or an emergency. Such assistance may be provided directly by the Federal Government or through State or local governments or disaster relief organizations.

Joint Field Office (JFO): A temporary Federal facility established locally to provide a central point for Federal, State, local, and tribal executives with responsibility for incident oversight, direction, and/or assistance to effectively coordinate protection, prevention, preparedness, response, and recovery actions.

The JFO will combine the traditional functions of the JOC, the FEMA DFO, and the JIC within a single Federal facility.

Joint Information Center (JIC): A facility established to coordinate all incident-related public information activities. It is the central point of contact for all news media at the scene of the incident. Public information officials from all participating agencies should collocate at the JIC.

Joint Information System (JIS): Integrates incident information and public affairs into a cohesive organization designed to provide consistent, coordinated, timely information during a crisis or incident operations. The mission of the JIS is to provide a structure and system for developing and delivering coordinated interagency messages; developing, recommending, and executing public information plans and strategies on behalf of the IC; advising the IC concerning public affairs issues that could affect a response effort; and controlling rumors and inaccurate information that could undermine public confidence in the emergency response effort.

Joint Operations Center (JOC): The JOC is the focal point for all Federal investigative law enforcement activities during a terrorist or potential terrorist incident or any other significant criminal incident, and is managed by the Senior Federal Law Enforcement Officer. The JOC becomes a component of the JFO when the National Response Plan is activated.

Jurisdiction: The range or sphere of authority. Public agencies have jurisdiction at an incident related to their legal responsibilities and authority for incident mitigation. Jurisdictional authority at an incident can be political/geographical (e.g., special district city, county, state or federal boundary lines), or functional (e.g., law enforcement, health department, etc.) (See Multi-jurisdiction.)

Jurisdictional Agency: The agency having jurisdiction and responsibility for a specific geographical area, or a mandated function.

Leader: The ICS title for an individual responsible for a functional unit, task forces, or teams.

Liaison Officer: A member of the Command Staff at the Field SEMS level responsible for coordinating with representatives from cooperating and assisting agencies. At SEMS EOC levels, the function may be done by a Coordinator and/or within a Section or Branch reporting directly to the EOC Director.

Life-Safety: Refers to the joint consideration of both the life and physical well-being of individuals.

Local Assistance Center: A facility jointly established by the Federal and State Coordinating Officers within or adjacent to an disaster impacted area to provide disaster victims a "one-stop" service in meeting their emergency representatives of local, state, and federal governmental agencies, private service organizations and certain representatives of the private sector.

Local Emergency: The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city, caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, or earthquake or other conditions, other than conditions resulting from a labor controversy, which conditions are or are likely to be beyond the control of the services, personnel, equipment, and facilities of that political subdivision and required the combined forces of political subdivisions to combat.

Local Government: Means local agencies defined in Government Code 8680.2 and special districts as defined in California Code of Regulations, Title 19 Division 2, Chapter 5, CDAA, 2900(y).

Logistics Section: One of the five primary functions found at all SEMS levels. The Section responsible for providing facilities, services and materials for the incident or at an EOC.

Major Disaster: Any hurricane, tornado, storm, flood, high-water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, snowstorm, drought, fire, explosions, or other catastrophe in any part of the United States which, in the determination of the President, causes damage of sufficient severity and magnitude to warrant major disaster assistance under the Federal Disaster Relief Act, above and beyond emergency services by the Federal Government, to supplement the efforts and available resources of States, local governments, and disaster relief organizations in alleviating the damage, loss, hardship, or suffering caused thereby.

Management by Objectives: In SEMS field and EOC levels, this is a top-down management activity which involves a three-step process to achieve the desired goal. The steps are: establishing the objectives, selection of appropriate strategy(s) to achieve the objectives; and the direction or assignments associated with the selected strategy.

Mass Care Facility: A location where temporary services are provided to disaster victims during an emergency which may include lodging, food, clothing, registration, welfare inquiry, first aid, and essential social services.

Master Mutual Aid Agreement: An agreement entered into by and between the State of California, its various departments and agencies, and the various political subdivision, municipal corporations, and other public agencies of the State of California to assist each other by providing resources during an emergency. Mutual aid occurs when two or more parties agree to furnish resources and facilities and to render services to each other to prevent and combat any type of disaster or emergency.

Mitigation: Pre-event planning and actions which aim to lessen the effects of potential disaster.

Mobilization: The process and procedures used by all organizations federal, state and local for activating, assembling, and transporting all resources that have been requested to respond to or support an incident.

Mobilization Center: An off-incident location at which emergency service personnel and equipment are temporarily located pending assignment to incidents, release, or reassignment.

Multi-Agency Coordination: The participation of agencies and disciplines involved at any level of the SEMS organization working together in a coordinated effort to facilitate decisions for overall emergency response activities, including the sharing of critical resources and the prioritization of incidents.

Multi-Agency Coordination System (MACS): The combination of personnel, facilities, equipment, procedures and communications integrated into a common system. When activated, MACS has the responsibility for coordination of assisting agency resources and support in a multi-agency or multi-jurisdiction environment. A MAC Group functions within the MACS. MACS organizations are used within the California Fire Services.

Multi-Agency Incident: An incident where one or more agencies assist a jurisdictional agency or agencies. The incident may be managed under single or Unified Command.

Multi-jurisdiction Incident: An incident requiring action from multiple agencies that have a statutory responsibility for incident mitigation. In ICS these incidents will be managed under Management.

Multi-purpose Staging Area (MSA): A pre-designated location such as a County/District Fairgrounds having large parking areas and shelter for equipment and operators, which

provides a base for coordinated localized emergency operations, a rally point for mutual aid coming into an area, and a site for post-disaster population support and recovery.

Mutual Aid Agreement: Written agreement between agencies and/or jurisdictions in which they agree to assist one another upon request, by furnishing personnel and equipment.

Mutual Aid Coordinator: An individual at local government, operational area, region or state level that is responsible to coordinate the process of requesting, obtaining, processing and using mutual aid resources. Mutual Aid Coordinator duties will vary depending upon the mutual aid system.

Mutual Aid Region: A mutual aid region is a subdivision of Cal OES established to assist in the coordination of mutual aid and other emergency operations within a geographical area of the state, consisting of two or more county (operational) areas.

Mutual Aid Staging Area: A temporary facility established by the California Emergency Services Agency (CalOES) within, or adjacent to, affected areas. It may be supported by mobile communications and personnel provided by field or headquarters staff from state agencies, as well as personnel from local jurisdictions throughout the state.

National Disaster Medical System (NDMS): A coordinated partnership between DHS, HHS, DOD, and the Department of Veterans Affairs established for the purpose of responding to the needs of victims of a public health emergency. NDMS provides medical response assets and the movement of patients to healthcare facilities where definitive medical care is received when required.

National Flood Insurance Program (NFIP): The Federal program, created by an act of Congress in 1968 that makes flood insurance available in communities that enact satisfactory floodplain management regulations.

National Incident Management System (NIMS): A set of principles that provides a systematic, proactive approach guiding government agencies at all levels, nongovernmental organizations, and the private sector to work seamlessly to prevent, protect against, respond to, recover from, and mitigate the effects of incidents, regardless of cause, size, location, or complexity, in order to reduce the loss of life or property and harm to the environment.

National Infrastructure Coordination Center (NICC): Managed by the DHS Information Analysis and Infrastructure Protection Directorate, the NICC monitors the Nation's critical infrastructure and key resources on an ongoing basis. In the event of an incident, the NICC provides a coordinating vehicle to share information with critical infrastructure and key resources information-sharing entities.

National Interagency Coordination Center (NICC): The organization responsible for coordinating allocation of resources to one or more coordination centers or major fires within the Nation. Located in Boise, ID.

National Response Framework (NRF): A guide to how the Nation conducts all-hazards response.

National Warning System: The federal portion of the civil defense warning system, used to disseminate warning and other emergency information from the warning centers or regions to warning points in each state.

One Hundred (100)-Year Flood: The flood elevation that has a one-percent chance of being equaled or exceeded in any given year. It is also known as the base flood elevation.

Operational Area: An intermediate level of the state emergency organization, consisting of a county and all political subdivisions within the county area.

Operational Area Coordinator: The individual within the operational area responsible for a specific function such as law enforcement, coroner's services, or emergency medical services.

Operational Period: The time scheduled for execution of a given set of operation actions as specified in the Incident or EOC Action Plan. Operational Periods can be of various lengths, although usually not over 24 hours.

Operations Section: One of the five primary functions found at all SEMS levels. The Section responsible for all tactical operations at the incident, or for the coordination of operational activities at an EOC. The Operations Section at the SEMS Field Response Level can include Branches, Divisions and/or Groups, Task Forces, Team, Single Resources and Staging Areas. At the EOC levels, the Operations Section would contain Branches or Divisions as necessary because of span of control considerations.

Planning Meeting: A meeting held as needed throughout the duration of an incident to select specific strategies and tactics for incident control operations and for service and support planning. On larger incidents, the planning meeting is a major element in the development of the Incident Action Plan. Planning meetings are also an essential activity at all SEMS EOC levels.

Planning Section: (Also referred to as Planning/Intelligence). One of the five primary functions found at all SEMS levels. Responsible for the collection, evaluation, and dissemination of information related to the incident or an emergency, and for the preparation and documentation of Incident or EOC Action Plans. The section also maintains information on the current and forecasted situation, and on the status of resources assigned to the incident.

Preparedness: A continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response. Within the National Incident Management System, preparedness focuses on the following elements: planning; procedures and protocols; training and exercises; personnel qualification and certification; and equipment certification.

Prevention: Actions to avoid an incident or to intervene to stop an incident from occurring. Prevention involves actions to protect lives and property. It involves applying intelligence and other information to a range of activities that may include such countermeasures as deterrence operations; heightened inspections; improved surveillance and security operations; investigations to determine the full nature and source of the threat; public health and agricultural surveillance and testing processes; immunizations, isolation, or quarantine; and, as appropriate, specific law enforcement operations aimed at deterring, preempting, interdicting, or disrupting illegal activity and apprehending potential perpetrators and bringing them to justice.

Public Assistance (PA): Supplementary Federal assistance provided under the Stafford Act to State and local governments or certain private, nonprofit organizations other than assistance for the direct benefit of individuals and families.

Public Information Officer: The individual at field or EOC level that has been delegated the authority to prepare public information releases and to interact with the media. Duties will vary depending upon the agency and SEMS level.

Reception Area: An area which, through a hazard analysis and related preparedness planning, is pre-designated to receive and care for (or provide basic needs for) persons displaced from a hazard area.

Recovery: Activities traditionally associated with providing Federal supplemental disaster recovery assistance under a Presidential major disaster declaration. These activities usually

begin within days after the event and continue after the response activities cease. Recovery includes individual and public assistance programs which provide temporary housing assistance, grants and loans to eligible individuals and government entities to recovery from the effects of a disaster.

Recovery Plan: A plan developed by a State, local, or tribal jurisdiction with assistance from responding Federal agencies to restore the affected area.

Regional Director (RD): A director of a regional office of FEMA, or his/her designated representative. As used in the Stafford Act, Regional Director also means the Disaster Recovery Manager who has been appointed to exercise the authority of the regional Director for a particular emergency or major disaster.

Regional Emergency Operations Center (REOC): Facilities found at Cal OES Administrative Regions. REOCS are used to coordinate information and resources among operational areas and between the operational areas and the state level.

Resources: Personnel and equipment available, or potentially available, for assignment to incidents or to EOCs. Resources are described by kind and type, and may be used in tactical support or supervisory capacities at an incident or at EOCs.

Resources Management: Efficient management requires a system for identifying available resources at all jurisdictional levels to enable timely and unimpeded access to resources needed to prepare for, respond to, or recover from an incident. Resource management under the National Incident Management System includes mutual aid agreements; the use of special Federal, State, local, and tribal teams; and resource mobilization protocols.

Resources Unit: Functional unit within the Planning Section at the SEMS Field Response level responsible for recording the status of resources committed to the incident. The Unit also evaluates resources currently committed to the incident, the impact that additional responding resources will have on the incident, and anticipated resources needs.

Response: Activities to address the immediate and short-term effects of an emergency or disaster. Response includes immediate actions to save lives, protect property and meet basic human needs. Based on the requirements of the situation, response assistance will be provided to an affected State under the National Response Framework using a partial activation of selected ESFs or full activation of all ESFs to meet the needs of the situation.

Safety Officer: A member of the Command Staff at the incident or within an EOC responsible for monitoring and assessing safety hazards or unsafe situations, and for developing measures for ensuring personnel safety. The Safety Officer may have assistants.

Section: That organization level with responsibility for a major functional area of the incident or at an EOC, e.g., Operations, Planning, Logistics, Administration/Finance.

Section Chief: The ICS title for individuals responsible for command of functional sections: Operations, Planning/Intelligence, Logistics and Administration/Finance. At the EOC level, the position title will be Section Coordinator.

Service Branch: A Branch within the Logistics Section in the field that is responsible for service activities at the incident and includes the Communications, Medical and Food Units.

Shelter Manager: An individual who provides for the internal organization, administration, and operation of a shelter facility.

Short-Term Prediction: A prediction of an earthquake that is expected within a few hours to a few weeks. The short-term-prediction can be further described as follows:

- **Alert--**Three days to a few weeks
- **Imminent Alert--**Now to three days

Situation Status Unit: Functional unit within the Planning Section responsible for the collection, organization and analysis of incident status information, and for analysis of the situation as it progresses. Reports to the Planning Section Chief.

Span of Control: The supervisory ratio maintained within an ICS or EOC organization. A span of control of five-positions reporting to one supervisor is considered optimum.

Special District: A unit of local government (other than a city, county, or city and county) with authority or responsibility to own, operate or maintain a project (as defined in California Code of Regulations 2900(s) for purposes of natural disaster assistance. This may include a joint powers authority established under section 6500 et seq. of the Code.

Stafford Act: Robert T. Stafford disaster Relief and Emergency Assistance Act, PL 100-707, signed into law November 23, 1988; amended the Disaster Relief Act of 1974, PL 93-288.

Staging Areas: Staging Areas are locations set up at an incident where resources can be placed while awaiting a tactical assignment. Staging Areas are managed by the Operations Section.

Staging Area Managers: Individuals within ICS organizational units that are assigned special managerial responsibilities at Staging Areas. (Also Camp Manager.)

Standardized Emergency Management System (SEMS): A system required by California Government Code for managing response to multi-agency and multi-jurisdiction emergencies in California. SEMS consists of five organizational levels which are activated as necessary: Field Response, Local Government, Operation Area, Region, State.

State Coordinating Officer (SCO): The person appointed by the Governor to act for the State in cooperation with the Federal Coordinating Officer.

State Emergency Organization: The agencies, board, and commissions of the executive branch of state government and affiliated private sector organizations.

State Emergency Plan: The State of California Emergency Plan as approved by the Governor.

State of Emergency: The duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the state caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, or earthquake or other conditions, other than conditions, resulting from a labor controversy, or conditions causing a "state of war emergency", which conditions by reason of magnitude, are or are likely to be beyond the control of the services, personnel, equipment, and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat.

State of War Emergency: The condition which exists immediately, with or without a proclamation thereof by the Governor, whenever the state or nation is directly attacked by an enemy of the United States, or upon the receipt by the state of a warning from the federal government that such an enemy attack is probable or imminent.

State Operations Center (SOC): An EOC facility operated by CalEMA at the state level in SEMS.

Strike Team: A set number of resources of the same kind and type that have an established minimum number of personnel.

Subgrantee: An eligible applicant in Federally declared disasters.

Supply Unit: Functional unit within the Support Branch of the Logistics Section responsible for ordering equipment and supplies required for incident operations.

Support Branch: A Branch within the Logistics Section in the field responsible for providing personnel, equipment and supplies to support incident operations. Includes the Supply, Facilities and Ground Support Units.

Support Resources: Non-tactical resources under the supervision of the Logistics, Planning, Finance/Administration Sections or the Command Staff.

Supporting Materials: Refers to the several attachments that may be included with an Incident Action Plan, e.g., communications plan, map, safety plan, traffic plan, and medical plan.

Task Force: A combination of single resources assembled for a particular tactical need with common communications and a leader.

Technical Assistance: Support provided to State, local, and tribal jurisdictions when they have the resources but lack the complete knowledge and skills needed to perform a required activity (such as mobile-home park design and hazardous material assessments).

Technical Specialists: Personnel with special skills that can be used anywhere within the ICS or EOC organization.

Technological Hazard: Includes a range of hazards emanating from the manufacture, transportation, and use of such substances as radioactive materials, chemicals, explosives, flammables, agricultural pesticides, herbicides and disease agents; oil spills on land, coastal waters or inland water systems; and debris from space.

Time Unit: Functional unit within the Finance/Administration Section responsible for recording time for incident or EOC personnel and hired equipment.

Type: Refers to resource capability. A Type 1 resource provides a greater overall capability due to power, size, capacity, etc., than would be found in a Type 2 resource. Resource typing provides managers with additional information in selecting the best resource for the task.

Unified Area Command: A Unified Area Command is established when incidents under an Area Command are multi-jurisdictional. (See Area Command and Management.)

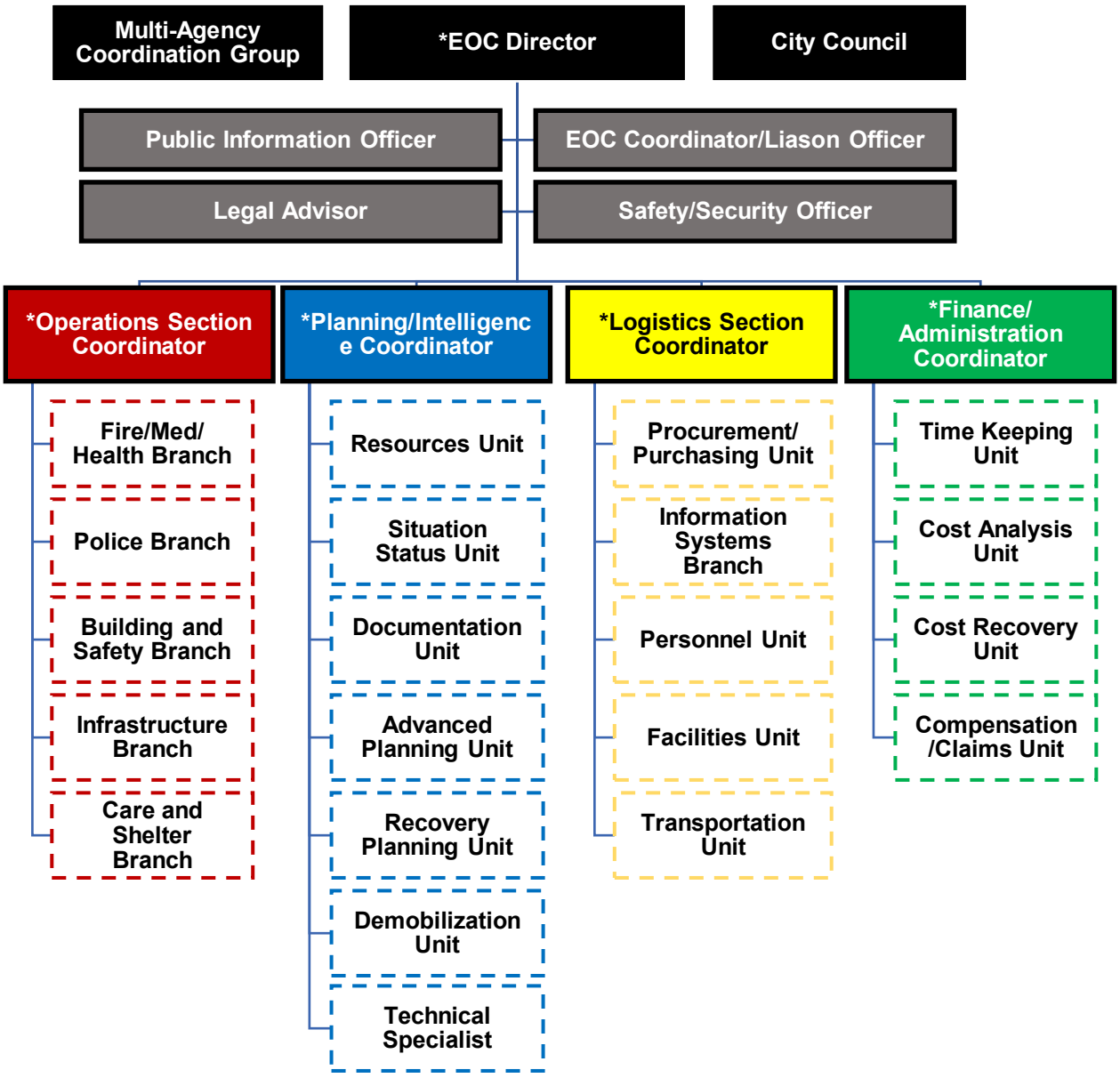
Unified Command: In ICS, Unified Command is a unified team effort which allows all agencies with responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating agency authority, responsibility or accountability.

Unit: An organizational element having functional responsibility. Units are commonly used in incident Planning Logistics, or Finance/Administration Section and can be used in operations for some applications. Units are also found in EOC organizations.

Unity of Command: The concept by which each person within an organization reports to one and only one designated person.

EOC POSITIONS OVERVIEW

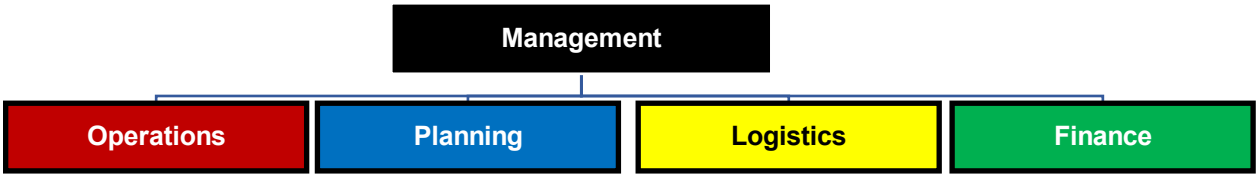
VENTURA EOC ORGANIZATION CHART



Dashed lines indicate that these functions are activated only as needed.

* If all elements are activated, a deputy may be appointed to provide a manageable span of control.
** Position is normally coordinated by the County, but a local coordinator may be designated, if needed
The Incident Command System will be used in the field. Field units will coordinate and communicate with each of the Branches under the Operations Section.

RESPONSIBILITIES CHART



Responsibilities:

Management (Management Function)

Responsible for overall emergency management policy and coordination through the joint efforts of governmental agencies, non-governmental organizations, and private organizations. Management will either activate appropriate sections or perform their functions as needed.

Operations Section

Responsible for coordinating all jurisdictional operations in support of the disaster response by implementing the city's EOC Action Plan.

Planning/Intelligence Section

Responsible for collecting, evaluating, and disseminating information; coordinating the development of the city's EOC Action Plan in coordination with other sections; tracking resources assigned to the event; initiating and preparation of the city's After-Action/Corrective Action Report, Improvement Plan and maintaining documentation.

Logistics Section

The Logistics Section is responsible for providing communications, facilities, services, personnel, equipment, supplies, and materials.

Finance/Administration Section

Responsible for financial activities and other administrative aspects.

COMMON EOC RESPONSIBILITIES

(The following is a checklist applicable to all EOC positions).

Activation

- O Check-in upon arrival at the EOC. (The Finance Section, Time Unit is responsible for Check-In of personnel resources to the EOC).
- O Report to your EOC organizational supervisor.
- O Identify yourself by putting your EOC vest on. Print your name on the EOC organization chart next to your assignment.
- O Obtain a briefing on the situation from your EOC organizational supervisor.
- O Determine your operating location and set it up as necessary.
- O Review your position responsibilities.
- O Clarify any issues regarding your authority and assignment and what others in the organization do.
- O Ensure all functions within your Section are appropriately staffed. Make required personnel assignments as staff arrives.
- O Log into DLAN if authorized. (Procedures can be found in the Appendices).
- O Based on the situation as known or forecast, determine likely future Section needs.

General Operational Duties

- O Establish operating procedure with the Information Systems Branch of the Logistics Section to use the telephone, radio, and data systems. Make any priorities or special requests known.
- O Anticipate potential situation changes, such as severe aftershocks, in all planning. Develop a backup plan for all plans and procedures requiring off-site communications.
- O Determine and anticipate support requirements and forward them to your EOC organizational supervisor.
- O Monitor your position activities and adjust staffing and organization to meet current needs.
- O Use face-to-face communication in the EOC whenever possible and document decisions and policy.

Documentation and Reports

- O Open and maintain a position activity log. Make sure you note your check-in time on the Activity Log. (Activity Log can found in the Forms Section of the Support Documentation.) Maintain all

required records and documentation to support the After-Action/Corrective Action Report and the history of the emergency/disaster. Document:

- Messages received
- Action taken
- Decision justification and documentation
- Requests filled
- EOC personnel, time on duty, and assignments

Precise information is essential to meet requirements for possible reimbursement by Cal OES and FEMA.

- O Review situation reports as they are received. Verify information where questions exist.
- O Ensure that your personnel and equipment time records and a record of expendable materials used are provided to your EOC organizational supervisor at the end of each operational period.
- O Do **NOT** throw any paperwork (notes, memos, messages, etc.) away. This documentation can be used to support FEMA reimbursement.
- O Keep your EOC organizational supervisor advised of your status and activity and on any problem areas that now need or will require solutions.
- O Brief your relief at the shift-change time. Ensure that in-progress activities are identified, and follow-up requirements are known. Use the EOC Change of Shift Briefing Worksheet. **(See Forms in the Support Documentation for the EOC Change of Shift Briefing Worksheet).**

Resources

- O Determine 24-hour staffing requirements and request additional support as required.
- O Keep up to date on the situation and resources associated with your position.
- O Request additional resources through the appropriate Logistics Section Unit.

Shift Change

- O Brief incoming personnel and identify in-progress activities that need follow-up. Use the EOC Change of Shift Briefing Worksheet**. (See Forms in the Support Documentation for the EOC Change of Shift Briefing Worksheet.)**
- O Provide incoming personnel the next EOC Action Plan.
- O Submit completed logs, time cards, etc., to your EOC organizational supervisor before you leave.
- O Determine when you should return for your next work shift.
- O Leave contact information where you can be reached.

Deactivation

- Ensure that all required forms or reports are completed and submitted to your EOC organizational supervisor before your release and departure.
- Be prepared to provide input to the EOC After-Action/Corrective Action Report.
- Determine what follow-up to your assignment might be required before you leave.
- Deactivate your position and closeout logs when authorized by your EOC organizational supervisor.
- Leave contact information where you can be reached.
- Maintain current status reports and displays.
- Sign out with your supervisor and on a large EOC organization/sign-in sheet.

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MANAGEMENT SECTION – GENERAL INFORMATION

Purpose

To direct and manage the City of San Buenaventura's response and recovery from an emergency in a uniformed, collective, collaborative and coordinated effort.

Overview

The Management Section is responsible for overall emergency policy and coordination through the joint efforts of governmental agencies and private organizations.

Functions in the Management Section include:

- EOC Director
- Public Information Officer
- EOC Coordinator
- Liaison Officer
- Safety Officer
- Security Officer
- Legal Officer
- City Representative to the County Operational Area EOC
- Multiagency Coordination Group

Objectives

The overall objective of emergency management is to ensure effective response and recovery activities and resource allocation associated with all hazards. To carry out its responsibilities, Management Section will accomplish the following objectives during a disaster:

- Overall management and coordination of emergency response and recovery operations, including prioritization of critical resources.
- Provide for the protection of life, property, and the environment.
- Coordinate and liaison with appropriate federal, state, and other local government agencies, as well as applicable segments of private sector entities and volunteer agencies.
- Establish priorities and resolve any conflicting demands for support.
- Prepare and disseminate emergency public information to inform, alert and warn the public.
- Disseminate damage information and other essential data.

Concept of operations

The Management Section will operate under the following policies during a disaster as the situation dictates:

- The Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) will be followed.
- All existing city and departmental operating procedures will be adhered to unless modified by the Multi-Agency Coordination Group or EOC Director.
- All on-duty personnel are expected to remain on duty until properly relieved of duty. Off-duty personnel will be expected to return to work in accordance with adopted policies.
- While in a disaster mode, operational periods will be 12 hours for the duration of the event unless changed by the EOC Director. Operational periods should be event-driven.
- City emergency response and recovery operations will be managed in one of three modes, depending on the magnitude of the emergency: Level 1, Level 2, or Level 3. (See Part One, Section Four for a description of the emergency management levels).

Section activation procedures

The EOC Director is authorized to activate the Management Section.

When to activate

The Management Section may be activated when the City's EOC is activated or upon the order of the EOC Director or designee. The Director of Disaster Services (EOC Director) will determine call-back instructions for staff to report to work. If communication systems are damaged due to a disaster, personnel shall assume they are needed and report to work immediately.

Where to report

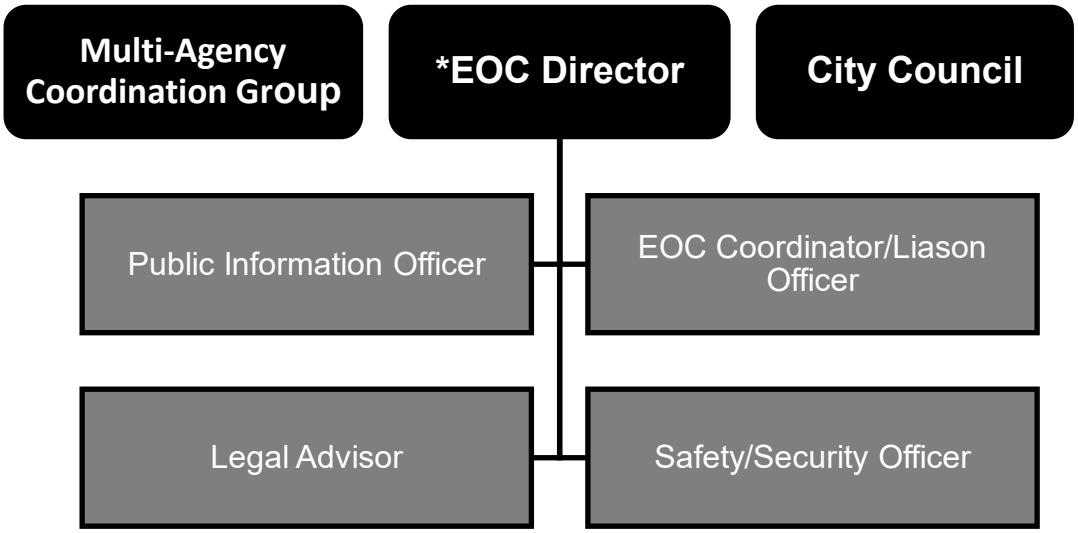
Due to the sensitive nature of the location of the EOC, this information regarding the primary and the alternate EOC is found in the restricted use section of this plan, the Appendix (a confidential/security document).

Reporting procedures

The following procedures are set forth to ensure a rapid, effective response by the City of San Buenaventura following an earthquake or other major disaster or emergency.

All full and part-time City staff are considered essential emergency personnel. Under Chapter 1 (section 3211.92) of Part I of Division 4 of the State of California Labor Code are defined as “Disaster Services Workers.” As such, all staff members are expected to make every reasonable effort to return to work following any disaster situation that may require the EOC’s activation or their individual department or unit. If at work, staff members are expected to stay at their workstations or emergency locations unless they are injured, relieved, or dismissed by the Director of Disaster Services or their designee or their immediate supervisor.

MANAGEMENT FUNCTION ORGANIZATION CHART



MANAGEMENT SECTION STAFF

The Management Section is led by the EOC Director and is established for every EOC activation to coordinate EOC operations. The City Manager by city ordinance will fill this position while serving as the Disaster Services Director during a disaster/emergency. The EOC Director, the Management Staff, the General Staff (Section Coordinators), and others as designated make up the EOC Management Team. The Management team is responsible for advising the EOC Director on policy matters. They also assist the EOC Director in developing an overall strategy to mitigate the incident and rules, regulations, proclamations, and orders. Management Section also includes certain staff functions required to support the Management function.

EOC Director

The EOC Director is responsible for the overall management of the City's emergency response and recovery effort. The EOC Director determines the operational period and the priorities for the operational period.

Public information officer

The Public Information Officer (PIO) ensures that information support is provided on request; that information released is consistent, accurate, and timely, and appropriate information is provided to all required agencies and the media. The PIO will oversee media staff that ensures the video recording of public announcements, important meetings, and special interviews within the Emergency Operations Center, and the subsequent broadcast of these when instructed by the EOC Director.

EOC Coordinator/Liaison Officer

The EOC Coordinator/Liaison Officer serves as the point of contact for Agency Representatives from assisting organizations and agencies outside our city government structure. The EOC Coordinator/Liaison Officer aids in coordinating the efforts of these outside agencies to reduce the risk of their operating independently. This ensures each agency is doing what it does best and maximizes the effectiveness of available resources. Any state and/or federal emergency official should contact the EOC Coordinator/Liaison Officer to ensure continuity of operations.

Safety/Security Officer

The Safety/Security Officer is responsible for identifying and mitigating safety hazards and situations of potential city liability during EOC operations and ensuring a safe and secure working environment. This position will be needed most at the beginning of activating the EOC. Once the safety of the EOC has been assessed, this position may be filled as needed.

Legal Officer

The Legal Officer is the City Attorney and provides legal advice to the EOC Director in all legal matters relative to the emergency and assists in the proclamation of an emergency.

Multiagency Coordination Group

The Multiagency Coordination Group is made up of department directors and others as needed to give support to the EOC Director.

CITY COUNCIL

SUPERVISOR: Electorate

Primary Responsibilities

- *Proclaim and/or **ratify a local emergency.
- Approve policies, recommendations, and emergency proclamations as submitted by the City Manager.
- Communicate with other elected officials.
- Disseminate disaster-related information provided by the EOC to their constituents.
- Support the EOC Director and provide policy guidance when needed.
- Obtain briefings from EOC Director and provide information to the public and media in coordination with the Public Information Officer.
- Host and accompany VIP's and government officials on tours of the emergency.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Assignments/Staffing

o Do not respond to the EOC, unless requested to do so by the EOC Director.

Notifications (None Applicable to This Checklist)

Meetings/Briefings

o Receive incident briefing from EOC Director (City Manager) or designee by phone or arranged meeting location.

o Call emergency meetings of the City Council to proclaim and/or ratify a local emergency and approve emergency orders as needed.

- Four members of the City Council are needed for an official quorum.
- Emergency proclamations must be ratified within seven (7) days.
- Approve extraordinary expenditure requirements as necessary.

Action Planning (None Applicable to This Checklist)

Documentation (None Applicable to This Checklist)

Policies

- Review, at least every 14 days, the need for continuing the Local Emergency and proclaim the termination of the Local Emergency as conditions warrant.
- In consultation with the EOC Director, Multi-Agency Coordination Group and General Staff, develop temporary emergency policies for managing the strategic aspects of the emergency.

Resources (none applicable to this checklist)

Ongoing Activities

- Upon request of PIO, Liaison Officer or EOC Coordinator host and accompany VIP's and governmental officials on tours of the emergency area. Coordinate all tours with PIO, Liaison Officer, and EOC Coordinator.
- Provide interviews to the media as arranged by the PIO.
- Refer all requests for emergency information to the EOC Director or PIO.
- Develop or utilize existing citizen's advisory group to address concerns, as appropriate.
- Consider developing an emergency planning task force within the local business or trade association to discuss concerns and disseminate pre-event planning information and post-event recovery information.
- Encourage post-event discussions in the community to identify perceived areas of improvement.

*Proclaim a local emergency – The City Council, if in session, and the Director of Disaster Services, when City Council is not in session, can proclaim a local emergency.

**Ratify a local emergency – Whenever a local emergency is proclaimed by the Director of Disaster Services, the City Council shall take action to ratify the proclamation within seven (7) days thereafter or the proclamation shall have no further force or effect. If the City Council does not ratify the local emergency, such inaction shall not affect the validity of the local emergency during the period of time it was in effect.

MULTI-AGENCY COORDINATION GROUP

SUPERVISOR: EOC Director

Primary Responsibilities

- **Note: Activated only if needed, and may be activated at various time periods but more than likely will not be activated continuously to avoid creating two EOCs.**
- Participate as a member of the Multi-Agency Coordinating Group providing support to the EOC Director.
- Ensure that the EOC Director has clear policy direction.
- Assist in making executive decisions based on policies of the City Council.
- Assist the EOC Director in the development of rules, regulations, proclamations and orders.
- Ensure Continuity of Government and Continuity of Operations.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Upon arrival, identify yourself as a member of the Multiagency Coordination Group and report to the EOC Director or City Manager.

O Assign Department staff to the EOC as needed.

O Clarify issues regarding your authority and assignment.

Notifications

O Determine if all **your** key Department personnel or alternates have been notified or are en-route to the EOC as necessary.

Meetings/Briefings

O Obtain a briefing or preliminary survey of the emergency/disaster from **your** staff and impact on **your** Department's operational capability.

O As appropriate, report to the EOC Director or City Manager for a briefing and provide a status report of **your** Department.

Action Planning

O Assist the EOC Director in the preparation of the Action Plan.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Provide personnel and equipment time records to the EOC Director at the end of each work shift.

Policies

- In consultation with the Director of Emergency Services, develop temporary emergency policies for managing the strategic aspects of the emergency.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Request additional personnel to maintain a 24-hour operation as required.

Ongoing Activities

- Review your position responsibilities.
- Advise department staff to activate **your** Department emergency voicemail or answering machine with an appropriate message.
- Determine information needs and advise the EOC Director of those needs.
- Advise and assist the EOC Director in the release of information to the public and the media, requests for additional resources, requests for release of resources and plans for recovery, reconstruction and demobilization.
- Ensure Continuity of Government and Continuity of Operations and prepare the EOC for transition to a recovery organization to restore the City to pre-disaster conditions as quickly and effectively as possible.

EOC DIRECTOR

SUPERVISOR: City Council

Primary Responsibilities

- Serve as the Director of Disaster Services for the City of San Buenaventura.
- Make executive decisions based on the policies of the City Council.
- Develop and issue rules, regulations, proclamations, and orders.
- Activate the EOC and establish an appropriate staffing level.
- Exercise overall management responsibility for the coordination of the response and recovery efforts within the affected area. In conjunction with the General Staff, set priorities for response and recovery efforts, and ensure that all agency actions are accomplished within the priorities established.
- Ensure that multi-agency or inter-agency coordination is accomplished effectively within the EOC.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Activation

o Determine the operational status and appropriate level of activation based on the situation as known.

o Confirm the level of EOC activation and ensure that EOC positions and ICS field positions are filled as needed.

o As appropriate, respond to the EOC.

o Mobilize appropriate personnel for the initial activation of the EOC.

o Activate an alternate EOC as required. When there is damage to the primary EOC sufficient to render it unusable, report to the alternate EOC.

o Ensure The EOC Is Properly Set Up And Ready For Operations.

Start-up

o Direct the implementation of the City's Emergency Operations Plan.

o Obtain a copy of the current EOC Action Plan (not available at initial EOC activation).

Assignments/Staffing

o Ensure that the Management Section is staffed as soon as possible at the level needed.

- Public Information Officer

- EOC Coordinator
- Liaison Officer
- Safety Officer
- Security Officer
- Legal Officer
- Multi-Agency Coordination Group
- City Council

o Assign Section Coordinators (General Staff) as needed for:

- Operations
- Planning/Intelligence
- Logistics
- Finance/Administration

o Assign person to record EOC Director's actions.

o Assign staff to initiate check-in procedures. **(See Finance/Administration Support Documentation-Check-In Form.)**

o Ensure that the EOC Organization and staffing chart is posted and that arriving team members are assigned by name.

Notifications

o Ensure the Liaison Officer notifies the Ventura County Operational Area that City EOC personnel is notified and directed to report to the EOC.

Meetings/Briefings

o Obtain briefing from current Incident Commander, or with persons responsible for public works, fire and police operations to obtain incident status and information or from whatever sources are available.

o Brief incoming EOC Section personnel prior to their assuming their duties. Briefings should include:

- Current situation assessment
- Identification of specific job responsibilities
- Identification of co-workers within the job function and/or geographical assignment
- Availability of communications
- Location of work area
- Identification of eating and sleeping arrangements as appropriate
- Procedural instructions for obtaining additional supplies, services and personnel
- Identification of operational period work shifts

- Prepare work objectives for Section staff.

O Ensure that all EOC management team meetings, General Staff meetings and policy decisions are documented by a scribe.

O Establish the frequency of briefing sessions.

O Conduct periodic briefings for your Section. Ensure that all organizational elements are aware of priorities.

O Conduct periodic briefing sessions with the City Council to update the overall situation.

Action Planning

O Schedule the first planning meeting.

O Establish overall EOC priorities and develop objectives for the Management function.

O Approve and authorize the implementation of the EOC Action Plan developed and prepared by the Planning/Intelligence Section and EOC management team.

Documentation

O See Documentation and Reports in Common EOC Responsibilities on page 71.

O Ensure that all your Section personnel and equipment time records and a record of expendable materials used are provided to the Time Keeping Unit and Cost Recovery Unit of the Finance/Administration Section at the end of each operational period.

Policies

O Confirm the delegation of authority. Obtain any guidance or direction as necessary.

O Determine appropriate delegation of purchasing authority to the Supplies/Procurement Unit of the Logistics Section.

Ongoing Activities

O Direct the implementation of the City's Emergency Operations Plan.

O Ensure that telephone, radio and data communications with other facilities are established and tested.

O Ensure that all departments account for personnel and work assignments.

O Carry out responsibilities of all other EOC Sections not currently staffed.

O Develop and issue appropriate rules, regulations, proclamations and orders.

O Initiate Emergency Proclamations as needed **(See Management Support Documentation – Legal Documents.)**

- Consider activating the Multi-Agency Coordination Group to address citywide issues (i.e. reduced hours of operations for regular city business), continuity of government and continuity of operations issues.
- Set priorities for restoration of city services.
- In conjunction with the PIO, coordinate and conduct news conferences and review media releases as required. Establish procedure for information releases affecting inter-agency coordination.
- Authorize PIO to release information to the media and to access the Emergency Alert System (EAS) via the Ventura County Operational Area EOC if necessary.
- Ensure that the Liaison Officer is providing for and maintaining positive and effective inter-agency coordination.
- Establish and maintain contacts with adjacent jurisdictions/agencies and with other organizational levels as appropriate.
- Keep the Mayor, City Council and the Operational Area informed of all problems and decisions.
- Monitor performance of EOC personnel for signs of stress or under-performance; initiate Critical Incident Stress Debriefing or Psychological First Aid as appropriate in coordination with Personnel Unit of the Logistics Section.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Request additional personnel to maintain a 24-hour operation as required.
- Determine if support is required from other jurisdictions; request mutual aid from the Ventura County Operational Area. Logistics Section will implement all Mutual Aid requests.

Deactivation

- Authorize deactivation of sections, branches or units when they are no longer required. Approve the Demobilization Plan (drafted by Planning).
- Ensure that the Liaison Officer notifies the Ventura County Operational Area, adjacent facilities and other EOCs as necessary of planned time for deactivation.
- Ensure that any open actions not yet completed will be taken care of after deactivation.
- Ensure that all required forms or reports are completed prior to deactivation.
- Ensure that the Planning Section Coordinator schedules a debriefing and critique of the disaster operations to incorporate into the After-Action/Corrective Action Report.
- Deactivate the EOC and close out logs when the emergency no longer requires activation.
- Proclaim termination of the emergency and proceed with recovery operations.

PUBLIC INFORMATION OFFICER

SUPERVISOR: EOC Director

Primary Responsibilities

- Serve as the dissemination point for all media releases related to city impacts and activities. Other agencies wishing to release information regarding the City of Ventura to the public should coordinate through the Public Information function.
- Coordinate use of the City's public notification system, VC Alert, 211, and the City's website.
- Coordinate as necessary to ensure that the public within the affected area receives complete, accurate, timely, and consistent information about lifesaving procedures, health preservation instructions, emergency status, relief programs and services and other information. Information released should be posted in hard copy in the EOC and to D-Lan.
- Review and coordinate all related information releases, including dissemination of emergency information to city departments to keep employees apprised of the situation.
- Maintain a relationship with the media representatives and hold periodic press conferences as required.
- Provide news releases, answer questions the media may have, and arrange for tours or photo opportunities of the incident.
- If multiple agencies and/or jurisdictions are affected and response operations are expected over 24 hours, a Joint Information Center (JIC) may be activated. The JIC could also expand to include county, state and federal agencies. If a JIC is established the PIO shall coordinate with and may send a representative to the JIC.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

O Determine need for additional PIO personnel and request approval from the EOC Director. Forward the request to Logistics Section. (Note: In a large-scale event, providing public information will exceed the capabilities of a single individual. The public information function may grow to a team effort.

O Provide sufficient staffing and telephones to handle incoming media and public calls and to gather status information.

O Consider establishing and staffing a hotline to answer inquiries from the public as needed.

O Establish staff to monitor a rumor control function to identify false or erroneous information. Develop procedure to be used to correct such information.

Notifications

- O Notify EOC sections and PIO's in the field that the PIO function as been established in the EOC. Distribute PIO phone numbers and contact information.
- O Notify local media of PIO contact numbers.
- O Notify the Op Area JIC that the PIO function has been established and provide PIO contact numbers.
- O Contact cable channels to disseminate emergency information/updates on cable channels either through message board or live taping of Mayor or EOC Director.

Meetings/Briefings

- O Attend all Section meetings and briefings.
- O Arrange for meetings between media and city officials or incident level PIOs for information on specific incidents.
- O Provide periodic briefings and press releases about the disaster situation throughout the affected areas. Refer media representatives to incident level PIOs for specific information.
- O Periodically prepare briefings for the elected officials or executives, as needed and directed by the EOC Director.

Action Planning

- O Assist the Management Section in developing Section objectives for the EOC Action Plan.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Prepare and provide approved information to the media. Post news releases in the EOC, Media Information Center and DLAN and other appropriate areas.
- O Maintain file copies of all information releases.
- O Prepare, update and distribute to the public a Disaster Assistance Information Directory containing locations to obtain food, shelter, supplies, health services, etc.
- O Prepare a briefing sheet to be distributed to all employees at the beginning of each shift so they can answer questions from the public, such as shelter locations, water distribution sites, Local Assistance Center locations, etc.
- O Prepare materials that describe the health risks associated with each hazard, the appropriate self-help or first aid actions and other appropriate survival measures.
- O Prepare instructions for people who must evacuate from a high-risk area, including the following information for each threat: evacuation guidance, evacuation routes; suggestions on types and quantities of clothing, food, medical items, etc. the evacuees should bring; location of shelters.

- O Develop a fact sheet for field personnel to distribute to residences and local businesses, as appropriate (include information about water and electrical outages/shortages, water supply stations, health services, etc.).
- O Ensure file copies are maintained of all information released and posted in the EOC.
- O Provide copies of all releases to the EOC Director.
- O Provide personnel and equipment time records to the EOC Director at the end of each work shift.

Policies

- O Implement City PIO/media procedures. **(Management Section Supporting Documents.)**
- O Obtain approval from the EOC Director for the release of all information.
- O Secure guidance from the EOC Director regarding the release of available information, and authorization to access the Emergency Alert System (EAS) and the cable system, if needed. **(See Management Support Documentation, Emergency Alert System Procedures.)**
- O Be sure that all elected officials, departments, agencies and response organizations in the city are aware that they must coordinate release of emergency information through the PIO and that **all press releases** must be cleared with the EOC Director before releasing information to the media.
- O Coordinate PIO activities with County of Ventura PIO if an Op Area JIC is established.

Ongoing Activities

- O Coordinate all media events with the EOC Director.
- O Respond to information requests from the EOC Director and EOC management team.
- O Keep the EOC Director advised of all unusual requests for information and of all major, critical or unfavorable media comments.
- O Determine requirements for support to the PIO function at other EOC levels.
- O Coordinate with Incident Commanders and field PIOs to work with the media at incidents.
- O Assist in making arrangements with adjacent jurisdictions for media visits, as appropriate.
- O Coordinate with an activated Op Area JIC to:
  - Ensure coordination of local, state and federal and the private sector public information activities.
  - Obtain technical information (health risks, weather, etc.).
  - Consider sending a city PIO representative to the Op Area JIC if established.
- O Establish a Media Information Center in the lobby of the Police/Fire Administration Building, if needed. Provide necessary work space, materials, telephones and staffing. If there are multiple

local, state and federal agencies involved consider establishing a Joint Information Center (JIC) or if a JIC is established, designate staff to participate at the JIC.

- O Schedule and post times and locations of news briefings in the EOC, Media Information Center and other appropriate areas.
- O Develop an information release program and schedule.
- O Obtain, process, and summarize information in a form usable in presentations.
- O Develop and/or obtain secure maps, fact sheets, pictures, status sheets and related visual aids for media.
- O Determine which radio and TV stations are operational. **(See Management Support Documentation.)**
- O Broadcast emergency information/updates on cable television, either through message board or live taping of Mayor or EOC Director.
- O Ensure you make a digital recording of all interviews that you give.
- O Interact with other branches/groups/units to provide and obtain information relative to public information operations.
- O Coordinate with the Situation Status Unit of the Planning/Intelligence Section and define areas of special interest for public information action. Identify means for securing the information as it is developed.
- O Maintain an up-to-date picture of the situation for presentation to media.
- O Provide escort service to the media and VIPs; arrange for tours and photo opportunities when available staff and time permit. Coordinate VIP tours with Liaison Officer, and EOC Director and City Council.
- O Monitor broadcast media to:
  - Get general information
  - Identify and correct inaccurate information
  - Identify and address any rumors
- O Ensure that announcements, information and materials are translated and prepared for special populations (non-English speaking; non-readers; elderly; the hearing, sight and mobility impaired; etc.).
- O Warn all non-English speaking and hearing impaired persons of the emergency situation/hazard by:
  - Using bilingual employees whenever possible.
  - Translating all warnings, written and spoken, into appropriate languages.
  - Contacting media outlets (radio/television) that serve the languages you need.
  - Utilizing 9-1-1 translation services and video services to contact the deaf.
- O Issue timely and consistent advisories and instructions for life safety, health and assistance:

- What to do and why.
- What not to do and why.
- Hazardous areas and structures to stay away from.
- Evacuation routes, instructions and arrangements for persons without transportation or access and functional needs (non-ambulatory, sight-impaired, etc.).
- Location of mass care shelters, first aid stations, food/water distribution points, etc.
- Location where volunteers can register and be given assignments.
- Street, road, bridges and freeway overpass conditions, congested areas to avoid and alternate routes to take.
- Instructions from the coroner and public health officials pertaining to dead bodies, potable water, human waste and spoiled food disposal.
- Curfew information.
- School information (The School District should issue specific information. The City PIO can issue general information authorized by the School District).
- Weather hazards when appropriate.
- Public information hotline numbers.
- Status of Local Proclamation, Governor's Proclamation or Presidential Declaration.
- Local, state and federal assistance available; locations and times to apply.
- Local Assistance Center (LAC) locations, opening dates and times.
- How and where people can obtain information about relatives/friends in the emergency/disaster area. (Coordinate with the Ventura County Human Services Agency and the American Red Cross on the release of this information).

o Prepare final news releases and advise media representatives of points-of-contact for follow-up stories.

Resources

o See Resources in Common EOC Responsibilities on page 72.

o Determine requirements for support to the emergency public information function at other EOC levels.

Deactivation

o See Deactivation in Common EOC Responsibilities on page 73.

EOC COORDINATOR/LIAISON OFFICER

SUPERVISOR: EOC Director

Primary Responsibilities

- Coordinate with Agency Representatives assigned to the EOC and handle requests from other agencies for sending liaison personnel to other EOCs.
- Function as a central location for incoming Agency Representatives, provide workspace, and arrange for support as necessary and provide an orientation briefing, as appropriate.
- Assist the EOC Director in providing orientations for VIPs and other visitors to the EOC.
- Interact with other sections and branches/groups/units within the EOC to obtain information assist in coordination and ensure the proper flow of information.
- Ensure that all developed guidelines, directives, action plans and appropriate situation information is disseminated to Agency Representatives.
- Provide outside agency information and guidance to the EOC Director.
- Maintain contact with the Ventura County Operational Area EOC Liaison Officer.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Assignments/Staffing

o Contact all on-site Agency Representatives. Make sure:
  - They have signed into the EOC.
  - They understand their assigned function.
  - They know their work location.
  - They understand EOC organization and floor plan (provide both).
  - They have a copy of the EOC Action Plan once available.

o Determine if outside liaison is required with other agencies such as:
  - Local/county/state/federal agencies/school districts
  - Volunteer organizations (Auxiliary Communications Services, Community Emergency Response Teams, Volunteer Organizations Active in Disasters)
  - Non-governmental agencies (American Red Cross, United Way, etc.)
  - Private sector organizations
  - Utilities not already represented
  - Special Districts not already represented

o If the County has activated an Inter-Agency Coordinating Group, ensure a city representative attends and represents city issues.

- Know the working location for any Agency Representative assigned directly to a branch/group/unit.

Notifications

- Notify pre-identified outside agency reps that the EOC has been activated. Request an Agency Representative, as appropriate.
- Determine if there are communication problems in contacting outside agencies. Provide information to the Information Systems Branch of the Logistics Section.

Meetings/Briefings

- Attend and participate in Management Section meetings and briefings.
- Brief Agency Representatives on current situation, priorities and EOC Action Plan.
- Provide periodic update briefings to Agency Representatives as necessary.

Action Planning

- Assist the EOC Director in developing Management objectives for the EOC Action Plan.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Compile list of Agency Representatives (agency, name, EOC phone) and make available to all Section and Branch/Group/Unit Coordinators.
- Provide personnel and equipment time records to the EOC Director at the end of work shift.

Resources

- See Resources in Common EOC responsibilities on page 72.
- Determine status and resource needs and availability of other agencies.
- Facilitate requests for support or information that they City can provide.
- Keep up-to-date on the general status of resources and activity associated with the City.

Ongoing Activities

- Provide EOC organization chart, floor plan and contact information to all Agency Representatives.
- Maintain ongoing contact with all agency Liaisons involved with the incident response and provide information to the Planning/Intelligence Section. If agency liaisons are not assigned to be on-site at the EOC, establish plan of communication with each appropriate liaison.

- Request Agency Representatives contact their agency, determine level of activation of agency facilities, and obtain any intelligence or situation information that may be useful to the EOC.
- Arrange and coordinate any VIP tours with PIO, EOC Director and EOC Coordinator.
- Notify and coordinate with adjacent jurisdictions on facilities and/or dangerous releases that may impose risk across boundaries.
- Act as liaison with county, state or federal emergency response officials and appropriate city personnel.
- Respond to requests from sections and branches/groups/units for Agency information. Direct requesters to appropriate Agency Representatives.
- With the approval of the EOC Director, provide agency representatives from the City EOC to other EOCs as requested, if available.

LEGAL OFFICER

SUPERVISOR: EOC Director

Primary Responsibilities

- Prepare proclamations, emergency ordinances and other legal documents and provide legal services as required.
- Maintain legal information, records and reports relative to the emergency. (See Management Support Documentation – Legal Documents.)
- Commence legal proceedings as needed.
- Participate as a member of the EOC management team when requested by EOC Director.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

- O See Common EOC responsibilities on page 71.

Assignments/Staffing

- O Report to the EOC Director.
- O Clarify issues regarding your authority and assignment.
- O Determine 24-hour staffing requirements and request additional support as required.

Notifications (none applicable to this checklist)

Meetings/Briefings

- O Attend Management Section meetings and briefings as requested.

Action Planning

- O Assist the Section in developing Section objectives for the EOC Action Plan.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Prepare proclamations, emergency ordinances and other legal documents required by the City Council and the EOC Director.
- O Prepare documents relative to the demolition of hazardous structures or conditions.

- Develop rules, regulations and laws required for the acquisition and/or control of critical resources.
- Provide personnel and equipment time records to the EOC Director at the end of each work shift.

Policies (none applicable to this checklist)

- Provides interpretation of city, county, state and federal ordinances, statutes and regulations.

Resources

- See Resources in Common EOC Responsibilities on page 72.

Ongoing Activities

- Develop emergency ordinances and regulations to provide a legal basis for evacuation and/or population control.
- Commence civil and criminal proceedings as necessary and appropriate to implement and enforce emergency actions.
- Advise the EOC Director on areas of legal responsibility and identify potential liabilities.
- Advise the City Council, EOC Director and management personnel of the legality and/or legal implications of contemplated emergency actions and/or policies.
- Keep the EOC Director advised of your status and activity.

SAFETY/SECURITY OFFICER

SUPERVISOR: EOC Director

Primary Responsibilities

- Ensure that all facilities used in support of EOC operations have safe operating conditions.
- Monitor all EOC and related facility activities to ensure that they are being conducted in as safe a manner as possible under the circumstances that exist.
- Stop or modify all unsafe operations.
- Provide twenty-four hour a day security for EOC facilities.
- Control personnel access to facilities in accordance with policies established by the EOC Director.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Assignments/Staffing

o Report to the EOC Director.

o Clarify issues regarding your authority and assignment.

o Determine current security requirements and establish staffing as needed.

Notifications

o Complete a radio or communications check with all on-duty security personnel as appropriate.

Meetings/Briefings

o Attend all Management Section meetings and briefings.

Action Planning

o Assist the Section in developing Section objectives for the EOC Action Plan.

Documentation

o See Documentation and Reports in Common EOC Responsibilities on page 71.

o Provide personnel and equipment time records to the EOC Director at the end of each work shift.

o Consider need for vehicle traffic control plan. Develop if required.

Policies (none applicable to this checklist)

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O Determine needs for special communications. Make needs known to the Information Systems Branch of the EOC Logistics Section.

Ongoing Activities:

- O Support Safety and Security Officers in the field to ensure safety and security of field operations for employees and volunteers.
- O Tour the entire facility area and determine the scope of on-going operations.
- O Evaluate conditions and advise the EOC Director of any conditions and actions which might result in liability—e.g. oversights, improper response actions, etc.
- O Provide executive security as appropriate or required.
- O As requested, provide security for any EOC critical facilities, supplies or materials.
- O Establish or relocate security positions as dictated by the situation.
- O Determine needs for special access facilities.
- O Coordinate with the Personnel Unit of the Logistics Section to ensure that training for personnel includes safety and hazard awareness and is compliant with OSHA requirements.
- O Study the facility to learn the location of all fire extinguishers, fire hoses and emergency pull stations.
- O Be familiar with particularly hazardous conditions in the facility.
- O Ensure that the EOC location is free from environmental threats (i.e., radiation exposure, air purity, water quality, etc.)
- O If the event that caused activation is an earthquake, provide guidance regarding actions to be taken in preparation for aftershocks.
- O Assist in any EOC evacuation.
- O Assist in sealing off any dangerous areas. Provide access control as required.
- O Keep the EOC Director advised of safety and security conditions.
- O Coordinate with Compensation/Claim Unit of the Finance Administration Section on any personnel injury claims or records preparation as necessary for proper case evaluation and closure.

MANAGEMENT SUPPORT DOCUMENTATION

PROCLAMATIONS - LOCAL AND STATE EMERGENCY

When there is a condition of extreme peril or potential peril to the safety of persons and property, and the condition is beyond the capability of the local forces to control effectively, the City Council, or a person authorized by ordinance, may proclaim that a local emergency exists. A local emergency may be proclaimed to exist due to a specific situation, such as flood, fire, storm, earthquake, epidemic, drought, sudden and severe energy shortage, or other conditions. The type of disaster, date of occurrence, and the area affected are to be identified. (See examples of local emergency proclamations/resolutions in **Exhibits 1, 2, 3, and 4.)** A copy of the resolution must be provided to the Ventura County Operational Area for transmission to Cal OES.

To qualify for assistance under the state California Disaster Assistance Act (CDAA), such proclamations must be made within 10 days of the event.

The governing body must review the need for continuing the Local Emergency Proclamation **at least every 60 days**. **No review should exceed 60 days** and the failure to do so terminates the Local Emergency Proclamation by operation of law.

The Proclamation of a Local Emergency:

- Gives public employees and governing bodies certain legal immunities for emergency actions taken.
- Enables local agencies to request state assistance under the State CDAA.
- Allows the chief executive or other authorized official designated by local ordinance to:
  - Establish curfews.
  - Take any measures necessary to protect and preserve public health and safety.
  - Exercise all authority granted by local ordinance.

Local Resolution Requesting State Director, Office Of Emergency Services, Concurrence In Local Emergencies

Following the proclamation of a local emergency and in the event public real property has been damaged or destroyed, and assistance is needed in the repair and restoration, the governing body may request the Cal OES Director to concur in their proclamation of a local emergency and to provide assistance under the California Disaster Assistance Act (CDAA). The resolution must indicate the nature and date of the emergency and the person designated to receive, process, and coordinate all aid. The resolution will be sent to Cal OES through the Ventura County Operational Area.

To assist the Cal OES Director in evaluating the situation, and in making a decision on whether or not to concur in the local emergency, the following is required to accompany the resolution:

- Certified copy of Local Emergency Proclamation (see Exhibits 1, 2, 3 or 4).
- Damage Assessment Summary

Note: The Local Emergency proclamation must be made within 10 days of the occurrence to qualify for assistance under the California Disaster Assistance Act. The following financial assistance is available through Cal OES under the CDAA:

- Assistance to repair, restore, reconstruct or replace public real property or public facilities belonging to local agencies damaged as a result of natural disasters;
- Indirect costs; and
- Direct costs of grant administration.

State of Emergency/Presidential Declaration

Resolution Requesting Governor to Proclaim a State of Emergency

After a proclamation of a local emergency, the governing body of the city or county, having determined that local forces are unable to mitigate the situation, may request by resolution that the Governor proclaim a state of emergency in the area to invoke mandatory mutual aid and provide state assistance under CDAA. A copy of the request for a Governor's Proclamation, with the following supporting data, will be forwarded to the Cal OES Director through the Ventura County Operational Area.

- Certified copy of the local emergency proclamation **(see Exhibits 1, 2, 3 and 4).**
- Damage Assessment Summary (to be provided if state financial assistance under provisions of the California Disaster Assistance Act is requested).

Financial assistance available:

- Eligible disaster response costs;
- Assistance to repair, restore, reconstruct or replace public real property or public facilities belonging to local agencies damaged as a result of natural disasters;
- Indirect costs; and
- Direct costs of grant administration.

Cal OES prepares a recommendation as to the action that should be taken by the Governor. If the action recommends a Governor's Proclamation, Cal OES prepares the proclamation.

Presidential Declaration

Following the above procedures, the governing body of the local jurisdiction may also pass a resolution asking the Cal OES Director to recommend that the Governor request a Presidential Declaration of a Major Disaster under the authority of Public Law 93-288 (Stafford Act). The Governor's Request to the President is submitted through the Federal Emergency Management Agency (FEMA). Supplementary justification data may be required to accompany the local resolution (certified copy) and Damage Assessment Survey.

Financial assistance available:

- Individual assistance to the private sector;

- Matching fund assistance for cost sharing required under federal disaster assistance programs (subject to state eligible project criteria);
- Local agency overtime costs and the costs of supplies used during eligible disaster response projects;
- Assistance to repair, restore, reconstruct or replace public real property or public facilities belonging to local agencies damaged as a result of natural disasters;
- Indirect costs; and
- Direct costs of grant administration.

Local Proclamation of Termination of Local Emergency

The governing body must review the need for continuing the local Emergency Proclamation **at least every 60 days**, and proclaim the termination of at the earliest possible date. **No review should exceed 60 days from the last review** and the failure to do so terminates the local Emergency Proclamation by operation of law.

Government Code Section 8630: "(a) A local emergency may be proclaimed only by the governing body of a city, county, or city and county, or by an official designated by ordinance adopted by that governing body. (b) Whenever a local emergency is proclaimed by an official designated by ordinance, the local emergency shall not remain in effect for a period in excess of seven days unless it has been ratified by the governing body. (c) The governing body shall review the need for continuing the local emergency at least once every 60 days until the governing body terminates the local emergency. (d) The governing body shall proclaim the termination of the local emergency at the earliest possible date that conditions warrant."

Exhibit 1 Resolution Requesting Governor to Proclaim a "State of Emergency" and a Request for State and Federal Assistance **(See Appendix)**

Exhibit 2 Resolution Proclaiming Existence of a Local Emergency and Rendering Certain Emergency Orders **(See Appendix)**

Exhibit 3 Proclamation and Order of the Director of Emergency Services Proclaiming Existence of a "Local Emergency" **(See Appendix)**

Exhibit 4 Resolution Requesting a Presidential Declaration and Asking for Assistance Due to the Extent and Severity of the Proclaimed Local Emergency **(See Appendix)**

REPORTING TO WORK FOLLOWING A DISASTER

During Nonworking Hours

All employees are to report to work per Rule VII, Section 11 of the City of Ventura Personnel Rules and Regulations or as otherwise outlined in Labor Memoranda of Understanding.

City of Ventura Personnel Rules and Regulations, Rule VII, Section 11

Section 11: EMERGENCY CALLBACKS TO WORK. In the event of a City emergency situation, all employees who are contacted to return to work on an overtime basis, unless physically incapacitated, must do so. Any employee who is contacted to come back to work on an overtime basis, due to a City emergency situation, who fails to do so due to outside employment, may be subject to disciplinary action.

PUBLIC INFORMATION OFFICER (PIO) SUPPORT DOCUMENTS

The City is responsible for providing the public with accurate, timely, and consistent information in an emergency. Informing the public is a special priority during emergency incidents, and the public expects timely information about the emergency.

The objectives of Emergency Public Information are to:

- Rapidly provide the general public with information about the emergency and instructions about what they should do.
- Provide the media with accurate, timely information about the extent of the emergency and response efforts.

To meet these objectives, public information officers (PIOs) at all levels must work together and with media representatives to disseminate information and instructions to the public when emergencies occur. The PIO team should:

- Provide a PIO planning/work area in or near the EOC.
- Coordinate with the Incident Command Post staff to establish a Media Photo Site for visual access near the scene of the incident.
- Establish a Media Information Center for briefing the news media.
- Establish a rumor control function to respond to public and media inquiries.
- Coordinate with the Liaison Officer and EOC Coordinator to handle VIP tours.

Any public information materials are to be developed with inclusionary messaging, meaning that the documents should be provided in accessible formats and integrate the needs of persons with disabilities.

PIO team should use multiple delivery methods to ensure maximum coverage to all population groups, such as social media (Facebook, Twitter, Nixle, NextDoor).

The **primary role** of the PIO is to disseminate emergency instructions and critical information through the media to the public.

A **secondary function** is to provide the public (through the media) with accurate and complete information regarding incident cause, size, status, resources committed, and potential short or long-term impacts, if known. For significant incidents or incidents involving numerous response agencies, PIOs from all responding agencies should combine to form a public information team under the direction of the designated PIO in the EOC.

Emergency Notification

Emergency notification instructions and advisories are primarily the City's responsibility. During the initial emergency phase, the PIO will assist in alerting the public to hazards and providing emergency instructions regarding protective actions to be taken to avoid injury and protecting property. These public notifications should be made as soon as possible through the broadcast media to provide adequate time for response.

Notifications should include local and national wire services. To notify news media of a breaking story, give the following information:

- Your name and title
- City of San Buenaventura
- Type of incident
- Safety information
- Location of incident
- Any additional information for the news media (command post location, equipment on scene, best access route, etc.).

The PIOs will release emergency public information locally and provide status information to PIOs at higher levels of government. This information should be coordinated with all agencies involved in the incident.

Emergency Phase

During this phase, the public information system is mobilized to provide public information of a pending hazard or to respond to media and public inquiries.

The PIO is an essential part of the field level and EOC Command Staff. The PIO function should be established as soon as possible to ensure prompt access to all current emergency response and health or safety information available. On-scene PIOs will coordinate with the PIO in the EOC.

Rapid dissemination of information is especially critical in a breaking event. The information should advise the public of the potential hazards and the nature of the hazard, area involved, evacuations, and traffic control.

Rumor Control

Government is responsible for providing information and instructions to the public and establishing an effective rumor control system. It is important to establish Rumor Control to respond to direct public and media inquiries.

Media Information

Joint Information Center or Media Center

Media accommodation begins with access to the scene through a Joint Information Center or Media Center. It is important to remember that the media is an important element of emergency response as they can provide critical information to the Incident Commander/EOC Director and staff, and the public.

On more minor incidents, a Media Information Center should be established to provide warning or precautionary information and to release information:

- On general safety instructions to the public via the media.
- Relating to the response activities on scene, medical, shelter, road/street closures, and damage assessment.
- On the status of the incident, deaths (when confirmed by the Medical Examiner), injuries, displaced persons, damages, hospital status, school status, and major problems.

The Media Information Center should be marked if located within law enforcement lines. It should be staffed by qualified PIOs and open to all authorized news media representatives. The Media Information Center should be closed to the general public. Appropriate government officials and incident specialists may be brought into the Media Information Center area for interviews.

When working with the media, it is important to provide:

- Location of media center(s)
- Best access routes to the media center
- Location of media access photo sites
- Times of news briefings
- Airspace restrictions
- Street closures/detours
- Shelter and hospital addresses
- Hazardous materials dangers
- Language assistance for non-English speaking journalists
- Scheduled media tours of the incident area (coordinate with the Liaison Officer)
- Weather information

A Joint Information Center should be established when multiple jurisdictions, agencies, and levels of government are involved in the response. The PIOs at the Joint Information Center will employ the Joint Information System to share and coordinate public information, whether formally or informally, to ensure the delivery of accurate and timely information the public needs and wants.

Media Identification

Provisions for press passes should be determined before an incident occurs. Generally, the law enforcement agency issues press passes to representatives from legitimate news gathering agencies. Provisions for a system of temporary press passes should be addressed to cover the occasion when legitimate journalists arrive on the scene of a major incident.

As a general guideline, any person employed by a news gathering agency, be it newspaper, wire service, television or radio station, or as a freelance journalist or photojournalist, is authorized access to disaster areas under Penal Code section 409.5 (d) or PC 409.6(d). As a general rule, media representatives should not be admitted to National Defense Areas such as the crash site of a military aircraft (66 Ops. Cal. Atty. Gen. 497(1983).

Other means of identification are Media Vehicle Placards and Press Photographer license plates (California vehicle Code Section 5008). The Department of Motor Vehicles, Special Plate Section states in part:

> *"Any person who is regularly employed or engaged as a bona fide newspaper, newsreel, or television photographer or cameraman may apply for press photographer's plates. No more than one set of the special plates will be issued to a press photographer. Photojournalists must derive more than 50% of their personal income as a press photographer from a bona fide news organization."*

These plates can be identified by the letters PP inside a triangle shaped shield, followed by a number. These vehicle identification plates serve only to identify the vehicle as the property of a media representative and all persons inside the vehicle should be properly identified.

News Conferences and Briefings

The Media Information Center should be able to accommodate all media representatives during news conference briefings. State policy allows all media representatives equal access to information developed for release. Physical access to the media center and site could be controlled or restricted. If access is controlled or restricted, public safety personnel at the perimeter/barriers must be instructed in these procedures. For access within police and fire lines, media representatives must have valid "authorized" media identification issued by public safety agency or authorization on company letterhead (67 Ops.Cal.Atty.Gen.535 (1984)).

Media briefings and press conferences should be conducted on a regular or "as needed" basis. In preparing for briefings and press conferences, PIOs shall:

- Arrange for an official spokesperson.
- Announce briefings times to all media.
- Arrange media tours if such action will not hinder response efforts. (coordinate with the liaison officer.)
- Conduct tours for media pool representatives as needed.

PIOs should ensure that all information available for release is clear, concise, confirmed, and approved by appropriate authorities before release to the media or public. PIOs should not release unconfirmed

information or speculate. Information, which is not confidential, would not hamper an investigation or jeopardize an individual's rights and safety should be released.

Media Pools

The media should be allowed reasonable access. If restrictions or limitations are unavoidable, a "pool" system may be used to avoid congestion. Journalists on the scene should be permitted to select representatives from each medium (radio, television, newspaper, wire service, magazine, video, and still photographers). They should also consider selecting representatives from each level of coverage (local, regional, national and international). These are then escorted into the area. These representatives will then share all information, photographs, and video/audiotape with other accredited journalists. Only journalists present when the pool is activated should be allowed access to pool material. A sign-up sheet may be used to record participants.

When access by the media must be denied or severely restricted, a valid explanation must be provided. The media pool is seen as a restriction placed on the media and coverage of the news. Media pools should be considered only as a last resort. Media representatives must be reasonably accommodated at disaster scenes.

Journalists selected as pool members must be willing and able to meet deadlines and share video, audio, or still coverage in a timely manner to all entitled to material generated by the media pool. Journalists not assigned to the media pool must obey the lawful orders of public safety officers. Once the media pool is formed, only authorized pool members may have access to the immediate scene while access is limited.

Media Access Photo Sites (MAPS)

Media Access Photo Sites (MAPS) should be established for photojournalists to provide visual access. MAPS are specific locations designated for use by still and video media to provide visual access to emergency, crime, and hazardous materials scenes. The MAPS should be identified and established as a priority by the PIO or knowledgeable representative of the Incident Commander.

Criteria considered in identifying locations for Media Access Photo Sites:

- The site should be as close as possible to the incident yet not interfere with the operation of public safety officers or compromise the safety of media representative.
- The location should be chosen to give the best visual access to all areas of interest associated with the incident.
- The need to locate video trucks and support equipment as close as possible for technical reasons should be considered.

Journalists will have access to the media photo site; however all media briefings and interviews should be conducted at the Media Information Center near the Command Post or EOC.

In the event that the incident falls under the jurisdiction of the National Transportation Safety Board (NTSB), the media photo site should be activated immediately by the PIO Function. The law enforcement agency will act as the investigator's agent when restricting access. They will decide on access. Officers are urged to treat the area as a crime scene, even though the incident may not have been the result of an obvious criminal act. Media photo sites should be placed outside the immediate crime scene area(s).

Post Emergency Phase

Recovery

Information will continue to be released after termination of the emergency. This will include information on clean up, possible health effects, traffic reports, restoration of essential services, extent of damage and available assistance programs available. It is the responsibility of the PIO to:

- Advise the public of recovery efforts
- Provide for public meetings to address public concerns.
- Continue monitoring public attitudes and revise public information strategies accordingly.
- Reduce tension by issuing news releases on a regular basis.
- Record and evaluate actions taken during incident for after action report.
- Consider contacting the media for their input into the after action report.
- Ensure that the PIO has business cards with phone numbers to give to media.

The following information should be released to the public when providing EMERGENCY public information.

Lifesaving/Health Preservation Instructions

- What to do (and why)and what not to do (and why)
- Information (for parents) on status and actions of schools (if in session)
- Hazardous/contaminated/congested areas to avoid
- Curfews
- Road, bridge, freeway overpass, dam conditions, and alternate routes to take.
- Evacuation:
  - Routes.
  - Instructions (including what to do if vehicle breaks down).
  - Arrangements for persons without transportation.
  - Location of mass care/medical/
  - Coroner facilities, food, safe water. Status of hospitals.
- First aid information
- Firefighting instructions
- Emergency telephone number (otherwise request people not to use telephone). Stress to out-of-area media that people should NOT telephone into the area. Lines must be kept open for emergency calls

- Instructions/precautions about utility use, sanitation, how to turn off utilities
- Essential services available: hospitals, grocery stores, banks, pharmacies, etc.
- Weather hazards/health risks (if appropriate)

Emergency Status Information

- Before release, clear all information with the EOC Director.
- Verify all information before release
- Provide all hotline numbers
- Description of the emergency situation, including:
  - Number of deaths and injuries
  - Property damage to city and businesses and dollar value
  - Persons displaced
  - Magnitude of earthquake, number of fires, etc.
- Description of government and private response efforts (mass care, medical, search and rescue, emergency repair, debris clearance, fire/flood fighting, etc.)
- Status of Local Proclamation, Governor's Proclamation and Presidential Declaration
- Where people should report/call to volunteer
- How people in other areas can obtain information about relatives/friends in the disaster area (coordinate with Red Cross on release of this information). How disaster victims can locate family members

Other Useful Information

Usually this type of information will be released in the Recovery Period because of lack of time and other priorities during other phases.

- State/Federal assistance available.
- Disaster Application Center opening dates/times.
- Historical events of this nature.
- Charts/photographs/statistics from past events.
- Human interest stories
- Acts of heroism
- Historical value of property damaged/destroyed
- Prominence of those killed/injured.

MEDIA PHONE LIST - RADIO/TV/PRINT

Television

Local – Ventura County

KEYT – Channel 3
730 Miramonte Drive,
Santa Barbara, CA 93109

www.keyt.com
General Information 805-882-3933
New Room Direct 805-882-3930

Local – Los Angeles County

CNN (Cable News Network)
6430 Sunset Boulevard, Suite 300
Los Angeles, CA 90028

www.cnn.com
General Information 323-993-5000
Fax 323-993-5081

KCBS - Channel 2
CBS Studio City Broadcast Center
4200 Radford Avenue
Studio City, CA 91604

www.cbs2.com
General Information 818-655-2000
News Room Direct 323-460-3316
Fax 323-464-2526

KNBC - Channel 4
3000 W. Alameda Avenue, Room 2201
Burbank, CA 91523

www.knbc.com
General Information 818-840-4444
News Room Direct 818-840-3425
Fax 818-840-3535

KTLA - Channel 5
5800 Sunset Boulevard
Los Angeles, CA 90028

www.ktla.trb.com
General Information 323-460-5500
News Room Direct 323-460-5501
Fax 323-460-5333

KABC - Channel 7
500 Circle Seven Drive
Glendale, CA 91201

www.abclocal.go.com/kabc
General Information 818-863-7777
News Room Direct 818-863-7500
After 6:00 p.m. 818-863-7600
Fax 818-863-7080

KCAL - Channel 9
Same information as KCBS
(Absorbed by KCBS parent company in 2002)

www.kcal9.com

KTTV (FOX) - Channel 11
1999 S. Bundy Drive
Los Angeles, CA 90025

www.myfoxla.com
General Information 310-584-2000
News Room Direct 310-584-2025
Fax 310-584-2024

KCOP - Channel 13 (soon to be absorbed by FOX 11)
915 N. La Brea Avenue
Los Angeles, CA 90038

www.upn13.com
General Information 323-851 1000
News Room Direct 323-850 2222
Ext. 409 or 419
Fax 323-850-1265

Radio

KVTA 1590 AM (EAS STATION)	805-642-8595	Ventura	www.kvta.com
KHAY - 100.7 FM (EAS STATION)	805-642-8595	Ventura	www.khay.com
KMLA – 103.7 FM (Spanish)	805-385-5656	Oxnard	www.Lam1037.com
KBBY 95.1 FM (VENTURA)	805-642-8595		www.951kbby.com
KDAR - 98.3 FM (OXNARD)	805-485-8881		www.983fmtheword.com
KOXR - 910 AM (OXNARD)	805-240-2070		
KVEN – 1450 AM (VENTURA)	805-289-1400		www.1450kven.com
KXLM - 102.9 FM (OXNARD)	805-240-2070		www.radiolazer.com

Newspapers

Ventura County Star	805-437-0000	805-482-6167 (fax)	www.vcstar.com
Ventura County Reporter www.vcreporter.com	805-648-2244		
Ventura Breeze www.venturabreeze.com	805-653-0791		
Tri-County Sentry (Multi-cultural) www.tricountysentry.com	805-983-0015		
The Acorn	818-706-0266		www.theacrononline.com

MEDIA RELATIONS DOS AND DON'TS

DO…	DON'T…
• Prepare a fact sheet / FAQs • Assume you're being recorded • Respect reporters' and publications' deadlines • Let reporters know how to reach you • Set – and stick to – expectations for updates (on the hour, every two hours, etc.) • Speak officially; facts only • Remember your tone and project confidence • Give the whole story • Treat all reporters equally • Highlight your priorities (safety of community, family reunification, donations, volunteers, etc.) • Say "I don't know," if you do not have information readily available; then set time frame for follow up when you do know • Be accessible to reporters; return calls promptly • Suggest interesting story ideas • Offer tours or support information • Think and speak in "soundbites" or quotes • Listen to the question; clarify to make sure you are answering what is asked • Practice your talking points; if necessary, issue written talking points in advance of your briefing • Anticipate questions • Correct misinformation and mistakes ASAP (reporters and your own) • Remember you are the expert • Know the law regarding media	• Lie. Ever. • Fake it, speculate, assume or guess • Go "off the record" • Say "no comment" • Use industry slang or terminology • Make flippant remarks • Offer personal opinions or comment on hypothetical situations • Tell one news agency what another is doing • Wear sunglasses on camera • Fill the "pregnant pause" • Put down your detractors • Argue with the press • Try to say everything at once • Answer hypotheticals • Say "Ah" or "Um" • Respond to emotional appeals with emotion • Send a news release unless it's newsworthy • Break the connection

Speak only for your agency or level of government.

- Arrange for meetings between the media and incident (field) personnel.
- Make sure telephones, coffee, etc., are available for media representatives if possible.
- Try to stay with your prepared statement.
- Stay cool; don't let questions unnerve you.
- Be direct and **only** comment on what you know - **DO NOT SPECULATE!**
- Have information release policy pre set with EOC Director.
- Try to make the media your friend-they can either help or hinder your operation.

SAMPLE MESSAGES FOR RELEASE TO THE PUBLIC AND MEDIA

Power Outage

Please be advised that Electrical outage in portions of the City of San Buenaventura. Power will be restored within a given amount of time, generally within one hour. For more information, contact Edison at 1-800-655-4555

Earthquake - No Information Available

Radio Message

This is (identify presenter) _____at the _____. An earthquake of undetermined magnitude has just been felt in the _____area. At this time we have no confirmed reports of injuries or damage. Law enforcement and fire units are responding to the area. We will keep you updated as reports come in. Meanwhile, be prepared for aftershocks. If shaking begins again and you can safely do so, quickly seek shelter under a sturdy piece of furniture. Avoid dangerous objects such as tall, unsecured bookcases, mirrors and windows. If your house has been damaged and you smell gas, shut off the main gas valve. Switch off electrical power if you suspect damage to the wiring. Do not use your telephone unless you need emergency help. Check your house for damage. Leave your house only if it is severely damaged.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (sheriff/fire dept.) of the location and condition of the person/s.

Earthquake - Update on Earthquake

Radio Message

This is (identify presenter) _____ at the _____. The magnitude of the earthquake which struck the _____ area at _____ today has been determined to be _____. The epicenter has been fixed at _____ by (scientific authority).

This office has received reports of _____ deaths (confirmed by coroner), _____ injuries, and _____ homes damaged. No dollar damage figure is yet available. Law enforcement and fire units are on the scene to assist residents.

(Continue with summary of situation.)

Aftershocks continue to be felt in the area. If you feel shaking and it is safe to do so, quickly seek shelter under a sturdy piece of furniture. Avoid danger spots. Do not use your telephone unless you need emergency help.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

SUMMARY STATEMENT FOR MEDIA

Earthquake

At approximately _____ today, a magnitude _____ earthquake struck the area, with its epicenter at _____. Fire and law enforcement units were immediately dispatched to assess injuries and damage.

(Indicate injuries, deaths (confirmed by the Coroner), property damage, fires, etc., reported to date.)

_____ aftershocks were felt, the largest occurring at (time) _____. No additional damage was reported (or specify damage).

Over _____ response personnel from law enforcement agencies, fire agencies and other City staff were called into action. The American Red Cross opened shelters at _____ for persons unable to remain in their homes. At (time) _____ on (date) _____, the City Council proclaimed the existence of a Local Emergency and requested that the Governor proclaim a State of Emergency. The Council also asked the Governor to request the President to declare a Major Disaster/Emergency. Damage to private and public buildings has been estimated to exceed $_____.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

HAZARDOUS MATERIAL INCIDENT (INCLUDING WMD)

Unidentified Spill/Release In Heavy Traffic Area

Radio Message

This is (identify presenter) _____ at the _____. An unidentified substance has been spilled/released at (specific location) _____. Please avoid the area, if possible, while crews are responding. The best alternate routes are _____.

If you are already in the area, please be patient and follow directions of emergency response personnel. The substance will be evaluated by specially trained personnel, and further information will be released as soon as possible.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (sheriff/fire dept.) of the location and condition of the person/s.

Thank you for your cooperation.

HAZARDOUS MATERIAL INCIDENT (INCLUDING WMD)

Low Hazard/Confined Spill/Release - No General Evacuation

Radio Message

This is (identify presenter) at the . A small amount of _____, a hazardous substance, has been spilled/released at _____. Streets are blocked, traffic is restricted, and authorities have asked residents in the immediate block area to evacuate. Please avoid the area. The material is slightly/highly harmful to humans and can cause the following symptoms: _____ . If you think you may have come in contact with this material, you should (give health instructions and hotline number, if available). For your safety, please avoid the area if at all possible. Alternate routes are (Insert alternate routes) and traffic is being diverted. If you are now near the spill/release area, please follow directions of emergency response personnel. Cleanup crews are on the scene.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

(Suggest EAS use: request repeated broadcast.)

HAZARDOUS MATERIAL INCIDENT (INCLUDING WMD)

High Hazard Spill/Release-General Evacuation Requested/Mandatory

Radio Message

This is (identify presenter) _____at the _____. A large/small amount of _____ , a highly hazardous substance, has been spilled/released at _____. Because of the potential health hazard, authorities are requesting/requiring all residents within _____ blocks/miles of the area to evacuate. If you are (give evacuation zone boundaries) _____, you and your family should/must leave as soon as possible/now. Go immediately to the home of a friend or relative outside the evacuation area or to (indicate shelter) _____.

If you can drive a neighbor who has no transportation, please do so. If you need transportation, call _____. Children attending the following schools: _____ (list) will be evacuated to: _____.

Do not drive to your child's school. Pick your child up from school authorities at the evacuation center.

Listen to this station for instructions.

The material is highly harmful to humans and can cause the following symptoms: _____. If you are experiencing any of these symptoms, seek help at a hospital outside the evacuation area, or at the evacuation center at

To repeat, if you are in the area of _____ you should/must leave, for your own safety. Do not use your telephone unless you need emergency assistance.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

SUMMARY STATEMENT FOR MEDIA

Hazardous Material Incident (Including WMD)

(TO BE ADAPTED ACCORDING TO THE SITUATION)

At approximately _____ a.m./p.m. today (a private citizen, city employee, etc.) reported a spill/release of a potentially hazardous substance to this office.

(Law enforcement/fire) units were immediately dispatched to cordon off the area and direct traffic. The material was later determined to be (describe) _____, a (hazardous/harmless) (chemical/substance/material/gas) which, upon contact, may produce symptoms of _____.

Precautionary evacuation of the _____ (immediate/X block) area surrounding the spill was (requested/required) by (agency) _____.

Approximately (number) _____ persons were evacuated.

Clean-up crews from (agency/company) _____ were dispatched to the scene, and normal traffic had resumed by (time) _____, at which time residents were allowed to return to their homes. There were no injuries reported (or) _____persons, including (no. of) _____ (fire/law enforcement) personnel, were treated at area hospitals for _____ and (all, number) _____ were later released. Those remaining in the hospital are in _____condition.

Response agencies involved were _____.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

FLOODING

Roads Closed

Radio/TV Message

This is (identify presenter) _____ from the _____. The recent storm has caused severe/moderate flooding in several/many areas of the city/county. As of _____ today, the following roads/streets have been closed by law enforcement officials:

Please avoid these roads/streets. If you must travel, use alternate routes. Avoid all coastal roads.

Again, those roads/streets which have been closed are _____.

Please stay tuned to this station for additional road closure information.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

FLOODING

Approved Viewing Spots

Radio/TV Message

This is (identify presenter) _____ from the _____. The following storm-damaged areas are still extremely hazardous and should be avoided: _____.

Please do not try to sightsee in these areas. You could be hurt.

Again, please avoid the storm-damaged areas, flood control channels and streams. You may place your life and that of others in danger.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

Thank you for your cooperation.

EVACUATION ORDERED

Radio/TV Message

(specify mandatory or voluntary)

This is (identify presenter) _____. The (disaster) situation continues in parts of the City of San Buenaventura. For your safety, I am asking that you leave the (give boundaries of local area, evacuation routes) _____ area as soon as possible.

Be sure to take essential items - medicine, special foods, personal items, baby supplies, clothing, money, and valuable papers - but do not overload your car. Secure your home before you leave. Be sure to check on any neighbors who may need assistance.

If you cannot stay with relatives or friends outside of the evacuated area, go to (one of) the Red Cross shelter(s) at _____.

Pets will not be allowed in American Red Cross shelters. If you cannot make arrangements for someone outside the evacuated area to take care of your pet, (give instructions) _____.

Do not allow your pet to run loose. If you cannot make arrangements for your large animals, (give instructions) _____ .

If you have no means of transportation or if you are physically unable to evacuate on your own, ask a neighbor to assist you or call _____. Otherwise, please do not use your telephone except to report an emergency.

I repeat. If you live in the (give boundaries) _____ area, you are requested/required to evacuate for your own safety. Stay tuned to this station for more information and instructions.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

Thank you for your cooperation and your courtesy to others.

Repeat complete message.

FIRE WARNING MEDIA RELEASE (IMPENDING EVACUATION)

This is _____, speaking for The City of San Buenaventura. Officials report that a major fire exists in the area(s) of _____.

All citizens in The City of San Buenaventura should begin preparations for the impending evacuation and take the following precautions. (List precautions) _____.

Tune to radio station _____ or channel _____ for further instructions.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

(Repeat the Message.)

NOTE: Have media repeat periodically; update times and events while interspersing necessary information to citizens.

WILD FIRE WARNING MEDIA RELEASE (EVACUATION NEEDED)

This is (Name) _____, speaking for The City of San Buenaventura. Officials report that a fire is presently burning out of control in the area of _____.

All citizens living in the affected area, especially _____ should begin immediate evacuation to _____ or to _____.

It is anticipated that the fires may interrupt travel along _____ and the following major streets _____ by (Time) _____.

The populated areas of _____ may be impacted by (Time) _____.

Move Calmly, but quickly. Listen to instructions of your local officials.

If you know of someone who is unable to understand, see, or hear this message, please tell them about it and assist them, if possible. If you are unable to help, please notify the (police/fire dept.) of the location and condition of the person/s.

(Repeat the Message.)

NOTE: Have media repeat periodically; update times and events while interspersing necessary information to evacuees.

30 SECOND DONATIONS ANNOUNCEMENT

In response to the relief efforts for the disaster in the City of San Buenaventura, there are questions as to what items and services are needed.

The City encourages all individuals desiring to help to give cash donations to an organized voluntary agency of your choice, such as the American Red Cross, United Way or the Salvation Army.

The City of San Buenaventura is helping to coordinate between individuals and businesses who wish to donate money, goods and services with agencies that are able to receive, store and distribute donated items.

For more information on what and where to donate, call the City of San Buenaventura Donations Desk at _____.

MEDIA ACCREDITATION PROCEDURES

During a local emergency the Office of Emergency Services, Emergency Operations Center, will be used as the Joint Information Center. All media personnel requesting information should report there.

Media personnel should be prepared to present photo I.D. in the form of a valid signed and dated photo identification card issued to the bearer from the Ventura County Sheriff's Department. Additional verification may be required.

No provisions will be made to feed or house media personnel.

Members of the media may not be allowed to enter the Emergency Operations Center (EOC) without authorization, as their presence may disrupt emergency operations.

MEDIA ACCESS REGULATIONS

The following are extracts from Government Codes and Regulations relating to the granting of access to the media to closed or restricted areas during incidents and disasters:

CALIFORNIA PENAL CODE

Section 409.5 Power of peace officers to close areas during emergencies; Entering or remaining within area as misdemeanor; Exception as to newspaper representatives, etc.

(a) Whenever a menace to the public health or safety is created by a calamity such as flood, storm, fire, earthquake, explosion, accident or other disaster, officers of the California Highway Patrol, California State Police, police departments or sheriff's office, any officer or employee of the Department of Forestry designated a peace officer by subdivision (f) of Section 830.3, and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (I) of Section 830.3, may close the area where the menace exists for the duration thereof by means of ropes, markers or guards to any and all persons not authorized by such officer to enter or remain within the closed area. If such a calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

(b) Officers of the California Highway Patrol, California State Police, police departments, or sheriff's office or officers of the Department of Forestry designated as peace officers by subdivision (f) of Section 830.3 may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating any calamity enumerated in this section or any riot or other civil disturbance to any and all unauthorized persons pursuant to the conditions which are set forth in this section whether or not such field command post or other command post is located near to the actual calamity or riot or other civil disturbance.

(c) Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains within such area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

(d) Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

FEDERAL AVIATION REGULATIONS

Subpart B - Flight Rules

Section 91.91 Temporary Flight Restrictions

(a) Whenever the Administrator determines it to be necessary in order to prevent an unsafe congestion of sight-seeing aircraft above an incident or event which may generate a high degree of public interest, or to provide a safe environment for the operation of disaster relief aircraft, a Notice to Airmen will be issued designating an area within which temporary flight restrictions apply.

(b) When a Notice to Airmen has been issued under this section, no person may operate an aircraft within the designated area unless:

(1) That aircraft is participating in disaster relief activities and is being operated under the direction of the agency responsible for relief activities;

(2) That aircraft is being operated to or from an airport within the area and is operated so as not to hamper or endanger relief activities;

(3) That operation is specifically authorized under an IFR ATC clearance;

(4) VFR flight around or above the area is impracticable due to weather, terrain, or other considerations, prior notice is given to the Air Traffic Service facility specified in the Notice to Airmen, and enroute operation through the area is conducted so as not to hamper or endanger relief activities; or,

(5) That aircraft is carrying properly accredited news representatives, or persons on official business concerning the incident or event which generated the issuance of the Notice to Airmen; the operation is conducted in accordance with 91.79 of this chapter; the operation is conducted above the altitudes being used by relief aircraft unless otherwise authorized by the agency responsible for relief activities; and further, in connection with this type of operation, prior to entering the area the operator has filed with the Air Traffic Service facility specified in the Notice to Airmen a flight plan that includes the following information:

(i) Aircraft identification, type and color.

(ii) Radio communications frequencies to be used.

(iii) Proposed types of entry and exit of the designated areas.

(iv) Name of news media or purpose of flight.

(v) Any other information deemed necessary by ATC.

EOC VISITOR CONTROL PROCEDURES

Visitors wishing to enter the Emergency Operations Center during an actual emergency or disaster must fill out a Visitation Request Form (See Forms Section).

All Visitation Request Forms will be reviewed by the EOC Liaison Officer or EOC Coordinator. Only those visitors whom the EOC Liaison Officer or EOC Coordinator determines will benefit the emergency operations effort will be allowed into the Emergency Operations Center. This might include, but is not limited to officials, representatives from other cities, etc.

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OPERATIONS SECTION - GENERAL INFORMATION

Purpose

To enhance the City's capability to respond to emergencies by coordinating and supporting tactical operations in the field based upon the EOC Action Plan. It is the policy of this Section that the priorities of responses are to:

- Protect life, property, and the environment.
- Carry out objectives of the EOC Action Plan.
- Ensure coordinated incident response.
- Cooperate with other sections of the City's emergency response team.

Overview

The Operations Section's primary responsibility is to coordinate the response operations of various elements involved in the disaster and to request resources as needed. These elements may include:

- Fire/Medical/Health Branch
- Police Branch
- Medical and Health Branch
- Care and Shelter Branch
- Infrastructure Branch
- Building and Safety Branch

Objectives

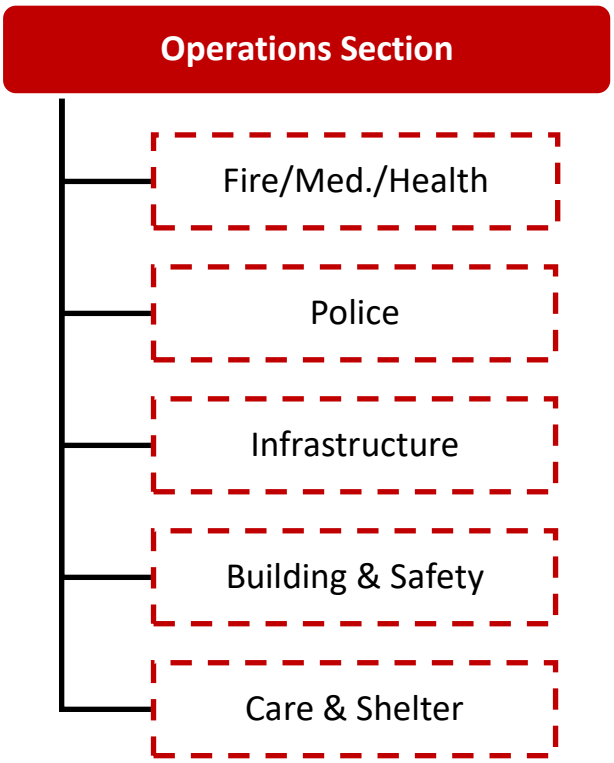
The Operations Section is responsible for the coordination of all response elements applied to the disaster. The Operations Section carries out the objectives of the EOC Action Plan and requests additional resources as needed.

Concept of Operations

The Operations Section will operate under the following policies during a disaster/emergency as the situation dictates:

- The Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) will be followed.
- All existing City and departmental operating procedures will be adhered to unless modified by the City Council or City Manager.
- All on-duty personnel are expected to remain on duty until properly relieved of duty. Off-duty personnel will be expected to return to work in accordance with adopted policies. **(See Reporting to Work During a Disaster in Management Support Documentation).**
- The EOC Director will determine operational periods. Operational periods will be event-driven.

OPERATIONS SECTION ORGANIZATION CHART



OPERATIONS SECTION STAFF

The Operations Section Coordinator will determine, based on present and projected requirements, the need for establishing specific and/or specialized branches. The following branches may be established as the need arises:

- Fire/Medical/Health Branch
- Police Branch
- Infrastructure Branch
- Building and Safety Branch
- Care and Shelter Branch

The Operations Section Coordinator may activate additional units as necessary to fulfill an expanded role.

Operations Section Coordinator

The Operations Section Coordinator, a member of the EOC Director's General Staff, is responsible for coordinating the City's operations to support the disaster/emergency response through implementation of the City's EOC Action Plan and for coordinating all requests for mutual aid and other operational resources. The Coordinator is responsible for:

- Understanding the current situation.
- Predicting probable resource needs.
- Preparing alternative strategies for procurement and resources management.

Fire/Medical/Health Branch

The Fire/Medical/Health Branch is responsible for coordinating personnel, equipment, and resources committed to the fire, field medical, search and rescue, hazardous materials, and other elements of the incident that may involve entry into hazardous atmospheres.

Medical/Health activities and Coroner activities will be coordinated with the Ventura County Health Care Agency for appropriate emergency medical response. The Ventura County Health Care Agency is responsible for managing personnel, equipment, and resources to provide the best patient care possible. Note: The County of Ventura Chief Medical Examiner-Coroner has Coroner responsibilities in the City of Ventura. In a wide-scale disaster within Ventura County, it may be several hours or days before the dead can be collected and processed by the Department of the Chief Medical Examiner-Coroner.

Police Branch

The Police Branch is responsible for alerting and warning the public, coordinating evacuations, enforcing laws and emergency orders, establishing safe traffic routes, ensuring that security is provided at incident facilities, ensuring access control to damaged areas, and ordering and coordinating appropriate mutual aid resources. The Ventura Police Department contracts with the Ventura County Animal Services to manage animal care issues for the City. During an emergency, all animal care services will be coordinated with Ventura County Animal Services.

Infrastructure Branch

The Infrastructure Branch is responsible for coordinating all Infrastructure operations, maintaining public facilities, surveying utilities and services, and restoring those that are damaged or destroyed; assisting other functions with traffic issues, search and rescue, transportation, inspections, etc., as needed.

Building and Safety Branch

The Building and Safety Branch is responsible for the evaluation and inspection of all City-owned and private structures damaged in an incident.

Care and Shelter Branch

The Care and Shelter Branch is responsible for providing care and shelter for evacuees and will coordinate efforts with the Ventura County Humans Services Agency and the American Red Cross Ventura County, and other volunteer agencies. For animal sheltering issues, the Care and Shelter Branch will coordinate with Ventura County Animal Services.

OPERATIONS SECTION COORDINATOR

SUPERVISOR: EOC Director

Primary Responsibilities

- Ensure that the Operations Section function is carried out, including the coordination of response for Fire, Police, Medical/Health, Care and Shelter, Infrastructure, and Building and Safety.
- Establish and maintain mobilization/demobilization areas for incoming mutual aid resources.
- Develop and ensure that the EOC Action Plan's operational objectives are carried out.
- Establish the appropriate level of organization within the Section, and continuously monitor the effectiveness of that organization. Make changes as required.
- Exercise overall responsibility for the coordination of activities within the Section.
- Report to the EOC Director on all matters pertaining to Section activities.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Activation

O Determine the operational status and appropriate level of activation based on situation as known.

O As appropriate, respond to the EOC.

O Mobilize appropriate personnel for initial activation of the EOC

Start-Up

O Direct the implementation of the City's Emergency Operations Plan.

O Obtain a copy of the current EOC Action Plan (not available at initial EOC activation).

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

O Determine what Section positions should be activated and staffed.

O Confirm that all key Operations Section personnel or alternates are in the EOC or have been notified. Recall the required staff members necessary for the emergency.

O Request additional personnel for the Section to maintain a 24-hour operation as required.

O Carry out responsibilities of your Section not currently staffed.

Notifications

- O Notify EOC Director when your Section is fully operational.
- O Establish field communications with established Incident Command Posts or DOCs, if activated.

Meetings/Briefings

- O Brief new or relief personnel in your Branch. Briefings should include:
  - Current situation assessment.
  - Identification of specific job responsibilities.
  - Identification of co-workers within the job function and/or geographical assignment.
  - Availability of communications.
  - Location of work area.
  - Identification of eating and sleeping arrangements as appropriate.
  - Procedural instructions for obtaining additional supplies, services, and personnel.
  - Identification of operational period work shifts.
- O Meet with other activated Section Coordinators, as needed.
- O Attend periodic briefing sessions conducted by the EOC Director.
- O Brief the EOC Director on major problem areas that need or will require solutions.
- O Conduct periodic Operations Section briefings and work to reach consensus for forthcoming operational needs.

Action Planning

- O Participate in the EOC Director's action planning meetings.
- O Work closely with the Planning/Intelligence Section Coordinator in the development of the EOC Action Plan. Ensure the development Operations Section objectives. **(See Planning/Intelligence Support Documentation – Action Planning.)**
- O Work closely with each Branch leader to ensure Operations Section objectives as defined in the current EOC Action Plan are being addressed.
- O Work closely with Logistics Section-Communications Unit in the development of a Communications Plan.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Open and maintain an Activity Log **(See Operations Support Documentation, Activity Log).**

- Provide personnel and equipment time records for the entire Section to the Time Keeping Unit in the Finance Section at the end of each work shift.
- Provide copies of the any reports to the Documentation Unit of the Planning/Intelligence Section at end of each operational period.

Ongoing Activities

- Receive, evaluate, and disseminate information relative to the Operations Section.
- Evaluate the field conditions associated with the disaster and coordinate with the Situation Status Unit of the Planning/Intelligence Section.
- From the Situation Status Unit of the Planning/Intelligence Section, obtain and review major incident reports and additional field operational information that may pertain to or affect your Section operations. Provide information to appropriate branches.
- Coordinate with Incident Commanders and DOCs, if activated to support any field activities.
- Coordinate with Police, and Fire/Medical/Health Branches and Incident Commanders, as appropriate, to determine the need for In-Place Sheltering or evacuations. Coordinate notification orders with Police and Fire/Medical/Health Branches and the PIO. **(See Operations Support Documentation – Shelter-In-Place.)**
- Coordinate the designation of primary and alternate evacuation routes for each incident with Police, Fire and Infrastructure Branches.
- Coordinate with the Situation Status Unit in the Planning Section to ensure primary and alternate evacuation routes are displayed on the situation maps.
- Coordinate any display or mapping needs with the Planning/Intelligence Section.
- Coordinate the activities of all departments and agencies involved in the operations.
- Provide all relevant emergency information to the PIO.
- Ensure that intelligence information from Branch leaders is made available to the Planning/Intelligence Section.
- Ensure that unusual weather occurrences within the jurisdiction are reported to the National Weather Service (NWS) **(see Operations Support Documentation – NWS.)**
- Ensure that all fiscal and administrative requirements are coordinated through the Finance/Administration Section, i.e., notification of any emergency expenditures.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Provide resources to the field as needed.
- Determine resources committed and resource needs.

- Identify, establish, and maintain mobilization areas for Operations-related equipment and personnel that come through Mutual Aid, as needed. Authorize release of equipment and personnel to incident commanders in the field.

- Review suggested list of resources to be released and initiate recommendations for their release. Notify the Resources Unit of the Planning/Intelligence Section.

FIRE/MEDICAL/HEALTH BRANCH DIRECTOR

SUPERVISOR: Operations Section Coordinator

Primary Responsibilities:

- Evaluate and process requests for fire, hazardous materials and rescue resources.
- Coordinate search and rescue, fire operations, the prevention, control and suppression of fire and hazardous materials incidents.
- Coordinate the provision of emergency medical care.
- Assist and serve as an advisor to the Operations Section Coordinator and other Branches as needed.
- Monitor and coordinate emergency medical care operations and treatment of the sick and injured resulting from the incident with the Ventura County EMSA. Provide Ventura County EMSA information on the medical casualties and needs. (Number of injuries and/or deaths). If the County Operational Area EOC is activated, coordinate with the Medical/Health Branch.
- Coordinate with the Ventura County Public Health Agency or if the County Operational Area EOC is activated, coordinate with the Medical/Health Branch regarding disease prevention and control activities.
- Coordinate with Ventura County Health Care Agency, Medical Examiner for any issues dealing with fatalities or if the County Operational Area EOC is activated, coordinate with the Medical/Health Branch.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Notifications

O Ensure that all on-duty Fire personnel have been alerted and notified of the current situation.

O Ensure that all off-duty Fire personnel have been notified of callback status, (when they should report) in accordance with current department emergency procedures.

O Notify appropriate local, state, and federal response agencies.

O Notify Ventura County Health Care Agency to coordinate any Medical/Health issues for the City.

O Identify patients and notify hospitals if contaminated or exposed patients are involved.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.
- O Check with the other Operations Section Branches for a briefing on the status of the emergency.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Operations Section Coordinator.
- O Set Fire Department priorities based on the nature and severity of the disaster.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Review and approve accident and medical reports originating within the Fire/Medical/Health Branch.

Ongoing Activities

- O Assess the impact of the disaster on the Fire Department's operational capacity
- O Report to the Operations Section Coordinator when:
  - EOC Action Plan needs modification
  - Additional resources are needed or surplus resources are available
  - Significant events occur
- O Assist with the needs of the Incident Command Post(s) as requested.
- O Advise EOC staff regarding the dangers associated with fire/hazardous materials.
- O Coordinate fire, hazardous materials and search and rescue operations.
- O Request activation of evacuation centers or mass care shelters when need is indicated through Care and Shelter Branch and provide fire protection and safety assessment of shelters.
- O Assist Police with the direction and management of population evacuation; assist in evacuating non-ambulatory persons.
- O Assist in dissemination of warning to the public.
- O Provide for radiation monitoring and decontamination operations and implement Radiological Protection Procedures if needed.
- O Determine if current and forecasted weather and wind conditions will complicate large and intensive fires, hazardous material, releases, major medical incidents and/or other potential problems. Contact the Situation Status Unit of the Planning/Intelligence Section for updates.

- Assist in efforts to identify spilled substances, including locating shipping papers and placards, and contacting as required Ventura County Health Care Agency, Cal OES, shipper, manufacturer, CHEMTREC, etc.
- Ensure proper clean-up arrangements are made with Ventura County Environmental Health.
- Coordinate emergency medical care and transportation to appropriate facilities, utilizing City resources and private providers.
- Provide support for decontamination operations.
- Coordinate firefighting water supplies with the Infrastructure Branch. Obtain status of water system and report to field Incident Commander or Command Post.

Medical/Health Ongoing Activities

- Coordinate with the Medical/Health Branch in the County Operational Area EOC to support all medical support/care, disease prevention and control activities, distribution of medications and other medical supplies to shelters or treatment areas as needed and coroner operations.
- Provide an estimate of number and location of casualties that require hospitalization to the Medical/Health Branch in the County Operational EOC.
- Support Ventura County Health Care Agency as appropriate to provide continued medical care for patients who cannot be moved when hospitals, nursing homes and other health care facilities are evacuated.
- Provide information on the disaster routes established within the city to the Medical/Health Branch in the County Operational Area EOC.
- Provide the PIO with information on public health hazards, mitigation procedures and the locations of medical shelters, first aid facilities, and Field Treatment Sites that may have been established by Ventura County Health Care Agency.
- Coordinate with the Ventura County Health Care Agency, Medical Examiner or with the Medical/Health Branch if the County Operational EOC is activated to support any temporary morgue facilities that have been established in the city.
- Maintain list of known dead and forward to the Medical Examiner or the Medical/Health Branch if the County Operational EOC has been activated.
- Assist and coordinate with the Ventura County Health Care Agency or the Medical/Health Branch if the County Operational EOC has been activated for the reburial of any coffins that may be washed to the surface of inundated cemeteries.
- Assess the need to provide mental health services to the general public and coordinate the provision of these services with Ventura County Health Care Agency or the Medical/Health Branch if the County Operational EOC has been activated, if needed.

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O Estimate need for fire mutual aid.
- O Request mutual aid resources through proper channels when approved by the Operations Section Coordinator.
  - Order all fire resources through the Ventura County Operational Area Fire Mutual Aid Coordinator
  - Order all other resources through the Logistics Section
- O In conjunction with the Transportation Unit of the Logistics Section, coordinate transportation and care of injured persons to treatment areas, as needed.
- O Coordinate with Logistics for provision of vehicles, shelter, food, water, sanitation, equipment, and supplies for fire personnel (including heavy equipment for rescuing trapped persons).
- O Report to the Operational Area Fire Mutual Aid Coordinator on major problems, actions taken and resources available or needed.
- O Resolve logistical problems reported by the field units.
- O Request additional resources through the Logistics Section or established ordering procedures, as needed.

POLICE BRANCH DIRECTOR

SUPERVISOR: Operations Section Coordinator

Primary Responsibilities

- Coordinate movement and evacuation operations during the disaster.
- Alert and notify the public of the pending or existing emergency.
- Activate any public warning systems.
- Coordinate all law enforcement and traffic control operations during the disaster.
- Ensure the provision of security at incident facilities.
- Coordinate incoming law enforcement mutual aid resources during the emergency.
- Coordinate and communicate with Police DOC, if activated.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

O Determine 24-hour staffing requirement and request additional support as required.

O Monitor your Branch/Unit activities and adjust staffing and organization as appropriate to meet current needs.

Notifications

O Ensure that all on-duty Police personnel have been alerted and notified of the current situation.

O Ensure that all off-duty Police personnel have been notified of call-back status, (when they should report) in accordance with current department emergency procedures.

O Notify Watch Commander of status.

Alerting/Warning of Public (See Operations/Alerting And Warning)

O Coordinate with Fire/Medical/Health Branch and field units to designate area to be warned and/or evacuated.

O Develop and coordinate with the PIO the warning/evacuation message to be delivered. At a minimum the message should include:

- Identification of agency making notification
- Nature of the emergency and exact threat to public

- Threat areas
- Time available for evacuation
- Evacuation routes
- Location of evacuee assistance center
- Radio stations carrying instructions and details

o Coordinate all emergency warning and messages with the EOC Director and the PIO. Consider following dissemination methods:

- Notifying police units to use loudspeakers and sirens to announce warning messages.
- Determining if helicopters are available and/or appropriate for announcing warnings.
- Using automated notification systems, cable TV, local radio stations and social media to deliver warning or emergency messages upon approval of the EOC Director.
- Using the Emergency Alert System (EAS) for local radio and television delivery of warnings. **(See Operations Support Documentation – Alerting and Warning.)**
- VCAlert - Follow the Ventura County VC Alert User's Manual to deliver warning or emergency messages to selected residences upon approval of the EOC Director.
- Using cadets, Disaster Services Workers reserves, and other City personnel as necessary to help with warnings. Request through the Logistics Section.

o Ensure that dispatch notifies special facilities requiring warning and/or notification (i.e., hospitals, schools, government facilities, special industries, etc.)

o Warn all non-English speaking; hearing, visually or mobility impaired persons; and other special needs populations of the emergency situation/hazard by:

- Using bilingual employees whenever possible.
- Translating all warnings, written and spoken, into appropriate languages.
- Contacting media outlets (radio/television) that serve the languages you need.
- Utilizing video phones, and 9-1-1 translation services to contact the deaf and hard of hearing.
- Using pre-identified lists and non-governmental organizations with outreach to people with access and functional needs.

o Check vacated areas to ensure that all people have received warnings.

Meetings/Briefings

o Brief new or relief personnel in your Unit/Position. Briefings should include:

- Current situation assessment
- Identification of specific job responsibilities
- Identification of co-workers within the job function and/or geographical assignment
- Availability of communications
- Location of work area
- Identification of eating and sleeping arrangements as appropriate

- Procedural instructions for obtaining additional supplies, services, and personnel
- Identification of operational period work shifts

- O Attend periodic briefing sessions conducted by Section Coordinator.
- O Obtain regular briefings from field command post(s) or DOC.
- O Conduct periodic briefings for your Branch/Unit. Ensure they are aware of priorities.

Action Planning

- O Assist in the preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Operations Section Coordinator.
- O Set Police Department priorities based on the nature and severity of the disaster.
- O Implement the evacuation portion of the EOC Action Plan.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Open and maintain an Activity Log **(See Operations Support Documentation, Activity Log).**
- O Provide periodic situation or status reports to your Section Coordinator for updating information to the Planning/Intelligence Section.
- O Provide personnel and equipment time records to the Section Coordinator at the end of each work shift.

Ongoing Activities

- O Keep the Operations Section Coordinator advised of your Branch status and activity and on any problem areas that now need or will require solutions.
- O Ensure that Police personnel have completed status checks on equipment, facilities, and operational capabilities.
- O Ensure that field units begin safety/damage assessment survey of critical facilities and report status information back through the Police Branch. Police Branch will forward information to the Planning/Intelligence Section.
- O Alter normal patrol procedures to accommodate the emergency situation.
- O Ensure that all relevant communication systems are operational.
- O Review situation reports as they are received. Verify information where questions exist.
- O Refer all media contacts to PIO.
- O Provide information to the PIO on matters relative to public safety.

- O Maintain contact with established DOCs and dispatch center to coordinate resources and response personnel.
- O Direct field units to report pertinent information (casualties, damage observations, evacuating status, radiation levels, chemical exposure, etc.).
- O Coordinate with Ventura County Animal Services for all animal services needed.
- O Activate the Critical Incident Stress Management teams if necessary.

Evacuation Activities

- O Implement the evacuation portion of the EOC Action Plan and/or support field operations.
- O Establish emergency traffic routes in coordination with the Infrastructure Branch and Ventura County EOC, as appropriate.
- O Coordinate with the Infrastructure Branch to determine capacity and safety of evacuation routes and time to complete evacuation.
- O Ensure that evacuation routes do not pass through hazard zones.
- O Ensure that VC-Alert is employed to assist with evacuations.
- O Assist Infrastructure Branch with identifying and clearing debris from critical routes required to support emergency response vehicles.
- O Identify alternate evacuation routes where necessary.
- O Identify persons/facilities that may have special evacuation requirements; i.e. people with access and functional needs, hospitalized, elderly, institutionalized, incarcerated etc.
  - Check status
  - Evacuate if necessary
  - Coordinate with the Transportation Unit of the Logistics Section for special transportation needs, i.e. wheelchair lift-equipped buses, transit buses, and paratransit vans.
  - Make sure the individuals are not separated from their durable medical equipment, i.e. wheelchairs, and walkers or service animals.
- O Consider use of City vehicles if threat is imminent. Coordinate use of City vehicles (trucks, vans, etc.) with the Transportation Unit of the Logistics Section. Encourage the use of private vehicles if possible.
- O Establish evacuation assembly points.
- O Coordinate the evacuation of hazardous areas with neighboring jurisdictions and other affected agencies.
- O Coordinate with Care and Shelter Branch to open evacuation centers.
- O Establish traffic control points and provide traffic control for evacuation and perimeter control for affected areas.

- Place towing services on stand-by to assist disabled vehicles on evacuation routes.
- Monitor status of warning and evacuation processes.
- Coordinate with the Infrastructure Branch to obtain necessary barricades and signs.

Security Activities

- Coordinate security for critical facilities and resources (consider vehicle security and parking at incident facilities.
- Enforce curfew and other emergency orders, as identified in the EOC Action Plan.
- Coordinate security in the affected areas to protect public and private property by establishing access controls and screening traffic entering the City, as required.
- Coordinate assisting fire units/ambulances/medical teams/emergency supply vehicles in entering and leaving incident areas, when needed.
- Coordinate with the Infrastructure Branch for street closures and boarding up of buildings.
- Coordinate police and crowd control services at mass care and evacuation centers.
- Ensure that detained inmates are protected from potential hazards. Ensure adequate security, and relocate if necessary.
- Develop procedures for safe re-entry into evacuated areas.

Major Air Crash Activities

- Notify the Federal Aviation Agency or appropriate military command for all air crash incidents.
- Request temporary flight restrictions, as necessary

Flooding and/or Dam Failure Activities

- Notify all units in and near inundation areas of flood arrival time.
- Direct mobile units to warn public to move to higher ground immediately. Continue warning as long as needed.
- Coordinate with PIO to notify radio stations to broadcast warnings.

Additional Actions in Response to Tsunami Warning

- Use the City of Ventura's Tsunami Evacuation Routes and Reunification Areas to evacuate portions of the City in and near tsunami inundation areas.
- Coordinate with the Ventura County Sheriff's OES to ensure that VC-Alert is employed to assist with evacuations.

- Coordinate with the Ventura County Sheriff's Department to confirm assembly areas for population being evacuated.
- Coordinate with the Ventura County Sheriff's OES and the Ventura County Transportation Commission to confirm pick up points for individuals with limited transportation resources. The Ventura County Operational Area Tsunami Evacuation Plan identifies the following pickup points in the City of Ventura for people needing assistance getting to the City's designated assembly area (Ventura College):
  - Schooner & Anchors Way (Ventura Harbor Mobile Home Park)
  - Seaward and Harbor (VON's Parking Lot)

  (For more information see Operations Support Documentation – Abbreviated Ventura County Operational Area Tsunami Evacuation Plan).
- Coordinate with Ventura County Animal Services to assist in evacuating animals in the inundation area.
- Direct mobile units to warn public to move to higher ground immediately. Continue warning as long as needed.
- Coordinate with PIO to notify radio stations to broadcast warnings.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Estimate need for law enforcement mutual aid.
- Request mutual aid assistance through the Ventura County Operational Area Law Enforcement Coordinator.
- Coordinate with the appropriate units of the Logistics Section for supplies, equipment, personnel, and transportation for field operations.
- Establish a multi-purpose staging area as required for incoming law enforcement mutual aid resources.

INFRASTRUCTURE BRANCH DIRECTOR

SUPERVISOR: Operations Section Coordinator

Primary Responsibilities

- Receive and process all field resource requests for Infrastructure resources. If Infrastructure DOC (Public Works/Water/Waste Water) is activated, field units will request resources through the Infrastructure DOC. The Infrastructure DOC will coordinate resource requests with the Infrastructure Branch Director. Coordinate those requests internally and externally as necessary to make sure there are no duplicate orders.
- Coordinate with the Logistics Section on the acquisition of all resources and support supplies, materials and equipment.
- Determine the need for and location of general staging areas for unassigned resources. Coordinate with the Facilities Unit of the Logistics Section and participate in any action planning meetings pertaining to the establishment of additional locations.
- Prioritize the allocation of resources to individual incidents. Monitor resource assignments. Make adjustments to assignments based on requirements.
- As needed, provide for the procurement and distribution of potable water supplies and coordinate with the Fire and Medical/Health Branches on water purification notices. (See Operations Support Documentation – Emergency Potable Water-Procurement and Distribution and Water – Concept of Operations.)

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Notifications

O Notify transportation officials (Caltrans) of City's emergency status and coordinate assistance, as required.

O Notify the Ventura County Operational Area EOC (OAEOC) of the situation and need for mutual aid and participate in OAEOC Water Chief conference calls as requested.

O Contact DHS District Office of Drinking Water, Ventura County Health Care Agency - Public Health, local water utilities, Fire Department, Police Department and other sources to compile situation information including:

- Cause and extent of water system damage
- Estimated duration of system outage
- Geographical area affected
- Population affected

- Actions taken to restore system
- Resources needed to reactivate system
- Emergency potable water needs (quantity and prioritized areas)

Please note: Going directly to the State agency (DHS District Office of Drinking Water) is not the normal channel of coordination. However, the local level must coordinate directly with and obtain approval of the State water quality agency for water system restoration.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Operations Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.

Ongoing Activities

- O Maintain back-up power in the EOC.
- O Assure that all emergency equipment has been moved from unsafe areas.
- O Mobilize personnel, heavy equipment and vehicles to designated general staging areas.
- O Ensure that sources of potable water and sanitary sewage systems are available and protected from potential hazards. **(See Operations Support Documentation – Emergency Potable Water-Procurement and Distribution and Water – Concept of Operations.)**
- O Develop priorities and coordinate with utility companies for restoration of utilities to critical and essential facilities.
- O In coordination with the Ventura County Public Works, determine status of evacuation routes and other transportation routes into and within the affected area. Determine present priorities and estimated times for restoration. Clear and reopen Disaster Routes on a priority basis.
- O Coordinate with the Law Enforcement Branch to ensure the safety of evacuation routes following a devastating event. -128
- O Coordinate with the Procurement Unit of the Logistics Section for sanitation service during an emergency.

Debris Management Issues

- Support clean-up and recovery operations during disaster events. Coordinate with County's Disaster Debris Management Team.
- Clear debris from waterways to prevent flooding. Drain flooded areas, as needed.
- In coordination with the Ventura County Operational Area Debris Management Team, develop a debris removal plan to facilitate city clean-up operations, which addresses:
  - Disaster Event Analysis/Waste characterization analysis
    - Conduct field assessment survey
    - Use video and photographs
    - Quantify and document amounts and types of disaster debris
    - Coordinate with Building and Safety Branch and track their information on damaged buildings inspected to determine the location, type and amount of potential debris
    - Expect normal refuse volumes to double after a disaster
    - Develop a list of materials to be diverted
    - Make diversion programs a priority
    - Get pre-approval from FEMA, if federal disaster, for recycling programs. Coordinate this with County Office of Emergency Services (OES).
  - Determine debris removal/building deconstruction and demolition needs
    - Coordinate with Building and Safety to determine if a city contractor will be needed to remove debris from private property or perform demolition services. (Refer to City Public Works Standard Operating Procedures for Waiver Liability)
    - The City may need to provide deconstruction or demolition services at no cost as many structure owners don't have earthquake insurance
    - The City should seek reimbursement of deconstruction or demolition services provided at no cost to the property owner if the property owner does have insurance that covers this type of service
  - Select debris management program(s) from the following:
    - Curbside collection – source separation of wood, concrete, brick, metals and Household Hazardous Waste
    - Drop-off sites for the source separation of disaster debris
    - Household Hazardous Waste – collection event or curbside program
  - Identify temporary storage/processing sites, if necessary
    - Coordinate with surrounding cities and the County
    - Determine capacity needs
    - Selection of sites will depend on type of debris and proximity to where debris is generated
    - Coordinate with FEMA, if federal disaster, regarding reimbursement for temporary sites and sorting which may require moving materials twice

- Identify facilities and processing operations to be used
- Determine contract needs:
  - Develop estimates of types and quantities of debris, location of debris and unit cost data for contracts and,
  - Document how contract price was developed
- Establish a public information program for debris removal
- Establish program length and develop monitoring and enforcement program
- Prepare report of program activities and results
- Prepare documentation for reimbursement

Water Issues

- O Determine the need to staff a Water Task Group and secure resources through the Logistics Section. **(See Operations Support Documentation – Emergency Potable Water-Procurement and Distribution and Water – Concept of Operations.)**
- O Evaluate and prioritize potable water needs (quantity/location/duration: minimum 2 gallons per person per day).
- O Identify and secure locations for water distribution points (e.g., parks, city halls, shelters, etc.).
- O Consult with DHS District Office, water utilities and PIO for appropriate public information announcements and media interface.
- O Transmit to Finance/Administration Section costs associated with the purchase and distribution of potable water.

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O Receive and process all requests for Infrastructure resources. Allocate personnel and equipment in accordance with established priorities.
- O Obtain Infrastructure resources through the Logistics Section, utilizing mutual aid process when appropriate.
- O In coordination with the Logistics Section, identify and obtain potable water resources. (If necessary, recommend that EOC Director request mutual aid to identify and/or obtain water resources. (A list of approved commercial vendors is maintained by the Food and Drug Branch of DHS and is available through the Regional EOC [REOC] Water Chief).
- O In coordination with the Logistics Section, identify and secure staff resources needed to operate water distribution points. (If necessary recommend that the EOC Director request mutual aid to obtain required staff resources.)
- O Allocate available resources based on requests and EOC priorities.

BUILDING AND SAFETY BRANCH

SUPERVISOR: Operations Section Coordinator

Primary Responsibilities

- Begin the immediate inspection for re-occupancy of key City facilities by departments responsible for emergency response and recovery.
- Provide inspections of each shelter site prior to occupancy.
- Provide the technical, engineering support as requested for other Operations Section Branches, i.e. Search and Rescue teams.
- Coordinate investigation and safety assessment of damage to buildings, structures and property within the City for the purpose of:
  - Identifying life-threatening hazardous conditions for immediate abatement.
  - Inspecting and identifying buildings and property for re-occupancy and posting and declaring unsafe conditions.
  - Determining the cost and percentage of damage to all buildings, structures and properties.
- Provide safety assessment information and statistics to the Situation Status Unit of the Planning/Intelligence Section.
- Coordinate investigation of building code performance. Determine the extent of damage to buildings and structures and develop recommendations for building code changes.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Assignments/Staffing

o Clarify any issues regarding your authority and assignment.

o Coordinate with the Personnel Unit of the Logistics Section to ensure that training for personnel includes safety and hazard awareness and is compliant with OSHA requirements.

Notifications

o Alert and stage Building and Safety assessment teams as needed.

o Brief all personnel on Department Emergency Operating Procedures and assignments.

Meetings/Briefings

o Attend briefing sessions conducted by the Section Coordinator.

o Brief all personnel on Building and Safety procedures and assignments.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Operations Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Activate data tracking system to document and report safety assessment information and forward to the Situation Status Unit of the Planning/Intelligence Section.
- O Provide detailed safety assessment information to the Planning/Intelligence Section, with associated loss damage estimates.
- O Provide documentation to Legal Officer on those structures which may need to be demolished in the interest of public safety.

Ongoing Activities

- O Coordinate with Ventura County Building and Safety regarding local jurisdictional needs.
- O Oversee the inspection of the following critical facilities (priority) and other facilities:
  - EOC
  - Police stations
  - Fire Stations
  - *Hospital
  - *Congregate care facilities (including private schools, convalescent care hospitals, board and care facilities, day care centers, etc.)
  - *Public schools
  - City facilities
  - Potential hazardous materials facilities, including gas stations
  - Designated shelters
  - Unreinforced masonry buildings
  - Concrete tilt-up buildings
  - Multi-story structures-commercial, industrial and residential
  - *Mobile homes/modular structures
  - Single-family dwellings

**Note: Certain facilities may fall under the jurisdiction of State or County inspectors. These agencies may exercise their jurisdictional authority to inspect these facilities. As a practical matter, there are very few State inspectors available and they may not be able to respond in a timely during the initial stages of the emergency/disaster.*

- Use a three-phase approach to inspection based upon existing disaster intelligence:
  - General Area Survey of structures
  - ATC-20 Rapid Inspection
  - ATC-20 Detailed Inspection

Be prepared to start over due to aftershocks.

- Determine priorities for identifying, inspecting and designating hazardous structures to be demolished.
- Track the information on damaged buildings inspected to determine the location, type and amount of potential debris.
- Implement procedures for posting of building occupancy safety status using ATC-20 guidelines.
- Assess the need to require potentially unsafe structures to be vacated.
- Provide structural evaluation of mass care and shelter facilities in coordination with the Care & Shelter Branch.
- Provide public school inspection reports to the Division of the State Architect.
- Consider establishing an area field site to direct and coordinate safety assessment and inspection teams.
- Support Building Inspectors and Safety Officers in the field to ensure safety of field operations for employees and volunteers.
- Coordinate with the Infrastructure Branch on immediate post-event issues (i.e., debris removal, demolition, fences, etc.)
- Provide policy recommendations to appropriate City officials for:
  - Emergency Building and Safety ordinances.
  - Expediting plan checking and permit issuance on damaged buildings.
- Coordinate with the PIO to establish public information and assistance hotlines.
- Consider using 24-hour inspection call-in lines to take damage reports and requests for safety inspections.
- Direct field personnel to advise property owners and tenants that multiple inspections of damaged property will be required by various assisting agencies, including American Red Cross; FEMA; Cal OES; local Building and Safety; insurance carriers and other local, state and federal agencies.
- If needed, request law enforcement escort of safety assessment and inspection personnel.

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O After completion of the safety/damage survey, develop a preliminary estimate of the need for mutual aid assistance.
- O Request mutual aid building inspectors through the Ventura County Operational Area EOC.
- O Coordinate incoming Building and Safety mutual aid resources.
- O Arrange for necessary communications equipment from the Communications Unit of the Logistics Section and distribute to all field personnel (e.g., radios, cellular phones, etc.)

CARE AND SHELTER BRANCH DIRECTOR

SUPERVISOR: Operations Section Coordinator

The City of San Buenaventura is within the jurisdiction of the American Red Cross-Ventura County

836 Calle Plano
Camarillo, CA 93012
(805) 987-1514
1-800-951-5600 (After working hours)

If the disaster is large enough, the affected American Red Cross chapter(s) may consolidate operations into a disaster operations headquarters at a site to be determined.

The Care and Shelter Branch shall ensure that plans are in place to open and operate evacuation and mass care facilities until, and if, the American Red Cross assumes responsibility. Thereafter, the Care and Shelter Branch will work closely with and support the American Red Cross and other volunteer services the City has agreements with to assist disaster victims.

The Ventura County Human Services Agency has the Operational Area responsibility for Care and Shelter.

Potential Shelter Sites

Potential shelter facilities should:

- Be pre-identified as potential sites with Site Surveys completed.
- In conjunction with the American Red Cross, have permission and Memos of Understanding secured for shelter usage.
- In conjunction with the American Red Cross, have procedures for the following inspections and access, both during regular and after hour use, before a shelter is established.
    - Structural safety inspection arranged with local Building Department
    - OSHA safety inspection for safety of clients and workers
    - Facility Walk-Through Survey prior to use (to protect owner and user against damage claims)

Examples of suitable potential shelter sites:

- City-owned facilities such as community centers, recreational facilities or auditoriums
- Churches and other privately owned facilities
- School multi-purpose buildings and gymnasiums
- Convention Centers or conference centers

Care and Shelter Branch should coordinate with the ARC in identifying potential sites. Potential shelters should have the following and comply with Americans with Disabilities Act (ADA) requirements:

- An open space suitable for cots, tables, etc.

- Sanitation and hygiene facilities, as available.

See Operations Support Documentation/Care and Shelter for Disability and Age-Specific Considerations. See Restricted Use Appendix for List of Pre-Identified Shelter Sites.

Depending upon the scope of the emergency, additional shelter sites may need to be obtained and/or existing shelters upgraded. All suitable buildings, other than those used for other emergency functions, may be used for sheltering.

Community centers and other city-owned facilities have become the most preferred facilities for shelter operations as they are public facilities and can usually accommodate large numbers of people. Churches are also appropriate as they are often large and have kitchen facilities on the premises. Because it is important that a community return to normal activities as soon after a disaster as possible, schools should be used in shelter operations only when other resources are unavailable.

Primary Responsibilities

- Identify the care and shelter needs of the community.
- If necessary, establish a Dependent Care Center for emergency worker family members and dependents.
- Coordinate with the American Red Cross and other emergency welfare agencies for emergency mass feeding and to identify, set up, staff and maintain evacuation centers and mass care facilities for disaster victims.
- Via the media, encourage residents to go to the shelter nearest their residence.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Notifications

O If need is established, contact the Ventura County American Red Cross and request an ARC liaison for the City of San Buenaventura's EOC. (The ARC will arrange for a liaison at the Operational Area EOC to satisfy local government needs.)

O The Ventura County American Red Cross should be contacted when considering opening a mass care facility.

O Notify the Post Office to divert incoming mail to designated relocation areas or mass care facilities, as necessary.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

- Assist in preparation of the EOC Action Plan.
- Attend planning meetings at the request of the Operations Section Coordinator.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Ensure shelter managers make periodic activity reports to the EOC including requests for delivery of equipment and supplies, any City expenditures, damages, casualties and numbers and types of persons sheltered. The reporting period will be determined by the Operations Section.

Ongoing Activities

- Identify the care and shelter needs of the community, in coordination with the other Operations Branches.
- Determine the need for an evacuation center or mass care shelter.
- Identify and prioritize which designated mass care facilities will be needed and if they are functional.
- Ensure that Building & Safety Unit has inspected each shelter site prior to occupancy following an earthquake and after each significant aftershock.
- If evacuation is ordered, in conjunction with the American Red Cross if available, open evacuation centers in low risk areas and inform public of locations.
- In coordination with the ARC, ensure that mass care facilities and staff can accommodate unaccompanied children and persons with access and functional needs, i.e., persons needing communication assistance, persons that are not mobile, persons that have special needs associated with maintaining their independence, persons that may need to be supervised, and people that have transportation needs.
- In conjunction with the American Red Cross, manage care and shelter activities (staffing, registration, shelter, feeding, pertinent evacuee information, etc.)
- Ensure shelter management teams are organized and facilities are ready for occupancy meeting all health, safety and ADA standards, in conjunction with the American Red Cross.
- Coordinate with the Ventura County Health Care Agency via the Ventura County Operational Area EOC for sheltering of residential care and medically fragile individuals.
- Ensure shelter and feeding areas are free from contamination and meet all health, safety and ADA standards.
- Coordinate with the American Red Cross, other volunteer organizations and private sector if mass feeding or other support is required at spontaneous shelter sites, e.g., in parks, schools, etc.
- Coordinate with Ventura County Animal Services for the care of shelterees' animals.

- Coordinate with the Facilities Unit of the Logistics Section in the evacuation and relocation or shelter-in-place of any mass care facilities that may be threatened by any hazardous condition.
- Request that the American Red Cross establish Reception Centers, as needed, to reunite rescued individuals with their families and to provide other necessary support services.
- Coordinate with the American Red Cross in the opening, relocating and closing of shelter operations. Also, coordinate the above with adjacent communities if needed.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Coordinate with the Personnel Unit of the Logistics Section to contact volunteer agencies and recall City staff to assist with mass care functions including basic first aid, shelter and feeding of evacuees and sanitation needs.
- Coordinate with the Communications Unit of the Logistic Sections to provide communications where needed to link mass care facilities, the EOC and other key facilities.
- Coordinate with the Transportation Unit of the Logistics Section for the transportation needs of shelterees.
- Assist the American Red Cross to ensure there are adequate food supplies, equipment and other supplies to operate mass care facilities, including food, water and relief areas for service animals. Ensure there are some foods and beverages available for people with dietary restrictions. Coordinate procurement and distribution through the American Red Cross or the Supplies/Procurement Unit of the Logistics Section if requested by American Red Cross.

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OPERATIONS SUPPORT DOCUMENTATION

SHELTER-IN-PLACE

These instructions give you guidelines if the EOC needs to shelter-in-place due to hazardous materials exposure from outside the EOC. These instructions could also be used by the Public Information Officer to disseminate information about how to shelter in place during a hazardous materials incident.

Bring people inside and

1. Close all doors to the outside and close and lock all windows (windows sometimes seal better when locked).
2. Use tape and plastic food wrapping, wax paper, or aluminum wrap to cover and seal bathroom exhaust fan grills, range vents, dryer vents, and other openings to the outside to the extent possible (including any obvious gaps around external windows and doors).
3. Where possible, ventilation systems should be turned off. Where this is not possible, building superintendents should set all ventilation systems to 100 percent recirculation so that no outside air is drawn into the structure.
4. Turn off all heating systems.
5. Turn off all air conditioners and switch inlets to the “closed” position. Seal any gaps around window-type air conditioners with tape and plastic sheeting, wax paper, or aluminum wrap.
6. Turn off all exhaust fans in kitchens, bathrooms, and other areas.
7. Close as many internal doors as possible in your buildings.
8. If the gas or vapor is soluble or even partially soluble in water-hold a wet cloth or handkerchief over your nose and mouth if the gases start to bother you. Don’t worry about running out of air to breathe. That is highly unlikely in normal buildings.
9. In case of an earthquake, aftershocks will occur-close drapes, curtains, and shades over windows. Stay away from external windows to prevent potential injury from flying glass.
10. Minimize the use of elevators in buildings. These tend to “pump” outdoor air in and out of a building as they travel up and down. Elevators can also fail.
11. Tune in to your local radio news station.

ACCESS AND FUNCTIONAL NEEDS CONSIDERATIONS

The following information is provided to assist the City of San Buenaventura to better meet the needs of persons who have limitations in the areas of seeing, hearing, speaking, moving, breathing, understanding and learning.

For the purposes of emergency preparedness and response, “needs” are organized into 5 categories: **C - Communication, M - Medical, I-Independence, S - Supervision and T - Transportation (C-MIST).**

Communication: This category includes people who have limited or no ability to speak, see, hear or understand. During an emergency, people with communication needs may not hear announcements, see signs, understand messages or verbalize their concerns.

Medical: People in this group require assistance in managing activities of daily living such as eating, dressing, grooming, transferring, and going to the toilet. It includes managing chronic, terminal, or contagious health conditions (such as ongoing treatment and administration of medications, IV therapy, catheters, tube feeding, dialysis, oxygen, operating life-sustaining equipment). During an emergency, people may be separated from family and friends. Early identification of these needs and intervention can avoid deterioration of health.

Independence: This includes people who can function independently if they have their assistive devices and/or equipment. Items consist of mobility aids (such as wheelchairs, walkers, canes, crutches); communication aids; medical equipment (such as catheters, oxygen, syringes, medications); and service animals. Individuals may become separated from their assistive equipment and/or animals in an emergency. Those at risk whose needs are recognized and restored early are able to maintain their independence and manage in mass shelters. Effectively meeting their functional needs prevents secondary complications.

Supervision: People with supervision needs may include those who have psychiatric conditions (such as dementia, Alzheimer's, Schizophrenia, depression, or severe mental illness); addiction problems; brain injury, or anxiety due to transfer trauma. During an emergency, some people with mental illness may be able to function well, while others require a more protected and supervised setting.

Transportation: Emergency response requires mobility, and this category includes people who are unable to drive because of disability, age, temporary injury, poverty, addiction, legal restriction or have no access to a vehicle. Wheelchair-accessible transportation may be necessary. Pre-planning evacuation needs help prevent chaos during an emergency and many people can function independently once evacuated to safety.

FUNCTIONAL PLANNING AREAS TO CONSIDER

Communications

Any emergency hotline or information service such as 211 created for an emergency or disaster should include TTY/TDD (text telephone, also known as a telecommunication device for the deaf) numbers, when available, or the instruction "TTY callers use relay." Make sure the same information is provided by the official spokesperson and is used on television and radio.

Frequently repeat essential emergency information in a simple message format that those with cognitive disabilities can follow.

Provide information in alternate formats (e.g., Braille, audio recording, large font, text messages, e-mails, etc.) whenever possible ahead of time-based on the needs of the population.

Ensure that web-based information is accessible. Web accessibility is based on the principle that no potential Website visitors, including those with varied disabilities, should be precluded from accessing content or services the site provides. This is especially important for helping the public take self-preserving actions based on emergency management information.

When designing the Website, be certain it meets accessibility standards so that the information will be available to all visitors, including people with disabilities. The following are recommendations for compliance:

1. Avoid hidden texts/sections
2. Avoid pop-ups
3. Alt tags on images must be used
4. Use large print since small print is not in compliance
5. Avoid Flash media

Warning and Notification

Many traditional emergency notification methods are not accessible to or usable by people with disabilities. People who are deaf or hard of hearing cannot hear radio, television, sirens, or other audible alerts. Those who are blind or have low vision may not be aware of visual cues, such as flashing lights. Often, using a combination of methods will be more effective than relying on one method alone. For instance, combining visual and audible alerts will reach a greater audience than either method would by itself. Use telephone calls, auto-dialed TTY (teletypewriter) messages, text messages, E-mails, and even direct door-to-door contact with pre-registered individuals.

Local TV stations and cable TV providers should also use open-captioning for emergency communications.

Evacuation

Individuals with disabilities will face a variety of challenges in evacuating, depending on the nature of the emergency. People with a mobility disability may need assistance leaving a building without a working elevator. Individuals who are blind or who have limited vision may no longer be able to independently use traditional orientation and navigation methods. An individual who is deaf may be trapped somewhere unable to communicate with anyone because the only communication device relies on voice. Procedures should be in place to ensure that people with disabilities can evacuate the physical area in a variety of conditions and with or without assistance. Special evacuation considerations include:

Durable Medical Equipment (DME)

In the past, people with disabilities were sometimes forced to leave expensive DME (augmentative communication devices, wheelchairs, walkers, respirators, etc.) at airports, bus loading areas, shelters, etc. Individuals should not be separated from their DME.

1. Tag all DME not easily replaced or that must be left behind with the owner's name.
2. Attempt to return a DME to an owner as soon as possible. Use systems similar to posting missing children's photos on specific web sites.

Service Animals

Service animals are not household pets and a person with a disability accompanied by a service animal may not be segregated in any public accommodation. While you cannot unnecessarily segregate persons who use service animals from others, you may consider the potential presence of persons who, for safety or health reasons, should not be with certain types of animals.

Many people with disabilities are utilizing service animals to maintain their independence in the community. The Americans with Disabilities Act provides protection and guidelines in the use of service animals in public places and work places. Like DME - service animals must remain with their owners. In addition – the city needs to be prepared to provide food, water and relief areas for service animals.

Here is a partial listing of service dog types:

1. **Guide Dog or Dog Guide** - assist people with visual impairments.
2. **Mobility Dog** - retrieve items, open doors, push buttons, also assisting people with disabilities with walking, balance and transferring from place to place.
3. **Hearing Alert** - assist people with a hearing impairment to sounds.
4. **Seizure Alert/Seizure Response also known as Medical Alert** – alerts to oncoming seizures and is trained to respond to seizures such as get help or stay with the person.
5. **Medical Alert/Medical Response** - alerts to oncoming medical conditions, such as: heart attack, stroke, diabetes, epilepsy, panic attack, anxiety attack or post-traumatic stress disorder.

Note: Not all people accompanied by a service animal have visible disabilities. Examples are: hearing, epilepsy, visual, heart disease and physiological/emotional conditions. Lack of a visible disability cannot be used as justification for turning away a service animal.

Some, but not all, service animals wear special collars and harnesses. Some, but not all, are licensed or certified and have identification papers. If you are not certain that an animal is a service animal, you may ask the person who has the animal: “Is this a service animal required because of a disability?” However, you may not ask if it is a service animal for any particular disability.

An individual may not be carrying documentation of his or her medical condition or disability. Therefore, such documentation cannot be required as a condition for providing service to an individual accompanied by a service animal. You may not insist on proof or certification before permitting the service animal to accompany the person with a disability.

You may exclude any animal, including a service animal, from your facility when that animal’s behavior poses a direct threat to the health or safety of others. For example, any service animal that displays vicious behavior towards other guests or customers may be excluded.

Although a public accommodation may exclude any service animal that is out of control, it should give the individual with a disability who uses the service animal the option of continuing to enjoy its goods and services without having the service animal on the premises.

Sheltering and Mass Care

When disasters occur, people are often provided safe refuge in temporary shelters. Some may be located in schools, office buildings, tents, or other areas. Many of these shelters have not been accessible to people with disabilities. Individuals using a wheelchair or scooter have often been able to get to the shelter, only to find no accessible entrance, accessible toilet, or accessible shelter area.

If space permits, each shelter should offer low-stimulation "stress-relief zones." These areas should be available on a priority basis to people whose disabilities are aggravated by stress.

Each shelter should have a Functional Needs Coordinator (FNC). This person can be an employee of the City of San Buenaventura; a representative from an agency that serves populations with access and functional needs; a pre-identified volunteer; or a person provided by the LACOA or the California FAST (Functional Assessment Service Team). If no FNC is available then the Shelter Manager will assume the FNC responsibilities. The FNC should:

- Ensure that all shelter locations can accommodate persons with disabilities.
- Ensure ample parking and that no barriers exist in pathways, entrances, sleeping and dining areas, toilet facilities, bathing facilities, first aid/medical facilities, recreation areas, and the routes to all of these areas.
- Ensure kitchen-access policies allow residents and volunteers with disabilities access to food and refrigerated medication.
- Ensure that at least some kinds of foods and beverages are available for people with dietary restrictions, such as diabetes or severe food allergies.
- Ensure that there is an effective way for people with disabilities to request and receive durable medical equipment and medication.
- Ensure that people with disabilities can request cots and beds, modifications to cots and beds, securement of cots and beds, and specific placement of cots, beds, or sleeping mats when needed.

Power and Refrigeration

Shelter locations should have back-up generators and a way to keep medications refrigerated (such as a refrigerator or a cooler with ice). Power and refrigeration should be made available on a priority basis to people whose disabilities require access to electricity and refrigeration, such as using life-sustaining medical devices, providing power to motorized wheelchairs, and preserving certain medications, such as insulin, that require refrigeration.

Accessible Communications

Shelter locations should provide accessible communication for people who are deaf or hard of hearing and for people with severe speech disabilities. Staff should be trained on the basic procedures for providing accessible communication, including exchanging notes or posting written announcements to go with spoken announcements. Staff should read printed information, upon request, to persons who are blind or who have low vision.

Shelters should also accommodate persons who are blind or have low vision by providing way-finding assistance to people to provide orientation to the shelter environment and assistance in locating shelter areas or features.

The following are options for providing assistive communications to people with access or functional needs:

- Audible announcements
- Bulletin Boards – all bulletin boards should be located in a central area and placed, so their contents are accessible to people in wheelchairs. All materials posted should be written in large font – for example, Times New Roman 16 point or greater.
- On-call sign-language interpreters
- Video Remote Interpreting – American Sign language only
- California Relay Service (711) – persons with speech disabilities

The availability of each of these methods will be based on available resources and if the appropriate service contracts can be negotiated by the City.

Unaccompanied Minors

Unaccompanied minors are persons under the age of 18 who have become separated from their parents or guardians and should be regarded as a vulnerable population who may be unable to care for themselves and/or may be at risk of abduction or other criminal activity. In addition, unaccompanied minors within the community may be unable to understand the scope of the emergency, access information, or know where to go for help.

Unaccompanied minors should be segregated from the general shelter population and placed in an area that can be continually monitored by shelter staff. In addition, shelter staff with access to unaccompanied minors should be limited to those who have been cleared for access to children. One way to achieve this would be to assign teachers or substitute teachers from the Ventura Unified School District to provide supervision of, and care for, unaccompanied minors.

Personal Attendants

Personal attendants should be allowed to remain in the same shelter as the person they assist or be allowed access to the shelter both inside and outside of the normal hours. Shelter personnel will not provide personal attendant care services to any shelter resident but will assist in coordinating personal care attendant services. If the shelter personnel are not able to coordinate personal care attendant services, the person should be referred to a medical shelter.

Service Animals

Federal regulations for a service animal differ from those for a household pet. Service animal means any dog that is individually trained to do work or perform tasks for the benefit of an individual with a disability, including a physical, sensory, psychiatric, intellectual, or other mental disability. Other species of animals, whether wild or domestic, trained or untrained, are not service animals for the purposes of this definition.

In addition to the provisions about service dogs, the revised Americans with Disabilities Act (ADA) regulations have a new, separate provision about miniature horses that have been individually trained to do work or perform tasks for people with disabilities. (Miniature horses generally range in height from 24 inches to 34 inches measured to the shoulders and generally weigh between 70 and 100 pounds.)

Entities covered by the ADA must modify their policies to permit miniature horses where reasonable. The regulations set out four assessment factors to assist entities in determining whether miniature horses can be accommodated in their facility. The assessment factors are:

1. Whether the miniature horse is housebroken
2. Whether the miniature horse is under the owner's control
3. Whether the facility can accommodate the miniature horse's type, size, and weight
4. Whether the miniature horse's presence will not compromise legitimate safety requirements necessary for safe operation of the facility

People with disabilities who use service animals should not be separated from their service animals when sheltering during an emergency, even if pets are normally prohibited in shelters. Shelters cannot unnecessarily segregate persons who use service animals from others, however, the potential presence of persons who, for safety or health reasons, should not be with certain types of animals.

Special Needs Shelters

Individuals who require minimal support or assistance should not be directed to a shelter that provides a greater level of support services than what they need. For example, an elderly individual who functions without assistance in his or her home may be confused and in need of assistance in the shelter environment. A person with a cognitive or psychiatric disability may need direction with the change in daily routine. These individuals may be accommodated with minimal assistance in a general population shelter. Likewise, individuals with special needs usually function best when kept with their family or caregiver.

If a "special needs" or "medical" shelter is established, eligibility policies and procedures will be adopted to ensure that shelter personnel do not require people with disabilities to stay in these shelters solely because they have a disability. Special needs and medical shelters are intended to house people who are medically fragile, such as those who require hospital or nursing home care.

Medications and Replacement Medications

Public and private insurance programs frequently limit the amount of prescription drugs people can order at one time. This restriction therefore limits individuals who may need to fill prescriptions immediately following an emergency. The Los Angeles County Public Health Department will be the lead agency in replacement of prescriptions for persons dependent on medications and not able to access their regular supply of medication.

Re-Entry, Temporary and Long-Term Housing

The needs of individuals with disabilities should be considered, too, when they leave a shelter or are otherwise allowed to return to their home. If ramps have been destroyed or blocked, people with mobility impairments will be unable to get into and out of their homes. People with access and functional needs are likely to face additional barriers in returning to their homes or in obtaining suitable housing that the non-disabled will not.

Re-Entry

Additional care must be taken in returning the disabled and elderly to their home environments. Conditions that would not pose a hazard to the able-bodied can pose a hazard to the disabled. Additionally, in many cases cleanup and simple repairs that will return a home to a usable state are beyond the capabilities of people with disabilities.

People with access and functional needs may require additional assistance during the re-entry phase. Prior to their leaving a shelter we will need to ensure that they are connected with either their support network or an outside organization that can evaluate their home and – if necessary - take corrective action to ensure that it is safe for that person. ENLA and/or VOAD may be able to provide referrals to organizations that can meet these needs.

Temporary Housing

Any temporary housing identified to be used after leaving the short-term shelters need to also meet the needs of persons with access and functional needs, i.e. have appropriate communication devices, such as TTY's, to ensure individuals with communication disabilities can communicate with family, friends, and medical professionals and have the necessary features such as ramps or electrical systems. People with access or functional needs will be given priority for temporary accessible housing.

The City can request assistance from State FAST members to coordinate transition from a shelter setting into the community. FAST members are trained and knowledgeable in regard to a variety of types of disability. They are able to assist in prevention of inappropriate institutionalization, and secure long-term health and mental health services.

Permanent and Replacement Housing

Lack of accessible housing opportunities for individuals with disabilities does and will continue to result in unnecessary and expensive institutionalization. Available data discloses that the costs of providing appropriate housing options for people with disabilities is well worth the investment because of the significant savings that results from enabling people with disabilities to live in the community, find employment, and pay taxes. People with access or functional needs should be given priority for accessible housing.

Restoration of Public Buildings and Services

In disaster it is not only the city's residents and businesses that are disrupted but the city government will be disrupted as well. However this is also an opportunity to repair or rebuild older facilities that are not accessible to people with disabilities in a manner that makes those facilities accessible. Any damaged accessibility features should be addressed before a public building is returned to operation after repairs. In some cases ADA requirements can be used as justification for replacing a facility instead of repairing it.

Facilities constructed or altered because of emergency- or disaster-related damage must comply with the accessibility requirements of Title II of the ADA. Facilities constructed after January 26, 1992, and repairs to such facilities, must comply with Title II's new construction requirements. Alterations to facilities constructed before the ADA became effective, must comply with Title II's requirements for alterations to existing facilities. Alterations may not decrease accessibility.

In instances where critical infrastructure is destroyed, the recovery process presents an opportunity for urban planners to ensure new buildings meet accessibility requirements, where perhaps the old buildings did not. This should be considered as part of the long term mitigation of future impacts on the community.

As Federal and/or State funding is received, the jurisdiction should recognize its obligations to involve special needs populations in the planning for community restoration.

Public and Disaster Assistance Programs

The recovery phase of a disaster is never easy, and the difficulties can be compounded for individuals with special needs. In addition to personal losses and injuries, individuals with special needs might lose vital connections with personal care providers, service animals, community liaisons, public transportation, neighbors, and other people integral to their everyday support network. These disconnections create disruptions in services that people with special needs rely on to participate in daily life.

Many people will need assistance, including the provision of individual case management support, with reestablishing and applying for human services programs and benefits. They may not be aware of the full array of services available to disaster victims and they may need assistance in completing forms, understanding eligibility requirements, and arranging for continuity of services. Local collaboration between planners and providers will be necessary to quickly and effectively reestablish human services support for persons with special needs. In addition, important information relating to the agency and recipient civil rights obligations, assistance options, and resources for those experiencing difficulty in accessing services, should be provided in multiple languages. Planning for the reestablishment of the human services infrastructure and alternate arrangements is best achieved during the initial stages of emergency planning with input from a local human services network. Keep in mind that local human service providers will need support in developing emergency plans for themselves as well as their constituents.

Outreach with Disability Advocacy Organizations and VOAD's

Jurisdictions most successful at recovering from disasters have established formal relationships with a variety of community organizations that provide a link to the special needs populations they serve. By working together on an ongoing basis to develop a joint plan of recovery, government agencies and community organizations will be better able to identify not only assets and capabilities, but also opportunities for improvement and cooperation.

Mental Health and Behavioral Services

Adequate support mechanisms should be planned to meet mental and behavioral health needs in the weeks and months following a disaster. Previous disasters have demonstrated that these stressful situations often lead to dramatic increases in suicide, domestic violence, and child abuse, as well as exacerbations of pre-existing physical and mental health issues. Mental health resources should be available and organizations serving individuals with special needs should be made aware of the availability of such resources and the means of accessing them. Ideally, assistance should be provided in familiar settings, such as schools, service provider offices, and community healthcare provider offices.

Considerations for Service and Assistance Programs

Continuity of operations plans need to address continuity of access to programs, services, and activities for people with disabilities. Programs relocated from damaged facilities must remain accessible to people with disabilities, whether the relocation is permanent or temporary.

1. Ensure that medical, social service, and other benefit programs are accessible to people with disabilities, including people who use wheelchairs, scooters, and other mobility aids and people who use service animals.
2. Ensure that medical, social service, and other benefit programs do not have eligibility criteria that screen out or tend to screen out people with disabilities, or application processes or procedures that deny access to people with disabilities.
3. Establish policies and procedures to ensure that medical, social service, and other benefit programs provide effective communication to people with disabilities, including primary consideration of the method of communication preferred by an individual with a disability.
4. Make allowances at blockades, shelters, and other affected areas for access by attendants, home health aides, visiting nurses, service/guide animals, and other individuals crucial to the immediate healthcare needs of people with disabilities
5. Address how people with disabilities who are employed by businesses that are able to open soon after a disaster will get to work.

Each location providing public assistance and disaster assistance programs should provide translation and interpreter services to support the disaster assistance application process, medical care, and other services needed as a result of the disaster. Volunteer assistance provided by individuals with special needs can also help disaster victims receive the level of support they require during recovery operations.

Alert and Warning - Alert and Warning Procedures

This section outlines the receipt of warning and alerting and notification by the City of San Buenaventura and methods for warning the public if there is a major emergency, especially one requiring evacuation. Such warnings may be necessary for fires, floods, hazardous materials incidents, and, as a precautionary measure, for a short-term earthquake prediction.

These procedures should be closely coordinated with the Public Information Officer to assure the most complete and conforming information delivery to the public.

Local Alerting and Warning Systems

All warning systems will be coordinated through the City of San Buenaventura's EOC Director. The following persons are authorized to activate the warning systems:

Watch Commander
EOC Director or designee

Activation procedures and geographical boundaries of the systems are detailed below:

Mobile Emergency Vehicle Sirens and Loudspeakers

The primary warning system for the City of San Buenaventura will be mobile emergency vehicle sirens and loudspeakers. Vehicles will be dispatched to specific locations and assignments made as directed by the Police Department or Incident Commander. All areas of the jurisdiction are accessible by vehicle.

Cable TV

Currently, the City has an agreements with local cable companies to provide the public with alerting and notification of various disaster situations. These systems include break into all TVs that are a part of this cable system. The City's cable channel via CAPS Media (Channels 6 and 15) will provide directions to the citizens via scrolled information. This includes a "leader" that will scroll across any TV station that is turned on directing viewers to tune to their local cable channel for more information.

Automated Notification System (VC Alert)

The City of Ventura uses VC Alert, a high-speed emergency notification system to deliver critical messages (voicemail, email, texts) about local emergencies and other important community news. The system enables officials to provide essential information quickly to each resident in Ventura.

Emergency Alert System (EAS)

Refer to the Appendix, a restricted use document, for EAS Activation Procedures. Access to EAS for local emergency events of concern to a significant segment of the population of Ventura County is through the Ventura County Sheriff's Office of Emergency Services.

City officials requesting County-wide activation should first review the following criteria:

- Pertinent data
- Area involved
- Actions desired from citizens
- Urgency of broadcast (immediate or delayed)
- Period of time broadcasting should continue

City Website

Recent emergency information may also be accessed via www.cityofventura.ca.gov and at the www.vcemergency.com.

Social Media

The city can post emergency messages at their Twitter account at @cityofventura and on the city's Facebook page.

Other warning systems utilized by the City include mobile emergency vehicle sirens and loudspeakers, door-to-door notification by Neighbor Hood Watch Block Captains, Community Emergency Response Team and other volunteers.

Operational Area Alerting, Notification and Warning Systems

Public Notification System

The Ventura County Sheriff's Office of Emergency Services uses a mass notification system (VC Alert) to alert residents and businesses by phone, text, and e-mail of emergencies in their area.

OASIS - Operational Area Satellite Information System

The County of Ventura has Cal OES OASIS equipment installed in the County EOC. OASIS is a system that consists of a communications satellite, multiple remote sites and a hub. Through this system the County has the capability of contacting any other County in California either through voice or data transmission. The system also allows the County to have direct access to the Cal OES and other participating state agencies.

EAS - Emergency Alert System

Refer to the Appendix, a restricted use document, for EAS Activation Procedures.

The Common Program Control Station (CPCS)

A primary station in an operational area which, preferably, has special communication links with appropriate authorities, (i.e., National Weather Service, Civil Defense, Government authorities, etc.) as specified in the State EAS Operational Plan. The primary CPCS station is responsible for coordinating the carriage of common emergency programs for its area. If it is unable to carry out this function, other Primary Stations in the operational area will be assigned the responsibility as indicated in the State EAS Operational Plan. Ventura County Operational Area CPCS stations are:

- KVTA (AM) 1590
- KHAY (FM) 100.7
- KMLA (FM) 103.7 - Spanish

The Sheriff of Ventura County, while not the originator of the EAS material, is responsible for the content and authenticity of the information broadcast over the local EAS. Local broadcast stations have the right to edit or use any or all of an EAS broadcast. **Refer to the Appendix - EAS Activation Procedures.**

State Alerting and Warning Systems

The California State Warning Center (CSWC) is responsible for informing, communicating, alerting, and notifying local governments, Operational Areas, state officials, and the Federal government of natural or human-caused emergencies. To meet this responsibility, the CSWC is equipped with a number of telephone, data, and radio systems, including the CALWAS, CLETS, NWS Weather Wire, CSWC message switching computer, and the CISN and Dialogic Automated Notification System. Most of these systems are used on a day-to-day basis; while others are available for use in an emergency, as conditions require.

NAWAS and CALWAS

The CSWC maintains the California Warning System (CALWAS) to communicate with Cal OES Regional Offices and County Warning Points during an emergency. CALWAS is part of the National Warning System (NAWAS).

OASIS, CLETS, CLERS, and EAS

The Operational Area Satellite Information System (OASIS), California Law Enforcement Telecommunications System (CLETS), and the California Law Enforcement Radio System (CLERS) are utilized to alert and notify sheriff and police departments, and key Emergency Alert System (EAS) stations.

Radios and Microwave Systems

The State agencies Radio / Microwave System is utilized to communicate information to State agencies and EOCs.

[1]Governor's Office of Emergency Services, *State of California Emergency Plan,* October 2017, page 54.

NATIONAL WEATHER SERVICE ISSUANCES

Types of Issuances

OUTLOOK - For events possible to develop in the extended period (extended definition depends on the type of event)

ADVISORY - For events that are occurring or are forecast to develop in the short term (generally within the next 6 hours)

WATCH - For the possibility of an event happening within the short term (generally refers to the next 6 to 12 hours)

WARNING - The most serious issuance! For life-threatening events occurring or forecast to develop within the short term (generally within the next 6 hours)

STATEMENTS (OR UPDATES) - Issued as updates to the above products

Specific Types of Issuances

Flash Flooding

FLASH FLOOD WARNING: Flash Flooding is occurring or imminent.

URBAN AND SMALL STREAM FLOOD ADVISORY: Flooding is occurring or imminent, but is not life threatening (nuisance flooding). This warning may be upgraded to a Flash Flood Warning if conditions worsen.

FLASH FLOOD WATCH: There is a good possibility of Flash Flooding, but it is neither occurring nor imminent (generally means the possibility exists within the next 24 hours).

FLASH FLOOD STATEMENT: Updates any of the above three issuances.

TORNADO AND SEVERE THUNDERSTORM WARNINGS: Issued on the observation of a tornado, funnel cloud, or severe thunderstorm (a thunderstorm is defined as severe when it is accompanied by 58 mph winds or 3/4" hail), or the indication of any of the above based on radar data.

TORNADO AND SEVERE THUNDERSTORM WATCHES: Issued (by the National Severe Storms Forecast Center in Kansas City, MO) when there is a likelihood of development of either tornadoes or severe thunderstorms.

Other Types of Issuances

DENSE FOG ADVISORY: Issued when dense fog (visibility below 2 mile) is expected to last for three hours or longer)

DENSE FOG WARNING: Issued when widespread zero or near-zero visibilities are forecast to last three hours or longer.

Refer to the Appendix section for contact numbers for the National Weather Service.

EMERGENCY POTABLE WATER PROCUREMENT & DISTRIBUTION

Introduction

The following procedures are designed to facilitate acquisition and distribution of alternative potable water. They set forth-specific activities that should be considered to evaluate emergency situations and then to procure and distribute potable water to critical locations if needed.

Primary Response Agency Roles and Responsibilities:

Agent	Function
Ventura Water	Primary agency responsible for purchase and distribution of alternate source of potable water for populations within the City. Coordinates water resources and manages operations for distribution of alternative potable water to affected populations.
Ventura County (Operational Area)	Operates Operational Area Emergency Operations Center (OAEOC) coordinates county resources and assists city EOC(s) in providing potable water to affected population(s).
California Office of Emergency Services	Coordinates federal, state, and regional resources to assist OAEOC(s) in providing alternative source of potable water to affected populations. Operates Regional Emergency Operations Center (REOC) and State Operations Center (SOC).
Federal Emergency Management Agency (FEMA)	Coordinates federal emergency response resources and provides alternate source of potable water to affected populations, as requested by State.

Note: For the purpose of this document: "alternative potable water" and "emergency potable water" means water that is supplied from an alternative source and/or delivery system. Cal OES will assist local government in pursuing possible Federal reimbursement for costs incurred.

WATER - CONCEPT OF OPERATIONS

During the initial hours following an emergency it is especially important to ascertain the scale of the emergency and the areas where the potable water supply and delivery system has been affected.

Procurement and Distribution Process

Successful implementation of these procedures will require the support of public, private, and volunteer agencies. The following identifies the public, private, and volunteer agencies, which will play a part in the acquisition and distribution of emergency potable water and assigns to them specific roles and responsibilities.

Ventura Water

Ventura Water will ensure that alternate sources of potable water will be available to affected populations when the water delivery system is damaged.

Operational Area

Ventura County Public Works is the primary agency responsible for the purchase and distribution of emergency potable water to populations within its jurisdiction.

California Office Of Emergency Services (Cal OES)

If the Operational Area cannot provide enough alternate source of potable water to affected populations Cal OES will activate Regional Emergency Operations Center(s) (REOC) and State Operations Center (SOC). Implement duties pursuant to REOC and SOC roles and responsibilities.

Federal Emergency Management Agency (FEMA)

Provide alternate source of potable water to affected populations, as requested by State. Implement duties pursuant to FEMA roles and responsibilities.

Responsibility

Ventura Water is responsible for evaluating situation assessments and prioritizing resource allocation. When necessary, the water coordinator will activate a water task group to help establish or assist in the establishment and operation of the alternative potable water procurement and distribution program. The size, makeup and specific assignment of the water task group will be dependent on the magnitude of the problem at hand.

The Water Coordinator and Water Task Group will be staffed by Ventura Water. The unit will report to the Infrastructure Branch.

Duties of the water coordinator/water task group are as follows:

1. Serve as EOC primary contact for all potable water procurement and distribution matters.

2. Coordinate conference calls with other level EOC water coordinators to assess potable water needs.
3. Obtain consolidated situation information compiled by the Planning/Intelligence Section and other sources.

   This information would include:

   - cause and extent of water system damage
   - estimated duration of system outage
   - geographical area affected
   - population affected
   - actions taken to restore system
   - resources needed to reactivate system
   - emergency potable water needs (quantity and prioritized areas)
4. Prioritize distribution locations (include needs of critical facilities) and make recommendations to Infrastructure Branch Director who will discuss with the Operations Section Coordinator.
5. Identify and secure potable water resources with assistance from the Logistics Section, Procurement/Purchasing Unit.
6. Identify transportation and equipment needs and secure required resources through the Logistics Section, Procurement/Purchasing Unit.
7. Coordinate with Ventura County Public Health Department, water utilities, and EOC Public Information Officer for appropriate public information announcements and media interface.
8. Document all information related to expenditures, resource commitments, contracts and other costs related to procurement and distribution of potable water and provide such information to the Finance and Administration Section.

Emergency Potable Water Supply Considerations

When there is a need for emergency potable water, everyone should work with the Operational Area and with the State Department of Health Services, Division of Drinking Water and Environmental Management. When there is a "Boil Water" advisory, the public should be advised to bring water to a rapid boil for 1-2 minutes. In the event of any other situation that may require supplying potable water, the City EOC and Operational Area EOC will utilize the following options in the order listed below. All City requests should go through the Operational Area EOC.

Bottled Water

Water in one-gallon plastic containers is by far the most convenient and effective way to initially provide emergency water to the public. A list of approved commercial vendors is maintained by the State Department of Health Services, Food and Drug Branch, is available through the REOC Operations Section Water Coordinator.

The Regional Emergency Operations Center (REOC) can arrange transportation, if necessary, with state assets. Water and beverage bottlers sometimes offer free bottled water and delivery.

Bulk Potable Water Deliveries:

(If bottled water is not a viable option)

Bulk potable water deliveries are for limited use and should only be employed for immediate crisis situations when the first option is not available. Bulk potable water may also be needed for critical facilities such as hospitals, clinics and other health facilities.

Portions of the existing potable water system, or nearby systems, may continue to have potable water in their normal distribution systems. These sources are closest and easiest to access and should be used for bulk water deliveries.

National Guard water buffaloes (500 gallon trailers) are available in limited numbers and should only be used to support evacuation efforts and immediate crisis situations. The small volume necessitates that water tenders keep buffaloes filled.

Water Purification Systems:

(If bulk potable water deliveries are not a viable option):

Commercial portable water purification systems are available where connection to an approved water source and some means of storing or distributing water is available. Approved and licensed commercial vendors can provide limited water storage (approximately 1,000 gallons). The State Department of Health Services Drinking Water Program or City Public Health must approve the water source to assure that the treatment is sufficient to deal with the level of contamination, and confirm the integrity of the system. The National Guard has limited purification capability, which should only be requested when all other options are exhausted.

PLANNING/INTELLIGENCE SECTION - GENERAL INFORMATION

Purpose

To enhance the capability of the City of San Buenaventura to respond to disasters by collecting, evaluating, displaying, and disseminating incident information.

Overview

The Planning/Intelligence Section's primary responsibility is to collect, evaluate, display, and disseminate incident information and status of all assigned, available, and “out-of-service” critical resources. This Section functions as the primary support for decision-making to the overall disaster organization. This Section also provides anticipatory appraisals and develops plans necessary to cope with changing field events. This Section gathers and documents information to answer critical questions: Where are the incidents? How bad are the incidents? How much worse will the incidents become? How can we best manage the incidents? During a disaster, other department heads will advise the Planning/Intelligence Coordinator on various courses of action from their departmental level perspective.

Objectives

The Planning/Intelligence Section ensures that safety/damage assessment information is compiled, assembled, and reported expeditiously to the various EOC sections, City departments, and the Ventura County Operational Area. This Section is responsible for preparing and documenting the EOC Action Plan (with input from Management Section Staff, Section Coordinators, and other appropriate agencies/jurisdictions). The Planning/Intelligence Section is also responsible for the detailed recording (Documentation Unit) of the entire response effort and preserving these records during and following the disaster. Finally, the Planning/Intelligence Section is responsible for inputting information into the County’s disaster information management system (DLAN). The Planning/Intelligence Section will accomplish the following specific objectives during a disaster:

- Collect initial situation and safety/damage assessment information.
- Display situation and operational information in the EOC using maps and visual aids.
- Prepare and maintain displays, charts, and lists that reflect the current status and location of assigned resources (personnel, equipment, and vehicles).
- Disseminate intelligence information to the EOC Director, Public Information Officer, Section Coordinators, and the Ventura County Operational Area via DLAN.
- Conduct mapping and recording operations.
- Prepare summary safety/damage assessment reports for dissemination to other sections, City departments, Cal OES, FEMA, and the Ventura County Operational Area.
- Prepare required reports identifying the extent of damage and financial losses.
- Determine the City's post-event condition.
- Provide Planning/Intelligence support to other sections.
- Ensure accurate recording and documentation of the incident.

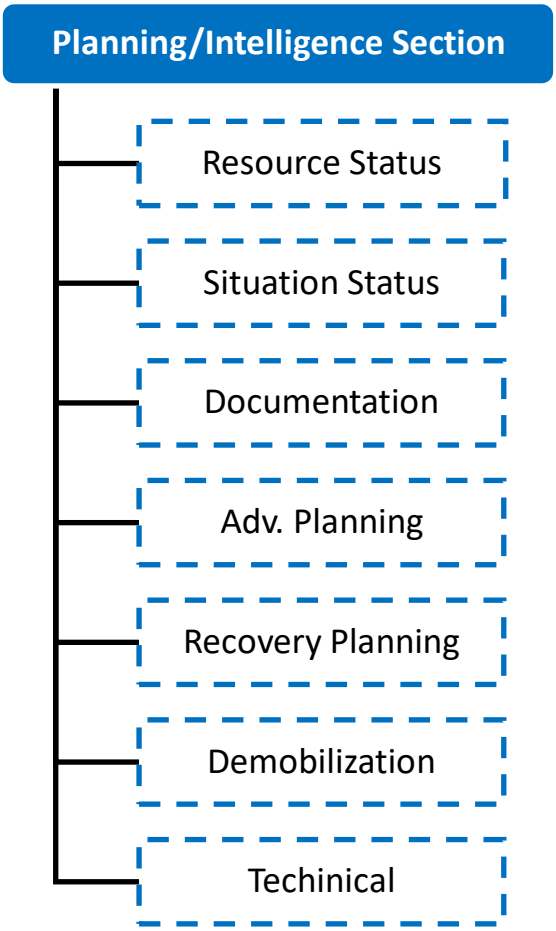
- Prepare the City's EOC Action Plan.
- Prepare the City's After-Action/Corrective Action Report after the EOC demobilizes.
- Prepare a post-disaster recovery plan.
- Maintain proper and accurate documentation of all actions taken to ensure that all required records are preserved for future use and Cal OES and FEMA filing requirements.
- Acquire technical experts for special interest topics or special technical knowledge subjects.

Concept of Operations

The Planning/Intelligence Section will operate under the following policies during a disaster as the situation dictates:

- The Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) will be followed.
- All existing City and departmental operating procedures will be adhered to unless modified by the City Council or EOC Director.
- All on-duty personnel are expected to remain on duty until properly relieved of duty. Off-duty personnel will be expected to return to work in accordance with the City Employee Emergency Response Procedures.
- Operational periods will be determined by the EOC Director. Operational periods should be event-driven.

PLANNING/INTELLIGENCE SECTION ORGANIZATION CHART



PLANNING/INTELLIGENCE SECTION STAFF

The Planning/Intelligence Section Coordinator will determine, based on present and projected requirements, the need for establishing specific units. The following may be established as the need arises:

- Resources Status Unit
- Situation Status Unit
- Documentation Unit
- Advance Planning Unit
- Recovery Planning Unit
- Demobilization Unit
- Technical Specialist

The Planning/Intelligence Section Coordinator may activate additional units as necessary to fulfill an expanded role.

The Planning/Intelligence Section Coordinator is responsible for overseeing all demobilization post-disaster. All Planning/Intelligence staff will account for all equipment, personnel, and supplies at the end of any operation.

Planning/Intelligence Section Coordinator

The Planning/Intelligence Section Coordinator, a member of the EOC Director's General Staff, is responsible for the collection, evaluation, forecasting, dissemination and use of information about the development of the incident and status of resources. Information is needed to:

- Understand the current situation.
- Predict probable course of incident events.
- Prepare alternative strategies for the incident.
- Prepare the EOC organization for transition to recovery operations to restore the City to pre-disaster condition as quickly and effectively as possible.

Resources Status Unit

The Resources Status Unit is responsible for maintaining detailed tracking records of resource allocation and use (resources available, resources assigned, resources requested but not yet on scene, “out-of-service” resources, and estimates of future resource needs); for maintaining logs to support the documentation process and for resources information displays in the EOC. This Unit cooperates closely with the Operations Section (to determine resources currently in place and resources needed) and Logistics Section (to determine resources ordered and in route).

Situation Status Unit

The Situation Status Unit is responsible for the collection and organization of incident status and situation information and maintaining detailed records of safety/damage assessment information, and supporting the documentation process. The Unit is also responsible for the evaluation, analysis, and display of information for use by EOC staff.

Documentation Unit

The Documentation Unit is responsible for initiating and coordinating the preparation of the City’s EOC Action Plans and After-Action/Corrective Action Reports; maintaining accurate and complete incident files; establishing and operating an EOC Message Center, as needed; providing copying services to EOC personnel and preserving incident files for legal, analytical and historical purposes.

Advance Planning Unit

The Advance Planning Unit is responsible for developing reports and recommendations for future time periods and for preparing reports and briefings for use in strategy and/or planning meetings.

Recovery Planning Unit

The Recovery Unit is responsible for all initial recovery operations and for preparing the EOC organization for transition to a recovery operations organization to restore the City to pre-disaster condition as quickly and effectively as possible.

Demobilization Unit

The Demobilization Unit is responsible for preparing a Demobilization Plan to ensure an orderly, safe and cost-effective release of personnel and equipment.

Technical Specialist

Technical Specialists are advisors with special skills needed to support a field or function not addressed elsewhere or by any other discipline. Technical Specialists (which may or may not be an employee of a public or private agency) may report to the Planning/Intelligence Section Coordinator; may function within an existing unit such as the Situation Status Unit; form a separate unit if required or be reassigned to other parts of the organization, i.e. Operations, Logistics, or Finance/Administration.

PLANNING/INTELLIGENCE SECTIONS COORDINATOR

SUPERVISOR: EOC Director

Primary Responsibilities

- Ensure that the Planning/Intelligence function is performed consistent with SEMS/NIMS Guidelines, including:
  - Collecting, analyzing and displaying situation information.
  - Preparing periodic situation reports
  - Initiating and documenting the City's Action Plan and After-Action/Corrective Action Report
  - Resource tracking
  - Advance planning
  - Transitioning to recovery operations
  - Planning for demobilization
  - Providing Geographic Information Services and other technical support services to the various organizational elements within the EOC
- Exercise overall responsibility for the coordination of branch/group/unit activities within the Section.
- Report to the EOC Director on all matters pertaining to Section activities.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Activation

O Determine the operational status and appropriate level of activation based on situation as known.

O As appropriate, respond to the EOC.

O Mobilize appropriate personnel for initial activation of the EOC

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

O Activate organizational elements within your Section as needed and designate leaders for each element or combination of elements.

- Situation Status Unit
- Resources Status Unit
- Documentation Unit
- Damage Assessment Unit

- Advance Planning Unit
- Recovery Planning Unit
- Demobilization Unit
- Technical Specialist

O Confirm that all key Planning/Intelligence Section personnel or alternates are in the EOC or have been notified. Recall the required staff members necessary for the emergency.

O Request additional personnel for the Section to maintain a 24-hour operation as required.

O Carry out responsibilities of your Section not currently staffed.

Notifications

O Notify EOC Director when your Section is fully operational.

Meetings/Briefings

O Brief new or relief personnel in your Branch. Briefings should include:

- Current situation assessment.
- Identification of specific job responsibilities.
- Identification of co-workers within the job function and/or geographical assignment.
- Availability of communications.
- Location of work area.
- Identification of eating and sleeping arrangements as appropriate.
- Procedural instructions for obtaining additional supplies, services, and personnel.
- Identification of operational period work shifts.

O Meet with other activated Section Coordinators, as needed.

O Attend periodic briefing sessions conducted by the EOC Director.

O Brief the EOC Director on major problem areas that need or will require solutions.

O Conduct periodic Planning Section briefings and work to reach consensus for forthcoming operational needs.

O Direct the coordination of periodic disaster and strategy plans briefings to the EOC Director and General Staff, including analysis and forecast of incident potential.

Action Planning

O Initiate the EOC Action Plan development process for the current and forthcoming operational periods.

- Work closely with the EOC Director and General Staff in the development of the EOC Action Plan.
- Participate in the EOC Director's action planning meetings and coordinate with the EOC Director to confirm the lead for the action planning meetings.
- Ensure the development of the Planning Section objectives. **(See Planning/Intelligence Support Documentation – Action Planning.)**
- Work closely with each Unit leader to ensure Planning/Intelligence Section objectives as defined in the current EOC Action Plan are being addressed.
- Work closely with Logistics Section-Communications Unit in the development of a Communications Plan.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Open and maintain an Activity Log **(See Planning/Intelligence Support Documentation, Activity Log).**
- Provide personnel and equipment time records for the entire Section to the Time Keeping Unit in the Finance Section at the end of each work shift.
- Review major incident reports and additional field operational information that may pertain to or affect Section operations.
- Review and approve reconnaissance, City status and safety/damage assessment reports for transmission by the Situation Status Unit to the Ventura County Operational Area.
- Ensure that your Section logs and files are maintained.
- Provide copies of the any reports to the Documentation Unit of the Planning/Intelligence Section at end of each operational period.
- With Section Coordinators, develop a plan for initial recovery operations.

Ongoing Activities

- Review responsibilities of branches in your Section. Develop plan for carrying out all responsibilities.
- Direct the Situation Status Unit leader to initiate collection and display of significant disaster events and safety/damage assessment information.
- Ensure coordination of collection and dissemination of disaster information and intelligence with other sections. Ensure Situation Status Unit develops information on the impact of the emergency from within the EOC and outside agencies and departments.
- Ensure that the Situation Status Unit determines the status of the transportation system into and within the affected area in coordination with the Transportation Unit of the Logistics Section. Find

out present priorities and estimated times for restoration of the disaster route system. Provide information to appropriate Branches/Units.

- O Make a list of key issues currently facing your Section to be accomplished within the next operational period.
- O Assemble information on alternative strategies.
- O Ensure that pertinent disaster information is disseminated through appropriate channels to response personnel, City EOC section staff, City departments, and the Ventura County Operational Area. Also ensure that the public is kept informed through the PIO.
- O Ensure internal coordination between branch/group/unit leaders.
- O Ensure status and display boards are current.
- O Update status information with other sections as appropriate.
- O Resolve problems that arise in conducting your Section responsibilities.
- O Refer all contacts with the media to the Public Information Officer (PIO).
- O Begin planning for recovery. Ensure Recovery Planning Unit is activated and supported.

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O Keep up to date on situation and resources associated with your Section.
- O Identify the need for use of special resources.

RESOURCES UNIT

SUPERVISOR: Planning/Intelligence Section Coordinator

Primary Responsibilities

- Maintain detailed tracking records of critical resource allocation and use (critical resources available, critical resources assigned, critical resources requested but not yet on scene, "out-of-service" critical resources and estimates of future critical resource needs.)
- Prepare and maintain displays, charts and lists that reflect the current status and location of controlled critical resources, transportation and support vehicles.
- Establish a critical resources reporting system for field and EOC units.
- Prepare and process critical resource status change information.
- Provide information to assist the Situation Status and Documentation Units of the Planning/Intelligence Section in strategy planning and briefing presentations.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC Duties on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

O Assist in preparation of the EOC Action Plan.

O Attend planning meetings at the request of the Planning/Intelligence Section Coordinator.

Documentation

O See Documentation and Reports in Common EOC Responsibilities on page 71.

O Maintain a master list of all critical resources reported.

O Provide a critical resources overview and summary information to the Situation Status Unit of the Planning/Intelligence Section as requested and written status reports on critical resource allocations as requested by the Section Coordinators.

Ongoing Activities

- Develop a system to track critical resources deployed for disaster response. Critical resources include personnel and equipment.
- Direct the collection, organization and display status of critical incident resources to include allocation, deployment and staging areas.
- Establish a reporting procedure for critical resources at specified locations.
- Provide for an authentication system in case of conflicting resources status reports.
- Assist in strategy planning based on the evaluation of the critical resources allocation, resources en route and projected resources shortfalls.
- Keep Operations Section informed of the estimated time-of-arrival of ordered personnel, support vehicles/units, transportation and other critical resources. (Coordinate with Logistics Section).

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Prepare and maintain displays, charts and lists that reflect the status and location of controlled resources, transportation and support vehicles.
- Ensure that available critical resources are not overlooked by EOC staff.
- Make recommendations to the Planning/Intelligence Section Coordinator of resources that are not deployed or should be activated.

SITUATION STATUS UNIT

SUPERVISOR: Planning/Intelligence Section Coordinator

Primary Responsibilities

- Collect, organize and analyze situation information including safety and damage assessment information from EOC sources. (Coordinate with the Building and Safety and the Infrastructure Branch of the Operations Section for safety and damage assessment information. Coordinate with Ventura County Operational EOC for damage assessment information.
- Provide current situation assessments based on analysis of information received from a variety of sources and reports.
- Develop situation reports for dissemination to Planning/Intelligence Section Coordinator, EOC Director, and other section coordinators to initiate the action planning process.
- Transmit approved reports to the Ventura County Operational Area. DLAN can be used to facilitate this process **(See DLAN information in the Appendices).**
- Develop and maintain current maps and other displays (locations and types of incidents).
- Assess, verify and prioritize situation information into situation intelligence briefings and situation status reports.
- Evaluate the content of all incoming field situation and major incident reports. Provide incoming intelligence information directly to appropriate EOC Sections, summarize and provide current information on central maps and displays.
- Monitor and ensure the orderly flow of disaster intelligence information within the EOC.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC Duties on page 71.

Assignments/Staffing

o Clarify any issues regarding your authority and assignment.

Meetings/Briefings

o Attend periodic briefing sessions conducted by the Section Coordinator.

o Meet with the Planning/Intelligence Section Coordinator and EOC Director to determine needs for planning meetings and briefings. Determine if there are any special information needs.

o Meet with the PIO to determine best methods for exchanging information and providing the PIO with Situation Status Unit information.

Action Planning

- Assist in preparation of the EOC Action Plan.
- Attend planning meetings at the request of the Planning/Intelligence Section Coordinator.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Prepare safety/damage assessment information and provide to the Planning/Intelligence Section Coordinator for approval.
- Document those structures requiring immediate demolition to ensure the public safety through inspection records, videos, photographs, etc.
- Provide final safety/damage assessment reports to the Documentation Unit.
- Establish and maintain an open file of situation reports and major incident reports for review by other sections/units.
- Prepare required Operational Area reports. Obtain approval from the Planning/Intelligence Section Coordinator and transmit to the Ventura County Operational Area via DLAN.
- Prepare written situation reports at periodic intervals at the direction of the Planning/Intelligence Section Coordinator.

Ongoing Activities

- Direct the collection, organization and display of status of disaster events according to the format that the Documentation Unit is utilizing, including:
  - Location and nature of the disaster/emergency
  - Special hazards
  - Number of injured persons
  - Number of deceased persons
  - Road closures and disaster routes
  - Structural property damage (estimated dollar value) – Public and private
  - Personal property damage (estimated dollar value)
  - Damage assessment information on roads, bridges and highways, the communications infrastructure: wired, data, cable and wireless from the Logistics Section, Communications Unit.
  - Additional safety/damage assessment information from the American Red Cross, utility companies and other sources.
  - City resources committed to the disaster/emergency
  - City resources available
  - Assistance provided by outside agencies and resources committed

- Shelters, type, location and number of people that can be accommodated

o Possible Information Sources include:

- Within the EOC:
  - Disaster briefings
  - EOC Action Plan
  - Section Reports
  - Intelligence Reports
  - Field observations
  - Casualty information
  - Resource Status Reports
  - Aerial reports and photographs
  - Values and hazards Information
  - On duty personnel from other Sections
  - DLAN

o Direct the collection of photographs, videos, and/or sound recordings of disaster events, as appropriate.

o Prepare and maintain EOC displays. Clearly identify incidents. Ensure that all displays reflect the most current and correct information.

o Using DLAN, post to the significant events log casualty information, health concerns, property damage, fire status, size of risk area, scope of the hazard to the public, number of evacuees, etc. **(Note: Casualty information cannot be released to the press or public without authorization from EOC Director and the Public Information Officer).**

o Develop sources of information and assist the Planning/Intelligence Section Coordinator in collecting, organizing and analyzing data from the following:

- Management Team
- Operations Section
- Logistics Section
- Finance/Administration Section

o Gather patient and casualty tracking information with the Fire/Medical/Health Branch.

o Provide for an authentication process in case of conflicting status reports on events.

o Provide information to the PIO for use in developing media and other briefings.

o Determine weather conditions, current and upcoming. Keep current weather information posted.

o Prepare an evaluation of the disaster situation and a forecast on the potential course of the disaster event(s) at periodic intervals or upon request of the Planning/Intelligence Section Coordinator.

- O As appropriate, assign “field observers” to gather information.
- O During a radiological incident, activate Radiological Protection Procedures as needed for reporting and documentation.

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O Provide resource and situation status information in response to specific requests.

DOCUMENTATION UNIT

SUPERVISOR: Planning/Intelligence Section Coordinator

Primary Responsibilities

- Maintain an accurate and complete record of significant disaster events.
- Assist other parts of the EOC organization in setting up and maintaining files, journals and special reports.
- Collect and organize all written forms, logs, journals and reports at completion of each shift from all sections.
- Provide documentation and copying services to EOC staff.
- Maintain and preserve disaster files for legal, analytical and historical purposes.
- Compile, copy and distribute the EOC Action Plans as directed by the Section Coordinators.
- Compile, copy and distribute the After-Action Report with input from other sections/units.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Assignments/Staffing

o Clarify any issues regarding your authority and assignment.

Meetings/Briefings

o Attend periodic briefing sessions conducted by the Section Coordinator.

o Meet with the Planning/Intelligence Section Coordinator to determine what EOC materials should be maintained for official records.

Action Planning

o Assist in preparation of the EOC Action Plan.

o Attend planning meetings at the request of the Planning/Intelligence Section Coordinator.

o Following planning meetings, assist in the preparation of any written action plans or procedures.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Ensure that the EOC Action Plans and After-Action Report/Correction Action are compiled, approved, copied and distributed to EOC Sections and Units**. (See Planning/Intelligence Support Documentation – Action Planning After Action/Corrective Action Reports.)**
- Coordinate documentation with the Situation Status Unit.
- Following planning meetings, assist in the preparation of any written action plans or procedures.
- Periodically collect, maintain and store messages, records, reports, logs, journals and forms submitted by all sections and units for the official record.
- Verify accuracy/completeness of records submitted for file – to greatest extent possible; correct errors by checking with EOC personnel as appropriate.
- Prepare an overview of the documented disaster events at periodic intervals or upon request from the Planning/Intelligence Section Coordinator.

Ongoing Activities

- Inform EOC sections and units of the requirement to maintain official records. Assist them as necessary in setting up a file records system.
- Ensure the development of a filing system to collect and log according to procedures approved by the Planning/Intelligence Section Coordinator.
- Identify and establish a “runner” support system for collecting, duplicating journals, and logs throughout the EOC.
- Establish copying service and respond to authorized copying requests.
- Establish a system for collecting all section and unit journal/logs at completion of each operational period.

Resources

- See Resources in Common EOC Responsibilities on page 72.

ADVANCE PLANNING

SUPERVISOR: Planning/Intelligence Section Coordinator

Primary Responsibilities

- Develop issues and requirements related to a time period, normally 36 to 72 hours in advance.
- Prepare special reports and briefings as necessary for use in strategy and/or planning meetings.
- Monitor action-planning activity to determine the shift in operational objectives from response to recovery **(See Planning Support Documentation – Action Planning).**

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

- O See Common EOC responsibilities on page 71.

Assignments/Staffing

- O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Planning/Intelligence Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O In coordination with other EOC sections, develop written forecasts for future time periods as requested. These should include any or all of the following:
  - Best estimate of likely situation in 36 to 72 hours given current direction and policy
  - Determine top priorities for actions and resources
  - Identify any recommended changes to EOC policy, organization or procedures to better address the possible situation
  - Identify any issues and constraints that should be addressed now in light of the probable situation in 36-72 hours
- O Provide reports to the EOC Planning/Intelligence Section Coordinator and/or EOC Director and others as directed.

Ongoing Activities

- Determine best estimate of duration of the situation from available information.
- Determine current priorities and policies from the EOC Planning/Intelligence Section Coordinator and EOC Director.
- Develop specific recommendations on areas and issues that will require continuing and/or expanded City involvement.
- Identify potential problem areas along evacuation routes, i.e., weight restrictions, narrow bridges, road sections susceptible to secondary effects of an incident, etc.
- In coordination with the Operations Section, estimate the number of people who will require transportation out of the risk areas and coordinate the movement of persons with access and functional needs. Coordinate with Logistics and the paratransit companies as necessary.
- As needed, develop methods for countering potential impediments (physical barrier, time, lack of transportation resources, etc.) to evacuation.
- Periodically evaluate the operational situation and assist the Planning/Intelligence Section staff in making recommendations on priority response and recovery actions.

Resources

- See Resources in Common EOC Responsibilities on page 72.

RECOVERY PLANNING

SUPERVISOR: Planning/Intelligence Section Coordinator

Primary Responsibilities

- Prepare the EOC organization for transition to a recovery operations organization to restore the City to pre-disaster conditions as quickly and effectively as possible. Ensure that the City is prepared to participate jointly with FEMA, Cal OES, Ventura County Operational Area and non-profit organizations to expedite disaster assistance for individuals, families, businesses, public entities and others entitled to disaster assistance. **(See Types of Recovery Programs in the Planning/ Intelligence Support Documentation).**
- Ensure that required and/or approved mitigation measures are carried out.
- Consider taking advantage of disaster-caused opportunities to correct past poor land-use practices, while ensuring that legal safeguards for property owners and the jurisdiction are observed.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on 81.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

O Assist in preparation of the EOC Action Plan.

O Attend planning meetings at the request of the Planning/Intelligence Section Coordinator.

Documentation

O See Documentation and Reports in Common EOC Responsibilities on page 71.

O With Section Coordinators, develop a plan for initial recovery operations.

Ongoing Activities

- Identify issues to be prioritized by the EOC Director on restoration of services to the City.
- Be alert for opportunities to implement actions to alleviate/remedy previous zoning practices that have caused incompatible land uses.
- In coordination with the Building and Safety Branch of the Operations Section, establish criteria for temporary entry of posted buildings so owners/occupants may retrieve business/personal property.
- In coordination with the Building and Safety Branch of the Operations Section, establish criteria for re-occupancy of posted buildings. Posting includes, as a minimum, the categories of Inspected, Restricted Access and Unsafe.
- In coordination with Building and Safety Branch of the Operations Section, establish criteria for emergency demolition of buildings/structures that are considered to be an immediate and major danger to the population or adjacent structures. Ensure that homeowners' and business owners' rights are considered to the fullest extent and that arrangements are made for appropriate hearings, if at all possible.
- Ensure that buildings considered for demolition that come under Historical Building classification follow the special review process which should be adopted as part of the emergency procedures. (Demolition of historic structures requires a "Certificate of Appropriateness" from the Planning Commission. An alternate process should be adopted after proclamation of a disaster giving this authority to the City Planner.)
- Prepare the EOC organization for transition to Recovery Operations.
- Coordinate with Planning and Development for all land use and zoning variance issues; permits and controls for new development; revision of building regulations and codes; code enforcement; plan review; and building and safety inspections.
- Coordinate with Ventura County Health Care Agency for restoration of medical facilities and associated services; and perform environmental reviews.
- Coordinate with the Infrastructure Branch for debris removal; demolition; construction; management of and liaison with construction contractors; and restoration of utility services.
- Coordinate with Care and Shelter for housing for persons with access and functional needs and the needy; and low income and special housing needs.
- Coordinate with Finance Department for public finance; budgeting; contracting; accounting and claims processing; taxation; and insurance settlements.
- Coordinate with Community Development Department for redevelopment of existing areas; planning of new redevelopment projects; and financing new projects.
- Coordinate with Legal Officer on emergency authorities; actions, and associated liabilities; preparation of legal opinions; and preparation of new ordinances and resolutions.
- Coordinate with FEMA, Cal OES, Ventura County Operational Area and non-profit organizations (Volunteer Organizations Active in Disaster [VOAD] to expedite disaster assistance for individuals, families, businesses, public entities and others entitled to disaster assistance.

- Coordinate with City Manager's Office for continuity of operations and communications; space acquisition; supplies and equipment; vehicles; personnel; and related support.

Resources

- See Resources in Common EOC Responsibilities on page 72.

DEMOBILIZATION UNIT

SUPERVISOR: Planning Section Coordinator

Primary Responsibilities

- Provide assistance to the EOC Planning/Intelligence Section Coordinator and EOC Director in planning for the EOC demobilization.
- Develop demobilization strategy and plan with Section Coordinators.
- Prepare written demobilization plan or procedures for all responding departments and agencies if necessary.
- Follow through on the implementation of the plan and monitor its operation.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

O Brief EOC Planning/Intelligence Section Coordinator on demobilization progress.

O Ensure a debriefing is conducted prior to release of personnel.

Action Planning

O Assist in preparation of the EOC Action Plan.

O Attend planning meetings at the request of the Planning/Intelligence Section Coordinator.

Documentation

O See Documentation and Reports in Common EOC Responsibilities on page 87.

O Prepare a Demobilization Plan to include the following:

- Release plan strategies and general information
- Priorities for release (according to agency and kind and type of resource)
- Phase over or transfer of authorities
- Completion and submittal of all required documentation
- Notify Ventura County Operational Area of demobilization plan

- Obtain approval of the Demobilization Plan from the EOC Director.
- Ensure that the plan, once approved, is distributed.

Ongoing Activities

- Coordinate with any the field level Demobilization Unit Leaders.
- Review the organization and current staffing to determine the likely size and extent of demobilization effort.
- Request the General Staff to assess long-term staffing needs within their sections and provide listing of positions and personnel for release by priority.
- Coordinate with the Agency Representatives to determine:
  - Agencies not requiring formal demobilization
  - Personal rest and safety needs
  - Coordination procedures with cooperating/assisting agencies
- Evaluate logistics and transportation capabilities to support the demobilization effort.
- Ensure that all sections and branches/groups/units understand their specific demobilization responsibilities.
- Ensure unresolved issues are assigned for resolution following deactivation.
- Supervise execution of the Demobilization Plan.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Obtain identification and description of surplus resources.
- Establish “check-in” stations, as required, to facilitate the return of supplies, equipment and other resources.

PLANNING/INTELLIGENCE SUPPORT DOCUMENTATION

ACTION PLANNING

EOC Action Planning (EOC)

The Action Planning process is an essential tool for the City, particularly in managing sustained emergency operations.

It is important that common City organizational goals are maintained and pursued as determined by Management. For the Management Section to draft appropriate goals, it must have a good understanding of the current situation and some idea of where the situation is going. They need to know not only what has happened in the last operational period but also what is likely to occur in the next and future operational periods**. The overall EOC Action Plan should be developed by the Planning/Intelligence Section and provided to the Emergency Operations Director.**

Once the EOC Action Plan has been delivered, the Management Section shall determine the Strategic Goals for the next operational period. These may or may not be different from the operational goals from the last period. This shortlist of organizational goals must be verifiable and measurable.

Once the city goals are set, they should be communicated to the other sections, which should communicate to their departments!! The Multi-Agency Coordination Group must receive copies of the EOC action plan.

Summary of Activities by Section

PLANNING/INTELLIGENCE	Presents the verbal Action Report or the situation status report
MANAGEMENT	Sets goals
PLANNING/INTELLIGENCE	Posts goals for organization's use
OPERATIONS	Determines strategies to achieve goals
LOGISTICS	Determines how it will support operations
FINANCE/ADMINISTRATION	Determines how it will support operations
PLANNING/INTELLIGENCE	Prepares Action Plan (document); continues collecting, analyzing and displaying information and continues Action Planning process

Action Planning at EOC

Action planning at the EOC is based around the use of an operational period. The length of the operational period for the EOC is determined by first establishing a set of objectives and priority actions that need to be performed and then establishing a reasonable time frame for accomplishing those actions. Generally, the actions requiring the longest time period will define the length of the operational period.

Typically, operational periods at the beginning of an emergency are short, sometimes only a few hours. As the emergency progresses, operational periods may be longer but should not exceed twenty-four hours. Operational periods should not be confused with staffing patterns or shift change periods. They may be the same but need not be.

The initial EOC Action Plan may be a verbal plan put together in the first hour after EOC activation. It is usually done by the EOC Director in concert with the general staff. Once the EOC is fully activated, EOC Action Plans should be written.

EOC Action Plans should not be complex or create a time-consuming process. The format may vary somewhat within EOC levels, but the EOC Action Plan should generally cover the following elements:

- Listing of objectives to be accomplished (should be measurable)
- Statement of current priorities related to objectives
- Statement of strategy to achieve the objectives (identify if there is more than one way to accomplish the objective, and which way is preferred)
- Assignments and actions necessary to implement the strategy
- Operational period designation: the time frame necessary to accomplish the actions
- Organizational elements to be activated to support the assignments (also, later EOC action plans may list organizational elements that will be activated during or at the end of the period.)
- Logistical or other technical support required

Focus of The EOC Action Plan

The primary focus of the EOC Action Plan should be on citywide issues. The plan sets overall objectives for the City and establishes the citywide priorities as determined by the EOC Director. It can also include mission assignments to departments, provide policy and cost constraints, and include inter-agency considerations, etc. Properly prepared, the EOC Action Plan becomes an essential input to developing departmental action plans.

The Planning “P” Tool (Found at The End Of This Section)

The Planning “P” is a guide to the process and steps involved in planning for an incident.

The Start of Each Planning Cycle

Phase 1: Understand the Situation

- **Initial Assessment:** Planning begins with a thorough size-up that provides information needed to make initial management decisions. The EOC Action Plan provides Management staff with information about the incident situation and the resources allocated to the incident.
- **Incident Briefing:** The EOC Director and/or the Planning/Intelligence Section Coordinator briefs EOC staff on the information that is currently known about the event.

Phase 2: Establish Objectives

- **Setting Incident Priorities:** The EOC Director with input from the General Staff establishes incident priorities and General Objectives for the incident.
- **Section Meetings:** Each Section Coordinator will meet with their staff and develop Section-specific objectives to accomplish the EOC priorities and General Objectives for the Operational Period. Each Section will fill-out the appropriate page in the EOC Action Plan for their specific Section. Objectives should be Specific, Measurable, Attainable, Realistic and Time Oriented.

Phase 3: Develop the Plan

- **Prepare for the Planning Meeting:** The Planning/Intelligence Section will compile all of the Section Objectives submitted by each Section Coordinator and have it ready for the Planning Meeting.

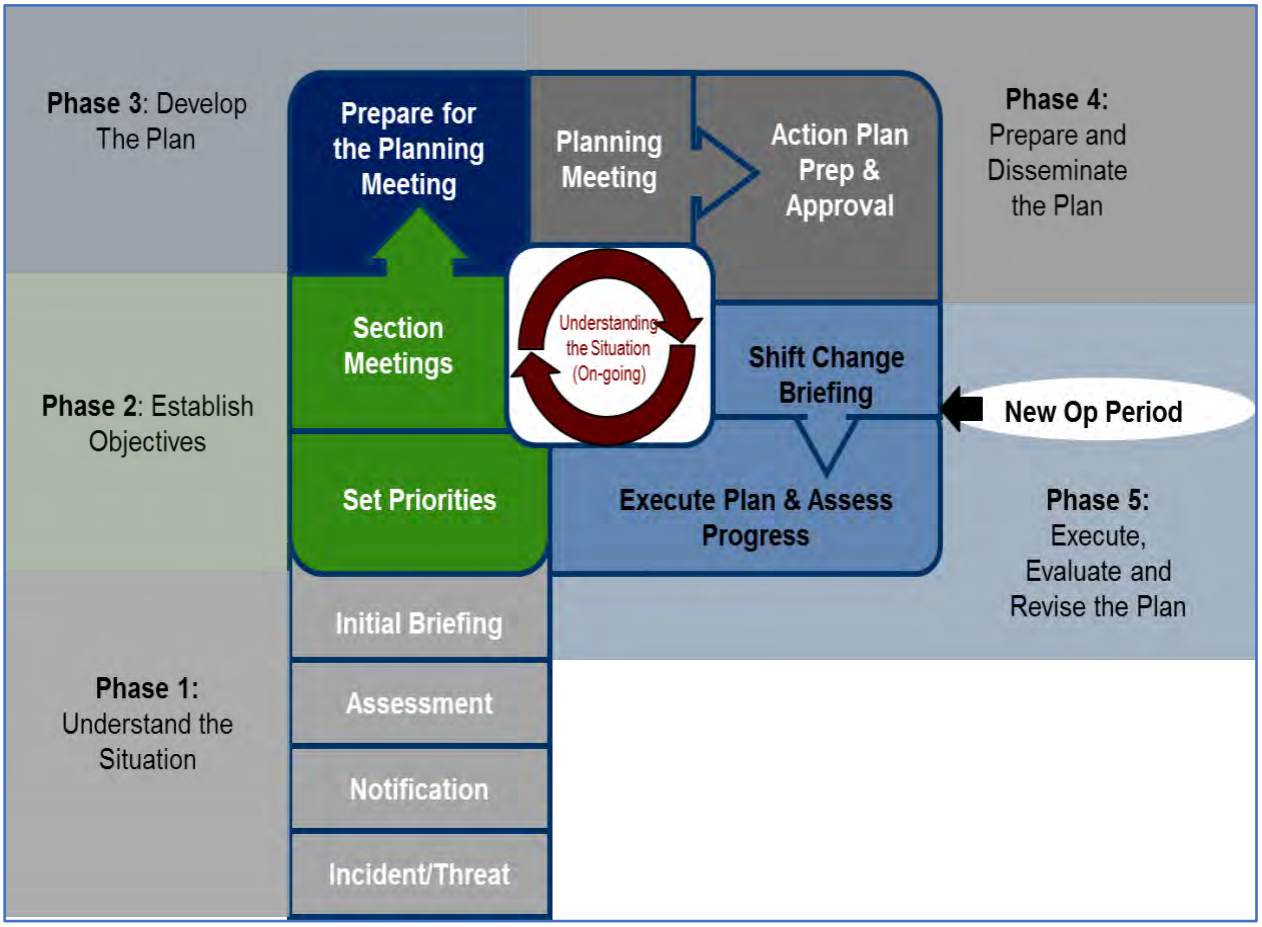
Phase 4: Prepare and Disseminate the Plan

- **Planning Meeting:** Management and General Staff attend the Planning Meeting to review and validate the EOC Action Plan. The Planning/Intelligence Section Coordinator facilitates this meeting. The Agenda for the Planning Meeting is:
  - Give situation and resource briefing; conduct planning meeting – Planning Intelligence Coordinator
  - Provide priorities and policy issues – EOC Director
  - Provide Section Objectives – Management and General Staff
  - Provide a status on resources – Logistics Section Coordinator
  - Provide a Safety & Security Briefing – Safety Officer and Security Officer
- **Finalize, approve and implement the EOC Action Plan:** Planning/Intelligence Section Coordinator finalizes the EOC Action Plan, EOC Director approves the EOC Action Plan, Management and General Staff implement the EOC Action Plan.

Phase 5: Execute, Evaluate and Revise the Plan

- **Shift Change Briefing:** The Shift Change Briefing is conducted at the beginning of each Operational Period.
- **New Operational Period Begins:** After the Shift Change Briefing a new Operational Period begins and the EOC Action Plan process starts all over.

Planning P Tool



AFTER ACTION/CORRECTIVE ACTION REPORTS

(This information is based on the SEMS Guidelines, After Action Reports [6/22/11])

Introduction

The completion of after-action reports is a part of the required SEMS reporting process. The Emergency Services Act, Section 8607 (f) mandates that the California Office of Emergency Services (Cal OES), in cooperation with involved state and local agencies, complete an after-action report within 120 days after each declared disaster.

Legal Authorities

Section 2450 (a) of the SEMS Regulations states that...."Any city, city and county, or county declaring a local emergency for which the governor proclaims a state of emergency, and any state agency responding to that emergency shall complete and transmit an after action report to Cal OES within ninety (90) days of the close of the incident period as specified in the California Code of Regulations, section 2900(j).

Use of After-Action Reports

After action reports are made available to all interested public safety and emergency management organizations and serve the following important functions:

- A source for documentation of response activities and transitional recovery activities
- The AAR captures an overview of response activities through the Close of Incident date, as determined by Cal OES
- Identification of problems/successes during emergency operations
- Analysis of the effectiveness of components of the SEMS
- Identification of areas for improvement and a description of the actions planned to correct areas needing improvement

The SEMS approach to the use of after-action reports emphasizes the improvement of emergency management at all levels. The after-action report provides a vehicle for not only documenting system improvements, but also can, if desired, provide a work plan for how these improvements can be implemented.

After Action Process

It may be useful to coordinate the after-action report process when multiple agencies/jurisdictions are involved in the same emergency. Jurisdictions are encouraged to work together in the development of after-action reports when appropriate and feasible. For example, an operational area may take the lead in coordinating the development of an after-action report which involves several jurisdictions.

If appropriate, jurisdictional reports may become part of an overall operational area report.

Suggested processes for developing after-action reports for local governments, state agencies, and Cal OES are described below.

Local Government and State Agency Report Process

1. Assign Responsibility for after action report

This assignment should be initiated as early as possible during the response phase of any emergency, which will require an after-action report. Ideally, the person assigned should have a background in the planning function, be familiar with emergency organization functions, and understand SEMS.

At both the field and EOC levels in SEMS, initiating the after-action report process should be assigned to the Documentation Unit within the Planning/Intelligence Function.

After the completion of the emergency period, and after the field ICS and EOC level organizations have been deactivated, the responsibility for the continuance of the after-action report process should be assigned elsewhere within the organization. In many organizations, the same person may be assigned to the after-action report function to provide continuity.

While it may appear to be premature to assign a person to this duty early in an emergency, it actually permits several key things to occur.

- It emphasizes the importance of documentation.
- It allows for early identification of possible system improvements and possible on-the-spot improvements.
- It allows data to be compiled before too much time has elapsed and participants have returned to their normal duties.
- It allows for establishment of timelines and expedites the preparation of the AAR.
- Early assignment also allows for establishment of timelines and expedites the actual preparation of the after action report.

2. Initiate the Documentation Process

Documentation actions should be initiated in the early stages of an emergency. Although it may be tempting to forgo documentation during the emergency response, adequate documentation;

- Is essential to operational decision-making
- May have future legal ramifications
- May have implications for reimbursement eligibility
- Provides the foundation for development of the AAR and Corrective Action

Depending upon the situation, different types of documentation comprise the source documents or "data base" for the after action report. Documentation should not be restricted to those reports or forms used exclusively by the planning function, but should include materials from the entire emergency organization. Ideally, key components of this data base such as time-keeping procedures, would be identified as part of pre-event planning and would then be used during and actual event.

There are many types of documentation. Some recommended types include:

- Action plans developed to support operational period activities
- Forms used in the SEMS field level Incident Command Systems
- Unit activity logs and journals
- Cal EOC forms and locally developed "feeder" forms/reports that support the Cal EOC forms
- Written messages
- Function and position checklists
- Public information and media reports
- FEMA-developed forms
- Other forms or documentation

3. Data Gathering Methods

Aside from reliance on documentation developed during emergency operations, other methods for gathering information include:

- Exit interview or critique forms distributed and completed as personnel rotate out of a function.
- Critiques performed at various time frames after and operation. Some critiques may be conducted immediately after an event and may be fairly informal in approach. Others may be conducted substantially later and may employ more forma, carefully structured workshops.
- Surveys distributed to individuals and organizations after the fact which can be used either for direct input to the after action report or as a basis for workshop discussions.
- After action report research teams, whose function is to gather information, and perhaps, write the applicable portions of the after action report.

There are many approaches to structuring and organizing data compilation. Some questions to consider are:

- What is the purpose of the critique or survey?
- Who is the survey's audience?
- Have all key "players" been included in the workshop?
- Does the survey/workshop process permit identification of internal, agency-specific improvements?
- Does the survey/workshop process permit identification of external improvements? Improvements involving the SEMS levels?
- Are SEMS functions (planning/intelligence, logistics, etc.) being assessed?
- Does the critique/survey format mesh with the after action report format?
- Does the research team understand its assignment and tasks?

4. AAR Preparation

A four-step process to prepare the after action report for local governments and state agencies is recommended:

A. Compile the results of surveys, critiques, and workshops and sort the information according to the areas covered in the attached sample after action report.

B. Use documentation and data to complete the online AAR Survey, as discussed later in these Guidelines.

C. The AAR can be distributed for review and approval to participating agencies, advisory boards, political bodies, and other appropriate interested parties.

D. Prepare final after action report and forward it to the city, operational area, Cal OES Region, or Cal OES Headquarters, as appropriate.

Sample After Action Report Outline

The automated AAR Survey meets the AAR submittal requirements unless local requirements state otherwise. Where appropriate, OAs and State agencies are encouraged to use the automated AAR Survey for submittal of after-action and corrective action information.

If an OA or State agency chooses to submit a written AAR, the following is an example of one way to structure an after-action report. Other options are possible. The report's format should fit the situation, and there is no requirement to force the report into a single structured format.

1. Introduction and Background:

A. Type/location of event (describe and attach maps if available)

B. Chronological Summary (provide description and list items such as key evacuations, areas destroyed, etc.)

C. Date/Time and content of Proclamations/Declarations

2. Discussion of Response at Designated SEMS Levels:
Cover the levels appropriate to the jurisdiction and situation. Include:

Summary of response Conclusions Recommendations (will be summarized at the end)

A. Field Response Level
Command
Operations (includes Air Operations)
Planning/Intelligence
Logistics (includes Communications) Finance/Administration (if activated)

B. Local Government Level
Emergency Operations Center (EOC) Department Operations Center (DOC) Special Districts
Other local government support
Community Based Organizations

(Note: For each item above, discuss Management, Operations, Planning/Intelligence, Logistics, Finance/Administration, and multi or interagency coordination as appropriate.)

C. Interaction with the Operational Area (discuss as appropriate)

D. Interaction with the Regional Level
Regional EOC (REOC)
Other State Agencies (if not part of REOC)

E. Interaction with State above Regional Level (discuss as appropriate)

F. Interaction with Federal Agencies (discuss as appropriate)

3. Interacting Systems, Agencies and Programs

A. Mutual Aid Systems (Law Enforcement, Fire and Rescue, Medical and others if used)

B. Cooperating Agencies
Utilities (telephone, electric, gas, etc.) American Red Cross
Salvation Army
Others (as appropriate)

C. Telecommunications and Information Processing
Field Level
Local Government Operational Area Interface with Region Interface with State

D. Training Needs (Consider all levels)

E. Recovery Activities to Date

F. Summary of Principal Recommendations

G. References
Maps Charts Bibliography
Other Items (as appropriate)

Corrective Action Plan for Improvements

This section of the report can be done separately or included as appropriate. Submitting Corrective Action Plan separately may allow the responding agency time to consider the plans for improvement and action needed to bring the improvements to fruition. Corrective Actions will be entered in the Cal OES Corrective Action Database and progress on each corrective action will be provided periodically by each responding agency. Cal OES may develop and disseminate reports outlining the status of the corrective actions taken to date.

It should describe for each of the principal recommendations:

- Description of actions to be taken
- Associated costs
- Timetable for completion

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LOGISTICS SECTION - GENERAL

Purpose

To enhance the capability of the City of San Buenaventura to respond to emergencies by establishing logistics protocols in managing personnel and equipment. It is City policy that the priorities of responses are to be:

- Protect life, property, and the environment.
- Provide operational and logistical support for emergency response personnel and optimize the utilization of resources.
- Provide support to the other sections of the City's emergency response team.
- Support the restoration of essential services and systems.

Overview

The Logistics Section's primary responsibility is to ensure the acquisition, transportation, mobilization of resources to support the response effort at the disaster sites, public shelters, EOCs, etc. This Section provides all necessary personnel, supplies, and equipment procurement support except for Fire and Law Enforcement resources procured through prior agreements. Methods for obtaining and using facilities, equipment, supplies, services, and other resources to support emergency response at all operational sites during disaster conditions will be the same as that used during normal operations unless authorized by the EOC Director or emergency orders of the City Council.

Objectives

The Logistics Section ensures that all other sections are supported for the duration of the incident. Any personnel, equipment, supplies, or services required by the other sections will be ordered through the Logistics Section except for those resources obtained through already established mutual aid agreements (such as Fire and Law Enforcement).

The Logistics Section will accomplish the following specific objectives during a disaster:

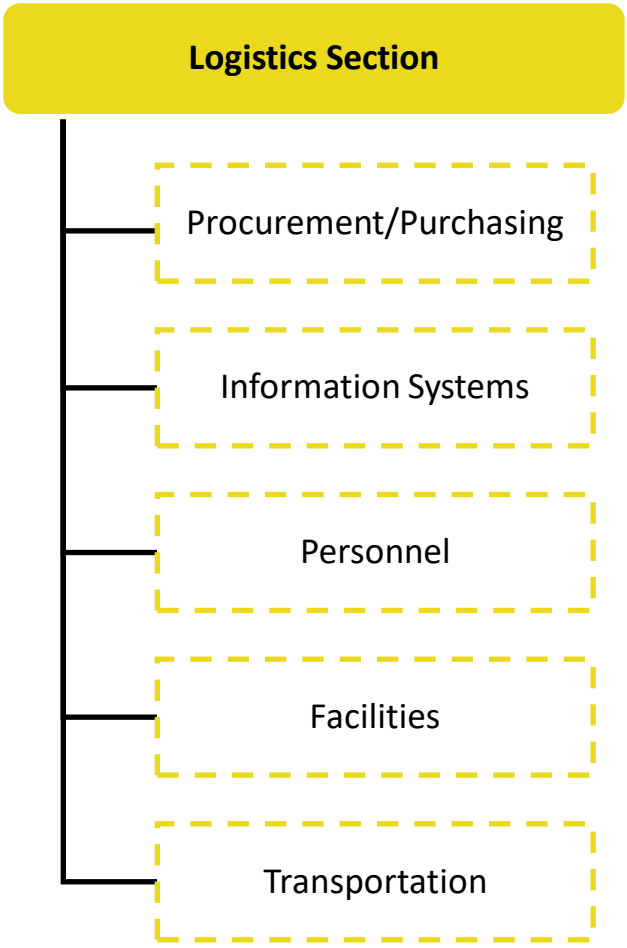
- Collect information from other sections to determine resource needs and prepare for expected operations.
- Coordinate provision of logistical support with the EOC Director.
- Prepare required reports identifying the activities performed by the Logistics Section.
- Determine the City's logistical support needs and plan for both immediate and long-term requirements.
- Maintain proper and accurate documentation of all actions taken and all items procured to ensure that all required records are preserved for future use and Cal OES and FEMA filing requirements.
- Supervises the negotiation and administration of vendor and supply contracts and procedures.

Concept of Operations

The Logistics Section will operate under the following policies during a disaster/emergency as the situation dictates:

- The Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) will be followed.
- All existing City and departmental operating procedures will be adhered to unless modified by the City Council.
- All on-duty personnel are expected to remain on duty until properly relieved of duty. Off-duty personnel will be expected to return to work in accordance with adopted policies.
- Operational periods will be determined by the EOC Director. Operational periods will be event-driven.
- Available and accessible resources from the private sector and volunteer organizations will be accessed through the City's own resources and private sector resources. Non-fire and non-law mutual aid will be accessed through the Ventura County Operational Area.

LOGISTICS SECTION ORGANIZATION CHART



LOGISTICS SECTION STAFF

The Logistics Section Coordinator will determine, based on present and projected requirements, the need for establishing specific and/or specialized units. The following units may be established as the need arises:

- Procurement/Purchasing Unit
- Information Systems
- Transportation
- Personnel Unit
- Facilities Unit

The Logistics Section Coordinator may activate additional units as necessary to fulfill an expanded role.

Logistics Section Coordinator

The Logistics Section Coordinator, a member of the EOC Director's General Staff, is responsible for supporting the response effort and the acquisition, transportation and mobilization of resources. Information is needed to:

- Understand the current situation.
- Predict probable resource needs.
- Prepare alternative strategies for procurement and resources management.

Procurement/Purchasing Unit

The Procurement/Purchasing Unit is responsible for obtaining all non-fire and non-law enforcement mutual aid materials, equipment, and supplies to support emergency operations and arranging for delivery of those resources. The Procurement/Purchasing is responsible for administering all financial matters pertaining to purchases, vendor contracts, leases, fiscal agreements, and tracking expenditures. The Procurement/Purchasing is responsible for identifying sources of equipment, preparing and signing equipment rental agreements, and processing all administrative paperwork associated with equipment rental and supply contracts, including incoming and outgoing mutual aid resources. The Procurement/Purchasing is also responsible for ensuring that all records identify the scope of work and site-specific work location.

Information Systems Branch

The Information Systems Branch is responsible for managing all radio, data, and telephone needs of the EOC staff. This Branch includes the Communications and Computer Systems Units.

Personnel Unit

The Personnel Unit is responsible for obtaining, coordinating and allocating all non-fire and non-law enforcement mutual aid personnel support requests, for registering volunteers as Disaster Services Workers and for managing EOC personnel issues and requests.

Facilities Unit

The Facilities Unit is responsible for ensuring that adequate facilities are provided for the response effort, including securing access to the facility and providing staff, furniture, supplies and materials necessary to configure the facility in a manner adequate to accomplish the mission.

Transportation Unit

The Transportation Unit is responsible for transportation of emergency personnel, equipment and supplies and for coordinating disaster transportation routing.

LOGISTICS SECTIONS COORDINATOR

SUPERVISOR: EOC Director

Primary Responsibilities:

- Ensure the logistics function is carried out consistent with SEMS/NIMS guidelines, including:
  - Managing all radio, data and telephone needs of the EOC.
  - Coordinating transportation needs and issues.
  - Managing personnel issues and registering volunteers as Disaster Services Workers.
  - Obtaining all materials, equipment and supplies to support emergency operations in the field and in the EOC.
  - Coordinating management of facilities used during disaster response and recovery.
- Oversee the acquisition, transportation and mobilization of resources.
- Establish the appropriate level of organization within the Section, and continuously monitor the effectiveness of that organization. Make changes as required.
- Be prepared to form additional units as dictated by the situation.
- Exercise overall responsibility for the coordination of unit activities within the Section.
- Report to the EOC Director on all matters pertaining to Section activities.
- Ensure any contacts with the media are directed to the Public Information Officer.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Activation

o Determine the operational status and appropriate level of activation based on situation as known.

o As appropriate, respond to the EOC.

o Mobilize appropriate personnel for initial activation of the EOC

Assignments/Staffing

o Clarify any issues regarding your authority and assignment.

o Activate organizational elements within your Section as needed and designate leaders for each element or combination of elements.

- Procurement/Purchasing Unit
- Information Systems Branch
- Personnel Unit

- Facilities Unit
- Transportation Unit

O Confirm that all key Logistics Section personnel or alternates are in the EOC or have been notified. Recall the required staff members necessary for the emergency.

O Request additional personnel for the Section to maintain a 24-hour operation as required.

O Carry out responsibilities of your Section not currently staffed.

Notifications

O Notify EOC Director when your Section is fully operational.

Meetings/Briefings

O Brief new or relief personnel in your Branch. Briefings should include:

- Current situation assessment
- Identification of specific job responsibilities
- Identification of co-workers within the job function and/or geographical assignment
- Availability of communications
- Location of work area
- Identification of eating and sleeping arrangements as appropriate
- Procedural instructions for obtaining additional supplies, services, and personnel
- Identification of operational period work shifts

O Brief the General Staff on operating procedures for use of telephone, data and radio systems.

O Meet with other activated Section Coordinators to identify service/support requirements for planned and expected operations.

O Attend periodic briefing sessions conducted by the EOC Director.

O Brief the EOC Director on major problem areas that need or will require solutions.

O Conduct periodic Logistics Section briefings and work to reach consensus for forthcoming operational needs.

Action Planning

O Participate in the EOC Director's action planning meetings.

O Prepare work objectives for Section staff and make staff assignments.

O Work closely with each Unit leader to ensure Logistics Section objectives as defined in the current EOC Action Plan are being addressed.

- Ensure a Communications Plan is developed for the EOC Action Plan. Assign to the Communications Unit, if activated.
- Following Action Planning meetings, ensure that orders for additional resources have been placed and are being coordinated within the EOC and field units.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Open and maintain an Activity Log **(See the Activity Log in Forms in the Support Documentation).**
- Provide personnel and equipment time records for the entire Section to the Time Keeping Unit in the Finance Section at the end of each work shift.
- Ensure that your Section logs and files are maintained.
- Develop a backup plan for all plans and procedures requiring off-site communications.

Ongoing Activities

- Make a list of key issues currently facing your Section to be accomplished within the next operational period.
- From Planning/Intelligence Section Coordinator, obtain and review major incident reports and additional field operational information that may pertain to or affect Section operations.
- From Planning/Intelligence Section and field sources, determine status of transportation system into and within the affected area. Find out present priorities and estimated times for restoration of the disaster route system. Provide information to other Sections.
- Meet with Finance/Administration Section Coordinator and review financial and administration support needs and procedures. Determine level of purchasing authority to be delegated to Logistics Section.
- Evaluate the need for Critical Incident Stress Debriefing for all affected personnel, victims and bystanders. Arrange debriefings through the Personnel Unit of the Logistics Section.
- Provide situation and resources information to the Situation Status Unit and Resources Unit of the Planning/Intelligence Section on a periodic basis or as the situation requires.
- Ensure internal coordination between branch/group/unit leaders.
- Update status information with other sections as appropriate.
- Resolve problems that arise in conducting your Section responsibilities.
- Make sure that all contacts with the media are fully coordinated first with the Public Information Officer (PIO).

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Keep up to date on situation and resources associated with your Section.
- Identify the need for use of special resources.
- Identify service/support requirements for planned and expected operations.
- Oversee the allocation of personnel, equipment, services and facilities required to support emergency management activities.
- Resolve problems associated with requests for supplies, facilities, transportation, communication and food.
- Keep the Ventura County Operational Area Logistics Coordinator apprised of overall situation and status of resource requests.

PROCUREMENT/PURCHASING UNIT

SUPERVISOR: Logistics Section Coordinator

Primary Responsibilities

- Coordinate and oversee the procurement, allocation and distribution of resources not normally obtained through existing mutual aid sources, such as food, potable water, fuels, heavy and special equipment and other supplies and consumables.
- Provide supplies for the EOC, field operations and other necessary facilities.
- Determine if the required items exist within the City supply system.
- Manage all equipment rental agreements.
- Procure items within limits of delegated authority from EOC Director.
- Arrange for the delivery of the items requisitioned, contracted for or purchased.
- Maintain records to ensure a complete accounting of supplies procured and monies expended. **Ensure that all records identify scope of work and site-specific work location.**
- Support activities for restoration of disrupted services and utilities.

Procurement Policy

The procurement of resources will follow the priority outlined below:

1. Resources within the City inventory (City-owned).
2. Other sources that may be obtained without direct cost to the City.
3. Resources that may be leased/purchased within spending authorizations.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

O Meet and coordinate activities with EOC Director and determine purchasing authority to be delegated to Procurement/Purchasing Unit. Review emergency purchasing and contracting procedures.

Action Planning

- Assist in preparation of the EOC Action Plan.
- Attend planning meetings at the request of the Logistics Section Coordinator.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Ensure that all records identify scope of work and site-specific locations.
- Provide updated reports on resource status to Resources Unit.
- Identify and maintain a list of available and accessible equipment and supplies to support response and recovery efforts.

Ongoing Activities

- Maintain information regarding;
  - Resources readily available
  - Resources requests
  - Status of shipments
  - Priority resource requirements
  - Shortfalls
- Coordinate with other branches/groups/units as appropriate on resources requests received from operations forces to ensure there is no duplication of effort or requisition.
- Issue purchase orders for needed items within dollar limits of authority delegated to Unit.
- Notify EOC Director of procurement needs that exceed delegated authority and obtain needed authorizations and paperwork, as necessary.
- Verify cost data in any preestablished vendor contracts with Finance Section.
- Establish contact with the appropriate Operations Section Branches and Red Cross representatives(s) and discuss the food and potable water situation with regard to mass care shelters and mass feeding locations. Coordinate actions.
- Establish a plan for field and EOC feeding operations, as appropriate. Coordinate with EOC Operations Section to avoid duplication. **(See Logistics Support Documentation – Emergency Response Feeding.)**
- Coordinate the provision of veterinary care and feeding of animals with Ventura County Animal Services.
- Assemble resource documents that will allow for agency, vendor and contractor contacts; e.g., telephone listings, procurement catalogs, directories and supply locations.

- O Continually update communications availability information with the Information Systems Branch. Revise contact methods with suppliers as improved communications become available.
- O Review the situation reports as they are received. Determine/anticipate support requirements. Verify information where questions exist.
- O Arrange for storage, maintenance and replenishment or replacement of equipment and materials.
- O Support activities for restoration of utilities to critical facilities.
- O Ensure the organization, management, coordination and channeling of donations of goods from individual citizens and volunteer groups during and following the disaster.

Resources

- O See Resources in Common EOC Responsibilities on page 72.
- O Review verify and process requests from other sections for resources.
- O Determine if needed resources are available from City stocks, mutual aid sources, or other sources. Arrange for delivery if available.
- O Determine availability and cost of resources from private vendors.
- O Arrange for delivery of procured resources. Coordinate with Transportation Unit, if activated.
- O Identify to the Logistics Section Coordinator any significant resource request(s) that cannot be met through local action. Suggest alternative methods to solve the problem if possible.
- O Provide and coordinate with the Operations Section the allocation and distribution of utilities, fuel, water, food, other consumables and essential supplies to all disaster operation facilities, including mass care shelters.
- O Procure and arrange for basic sanitation and health needs at mass care facilities (toilets, showers, etc.) as requested by Operations Section.
- O Procure and coordinate water resources for consumption, sanitation and firefighting.
- O Obtain and coordinate necessary medical supplies and equipment for persons with access and functional needs.
- O Obtain necessary protective respiratory devices, clothing, equipment and antidotes for personnel performing assigned tasks in hazardous radiological and/or chemical environments, as needed.

INFORMATION SYSTEMS BRANCH

SUPERVISOR: Logistics Section Coordinator

Primary Responsibilities:

- Notify support agencies and oversee the installation, activation and maintenance of all radio, data and telephone communications services inside of the EOC and between the EOC and outside agencies.
- Determine the appropriate placement of all radio transmitting equipment brought to the EOC to support operations. Approve all radio frequencies to minimize interference conditions.
- Provide necessary communication system operators, and ensure effective continuous 24-hour operation of all communications services.
- Copy and log incoming radio, data and telephone reports on situation reports, major incident reports, resource requests and general messages.
- Make special assignment of radio, data and telephone services as directed by the EOC Director.
- Organize, place and oversee the operation of amateur radio services working in support of the EOC.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

O Provide a briefing on EOC on-site and external communications needs, capabilities and restrictions and operating procedures for the use of telephones, computer and radio systems.

O Brief your relief at shift-change time. Ensure that in-progress activities are identified and follow-up requirements are known.

Action Planning

O Assist in preparation of the EOC Action Plan.

O Attend planning meetings at the request of the Logistics Section Coordinator.

O Provide communications briefings as requested at action planning meetings.

O Prepare the Communications Plan as a part of the EOC Action Plan.

Documentation

- See Documentation and Reports in Common EOC Responsibilities on page 71.
- Coordinate with all operational units and the EOC to establish a Communications Plan (component of the EOC Action Plan) to minimize communication issues that include radio, data and telephone needs utilizing established communications, the private sector, amateur radio and volunteers. **(See Logistics Support Documentation – Communications Plan).**

Ongoing Activities

- Coordinate with all sections and branches/groups/units on operating procedures for use of telephone, data and radio systems. Receive any priorities or special requests.
- Establish a plan to ensure staffing and repair of communications equipment.
- Monitor operational effectiveness of EOC communications systems. Obtain additional communications capability as needed.
- Coordinate all communications activities.
- Determine and anticipate support requirements and forward to your Section Coordinator.
- Coordinate frequency and network activities with Ventura County Operational Area.
- Establish a primary and alternate system for communications. Link with utilities and contracting and cooperating agencies to establish communications as soon as possible.
- Coordinate with volunteer and private sector organizations to supplement communications needs, as necessary.
- Protect equipment from weather, aftershocks, electromagnetic pulse, etc.
- Coordinate needed telephone data lines.
- Support activities for restoration of computer services.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Keep up to date on the situation and resources associated with your Unit.

PERSONNEL UNIT

SUPERVISOR: Logistics Section Coordinator

Primary Responsibilities

- Obtain, coordinate and allocate all non-fire and non-law enforcement mutual aid personnel support requests received; register volunteers as Disaster Services Workers and manage EOC personnel issues and requests.
- Identify sources and maintain an inventory of personnel support and volunteer resources. Request personnel resources from those agencies as needed.
- Ensure that all Disaster Service Workers and volunteers are registered and integrated into the emergency response system, as appropriate.
- Assign personnel within the EOC as needs are identified.
- Coordinate emergency management mutual aid (EMMA) through the Ventura County Operational Area EOC.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

Assignments/Staffing

o Clarify any issues regarding your authority and assignment.

Meetings/Briefings

o Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

o Assist in preparation of the EOC Action Plan.

o Attend planning meetings at the request of the Logistics Section Coordinator.

Documentation

o See Documentation and Reports in Common EOC Responsibilities on page 71.

Ongoing Activities

o Establish Disaster Service Worker and Volunteer registration and interview locations. Assign staff to accomplish these functions.

o Issue ID cards to Disaster Service Workers, as appropriate.

o Maintain information regarding:

- Personnel/volunteers processed.
- Personnel/volunteers allocated, assigned and on standby by agency/location.
- Special personnel requests by category not filled.

O Develop a system for tracking personnel/volunteers processed by the Unit. Maintain sign in/out logs. Control must be established for the accountability of personnel used in the response effort. Personnel/volunteers relieved from assignments will be processed through the Demobilization Unit.

O Ensure training of assigned response staff and volunteers to perform emergency functions. Coordinate with Safety Officer to ensure that training for personnel includes safety and hazard awareness and is compliant with OSHA requirements.

O Obtain crisis counseling for emergency workers. **(See Logistics Support Documentation-CISM).**

O Coordinate feeding, shelter and care of personnel, employee's families and volunteers with the Procurement/Purchasing Unit, Facilities Unit and the Care and Shelter Branch.

O Establish a plan for childcare for City employees, as needed. Coordinate with Facilities Unit for suitable facilities and with the Care and Shelter Branch for staff support.

O Assist and support employees and their families who are also disaster victims.

O Develop a plan for communicating with those agencies and non-governmental agencies having personnel resources capable of meeting special needs, i.e. persons with access and functional needs (AFN).

O Coordinate transportation of personnel and volunteers with the Transportation Unit.

O If the need for a call for volunteers is anticipated, coordinate with the PIO and provide the specific content of any broadcast item desired.

O Keep the PIO advised of the volunteer situation. If the system is saturated with volunteers, advise the PIO of that condition and take steps to reduce or redirect the response.

Resources

O See Resources in Common EOC Responsibilities on page 72.

O Receive and process all incoming requests for personnel support. Identify number of personnel, special qualifications or training, location where needed and person to report to upon arrival. Secure an estimated time of arrival for relay back to the requesting agency.

O Ensure the recruitment, registration, mobilization and assignment of volunteers.

O Coordinate with the Ventura County Operational Area EOC for additional personnel needs.

O Ensure the organization, management, coordination and channeling of the services of individual citizens and volunteer groups during and following the emergency.

O Obtain health/medical personnel, e.g., nurse's aides, paramedics, Red Cross personnel and other trained volunteers to meet health/medical needs.

- Request technical expertise resources not available within the jurisdiction (hazardous materials, environmental impact, structural analysis, geotechnical information, etc.) through established channels, mutual aid channels or the Ventura County Operational Area EOC.

FACILITIES UNIT

SUPERVISOR: Logistics Section Coordinator

Primary Responsibilities

- Ensure that adequate facilities are provided for the response effort, including securing access to the facility and providing staff, furniture, supplies and materials necessary to configure the facility in a manner adequate to accomplish the mission.
- Coordinate with other EOC branches/groups/units for support required for facilities.
- Support activities for restoration of disrupted services and utilities to facilities.
- Coordinate with Finance/Administration Section on any claims or fiscal matters relating to facilities' operations.
- Close out each facility when no longer needed.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

O Assist in preparation of the EOC Action Plan.

O Attend planning meetings at the request of the Logistics Section Coordinator.

Documentation

O See Documentation and Reports in Common EOC Responsibilities on page 71.

Ongoing Activities

O Maintain information in the Unit regarding:

- Facilities opened and operating
- Facility managers
- Supplies and equipment at the various locations
- Specific operations and capabilities of each location

- As the requirement for emergency-use facilities is identified, coordinate the acquisition of required space to include any use permit, agreement or restriction negotiations required.
- In coordination with the Operations Section, provide support to facilities used for disaster response and recovery operations; i.e., staging areas, shelters, local application centers (LACs), etc.
- Identify any communications requirements to the Communications Unit.
- Identify equipment, material and supply needs to the Procurement/Purchasing Unit.
- Identify personnel needs to the Personnel Unit.
- Identify transportation requirements to the Transportation Unit. Coordinate evacuation schedules and identify locations involved.
- Identify security requirements to the Security Officer.
- Monitor the actions at each facility activated and provide additional support requested in accordance with Unit capabilities and priorities established.
- Account for personnel, equipment, supplies and materials provided to each facility.
- Ensure that operational capabilities are maintained at facilities.
- Ensure that basic sanitation and health needs at mass care facilities (toilets, showers, etc.) are met.
- Ensure that access and functional needs are addressed in provided in facilities.
- Ensure all facilities have water resources for consumption, sanitation and firefighting.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Consider providing facilities for sheltering essential workers, employee's families and volunteers. Coordinate with the Care and Shelter Branch.
- Coordinate with Ventura County Animal Services via the Ventura County Operational Area EOC to provide facilities for animal boarding as required.
- Coordinate water resources for consumption, sanitation and firefighting at all facilities.
- Coordinate the receipt of incoming resources to facilities.
- Oversee the distribution of utilities, fuel, water, food, other consumables and essential supplies to all disaster operation facilities.

TRANSPORTATION UNIT

SUPERVISOR: Logistics Section Coordinator

Primary Responsibilities

- Coordinate the transportation of emergency personnel and resources within the City by all available means.
- Coordinate all public transportation resources.
- Coordinate the disaster routes with the Operations Section.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

- O See Common EOC responsibilities on page 71.

Assignments/Staffing

- O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Logistics Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Establish a transportation plan for movement of:
  - Personnel supplies and equipment to the EOC, field units, shelters and other facilities.
  - Individuals to medical facilities as requested by Operations Section.
  - Emergency workers and volunteers to and from risk area.
  - Dependents and families of emergency workers as requested by the Care and Shelter Branch.

Ongoing Activities

- Coordinate with the Planning/Intelligence and Operations Sections to determine which disaster routes are available for emergency vehicles entering and exiting the City.
- Coordinate with Fire and Police on road closures and traffic light outage information and ensure information is displayed in the EOC.
- Coordinate with the Ventura County Operational Area for highway status with Cal Trans and CHP.
- Coordinate use of disaster routes with the Operations Section.
- Participate in evacuation route planning, transportation routes and transportation resources needed to support operations.
- Coordinate with other sections and branches/groups/units to identify transportation priorities.
- Coordinate with the Operations Section on the movement of persons with access and functional needs. Coordinate with paratransit companies as necessary.
- Coordinate with the Ventura County Animal Services via the Ventura County Operational Area EOC for transportation of animals as required.
- As reports are received from field units and EOC sections and as sufficient information develops, analyze the situation and anticipate transportation requirements.
- Prepare schedules as required to maximize use of available transportation.
- Provide Resources Unit of Planning Section with current information regarding transportation vehicles (location and capacity). Notify Resources Unit of all vehicle status change.
- Establish mobilization areas for vehicles as directed.
- Coordinate with staff and agency representatives to ensure adherence to service and repair policies.
- Ensure that vehicle usage is documented by activity and date and hours in use.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Coordinate with local transportation agencies and Ventura Unified School District to establish availability of resources for use in evacuations and other operations as needed.
- Maintain inventory of support and transportation vehicles (staff cars, passenger vans, buses, pick-up trucks, light/heavy trucks).
- Arrange for fueling of all transportation resources.

LOGISTICS SUPPORT DOCUMENTATION

PERSONNEL RECALL AND NOTIFICATION POLICY AND PROCEDURES FOR DISASTER RESPONSE

Employee Responsibility

The citizens of Ventura rely on the City government for leadership and assistance in a disaster. In response to such occurrences, it is imperative that all City employees be available to assist in this type of emergency response.

The Government Code of the State of California Chapter 8 of Division 4 of Title 1 Section 3100: Declaration; Public Employees as Disaster Workers states:

- *It is hereby declared that the protection of the health and safety and preservation of the lives and property of the people of the state from the effects of natural, manmade, or war-caused emergencies which result in conditions of **disaster** or in extreme peril to life, property, and resources is of paramount state importance requiring the responsible efforts of public and private agencies and individual citizens. In furtherance of the exercise of the police power of the state in protection of its citizens and resources, all public employees are hereby declared to be **disaster service workers** subject to such **disaster service** activities as may be assigned to them by their superiors or by law.*

The City's Emergency Operations Plan and Chapter 2.370 of the City's Municipal Code specify that:

- The City Manager (or designee) may require emergency service of any City officer, employee or citizen, and may requisition necessary personnel or material of any City department or agency.
- In any emergency, City employees may be assigned, regardless of their Job Description/Checklist Actions, any duties that they are capable of performing safely.

In the event a disaster occurs during normal working hours:

- All City employees shall remain at work to provide for disaster relief if required.
- Department heads (or designee) shall be responsible for ensuring employees remain at work.
- Department heads (or designee) shall authorize release of employees.
- Employees who leave without authorization may be subject to disciplinary action.

In the event a disaster occurs beyond normal working hours:

- All employees in public safety operations shall respond to established emergency response procedures for their departments.
- All non-public safety employees will be expected to report to work unless informed otherwise via automated phone systems, the media or the Emergency Alert System that non-essential employees are not required to report to work. Radio stations providing information: KVTA 1590, KHAY 100.7 FM and KMLA 103.7 FM (Spanish).
- All employees have an obligation to attempt and continue to try contacting their department or the employee emergency call-in numbers to determine whether it is necessary to report to work.

Release of Employees (By City Manager or Designee Authority)

Only the City Manager (or designee) has the authority to order a release of City employees in the event of a disaster. However, the City Manager (or designee) may authorize department heads (or their designee) to exercise their judgment in releasing individual employees or work units to return home. Such decisions will consider the total scope of the emergency at hand, including but not limited to the following factors:

- The condition of local transportation routes; employees will not be permitted to leave work if doing so would exacerbate existing transportation problems;
- The availability of safe worksites and in the event of an extended stay, the availability of food and other support services and facilities;
- The need for City personnel;
- The scope of the disaster and the resources needed to respond; and
- Whether the need to provide support services for City employees would otherwise interfere with or detract from the efforts to respond to the disaster.

Release of Employees (By Department Head or Designee Authority)

Notwithstanding the release authority of the City Manager (or designee), department heads (or appointed designees) may otherwise release employees by authorizing emergency leave or personal leave in the following cases:

- When an employee is psychologically or physically incapacitated to the degree that he/she is unable to function effectively (provided that no employee will be released unless they can care for and transport themselves safely);
- When the City is unable to provide shelter or services to support the continued presence of the employee(s) at work;
- When the City Manager (or designee) has called for a general release of employees in non-disaster response positions and the department head (or designee) is aware that the employees will not be needed for disaster relief; and/or
- When the continued presence of the employee(s) at the worksite would present a direct hazard.

Departmental Requirements

The primary responsibility for managing City employees during and following a disaster lies with the individual operating departments. All departments need to consider that even though their department may not have direct responsibility for disaster response, all employees represent a valuable resource for disaster relief. All departments are, therefore, required to develop a Departmental Emergency Operations Plan (EOP) to be submitted for review by the City's Emergency Services Manager. Such plans shall assist in the identification of emergency assignments. The departmental EOP will provide City employees with an effective means for responding to emergencies and major disasters.

Continuity Planning

In the event of a major disaster or at the direction of the City Manager or his/her designee, an Emergency Staffing/Continuity Plan will be put into effect. It is the responsibility of individual departments to plan for staffing their departments and to provide staff to other City departments during a disaster. Departments should have a staff "recall plan". In the event of an earthquake, or other sudden disaster, scheduling will be put into effect automatically by departments and affected employees know ahead of time that they are to report for work.

If employees are unable to report to their regular facility or alternate staging area, they are encouraged to report to their closest local governmental jurisdiction to register as a Disaster Services Worker for that agency. All City employees are declared to be Disaster Services Workers by Section 3100 of Chapter 8 of Division 4 of Title 1 of the Government Code.

Considerations for Feeding - EOC Support and Field Staff

- Coordinate all feeding operations for the EOC, support and field personnel.
- Establish a feeding plan, which identifies cost limits, authorized vendors and catering companies, type of food, etc. Ensure everyone is aware of this policy.
- Set meal schedules. Consider the impact of curfews on businesses you may use.
- Set up and manage eating areas for EOC, staff and field personnel. Notify workers of food schedules and locations.
- Pre-identify low-cost vendors and catering companies to maximize efficiency and lower costs (FEMA may question upscale or expensive restaurants or catering).
- Arrange with local catering services or restaurants for in-house feeding.
- Establish a personnel-feeding account for EOC, support and field personnel at local restaurants.
- Brief all EOC personnel as to location, cost limitations and incident number to be used for each restaurant or caterer.
- Coordinate acquisition, preparation and service of meals.
- Be aware of and provide for special diets.
- Consider providing on-site employee child-care needs, if needed.
- Arrange for and coordinate cleanup of eating, food preparation and serving areas.
- Provide snacks/water/coffee/beverages for EOC, support and field personnel.
- Consider a chit or voucher system at the location set up for feeding operations to identify those employees' meals, which are reimbursable under FEMA guidelines. FEMA may not reimburse for all feeding operations. **Currently FEMA will not reimburse for meals provided during an employee's normal working hours unless it is stipulated in the employer's MOU. FEMA will reimburse for meals given to volunteers or unpaid workers and employees working overtime. This may be the individual call/interpretation of the disaster adjuster.**
- Document cost of meals and report daily to the Finance/Administration Section for cost recovery purposes.
- Advise disaster workers regarding agency policy for reimbursement of disaster-related meals.
- Encourage all EOC staff to take regular meal and snack breaks.

REQUESTING CRITICAL INCIDENT STRESS MANAGEMENT (CISM) PROCEDURES

Purpose

Case studies by medical groups of work-related incidents where injuries or fatalities occurred have revealed that significant numbers of employees experience some form of stress-related symptoms following the incident. Many of these symptoms were transitory and most personnel had no long-term detrimental effects. These studies, however, have also revealed that a small percentage of personnel do experience continuing, long-term detrimental effects resulting from exposure to such incidents. Some of these effects have been delayed, surfacing later after a period with no apparent symptoms.

Without professional intervention, these personnel have experienced declining work performance and deterioration of family relationships, as well as increased health problems. The objective of this procedure is to provide professional intervention immediately after major critical incidents or crises to minimize stress-related injuries to city personnel and to provide all necessary support to city personnel during a crisis.

Incident debriefing is not a critique of an incident. Performance issues will not be discussed during the debriefing. The debriefing process provides a format where personnel can discuss their feelings and reactions and, thus, reduce the stress resulting from exposure to critical incidents and crisis situations. All debriefings will be strictly confidential.

Debriefings may be conducted anywhere that provides ample space, privacy and freedom from distractions. Selection of the site will be determined by the city's CISM coordinator based on the type of debriefing required.

The debriefing team will consist of CISM professionals (mental health counselors specifically trained in stress-related counseling) as well as trained peer counselors. The team members' role in the debriefing process will be to assist and support the professional counselors as necessary. All follow-up care will be approved by the Human Resources Department prior to beginning treatment.

Activation of CISM

Department directors, managers and supervisors bear the responsibility for identifying/recognizing significant incidents that may qualify for debriefing. When an incident is identified as a critical incident or crisis, a request for debriefing consideration should be made as soon as possible to the CISM coordinator (Risk Manager) for the City. If additional assistance is required, the CISM coordinator will contact Ventura County Fire Protection District (VCFPD) Dispatch and request that a CISM team be assembled.

GUIDELINES FOR UTILIZATION OF VOLUNTEERS

Introduction

As recent disasters have shown, volunteers play a significant role in both the response and recovery phases of a disaster. Volunteers are among the first to arrive on scene following a major event or disaster. They will be essential to the sheltering, mass feeding, and other operations established in the wake of these disasters.

Volunteers will come forward in every major disaster—whether they emerge spontaneously or have been pre-registered and trained by a response agency. Having a plan in place for how volunteers will be recruited, managed and utilized will assist jurisdictions in improving the overall effectiveness of their disaster response.

Management of the volunteer function is in the Logistics Section of the EOC. Management of claims for Workers Compensation Insurance is handled by the Finance/Administration Section.

Purpose

The following materials provide guidelines for registering volunteer Disaster Service Workers in the State Workers' Compensation and Safety Program. It also provides general guidance for managing volunteer workers during an emergency.

Background

Workers' Compensation Insurance provides benefits for employees injured on the job or who become ill from job related conditions. Damage to artificial limbs, dentures or medical braces is also considered an injury. Workers' Compensation benefits are set by the legislature and spelled out in the Labor Code. One section of the Labor Code defines Disaster Service Workers as "employees" under certain conditions and describes their benefits.

Eligibility

A Disaster Service Worker is anyone registered with a Disaster Council certified by the California Emergency Council or any person ordered by a person or body having authority to command the aid of citizens to carry out assigned duties to perform services during a State of War Emergency or any State of Emergency or Local Emergency.

A partial list of Disaster Service Workers includes:

- Reserve law enforcement officer
- Auxiliary firefighter
- Emergency welfare worker
- Communications specialist
- Medical worker
- Clerk

Any Disaster Service Worker is eligible for Workers' Compensation benefits while performing duties or undergoing any authorized training activities. Any injury, under these circumstances is covered no matter where it occurs.

Exclusions

If the Disaster Service Worker is paid for these services, an "employer-employee" relationship exists. A Disaster Service Worker injured while in this relationship would be entitled to Workers' Compensation benefits under their regular employer's program. Members registered as active firefighters of any regularly

organized and municipally supported volunteer fire department are excluded from disaster service benefits.

Volunteer Disaster Service Workers

Volunteers active in emergency services and/or disaster relief operations usually belong to one of two categories: organized volunteers or spontaneous (convergent) volunteers. Depending on circumstances, different registration procedures are utilized to serve each group's needs.

Organized Volunteers

Organized volunteers are defined as individuals affiliated with specific organizations prior to an emergency or disaster. These organizations are usually chartered to provide volunteer emergency and/or disaster relief services. Members of these organizations usually participate in scheduled exercises to practice their disaster relief skills and integrate with the local community's emergency plan and response effort.

Examples of these organizations include:

- American Radio Relay League
- American Red Cross
- California Rescue Dog Association
- Salvation Army
- Civil Air Patrol

Public safety agencies usually prefer to utilize trained, organized volunteers because their organizations are familiar with working under a unified structure. They also provide their own supervision, transportation and support needs.

Agency Trained Volunteers

To ensure that they have an adequate pool of organized volunteers, some jurisdictions organize and train teams of civilian volunteers to act as disaster first responders within their own neighborhoods or jurisdictions. These volunteer organizations possess several advantages:

- Familiarity with the disaster area, its hazards and resources
- Knowledge of the jurisdiction's emergency organization
- Opportunity to regularly exercise and drill with the jurisdiction served

The City of San Buenaventura has supported and helped to develop the City's Community Emergency Response Team

Spontaneous (Convergent) Volunteers

Spontaneous (convergent) volunteers are members of the general public who spontaneously volunteer during emergencies. They are not usually involved with organized volunteer organizations and may lack specific disaster relief training when there is very little time and few resources to train them. They come from all walks of life and comprise the majority of volunteer personnel available to local public safety agencies during a disaster response.

Public safety agencies often form volunteer assembly points for recruiting and classifying volunteers during disaster response operations. To be eligible for Workers' Compensation, the spontaneous volunteer must also be registered as a Disaster Services Worker.

Considerations in Volunteer Utilization

In order to manage volunteers effectively, there are several issues that need to be addressed. For pre-registered volunteers, the process may be fully organized and accomplished over a period of time. Because this process must be accomplished under extreme conditions with convergent volunteers, it is essential that the planning and execution of the process be thoroughly worked out in advance of the disaster.

Issues to be addressed include:

Recruiting

Volunteer recruitment may become an issue if the disaster lasts a long time and the initial number of convergent volunteers begins to dwindle. It also may become necessary to recruit volunteers with specific skills, such as heavy equipment operators, medical personnel, translators, etc.

Recruitment avenues include the local media and other organizations. Organizations to contact for recruitment assistance include local labor unions, educational institutions and private companies.

Screening

Pre-registered volunteers will have been screened in advance. Walk-ins, however, will have to be screened at the time that they appear for assignment prior to duty.

Certain vital information is essential if volunteers are to be properly and efficiently used; and screening teams must be identified and trained in advance on the screening of volunteers. The data or information required regarding the volunteers should also be developed in advance. The actual data requirements should be held to a minimum, consistent with the needs of the local jurisdiction.

Identification

Once screening is completed, all volunteers must be issued proper I.D. and be required to sign for any equipment issued for their position. Organized volunteers will possess identification issued by their organizations. The jurisdiction is responsible for providing identification to convergent volunteers. Forms of I.D. include arm bands, vests, patches, and city I.D. cards.

Training

Before being deployed, it is essential that volunteers receive an adequate amount of training. At a minimum, volunteers must be thoroughly briefed on the legal aspects of the tasks to which they are to be assigned. They should also fully understand their responsibilities and the limits to which they may go in performing their assigned duties.

Records must be established for each volunteer that reflects the training received. Training records should be maintained as part of the permanent record of the emergency response to the specific disaster.

Supervision

More so than paid staff, volunteers must be supervised according to the task assigned. Ideally, though not always possible, paid staff personnel should supervise all volunteer effort. When this is not possible, skilled, highly trained volunteers should be assigned as supervisors.

Planning

The jurisdiction must recognize that volunteers will appear after the onset of a major disaster. Established plans are needed for the proper management of volunteer personnel in order to optimize this resource and prevent convergent volunteers from becoming a problem. Properly managed, volunteer resources may mean the difference between success and failure of the emergency response.

Recognition

The final requirement of the jurisdiction is to ensure that volunteers are properly recognized for their services. Recognition may be in the form of individual commendation by the elected officials, public acknowledgment by the media, or a letter of appreciation from the local emergency manager.

THESE GUIDELINES DO NOT SUPERSEDE GUIDELINES FOR VOLUNTEER UTILIZATION SET FORTH BY THE GOVERNOR'S OFFICE OF EMERGENCY SERVICES. FOR MORE INFORMATION AND REGISTRATION FORMS, SEE "DISASTER SERVICE WORKER VOLUNTEER PROGRAM", OCT. 2016.

FINANCE/ADMINISTRATION SECTION - GENERAL

Purpose

To enhance the capability of the City to respond to disasters by providing financial support and coordination for City disaster operations and coordinating the recovery of costs as allowed by Federal and State law. It is the policy of this section that the priorities are to be:

- Protect life, property, and the environment.
- Provide continuity of financial support to the City and community.
- Cooperate with the other sections of the City's disaster response team.
- Document the City's costs and recovery of those costs as allowable.
- Maintain a positive image for the City in its dealings with the community.

Overview

The Finance/Administration Section's primary responsibility is to maintain to the greatest extent possible the financial systems necessary to keep the City functioning during disasters, including:

- Payroll
- Payments
- Revenue collection
- Claim processing
- Cost recovery documentation

The Section also supervises the negotiation and administration of vendor and supply contracts and procedures.

The extent of the disaster/emergency will determine the extent to which the Finance/Administration Section will mobilize. In a low-level emergency, only part of the Section will mobilize. In a widespread disaster that damages communications and systems, the entire Section will mobilize.

Objectives

The Finance/Administration Section acts in a support role in all disasters to ensure that all required records are preserved for future use and Cal OES and FEMA filing requirements are adhered to through maintenance of proper and accurate documentation of all actions taken. To carry out its responsibilities, the Finance/Administration Section will accomplish the following objectives during a disaster:

A. For all disasters:

1. Notify the other sections and City departments that the Disaster Accounting System is to be used for the disaster/emergency.
2. Determine the extent to which the City's computer systems are accessible and/or usable.

3. Determine if the City's bank can continue handling financial transactions.
4. Maintain, as best possible, the financial continuity of the City (payroll, payments and revenue collection).
5. Disseminate information about the Disaster Accounting System to other sections and departments as necessary.
6. Upon declaration of a disaster by the State and/or Federal Governments, coordinate with disaster agencies to initiate the recovery process of the City's costs.
7. Coordinate with the other sections and departments the collection and documentation of costs pertaining to the disaster.
8. Coordinate with the disaster assistance agencies for the required inspections, documentation, audits, and other necessary work in order to recover costs.

B. For disasters where the City's computer systems and bank are accessible and usable:

1. Inform the other sections and City departments that the payroll and payments processing will be handled on a "business-as-usual" basis except that the Disaster Accounting System will be used for disaster/emergency-related costs.
2. Continue with objectives A.5. through A.8. above.

C. For disasters where the City's computer systems and/or bank are either inaccessible or unusable for a short period of time; i.e., less than one week:

1. Inform the other sections and City departments that payroll and payments will be on hold for a short time and that processing will continue on a normal basis as of a specified date.
2. Continue with objectives A.4. through A.8. above.

D. For disasters where the City's computer and/or bank systems are either inaccessible or unusable for an extended period of time; i.e., one week or more:

1. Inform the other sections and City departments that disaster accounting procedures will be necessary for the next payroll and all critical payments.
2. Activate other Finance/Administration Section Units as necessary.
3. Continue with objectives A.4. through A.8. above.

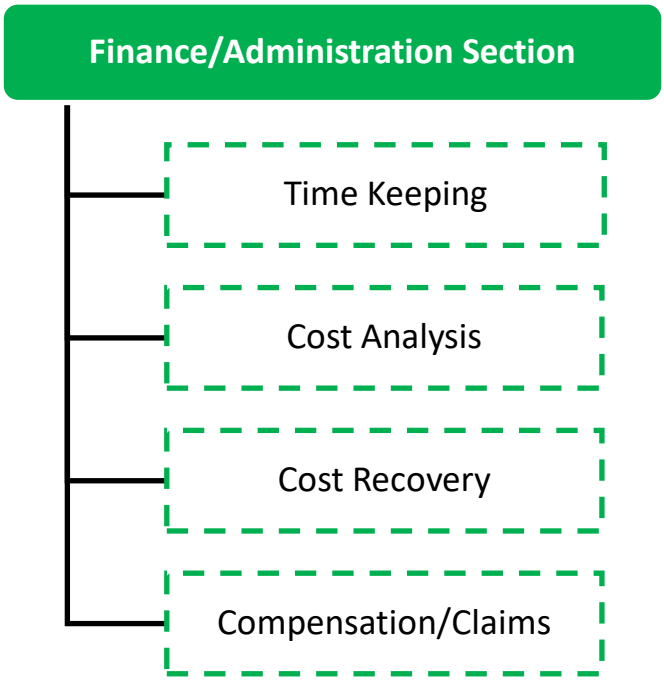
Concept of Operations

The Finance/Administration Section will operate under the following policies during a disaster/emergency as the situation dictates:

- The Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) will be followed.
- All existing City and departmental fiscal operating procedures will be adhered to unless modified by City Council or EOC Director.
- For disasters/emergencies that leave the accounting systems accessible and usable, regular working hours will be retained for all but the Cost Recovery and the Documentation Units. These units will function on the schedule determined necessary to perform its objectives.

- For disasters that render the accounting systems either inaccessible or unusable for any period of time, appropriate personnel in the activated units will be on an operational period determined by the EOC Director. This may be a period of 12 hours.

FINANCE/ADMINISTRATION SECTION ORGANIZATION CHART



FINANCE/ADMINISTRATION SECTION STAFF

The Finance/Administration Section Coordinator will determine, based on present and projected requirements, the need for establishing specific and/or specialized branches/groups/units.

- Time Keeping Unit
- Cost Analysis Unit
- Cost Recovery Unit
- Compensation/Claims Unit

The Finance/Administration Section Coordinator may activate additional units to fulfill an expanded role if necessary.

Finance/Administration Section Coordinator

The Finance/Administration Section Coordinator supervises the financial support, response, and recovery for the disaster; ensures that the payroll and revenue collection process continues and activates the Disaster Accounting System.

Time Keeping Unit

The Time Keeping Unit is responsible for tracking hours worked by paid personnel, volunteers, contract labor, mutual aid, and all others and ensuring that daily personnel time recording documents are prepared and compliance to the agency's time policy is being met. The Time Unit is responsible for ensuring that time and equipment use records identify the scope of work and site-specific work location consistent with initial safety/damage assessment records, sites, and Project Worksheets.

Personnel time and equipment use records should be collected and processed for each operational period as necessary. Records must be verified, checked for accuracy, and posted according to existing policy. Excess hours worked must also be determined, and separate logs will be maintained. Time and equipment use records must be compiled in an appropriate format for cost recovery purposes.

Cost Analysis Unit

The Cost Analysis Unit is responsible for providing cost analysis data for the incident to help the planning and recovery efforts. The Unit must ensure that all pieces of equipment and personnel that require payment are properly identified; obtain and record all cost data; analyze and prepare estimates of incident costs and maintain accurate records of incident costs.

The Cost Analysis Unit will be increasingly tasked to support the planning function in terms of cost estimates of resources used. The Unit must maintain accurate information on the actual costs for the use of all assigned resources.

Cost Recovery Documentation Unit

The Cost Recovery Documentation Unit should be activated at the onset of any disaster and is responsible for maintaining the Disaster Accounting System and procedures to capture and document costs relating to a disaster in coordination with other sections and departments. The Unit also acts as liaison with the disaster assistance agencies and coordinates the recovery of costs as allowed by law. Maintaining records that will pass audit is also an extremely important task of this Unit. Accurate and timely documentation is essential to financial recovery.

Compensation/Claims Unit

The Compensation/Claims Unit is responsible for managing the investigation and compensation of physical injuries and property damage claims involving the City arising out of an disaster, including completing all forms required by workers' compensations programs and local agencies, maintaining a file of injuries and illnesses associated with the incident and for providing investigative support of claims and for issuing checks upon settlement of claims.

FINANCE/ADMINISTRATION SECTION COORDINATOR

SUPERVISOR: EOC Director

Primary Responsibilities

- Ensure that the Finance/Administration function is performed consistent with SEMS/NIMS Guidelines, including:
  - Implementing a Disaster Accounting System - **(See Finance/Administration Support Documentation)**
  - Maintaining financial records of the disaster
  - Tracking and recording of all agency staff time
  - Processing workers' compensation claims received at the EOC
  - Handling travel and expense claims
  - Providing administrative support to the EOC
  - Supervise the Finance/Administration Section staff.
- Establish the appropriate level of organization within the Section, and continuously monitor the effectiveness of that organization. Make changes as required.
- Be prepared to form additional units as dictated by the situation.
- Exercise overall responsibility for the coordination of unit activities within the Section.
- Ensure that the Section is supporting other EOC sections consistent with priorities established in the EOC Action Plan.
- Keep the EOC Director updated on all significant financial developments.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

O See Common EOC responsibilities on page 71.

Activation

O Determine the operational status and appropriate level of activation based on situation as known.

O As appropriate, respond to the EOC.

O Mobilize appropriate personnel for initial activation of the EOC

Assignments/Staffing

O Clarify any issues regarding your authority and assignment.

O Activate organizational elements within your Section as needed and designate leaders for each element or combination of elements.

- Cost Recovery Unit

- Time Keeping Unit
- Compensation/Claims Unit
- Cost Analysis Unit

O Confirm that all key Finance Section personnel or alternates are in the EOC or have been notified. Recall the required staff members necessary for the emergency.

O Request additional personnel for the Section to maintain a 24-hour operation as required.

O Carry out responsibilities of your Section not currently staffed.

Notifications

O Notify EOC Director when your Section is fully operational.

Meetings/Briefings

O Brief new or relief personnel in your Branch. Briefings should include:

- Current situation assessment
- Identification of specific job responsibilities
- Identification of co-workers within the job function and/or geographical assignment
- Availability of communications
- Location of work area
- Identification of eating and sleeping arrangements as appropriate
- Procedural instructions for obtaining additional supplies, services, and personnel
- Identification of operational period work shifts

O Meet with other Section Coordinators.

O Brief the EOC Director on major problem areas that need or will require solutions.

O Meet with assisting and cooperating agency representatives as required.

Action Planning

O Participate in the EOC Director's action planning meetings.

O Prepare work objectives for Section staff and make staff assignments.

O Provide input in all planning sessions on finance and cost analysis matters.

Documentation

O See Documentation and Reports in Common EOC Responsibilities on page 71.

O Open and maintain an Activity Log (See Forms in Support Documentation, Activity Log).

- Provide personnel and equipment time records for the entire Section to the Time Keeping Unit in the Finance Section at the end of each work shift.
- Ensure that all documents initiated during the disaster are properly prepared and completed.
- Ensure that your Section logs and files are maintained.

Ongoing Activities

- Authorize use of the Disaster Accounting System. **(See Finance/Administration Support Documentation – Disaster Accounting.)**
- Make a list of key issues currently facing your Section to be accomplished within the next operational period.
- Monitor your Section activities and adjust Section organization as appropriate.
- Work closely with each Unit leader to ensure Finance Section objectives as defined in the current EOC Action Plan are being addressed.
- Evaluate the need for Critical Incident Stress Debriefing for all affected personnel. Arrange debriefings through the Personnel Unit of the Logistics Section.
- Ensure internal coordination between branch/group/unit leaders.
- Update financial and cost status information with other sections as appropriate.
- Resolve problems that arise in conducting your Section responsibilities.
- Develop a backup plan for all plans and procedures requiring off-site communications.
- Make sure that all contacts with the media are fully coordinated first with the Public Information Officer (PIO).
- Ensure that the payroll and revenue collection process continues.
- Organize, manage, coordinate, and channel the donations of money received during and following the emergency from individual citizens and volunteer groups.
- Make recommendations for cost savings to the General Staff.
- Keep the General Staff apprised of overall financial situation.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Keep up to date on situation and resources associated with your Section. Maintain current status and displays at all times.

TIME KEEPING UNIT

SUPERVISOR: Finance/Administration Section Coordinator

Responsibilities

- Track, record and report staff time for all personnel/volunteers working at the emergency/disaster.
- Establish and maintain a file for all personnel working at the disaster.
- Ensure that daily personnel time recording documents are prepared and are compliant with specific City, Cal OES and FEMA time recording policies.
- Track, record and report equipment use and time.

Ensure that time and equipment use records identify scope of work and site-specific work location consistent with initial safety/damage assessment records, sites and Project Worksheets (PWs).

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

o See Common EOC responsibilities on page 71.

It there is enough staffing for the Finance Section you may want to have a person focus on Personnel Time Recording and another person focus on Equipment Time Recording. If you are limited in staff, make sure that the tasks associated with both of these focus areas are accomplished.

Assignments/Staffing

o Clarify any issues regarding your authority and assignment.

o Identify City cost recovery team members before the EOC demobilizes.

Meetings/Briefings

o Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

o Assist in preparation of the EOC Action Plan.

o Attend planning meetings at the request of the Finance Section Coordinator.

Documentation

o See Documentation and Reports in Common EOC Responsibilities on page 71.

Ongoing Activities

Personnel Time Recorder

- Initiate, gather, or update a time report from all applicable personnel assigned to the disaster for each operational period. **(See Finance/Administration – Disaster Labor Record - Sample)**
- Ensure that all records identify scope of work and site-specific work location.
- Track all travel requests, forms, and claims.
- Ensure that daily personnel time recording documents are accurate and prepared in compliance with City policy.
- Ensure that all employee identification information is verified to be correct on the time report.
- Ensure that all volunteers assigned as Disaster Service Workers maintain detailed and accurate time cards.
- Ensure that time reports are signed.
- Maintain separate logs for overtime hours.
- Establish and maintain a file for employee time records within the first operational period for each person.
- Maintain records security.
- Close out time documents prior to personnel leaving emergency assignment.
- Keep records on each shift *(Twelve-hour shifts recommended).*
- Coordinate with the Personnel Unit of the Logistics Section.

Equipment Time Recorder

- Assist sections and branches/groups/units in establishing a system for collecting equipment time reports and service records. Design and distribute Force Account and Rented Equipment Records. **(See Finance/Administration – Disaster Force Account and Equipment Records - Samples.)**
- Ensure that all records identify scope of work and site-specific work location.
- Establish and maintain a file of time reports on owned, rented, donated and mutual aid equipment (including charges for fuel, parts, services and operators). Track the type of equipment used, make/model numbers, date and time of usage, operator name/agency affiliation, charges for fuel, parts, and services. Track city-owned equipment separate from rented equipment.
- Maintain list of damaged or lost equipment (for billing and claims purposes) in coordination with Planning Section, Resource Status Unit.
- Maintain records security.

Resources

- See Resources in Common EOC Responsibilities on page 72.

COST ANALYSIS UNIT

SUPERVISOR: Finance/Administration Section Coordinator

Responsibilities

- Provide all cost analysis activity associated with EOC operation.
- Obtain and record all cost data for the emergency/disaster.
- Ensure the proper identification of all equipment and personnel requiring payment.
- Analyze and prepare estimates of EOC costs.
- Maintain accurate record of EOC costs.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

- O See Common EOC responsibilities on page 71.

Assignments/Staffing

- O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Finance Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Maintain a fiscal record of all expenditures related to the emergency/disaster.
- O Prepare and provide periodic cost summaries for the Finance/Administration Section Coordinator and the EOC Director.
- O Maintain cumulative emergency/disaster cost records.
- O Maintain accurate information on the actual cost for the use of all assigned resources.
- O Ensure that all EOC sections maintain proper supporting records and documentation to support claims.
- O Ensure that all financial documents are accurately prepared.

Ongoing Activities

- Collect and record all cost data. **(See Finance/Administration Support Documentation – Disaster Records and Forms).**
- With the Time Keeping Unit ensure that all pieces of equipment under contract and dedicated personnel are properly identified.
- Make recommendations for cost savings to the Finance/Administration Section Coordinator.

Resources

- See Resources in Common EOC Responsibilities on page 72.
- Prepare resources-use cost estimates.

COST RECOVERY UNIT

SUPERVISOR: Finance/Administration Section Coordinator

Responsibilities

- Activate and maintain Disaster Accounting System. **(See Finance/Administration Support Documentation – Disaster Accounting Procedures.)**
- Document information for reimbursement from the state and federal governments.
- Act as liaison with the disaster assistance agencies and insurance companies, and coordinate the recovery of costs as allowed by law and ensure records are maintained in such a manner that will pass audit.
- Receive and allocate payments.
- Coordinate documentation of costs with other sections and departments.
- After the EOC demobilizes, oversee the City's cost recovery team comprised of representatives from each department with emergency response costs.

The Cost Recovery Documentation Unit should be activated at the onset of any disaster. Accurate and timely documentation is essential to financial recovery.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

- O See Common EOC responsibilities on page 71.

Assignments/Staffing

- O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.
- O Inform all sections and departments that the Disaster Accounting System is to be used.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Finance Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Prepare all required state and federal documentation to recover all allowable disaster costs.

- Work with EOC sections and appropriate departments to collect all required documentation.
- Organize and prepare records for final audit.

Ongoing Activities

- Activate and maintain the Disaster Accounting System and procedures to capture and document costs relating to a disaster in coordination with other sections and departments. **(See Finance/Administration Support Documentation – Disaster Accounting Procedures.)**
- Make decisions on cost codes and items to be tracked by the Disaster Cost Accounting System.
- Coordinate cost recovery with disaster assistance agencies and insurance companies.
- Receive and allocate payments.
- Act as liaison with the disaster assistance agencies and coordinate the recovery of costs as allowed by law.
- Provide analyses, summaries and estimates of costs for the Finance/Administration Section Coordinator, EOC Director, and the Ventura County Operational Area as required.
- Ensure a City cost recovery team is identified before the City EOC is demobilized.
- Maintain contact with Ventura County Operational Area, Cal OES and FEMA for advice and assistance in obtaining maximum eligible funds for disaster costs.
- Prepare recommendations as necessary.

Resources

- See Resources in Common EOC Responsibilities on page 72.

COMPENSATION/CLAIMS UNIT

SUPERVISOR: Finance/Administration Section Coordinator

Responsibilities

- Accept as agent for the City claims resulting from an disaster.
- Manage the investigation and compensation of physical injuries and property damage claims involving the City including completing all forms required by workers' compensations programs, insurance companies and local agencies.
- Collects information for all forms required for claim's filings.
- Maintain a file of injuries and illness associated with the personnel activity at the EOC and maintains a file of written statements on injuries.
- Manage and direct all Workers' Compensation and claims specialists assigned to the disaster.
- Provide investigative support in areas of claims for bodily injury and property damage compensation presented to the City.

READ ENTIRE CHECKLIST AT START-UP AND AT BEGINNING OF EACH SHIFT

- O See Common EOC responsibilities on page 71.

Assignments/Staffing

- O Clarify any issues regarding your authority and assignment.

Meetings/Briefings

- O Attend periodic briefing sessions conducted by the Section Coordinator.

Action Planning

- O Assist in preparation of the EOC Action Plan.
- O Attend planning meetings at the request of the Finance Section Coordinator.

Documentation

- O See Documentation and Reports in Common EOC Responsibilities on page 71.
- O Maintain a log of all injuries occurring during the disaster.
- O Develop and maintain a log of potential and existing claims.
- O Ensure that all Compensation–for-injury and Claims logs and forms are complete and routed to the appropriate department for post-EOC processing.
- O Periodically review all logs and forms produced by Unit to ensure:

- Work is complete
- Entries are accurate and timely
- Work is compliant with City of San Buenaventura requirements and policies.

O Prepare insurance claims relative to damage to City property. Notify and file the claims with insurers.

O Provide report of injuries and coordinate with the Safety Officer for mitigation of hazards.

Ongoing Activities

O Coordinate with the Liaison Officer, Agency Representatives, and Personnel Unit of the Logistics Section.

O Determine if there is a need for Compensation-for-injury and Claims Specialists and order personnel as needed.

O Ensure the investigation of all accidents, if possible.

O Ensure that the Personnel Unit of the Logistics Section completes claims for any injured personnel or volunteers working at the emergency.

O Obtain all witness statements pertaining to claim and review for completeness.

Resources

O See Resources in Common EOC Responsibilities on page 72.

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FINANCE/ADMINISTRATION SUPPORT DOCUMENTATION

DISASTER ACCOUNTING RECORDS

When a disaster strikes the City, it may be in the form of an earthquake, storm damage, major oil or chemical/hazardous waste spill, civil disturbance, or a fire emergency. Those employees who are assigned work directly associated with the disaster are to use the Disaster Cost Accounting System numbers for their department. The use of these numbers will enable the city to collect, sort, and document costs associated with the disaster.

The purpose of separate accounting for these costs is to obtain sufficient backup data if the city qualifies for federal and/or state assistance.

Obtaining federal and state assistance requires the City to collect and retain a broad range of original documents that demonstrate that they were used for the disaster/emergency, including:

- Employee time cards showing hours (regular and overtime) worked and which indicate the type and location (GPS locations are preferred) of the work.
- Use of city-owned equipment supported by equipment identification, dates and number of hours used each day, location (GPS locations are preferred), and purpose for using the equipment.
- Use of city-owned supplies supported by a reasonable basis for determining costs, why the material was necessary, and location (GPS locations are preferred) of where the material was used.
- Purchases of material supported by invoices showing quantity, description, unit cost, where (GPS locations are preferred), when and how the material was used.
- Rental of equipment supported by invoices identifying the type and description of equipment, the rate per hour indicating with or without operator, dates and hours used each day, where (GPS locations are preferred), and why the equipment was used.
- Invoices for work performed by contract **must** provide a detailed breakdown of cost, where (GPS locations are preferred), when and why the work was performed. If contractor is providing different types of services, i.e., debris removal and repair work, each category of work should be invoiced separately.

The above records and documentation must be retained for **AT LEAST THREE YEARS** from the date of final settlement of claim. All such records should be forwarded to the Cost Recovery Unit for audit follow-up.

DO'S AND DON'TS FOR USING DISASTER ACCOUNTING RECORDS

DO:
DO record all regular and overtime hours **WORKED** on the disaster, categories C through G.
DO record all overtime hours **WORKED** on the disaster/emergency, categories A and B.
DO write on time card the location and brief description of work performed.
DO charge vehicles and equipment used and indicate when and where they were used.
DO charge equipment rentals to the appropriate charge points.
DO charge outside contracts to the appropriate charge points.
DO document how contracts were awarded.
DO place limits on contract with, "Amount not to exceed". If more work needs to be done, then amend contract.
DO use terms such as "Assess risk to public Health and Safety" instead of "Survey damage".
DO use terms such as "Direct", "Control", "Assign", and "Dispatch" instead of "Administer".
DO report all damage to Cost Recovery Unit.
DO keep all records and unit logs accurately and up to date.
DO ask questions of the Cost Recovery Unit for clarifications.

DO NOT:
DO NOT order everyone to charge all time to the disaster. Only charge those people and hours actually WORKED. **(See above 1st and 2nd Do's)**
DO NOT charge stand-by time to the system. FEMA will only pay for time worked.
DO NOT charge manager overtime to the system. The system will not post it, the City does not pay it, and FEMA will only reimburse what was paid. (If the city does compensate manager overtime, **Do** record this time.)
DO NOT enter into sole source contracts without **explicit documentation** of why it was **necessary**.
DO NOT enter into cost plus contracts.
DO NOT enter into open ended contracts with no cap on expense. Place limits and amend if necessary.
DO NOT use terms such as "Damage Survey": use "Assess for risk to health and safety".
DO NOT use the term "Administer" in place of "Direct", "Control", "Assign", or "Dispatch".
DO NOT assume damage to a City facility is not recoverable. It may be, but let the disaster assistance agencies make that decision. Let's not make it for them.
DO NOT throw away records.
DO NOT forget to ask questions.

NOTE: While recent FEMA regulations do not allow recovery of straight time for emergency response activities (Categories A and B), **record it anyway**. Allocation for straight time shall be charged to your

home function (program) covering categories A and B. The city can recover straight time for other categories and in some cases where we assist other agencies, therefore charge all **Force Account Labor** to the disaster function (program). Better to record and not use than not record and try to recreate.

PROCEDURES FOR APPLYING FOR FINANCIAL ASSISTANCE

General Information

Financial assistance may come from the state alone or both the state and federal governments. For state assistance, it is necessary for the Governor to proclaim a **"Disaster**" in specified counties. For federal assistance, it is necessary for the President to declare a **"Disaster"** in those same locations.

In both cases the lead agency is the California Office of Emergency Services (Cal OES). Their address and phone number is:

Cal OES
Disaster Assistance Division
3650 Schriver
Mather, CA 95655

Phone (916) 845-8100

Pre-Disaster Declaration Steps

Following a disaster, the City will report damage and a rough estimate of costs to the Ventura County Operational Area.

These estimates should include City personnel and equipment costs, damage to facilities with cost to repair, and cost to replace facilities and equipment damaged beyond repair.

The Ventura County Operational Area will transmit the estimates to Cal OES, and then the Governor will decide whether to proclaim a State of Emergency in the County. If the Governor does proclaim a State of Emergency, then the State will request a Presidential declaration. If the President declares a Major Disaster, then FEMA will be involved.

Post Disaster Declaration Steps

At this point, Cal OES will notify the Ventura County Operational Area, who will in turn notify the City. There will usually be an orientation meeting where all agencies desiring to participate will be briefed on the application procedures and the reimbursement process.

Several Forms must be submitted. These are:

1. **Request for Public Assistance (RPA) Form**

   This form indicates that the City will be applying for assistance. Does not restrict City form making changes, but must be sent within 30 days of the declaration date.

2. **Project Listing (OES Form)**

   This indicates the categories and projects which the City is asking assistance for. It may be revised later on. It gives Cal OES an idea of the scope of the damage.

3. **Designation of Applicants' Agency Resolution (OES Form 130)**

   This is a resolution passed by the City Council authorizing specified individuals to act as the City's agent in dealing with Cal OES and FEMA. There is no deadline, but payments cannot be made until Cal OES receives it. A City usually designates as agents one or more of the following:

   - Director of Finance Services
   - Assistant City Manager

4. **Vendor Data Record (Form STD 204)**

   For State's 1099 purposes. No deadline, but no payment until submitted.

5. **Project Application for Federal Assistance (OES Form 89)**

   Formal application for FEMA funding. No specific deadline, but no payment until submitted.

6. **Project Worksheet (PW)**

   The City will fill out this form for all small projects and submit to FEMA's Program Delivery Manager (PGDM). The PGDM will assist the city to write the large project PW. The PWs are prepared based on Permanent Work or Emergency Work.

On-Site Inspections

Cal OES and FEMA may send an inspector to visit each applicant. You may get one inspector from one of the organizations or two to make up a team approach. The inspector(s) will meet with the City's Designated Agent who will arrange meetings with other City personnel as necessary. These local representatives should be people who have detailed knowledge of damaged facilities, cost estimates and potential mitigation work that may prevent future damage.

Past experience has been that these meetings will be on short notice. Cal OES usually sets up a field office and starts scheduling visits soon after. **A week's notice is the best that can be expected.**

The team may want to see:

- Damaged facilities
- Pictures or videos of damage/destruction
- Narratives on work done
- A broad summary of costs to date with estimates of work to be completed.
- Proposals on repair, reconstruction and mitigation projects
- These need not be final, they can be changed

The team will want to discuss:

- How payroll costs are organized and developed
- How payroll cost relates to time worked

- How fringe benefit rates are made up

There is a sixty-day period in which to bring new damage sites to the attention of the disaster assistance agencies from the date of the team's first on-site visit.

Post Project Worksheet Procedures

All documentation and costs must be gathered and sorted to support their respective PWs. Thus, if there is one PW for Debris Clearance, all payroll overtime costs and time cards for those personnel working on Debris Clearance must be sorted and organized to document these costs on that PW. Also all equipment costs (use FEMA rates), dump fees, etc. for this work becomes part of the documentation package for this PW.

The PWs for construction projects will require the same specific documentation. Each will require, as appropriate: engineering studies, architectural plans, bid packages, selection records, contracts, contractor's invoices, payment records, and all other costs. Also note that since government money is involved that the Davis Bacon Act and/or state prevailing wage clauses will apply and must also be documented.

How Payment Is Made

The State Public Assistance program is authorized under the California Disaster Assistance Act (CDAA). CAL OES administers this program. CDAA assistance may be obtained following a Local Emergency with the concurrence of the Director of Cal OES for permanent repairs only or for all eligible costs including personnel costs following the Governor's proclamation of a State of Emergency. The cost share on eligible costs may be 75% state share and 25% local government share. For example: Cal OES determines that there are $100,000 in eligible emergency response costs for the city. Cal OES pays $75,000 and the city must handle the remaining $25,000. **Failure to follow SEMS, however, may disqualify the city from receiving all or part of the state's share and accordingly change a $25,000 loss back to $100,000.** The CDAA program is coordinated as supplemental to the federal program following the Declaration of a Major Disaster by the President of the United States.

The Federal Public Assistance program is authorized under the Stafford Act and is administered by FEMA in coordination with Cal OES at the request of the Governor, who has designated the Cal OES Secretary as his representative. FEMA will pay eligible costs to local governments on a 75% federal share and a 25% state and/or local share. If Cal OES finds that the costs covered by FEMA are also eligible under CDAA criteria, then the state may cover 75% of that 25% share. For example: a city is determined to have $100,000 of eligible emergency personnel costs by FEMA. FEMA will reimburse up to $75,000, leaving $25,000 for the state and local governments to handle. Cal OES determines that the costs are eligible under CDAA and may pay $18,750 which leaves $6,250 for the local government to handle. **Failure to follow SEMS may jeopardize the state share and cause the $6,250 loss to increase up to the full $25,000 state local share.**

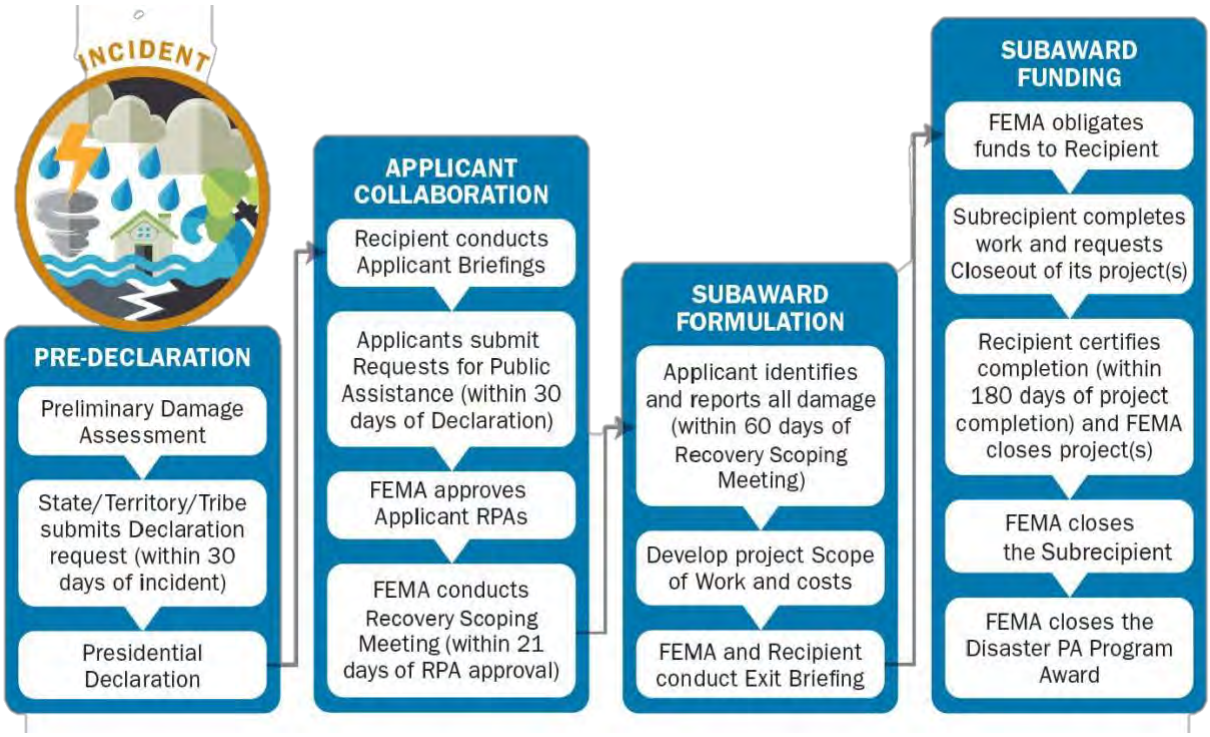
State and federal assistance are based upon reimbursements of eligible costs incurred. There are provisions for partial advances for emergency work; however, the amounts and conditions may change. Assistance is based upon uninsured loss and is not a substitute for insurance. The reimbursement process is a lengthy one involving the complete review of damage estimates and documentation. Actual receipt of funds may take weeks or months.

Sometime later, perhaps two years, the State Controller may audit the project. If discrepancies are found, they will require reimbursement of the disallowed costs if the allowable costs are less than what was already paid. If allowable costs are greater than prior payments, then the balance will follow after official sign off on the claim by FEMA and/or Cal OES. This also is a long process.

Remember:

1. DOCUMENT EACH COST TO A SPECIFIC DISASTER ACTION AND LOCATION.
1. FAILURE TO FOLLOW SEMS MAY COST YOU CDAA ASSISTANCE ON ELIGIBLE EMERGENCY PERSONNEL COSTS.

PUBLIC ASSISTANCE OVERVIEW



FEMA CATEGORIES OF WORK

To facilitate the processing of Public Assistance Program grants, FEMA has divided disaster related work into seven Categories of Work. These categories are listed below and are described in more detail elsewhere in FEMA's Public Assistance Policy Digest and other Public Assistance documents.

Emergency Work

Category A: Debris Removal

Clearance of trees and woody debris; building wreckage; sand, mud, silt, and gravel; vehicles; and other disaster-related material deposited on public and, in very limited cases, private property.

Category B: Emergency Protective Measures

Measures taken before, during, and after a disaster to save lives, protect public health and safety, and protect improved public and private property.

Permanent Work

Category C: Roads and Bridges

Repair of roads, bridges, and associated features, such as shoulders, ditches, culverts, lighting and signs.

Category D: Water Control Facilities

Repair of irrigation systems, drainage channels, and pumping facilities. Repair of levees, dams, and flood control channels fall under Category D, but the eligibility of these facilities is restricted.

Category E: Buildings and Equipment

Repair or replacement of buildings, including their contents and systems; heavy equipment; and vehicles.

Category F: Utilities

Repair of water treatment and delivery systems; power generation facilities and distribution lines; and sewage collection and treatment facilities.

Category G: Parks, Recreational Facilities, and Other Items

Repair and restoration of parks, playgrounds, pools, cemeteries, and beaches. This category also is used for any work or facility that cannot be characterized adequately by Categories A-F.

TYPES OF RECOVERY PROGRAMS

The matrix below depicts some of the recovery programs that may become available during the recovery phase.

NO PROCLAMATION REQUIRED:			
Emergency Loan Program	Farmers, Ranchers, Aquaculturists	U.S.D.A. Farm Services Agency	At least 30 percent crop production or physical loss. US Secretary of Agriculture has discretionary authority to consider other factors.
Physical Loss Loans	Individuals, Businesses	U.S. Small Business Administration (SBA)	A minimum of 25 homes and/or businesses, each sustaining uninsured losses of 40 percent or more of value.
Economic Injury Loans	Businesses	SBA	Governor (or designee) must certify that at least five business concerns have experienced substantial economic injury as a result of disaster.
Fire Management Assistance Grant	State and Local Government	Federal Emergency Management Agency (FEMA)	Reimbursement of fire suppression costs that exceed state threshold.

LOCAL EMERGENCY PROCLAMATION REQUIRED:			
California Disaster Assistance Act - Director's Concurrence	Local Governments	CAL OES	Requires concurrence of the CAL OES . Reimbursement limited to Permanent restoration costs.

GOVERNOR'S STATE OF EMERGENCY PROCLAMATION REQUIRED:			
California Disaster Assistance Act	Local Governments	CAL OES	Permanent restoration and emergency work reimbursed.

PRESIDENTIAL EMERGENCY DECLARATION REQUIRED:			
Public Assistance - Emergency Declaration	Local Governments, State agencies, Certain Non-Profits, Indian Tribes	FEMA	Reimbursement limited to emergency work costs and to $5 million per event.

PRESIDENTIAL MAJOR DISASTER DECLARATION REQUIRED:			
Assistance to Individuals and Households Program (IHP)	Individuals	FEMA/State cost share	Significant impacts to real and personal property when financial assistance cannot be addressed by other means (i.e., personal insurance).
State Supplemental Grant Program	Individuals	State of California	Significant impacts to real and personal property when financial assistance cannot be addressed by other means (i.e., IHP assistance, personal insurance).
Crisis Counseling	County Mental Health	FEMA	Disaster-related mental health needs beyond local government resources.
Disaster Unemployment Assistance	Individuals	U.S. Department of Labor	Significant impacts to employment or place of work as a result of a major disaster (including self-employed and farmers)
Public Assistance - Major Disaster Declaration	Local Governments, State agencies, Certain Non-Profits, Indian Tribes	FEMA	Reimbursement for permanent restoration and emergency work.

INDIVIDUAL ASSISTANCE SECTION

The Cal OES Individual Assistance Section coordinates with local, state and federal entities to provide recovery assistance following a disaster that impacts individuals, businesses, and/or the agricultural community in the State of California. This may include:

- Providing pre-disaster guidance and training to public entities in order to maximize assistance
- Facilitating and coordinating preliminary damage assessments to determine the impact of disaster
- Coordinating the implementation of local, state, and federal assistance programs to address disaster-related needs
- Monitoring programmatic progress and in certain circumstances provide oversight in program administration
- Establishing local assistance centers in partnership with local, state, and federal entities to facilitate disaster recovery

Types of Assistance Individual Assistance Program assistance may include:

- Loans or grants for real and/or personal property losses
- Tax relief
- Crisis counseling
- Information on veteran's, Social Security, contractor, or insurance services

- Housing assistance
- Repair or replacement of real and personal property
- Unemployment and job training
- Assistance for agricultural losses
- Food commodities
- Business and personal tax relief
- Legal services
- Contractor information
- Insurance information
- Other unmet emergency needs.

Programs The following individual assistance (IA) programs are examples of assistance that may become available, dependent on the size and scope of the event.

- Assistance to Individuals and Households Program (IHP)
- State Supplemental Grant Program (SSGP)
- U.S. Department of Agriculture (USDA) Emergency Loans
- U.S. Small Business Administration (SBA) Disaster Loan Programs
- Disaster Unemployment Assistance (DUA)
- Mental Health services

HAZARD MITIGATION

Purpose

This section establishes actions, policies and procedures for implementing Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 (Public Law 93 288, as amended), following a Presidentially declared Emergency or Major Disaster. It also assigns hazard mitigation responsibilities to various elements of federal, state, and local governments in California.

Authorities And References

Activities enumerated in this enclosure will be conducted in accordance with the enabling legislation, plans, and agreements listed in Part One, Section Seven -Authorities and References.

General

Hazard mitigation is defined as any action taken to reduce or eliminate the long-term risk to human life and property from disasters. Section 322 of Public Law 106 390 requires, as a condition of receiving certain federal disaster aid, that local governments develop a mitigation plan that outlines processes for identifying the natural hazards, risks and vulnerabilities in their jurisdiction. Mitigation plans must:

Describe actions to mitigate hazards, risks and vulnerabilities identified under the plan.

Establish a strategy to implement those plans.

Specific plan requirements are listed in 44 CFR Section 201.6. Local jurisdictions without an approved hazard mitigation plan will not be eligible to receive funds for the Hazard Mitigation Grant (HMGP), Pre-Disaster Mitigation (PDM) or Flood Mitigation Assistance (FMA) programs

Local mitigation plans are the jurisdiction's commitment to reduce risks from natural hazards and guide decision makers as they commit resources to reduce the damage from natural hazards. Hazard mitigation planning and actions are continuous year-round efforts.

Pre-Disaster Mitigation (PDM)

The Pre-Disaster Mitigation (PDM) grant program may provide financial assistance to local jurisdictions to develop and update plans or identify and mitigate pre-disaster conditions to reduce vulnerability.

PDM funding is provided through the National Pre-Disaster Mitigation Fund and is subject to Congressional appropriations. PDM projects are nationally competitive and opportunities to apply for grants are announced once a year by the Governor's Office of Emergency Services.

Hazard Mitigation Grant Program

Following a disaster, mitigation opportunities and financial assistance may be available through the Hazard Mitigation Grant Program (HMGP). The program funds projects that are cost-effective and which substantially reduce the risk of future damage, hardship, loss or suffering as a result of a natural disaster. The HMGP is funded for each disaster; total allocation is based upon a sliding scale of between 7.5 and 15 percent of the Federal Emergency Management Agency's (FEMA) estimate of all public infrastructure damages (not emergency work) and individual assistance costs in a particular disaster. As an incentive to encourage the development of local plans, DMA2000 permits local government to be eligible for up to a 20 percent share of the total damages estimated in the Public and Individual Assistance programs if they have an approved local hazard mitigation plan. HMGP awards are competitive among jurisdictions that are part of the disaster declaration.

Flood Mitigation Assistance Program (FMA)

FEMA's Flood Mitigation Assistance Program (FMA) provides funding to communities to reduce or eliminate the long-term risk of flood damage to buildings, manufactured homes and other structures insurable under the National Flood Insurance Program (NFIP). The program provides grants for mitigation planning, projects and technical assistance to reduce claims under the NFIP. A priority of the FMA Program is to fund flood mitigation activities that reduce the number of repetitive loss structures insured by the NFIP. Repetitive loss structures are those that have sustained two or more losses, each exceeding $1000, within a ten year period. FEMA encourages communities to develop plans that address repetitive loss properties.

The federal contribution for an individual HMGP, PDM or FMA project can be up to 75 percent of the cost of the proposed project with applicants providing match funding through a combination of either state, local or private sources. Awards go to projects that best demonstrate the goals and objectives of local mitigation programs. HMGP funding may not be used to fund any mitigation project that is eligible under

Public Assistance or other federal programs, though it may be used to complement or enhance mitigation funded under Individual or Public Assistance.

Implementation

Following each presidentially declared Emergency or Major Disaster, the Regional Director of the Federal Emergency Management Agency (FEMA) and the Governor execute a document called the Federal/State Agreement. This agreement includes appropriate provisions for hazard mitigation. Under the "typical paragraph" set out to serve this purpose, the State agrees to:

- Evaluate or have the applicant evaluate specific natural hazards in the disaster area and make appropriate recommendations to mitigate them.
- Follow up with applicants to ensure that the appropriate hazard mitigation actions are taken.
- Follow up with applicants to ensure that the appropriate hazard mitigation plan or plans are developed and submitted to the FEMA Regional Director for concurrence.
- Review and update as necessary disaster mitigation portions of emergency plans.

A hazard mitigation officer is appointed for the state and local applicant. These individuals will constitute the hazard mitigation survey team which will:

- Identify significant hazards in the affected areas, giving priority to disaster related hazards.
- Evaluate impacts of these hazards and recommend mitigation measures.

The hazard mitigation survey team uses information from Project Worksheets (PWs) and visits selected sites where significant damage has occurred. The state and local representatives on the hazard mitigation survey team are responsible for ensuring that there is adequate consultation among interested federal, state, and local parties.

The hazard mitigation survey team also prepares a hazard mitigation plan which is submitted to the FEMA Regional Director through the Governor's authorized representative within 180 days after a Presidential declaration. The plan:

- Recommends hazard mitigation measures for local, state, and federal agencies.
- Establishes short- and long-term planning frameworks for implementation of hazard mitigation efforts.

The State sets mitigation priorities and awards for HMGP grants. FEMA conducts the final eligibility review to ensure that all projects are compliant with Federal regulations. This includes the Federal law that requires States and communities to have FEMA-approved mitigation plans in place prior to receipt of HMGP project funds.

Responsibilities

Hazard mitigation measures include avoidance, reduction and land use regulations. Key responsibilities of local governments are to:

- **Participate** in the process of evaluating hazards and adoption of appropriate hazard mitigation measures, including land use and construction standards.

- **Appoint** a Local Hazard Mitigation Officer, if appropriate.
- **Participate** on Hazard Mitigation Survey Teams and Inter-agency Hazard Mitigation Teams, as appropriate.
- **Participate** in the development and implementation of section 409 plans or plan updates, as appropriate.
- **Coordinate and monitor** the implementation of local hazard mitigation measures.

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Find Address
AIR PHOTOS
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Zoom Out
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Bookmarks...
N. VENTURA AVE
W. STANLEY AVE
N. OLIVE ST
W. MAIN ST
E. SANTA CLARA ST
E. THOMPSON BLVD
HARBOR BLVD
SHORELINE DR
MISSION AVE
W. PARK ROW AVE
KELLOGG ST
BELL WAY
BRAKEY RD
FERRO DR
BUENA VISTA ST
POLI ST
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Name: Fire Hazard Severity Zones per State (DRAFT 2007)

Display Field: SRA

Type: Feature Layer

Geometry Type: esriGeometryPolygon

Description: These polygons represent the severity of Fire Hazard, classified by the State of California as: Very High, High, Moderate, Non-Wildland/Non-Urban, or Urban Unzoned. These shapes have been color-coded according to these classifications. This set of shapes comes from the LRA 2007 DRAFT map on the State's website. See: https://osfm.fire.ca.gov/media/6847/fhszl06_1_map56.pdf

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Copyright Text:

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Max Scale: 0

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Supports Statistics: false

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Can Scale Symbols: false

Use Standardized Queries: true

Supports Datum Transformation: true

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Spatial Reference: 102699 (102699)

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Field 2: null
Field 3: null
Field Delimiter: ,
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Default Label: null
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Supports Distinct: false
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Supports Query With ResultType: false
Supports Returning Geometry Centroid: false

HasZ: false

HasM: false

Has Attachments: false

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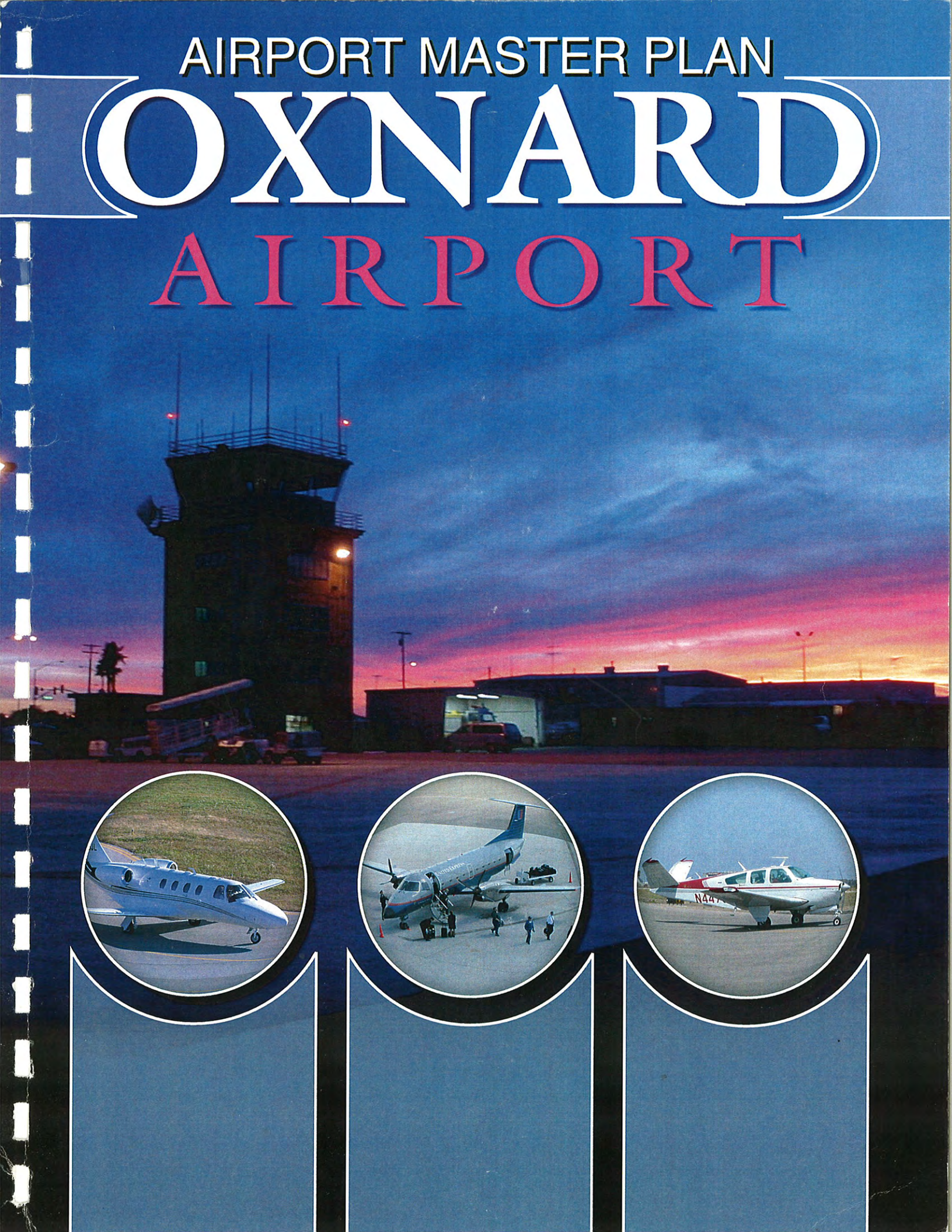
Supported Operations: Query Generate Renderer Return Updates

Iteminfo Thumbnail Metadata

AIRPORT MASTER PLAN

OXNARD AIRPORT



AIRPORT MASTER PLAN

FOR

OXNARD AIRPORT
Oxnard, California

Prepared For
Ventura County

By
Coffman Associates, Inc.

August 2004

"The contents of these documents reflect the views of Coffman Associates, Inc., which is responsible for the parts and accuracy of the data contained herein. The contents do not necessarily reflect the official views or policy of the FAA. Acceptance of these documents by the FAA does not in any way constitute a commitment on the part of the United States to participate in any development depicted herein nor does it indicate that the proposed development is environmentally acceptable in accordance with Public Laws 90-495, 91-190, 91-258, 94-343, and/or 100-223."

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OXNARD AIRPORT
Oxnard, California

Airport Master Plan

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INVENTORY

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Chapter Two
FORECASTS

Chapter Three
FACILITY REQUIREMENTS

Chapter Three (Continued)

Chapter Four
ALTERNATIVES

Chapter Four (Continued)

Chapter Five
DEVELOPMENT PLANNING PROGRAM

EXHIBITS

EXHIBITS (Continued)

Appendix A
GLOSSARY AND ABBREVIATIONS

Appendix B
PAC COMMENTS

PHASE I – PAC COMMENTS
PHASE II – PAC COMMENTS
PHASE III – PAC COMMENTS

Appendix C
AIRPORT LAYOUT PLAN

Appendix D
ENVIRONMENTAL EVALUATION

OXNARD AIRPORT

INTRODUCTION AND SUMMARY

INTRODUCTION AND SUMMARY

The Oxnard Airport Master Plan is being prepared to provide the community and public officials with proper guidance for future development that addresses aviation demands and is wholly compatible with the environment. This study has the specific objective of re-examining the recommended direction from the 1996 Draft Airport Master Plan. This will include incorporating subsequent changes where conditions and circumstances may have invalidated previous recommendations within the context of the airport mission statement. Still valid concepts may be retained, while new concepts will be developed for those alternatives that are either no longer valid or considered to be unacceptable or unworkable. Coordination between Ventura County (Sponsor), local, regional, state, and federal agencies, and the consultant team will be essential to bringing together all facts and data relevant to the project and to developing a mutual agreement regarding future development of the airport.

The Master Plan will provide recommendations from which the County may take action to maintain and improve the airport and all associated services important to public needs, convenience, and economic growth. The Master Plan is intended to benefit all residents of the area by providing a comprehensive plan which supports and balances continued opportunity for aviation activities and the environmental preservation of the surroundings.

AIRPORT MISSION STATEMENTS

The mission statements for both the Ventura County Department of Airports and the Oxnard Airport are provided here for reference and guidance during the preparation, review, and implementation of the Oxnard Airport Master Plan.

DEPARTMENT OF AIRPORTS MISSION STATEMENT

- To provide safe, efficient, maintained, and accessible facilities for the provision of general aviation and limited commuter airline service needs of the citizens of Ventura County.
- To limit the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.
- To optimize the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.

OXNARD AIRPORT MISSION STATEMENT

Oxnard Airport shall:

- be a publicly owned, operated, and managed general aviation airport with a strong emphasis on safety, cooperation with its neighbors, and responsible flight operations.
- maintain a viable center for air commerce, which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.
- make every reasonable effort to limit the hours of air operations through a curfew, and to reduce noise and air pollution nuisances caused by airport users and operations.
- provide the region with safe and efficient access to the national air transportation system and general aviation.
- continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County.

SUMMARY AND RECOMMENDATIONS

The proper planning of a facility of any type must consider the demand that may occur in the future. For Oxnard Airport (OXR), this involved updating forecasts to identify potential future aviation demand. Because of the cyclical nature of the economy, it is virtually impossible to predict with certainty year-to-year fluctuations in activity when looking five, ten, and twenty years into the future.

Recognizing this reality, the Master Plan is keyed more to potential demand "horizon" levels than future dates in time. These "planning horizons" were established as levels of activity that will call for consideration of the implementation of the next step in the Master Plan program. By developing the airport to meet the aviation demand levels instead of specific points in time, the airport will serve as a safe and efficient aviation facility which will meet the operational demands of its users while being developed in a cost efficient manner. This program allows the County to change specific development in response to unanticipated needs or demand.

The forecasts of aviation activity at Oxnard Airport were developed taking into account the two mission statements. This results in forecasts that are somewhat constrained compared to those developed by previous planning efforts. The forecast planning horizons are summarized in **Table A** and **Exhibit A**.

TABLE A
Aviation Demand Planning Horizons
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
ANNUAL OPERATIONS				
Commuter	3,650	4,500	5,600	6,500
Air Taxi	9,756	11,500	12,600	14,500
Military	1,541	1,500	1,500	1,500
General Aviation	73,803	78,200	83,900	92,700
Total Operations	88,750	95,700	103,600	115,200
ANNUAL PASSENGERS				
Enplanements	22,829	35,000	45,000	60,000
Based Aircraft	142	150	158	170

Exhibit A also presents historic activity for the four primary activity indicators. It is evident from this exhibit that the long term planning horizon activity levels for based aircraft and operations will remain well below levels attained in the 1990's. The long term horizon for enplanements is just slightly above the 1990 high level.

The Airport Layout Plan set acts as a blueprint for everyday use by management, planners, programmers, and designers. These plans were prepared on computer to help ensure their continued use as an everyday working tool for the Department of Airports.

As indicated in the introduction, this Master Plan is intended to re-examine the recommended direction of the 1996 Draft Master Plan that was never adopted by the County Board of Supervisors.

The principal airfield recommendations focus upon safety, security, and compatibility. It is of key importance to ensure that airport design standards are upheld to the maximum extent feasible, particularly in relation to the runway safety area (RSA). Other recommendations are provided to improve the efficiency and circulation on the airfield. **Exhibit B** depicts the airfield recommendations.

Runway 7-25 will remain the only runway at Oxnard Airport. The runway is currently 5,950 feet long and 100 feet wide with a pavement strength of 70,000 pounds dual wheel loading. It is planned to remain at this pavement strength to continue to accommodate the design aircraft indicated earlier.

An analysis of the runway's safety area requirements indicated that the runway does not meet the FAA design standards for the approach category C and D aircraft that regularly use the airport. The RSA beyond the east end of the runway extends for approximately 750 feet before reaching the airport's perimeter service road. The recommended plan for the east end involves relocating the departure end threshold for Runway 7 250 feet to the west.

It is also recommended that, in the interest of safety and to minimize disruption of airline service, the airport continue to improve its instrument approaches. This will likely mean improving approach minimums as improved capabilities become available through GPS (global positioning system).

Exhibit B also depicts the property acquisition recommendations. All property acquisitions are related to direct control of land use for the enhancement of safety. The intent is to either clear properties, maintain undeveloped properties, or to at least maintain current uses with no new development.

Recommended landside improvements are primarily associated with maintenance, redevelopment, and modernization of existing facilities. The facility requirements indicated that, with the addition of previously approved executive hangars, and the replacement of Hangar One, facilities area should be adequate from a space standpoint. Older hangar facilities may require replacement during the planning period. In addition, future mandates in security could require alterations in the terminal area.

The primary improvement items over the planning horizons include the following:

Short Term

- Meet changing security needs.
- Continue pavement rehabilitation and maintenance

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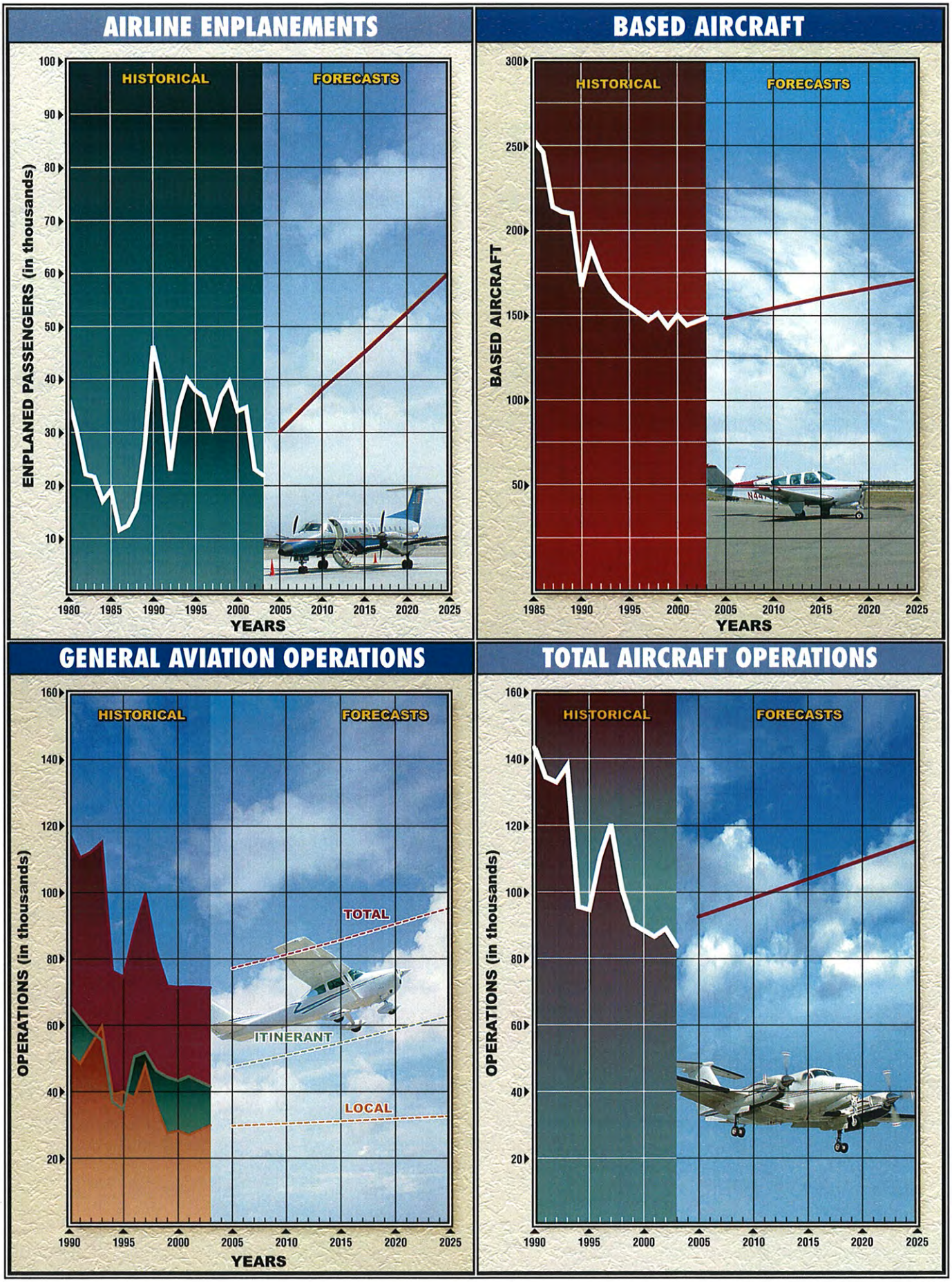

Exhibit A
AIRPORT ACTIVITY
HISTORIC AND FORECAST

02MP01-B-11/4/03

LEGEND

- Existing Airport Property Line
- Future Airport Property Line
- Proposed Property Acquisition
- Object Free Area (OFA)
- Runway Safety Area (RSA)
- Building Restriction Line (BRL)
- Existing Easements
- Proposed Avigation Easement

Victoria Avenue

CAT I APPROACH RPZ

CURRENT APPROACH RPZ

Teal Club Road

CURRENT APPROACH RPZ

CAT I APPROACH RPZ

RELOCATED SEGMENTED CIRCLE

RUNWAY 7 MALSR

RUNWAY 7 DEPARTURE THRESHOLD

BLAST PAD 120' x 150'

LIGHT LANE EASEMENT

Relocated Port-a-Port Hangars

Remove Port-a-Port Hangars

OXNARD

Return to GA Parking Apron

Reserve For Future Aviation Development

Redevelop Older Hangars As Needed

APPROVED EXECUTIVE HANGARS 21 UNITS 60' x 50'

5th Street

DEPARTURE RPZ

Rental Car Lot

Self-Maintenance Hangar

Relocated Port-a-Port Hangars

Ventura Road

NORTH

0 800 1600

SCALE IN FEET

OXNARD AIRPORT

Exhibit B
RECOMMENDED PLAN

- Correct extended RSA off east end of runway
- Construct blast pad off east end of runway
- Continue fee simple and easement acquisitions for safety enhancement
- Repair and maintain existing structures as necessary
- Make security improvements as may become necessary

Intermediate Term

- Improve Runway 7 GPS approach minimums by installing approach light system
- Continue airport facility rehabilitations and modernizations
- Remodel terminal building

Long Term

- Continue rehabilitation and modernization of facilities as necessary.

The full implementation of the Master Plan would involve a financial commitment of $16.4 million over the planning period (**Table B**). Approximately 90 percent of the total costs will be eligible for grants-in-aid administered by the Federal Aviation Administration (FAA). The source of these grants is the Aviation Trust Fund which is a depository for aviation taxes such as those from airline tickets, aviation fuel, aircraft registrations, and other aviation-related fees. Most eligible projects can receive up to 95 percent funding from the FAA.

Primary commercial service airports such as Oxnard Airport qualify for entitlement funding through the program. Oxnard Airport is currently earmarked for $1.0 million in annual entitlement funds annually. These funding levels, however, are not guaranteed. The amount of federal funding that will be made available will depend upon the future of the Airport Improvement Program.

TABLE B
CIP Financial Assumptions (2004 $)

	Short Term	Intermediate Term	Long Range
Total Project Costs	$6,757,000	$3,171,000	$6,500,000
Grant Eligible	$5,997,900	$3,012,450	$5,795,000
AIP Entitlements	$5,000,000	$7,000,000	$10,000,000
State Funding	$0	$0	$0
Remaining Grant Eligible Costs	$997,900	$0	$0
Matching Share Costs	$439,100	$158,550	$305,000
Remaining PFC-Eligible Costs	$1,437,000	$158,550	$305,000
Passenger Facility Charges (PFC)	$722,400	$1,227,650	$2,289,750
Remaining Matching Share	714,600	$0	$0
Non-Eligible Costs	$320,000	$0	$400,000
Remaining Airport CIP Costs	$1,034,600	$0	$400,000

The Ventura County Department of Airports will need to use other sources of airport-generated funding as well. Commercial service airports such as Oxnard Airport have been authorized by Congress to impose passenger facility charges (PFCs) as a means to collect revenues for airport improvements. A PFC of up to $4.50 is allowed. The airport has been authorized at this maximum level and currently uses the revenue to fund eligible projects in excess of the entitlement funding received. Most of the projects not eligible for federal funding can be funded from the revenue they generate.

CONCLUSIONS

In conclusion, the Master Plan is reviewed with regard to the Department of Airports and Oxnard Airport Mission Statements.

DEPARTMENT OF AIRPORTS MISSION STATEMENT

- ***To provide safe, efficient, maintained, and accessible facilities for the provision of general aviation and limited commuter airline service needs of the citizens of Ventura County.***

The Master Plan concept preserves the current general aviation and commuter activities for which Oxnard Airport is used. It includes recommendations to enhance safety and efficiency, as well as to maintain existing facilities.

- ***To limit the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.***

The Master Plan utilizes a forecast that takes into account the following development qualifiers:

- No increase in runway length.
- No significant increase in terminal space.
- Planning to maintain and serve based aircraft levels equal to its current market share of registered aircraft in the county.

- ***To optimize the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.***

With the exception of an approach light system, segmented circle relocation, and perimeter fencing, all development in the Master Plan will occur on current airport property. The only property acquisitions recommended are those designed to enhance operational safety.

OXNARD AIRPORT MISSION STATEMENT

Oxnard Airport shall:

- ***be a publicly owned, operated, and managed general aviation airport with a strong emphasis on safety, cooperation with its neighbors, and responsible flight operations.***

The Master Plan is based upon maintaining the Oxnard Airport as a County-owned and operated airport. It remains open to general aviation activity that can operate within the constraints of its facilities. The major improvement recommendations for the airfield are based upon meeting airport design standards to the extent feasible.

- ***maintain a viable center for air commerce, which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.***

The Master Plan continues to provide for maintenance and modernization of existing terminal area facilities to serve the needs of its users. The plan does consider growth in general aviation and airline traffic beyond the current levels of activity in support of economic development and transport-ation needs of the City and County.

- ***make every reasonable effort to limit the hours of air operations through a curfew, and to reduce noise and air pollution nuisances caused by airport users and operations.***

Since the Master Plan is primarily a facility-related plan, the consideration of limited hours and/or curfews is beyond the purview of the Master Plan. The Master Plan is also limited in means to reduce noise and air pollution. The Master Plan, however, does not recommend any improvements that would increase the potential for noise and air pollution.

- ***provide the region with safe and efficient access to the national air transportation system and general aviation.***

Safety, maintenance, and modernization of the Oxnard Airport is the primary emphasis of the Master Plan. The plan will allow the airport to continue to be a regional access to the national air transportation system.

- ***continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County.***

The limited development recommendations of the Master Plan are based in large part on the continued search for a new airport. The Master Plan recognizes that the forecasts for Oxnard Airport fall well short of meeting the commercial service demand in Ventura County. As other commercial airports in the Los Angeles Basin reach their capacities, it will become more incumbent upon the County to have access to adequate airport facilities to serve the needs of its citizens, businesses, and economic well-being.

OXNARD AIRPORT

Chapter One
INVENTORY

CHAPTER ONE

INVENTORY

The initial step in the preparation of an airport master plan is the collection of information that will provide a basis for further analysis in subsequent chapters. Information is gathered regarding not only the airport but also the region it serves. This chapter will begin with an overview of the existing conditions at Oxnard Airport consisting of airport facilities, airspace, and the airport's role in regional, state, and national aviation systems. This will be followed by background information regarding Ventura County, the City of Oxnard, and the regional area, including information regarding surface transportation and the socioeconomic profile.

Information provided in this chapter was obtained through on-site inspections of the airport, interviews with airport management, airport tenants, and various governmental agencies. Information was also obtained from available documents and studies, both in print and online, concerning the Oxnard Airport and the Ventura County area.

HISTORICAL PERSPECTIVE

The current airport setting and configuration is depicted on **Exhibit 1A**. Oxnard Airport was opened by Ventura County in 1934 with a 3,500-foot dirt runway. In 1938, the runway was paved and a large hangar, now referred to as Hangar Two, was constructed by the Works Progress Administration (WPA). After the completion of these improvements, the Oxnard Flying School began operations in 1939 with two aircraft. In 1940, the U.S. Army Air Corps established a primary training base for its pilots at the airport. The training facility was named the Mira Loma Flight Academy. During the Air Corps tenure at the

airport, two more hangars, Hangar One and Hangar Three, and a housing facility were constructed. The housing facility, that was used to house the pilots and their trainers, still exists across the street from the airport and is now the Mira Loma Apartments.

The declaration of war in December 1941 resulted in the relocation of the Oxnard Flying School to Boulder City, Nevada as civilian flying was not allowed within 200 miles of the coastline. The Army Air Corps continued training at the airport prior to 1944 when the airport was reassigned to the U.S. Navy until the Naval Air Station at Point Mugu could be completed. In 1945, the Navy relocated to the completed station at Point Mugu and the Oxnard Flying School returned to the airport. Control of the airport was returned to Ventura County by the federal government in 1948 and in the following year, the State of California issued the airport an operating permit.

Scheduled airline flights began in 1946 by Southwest Airlines and later Pacific Airlines. Since that time, a number of commercial service providers have served the airport including Cable, Golden West, Wings West, American Eagle, Mesa, and America West Express.

Major improvements at the airport have included the construction of an airport traffic control tower in 1960, the extension of Runway 7-25 to 5,947 feet in 1963, construction of a terminal building in 1971, the installation of taxiway lighting in 1973, and the installation of precision instrument landing and approach lighting systems in 1976. It should also be noted that in 1974 radar approach control was established at Point Mugu, thereby allowing positive radar coverage to aircraft flying into and out of Oxnard Airport.

In October 1994, Hangar One, the original hangar constructed at the airport, was lost to fire. Plans are underway to replace this hangar with a corporate hangar and office complex which will serve the general aviation community at the airport.

Currently, Oxnard Airport is positioned to serve all segments of the civil air transportation industry as it has facilities to accommodate commercial airline activity and general aviation users.

The commercial airline segment of the air transportation industry includes all air carriers providing scheduled air service. Currently, regularly scheduled commercial service is provided by Sky West Airlines, operating under a code share agreement with United Airlines as United Express.

General aviation is the largest and most diverse segment of the air transportation industry. General aviation aircraft constitute 97 percent of all civil aircraft in the United States today. Use of these aircraft covers a broad spectrum of activities from personal and recreational flying to air ambulance to business and commercial uses such as aerial applicators, aerial surveyors and photographers, and the non-scheduled transport of company staff from one location to another. General aviation aircraft range from one and two seat piston-powered

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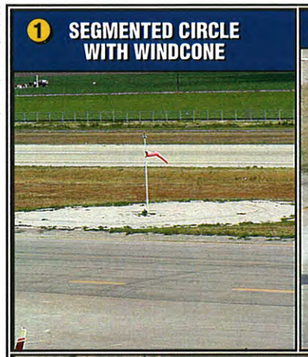

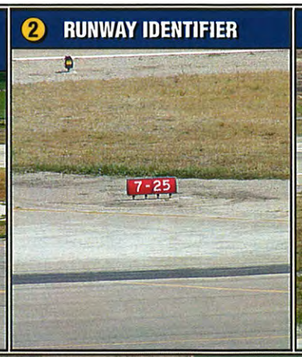

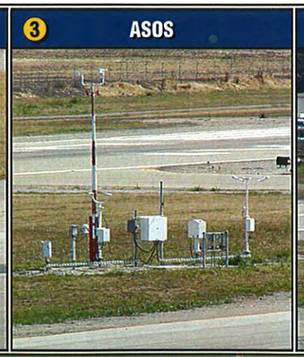

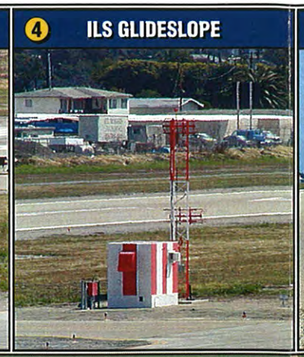

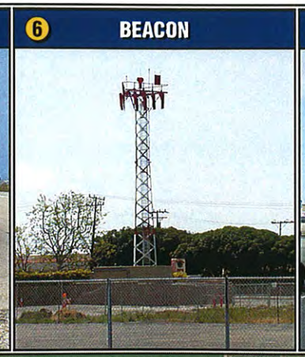

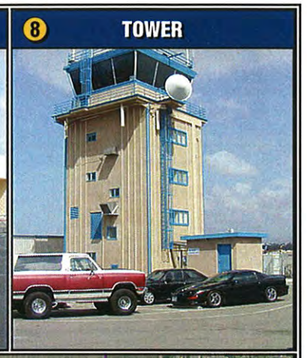

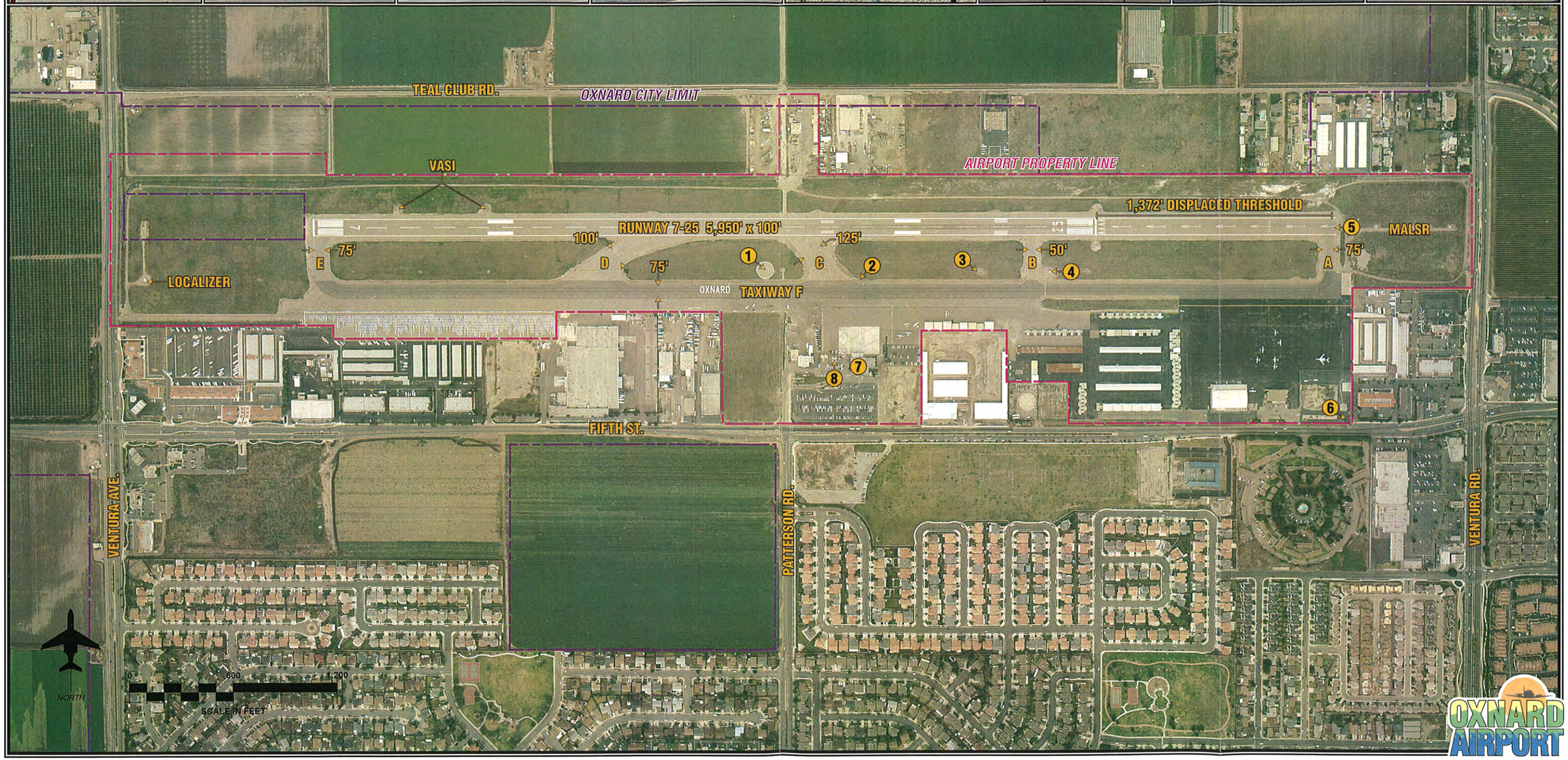

OXNARD AIRPORT

Exhibit 1A
EXISTING AIRFIELD FACILITIES

aircraft to long-range business jet aircraft capable of flying non-stop to international destinations. In the spring of 2002, there were 144 aircraft based at Oxnard Airport.

THE AIRPORT'S SYSTEM ROLE

Airport planning exists on many levels: local, state, and national. Each level has a different emphasis and purpose. Locally, this master plan is the primary airport planning document.

At the national level, the airport is included in the National Plan of Integrated Airport Systems (NPIAS). The NPIAS includes a total of 3,660 airports (both existing and proposed) which are important to national air transportation. Oxnard Airport is classified as a primary commercial service airport within the NPIAS.

At the state level, the airport is included in the **California Aviation System Plan** (CASP) as one of 29 primary commercial service airports in the State of California.

At the regional level, the airport is included in the **Southern California Association of Government's Regional Aviation Plan**. This plan encompasses 65 airports including six air carrier airports, three commuter airports, 45 general aviation airports, and 11 existing or recently closed military installations. Within this plan, Oxnard Airport is classified as a commuter airport.

AIRPORT ADMINISTRATION

Oxnard Airport is a commercial service airport owned by Ventura County and operated by the Ventura County Department of Airports which is charged with the day-to-day operation, repair, maintenance, and administration of the airport. The Department of Airports oversees Oxnard and Camarillo airports and is staffed with 32 employees. Of these 32 staff members, ten are allocated directly to Oxnard Airport.

The airport is overseen by the Ventura County Board of Supervisors. The Board receives recommendations from the Ventura County Airport Advisory Commission, which is concerned with the technical aspects of the airport, and the Oxnard Airport Authority, which is concerned with the business aspects of the airport.

The Aviation Advisory Commission, which makes recommendations on both Oxnard and Camarillo airports, consists of ten appointed members. The members are appointed by the County Board of Supervisors. Each supervisor appoints two individuals to serve on this commission.

The Airport Authority is responsible for only Oxnard Airport and consists of five members - two members from the Board of Supervisors, two members from the Oxnard City Council, and one member from the public.

AIRPORT SETTING

The City of Oxnard lies equidistant between Santa Barbara and Los Angeles, approximately 62 miles from each. **Exhibit 1B** depicts the city in its regional setting. Oxnard Airport lies one and one-half miles east of the Pacific coastline, and is situated along the coastal edge of the 200-square mile Oxnard Plain. The airport is located on approximately 216 acres of land in the northwest portion of the City of Oxnard.

AIRPORT FACILITIES

This section presents a description of the existing facilities at Oxnard Airport. These facilities can be divided into two distinct categories, airside facilities and landside facilities. Airside facilities include those directly associated with aircraft operation. Landside facilities include those necessary to provide a safe transition from surface-to-air transportation and support aircraft servicing, storage, maintenance, and operational safety.

AIRSIDE FACILITIES

Airside facilities, previously depicted on **Exhibit 1A**, are those facilities directly associated with the safe and efficient movement of aircraft on the airport. In most cases, airside facilities dictate the types and levels of aviation activity capable of operating at an airport. Airside facilities include runways, taxiways, airport lighting, and navigational aids. Airside facility data is discussed in detail below and is summarized in **Table 1A**.

Runways

Oxnard Airport is equipped with a single 5,950-foot long by 100-foot wide runway. This runway, Runway 7-25, is oriented in an east-west alignment. Due to obstructions in the east approach, the Runway 25 landing threshold has been displaced 1,372 feet to the west, which reduces the landing length available for Runway 25 to 4,578 feet.

Runway 7-25 has an asphalt surface and is strength-rated for 50,000 pounds single-wheel loading (SWL) and 70,000 pounds dual-wheel loading (DWL). SWL refers to the design of the aircraft landing gear that has a single wheel on each main landing gear strut and DWL refers to a landing gear that has dual wheels on each main landing strut.

Taxiways

The taxiway system at Oxnard Airport, as depicted on **Exhibit 1A**, consists of a full length parallel taxiway and five connecting taxiways, all located on the south side of Runway 7-25.

Taxiway F is the full length parallel taxiway. This taxiway is 75 feet wide and provides access to all apron and hangar facilities on the airport.

Taxiways A, B, C, D, and E are connecting taxiways providing access between the runway to Taxiway F. Taxiways A (east end) and E (west end) are 75-foot wide right angle taxiways which provide access for aircraft taking off and exiting from both ends of the runway.

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OXNARD AIRPORT

Exhibit 1B
LOCATION MAP

TABLE 1A
Runway Data
Oxnard Airport

	RUNWAY	
	7	**25**
Runway Length (feet) Runway Width (feet)	5,950' 100'	
Runway Surface Surface treatment	Asphalt Grooved	
Displaced Threshold	No	1,372'
Runway Load Bearing Strength (pounds) Single Wheel Loading (SWL) Dual Wheel Loading (DWL)	 50,000 70,000	
Runway Lighting	MIRL	
Approach Lighting	No	MALSR
Runway Pavement Markings	Non-precision Instrument	Precision Instrument
Visual Slope Indicator	VASI-4	PAPI-2
Instrument Approach Procedure	GPS	ILS
Traffic Pattern	Left	Left
Taxiway Lighting	MITL	
Taxiway, Taxilanes, Apron Pavement Markings	Centerline markings, signage	
Other Facilities	ASOS, Segmented Circle, Wind Cones	
Airport Elevation	42.5 MSL	

MIRL/MITL: Medium intensity runway/taxiway lighting
MALSR: Medium intensity approach lighting system with runway alignment indicator lights
VASI: Visual approach slope indicator
PAPI: Precision approach path indicator
ASOS: Automated surface observation system

Taxiway B is a 50-foot wide exit taxiway located approximately 1,500 feet west of the displaced threshold for Runway 25. Taxiways C and D are angled exit taxiways. Taxiway C is 125 feet wide and is angled to serve Runway 25 landings. Taxiway D is 100 feet wide and is angled to serve as an exit for Runway 7 landings.

Airfield Lighting

Airfield lighting systems extend an airport's usefulness into periods of darkness and/or poor visibility. A variety of lighting systems are installed at Oxnard Airport for this purpose. These lighting systems, categorized by function, are summarized as follows.

- IDENTIFICATION LIGHTING

The location of an airport at night is universally indicated by a rotating beacon which projects two beams of light, one white and one green, 180 degrees apart. The rotating beacon at Oxnard Airport is located in the southeast corner of the airfield near Fifth Street.

- RUNWAY AND TAXIWAY LIGHTING

Runway and taxiway lighting are light fixtures placed near the pavement edge to define the lateral limits of the pavement. This lighting is essential for maintaining safe operations at night and/or during times of poor visibility in order to maintain safe and efficient access from the runway and aircraft parking areas.

Runway 7-25 is equipped with medium intensity runway lighting (MIRL). Medium intensity taxiway lighting (MITL) has been installed on its associated taxiways.

- APPROACH LIGHTING

Approach lighting systems (ALS) consist of a configuration of signal lights that extend into the approach area from the runway threshold. The purpose of an ALS is to aid pilots in transitioning from instrument flight to visual flight for landing. A medium intensity approach lighting system with runway alignment indicator lights (MALSR) is installed at the end of Runway 25 to assist pilots in landing to the west during inclement weather conditions. The MALSR extends for 2,800 feet from the displaced runway threshold.

Two types of visual approach slope guidance aids are utilized at the airport: visual approach slope indicator (VASI) and precision approach path indicator PAPI). While configured differently, the VASI and PAPI have a similar purpose of providing visual approach slope guidance to pilots. Generally, each lighting aid consists of a system of lights, located at various distances from the runway threshold which, when interpreted by the pilot, give him or her an indication of being above, below, or on the designed descent path to the runway.

The two-box PAPI (PAPI-2) system installed for Runway 25 is located on the left, approximately 400 feet past the displaced threshold. Runway 7 is equipped with a four-box VASI (VASI-4) system which is located on the left side of the runway approximately 400 feet from the runway threshold.

- AIRFIELD SIGNS

Airfield identification signs assist pilots in identifying their location on the airfield and direct them to their desired location. Lighted airfield signs at Oxnard Airport are located along Runway 7-25 and its associated taxiways. They are also used to identify aircraft hold positions, taxiway intersections, as well as the intersection of the connecting taxiways and runway.

- PILOT-CONTROLLED LIGHTING

The MIRL and MALSR systems on Runway 7-25 can be controlled through a pilot-controlled lighting system (PCL) when the airport federal control tower (FCT) is closed. This system allows pilots to turn on and/or increase the intensity of the lighting system from the aircraft with the use of the aircraft's radio transmitter.

Pavement Markings

Pavement markings aid in the movement of aircraft along airport surfaces and identify closed or hazardous areas on the airport. Non-precision instrument markings on Runway 7 identify the runway designations, centerline, touchdown point, and aircraft holding positions. Runway 25 has precision instrument markings that identify the runway centerline, designation, touchdown point, and pavement edge as well as the displaced threshold. Taxiway and apron centerline markings are provided to assist pilots in maintaining proper clearance from pavement edges and objects near the taxiway/taxilane edges. Pavement markings also identify aircraft tie-down positions and aircraft holding positions.

Other Facilities

The airport also has a lighted wind cone inside a segmented circle. A lighted wind cone provides information to pilots regarding wind conditions both day and night. The segmented circle consists of a system of visual indicators designed to provide traffic pattern information at airports. The segmented circle and wind cone are located midfield near the intersection of Taxiways C and F. Additional windcones are located near each end of Runway 7-25 between the runway and Taxiway F.

Air Traffic Control

Oxnard Airport has an FCT which provides traffic control services from 7:00 a.m. to 9:00 p.m. The purpose of the FCT is to control aircraft movement within the local Class D airspace and on the runway and taxiway system. Approach and departure control is provided by Point Mugu Approach Control between the hours of 7:00 a.m. and 11:00 p.m. Between the hours of 11:00 p.m. and 7:00 a.m., approach and departure control services are provided by the Los Angeles Air Route Traffic Control Center (ARTCC).

Aircraft operating in the vicinity of the airport are not required to file any type of flight plan or to contact any air traffic control facility unless they are entering

airspace where contact is mandatory. Air traffic advisories and certain weather information can be obtained using the airport CTAF. Enroute air traffic control services are provided through the Los Angeles ARTCC, which controls aircraft in a large multi-state area.

LANDSIDE FACILITIES

Landside facilities are the ground-based facilities that support the aircraft and pilot/passenger handling functions. These facilities typically include the passenger terminal complex, aircraft storage/maintenance hangars, aircraft parking apron and support facilities such as fuel storage, automobile parking, and roadway access. Landside facilities at Oxnard Airport are identified on **Exhibit 1C**.

Airline Terminal Facilities And Services

The airport terminal building is located at midfield, east of the FCT. Areas for airline ticketing and operations, baggage claim, rental car reservation offices, security screening, a lounge, and a restaurant are provided within the terminal building. **Exhibit 1D** depicts terminal area floor plan.

Fifth Street provides access to the airport. The terminal access road connects to this street and extends north to the terminal building. The two-lane, one-way road then turns west and runs between the terminal building and the vehicle parking lot. The terminal road ends at Patterson Road on the west side of the parking lot. Patterson Road returns traffic to a signaled intersection at Fifth Street.

The passenger pick-up or drop-off area consists of 160 feet of curb in front of the terminal building. Three vehicle parking lots are located within the terminal complex area. The public parking lot, located across the street from the terminal building, consists of 220 public and 36 rental car parking spaces. A total of 26 public spaces are designated for short term parking with the remaining spaces available for long term parking.

A rental car lot is located east of the terminal building. This lot provides 73 parking spaces for rental car storage and service.

A 43-space employee parking lot is located north and west of the terminal access road, near the base of the FCT. Access to this parking lot is provided via Patterson Road.

The terminal apron is located directly north of the terminal building. The apron provides for aircraft parking, access, and circulation for the commuter aircraft.

Scheduled air service at Oxnard Airport is provided by United Express using Embraer Brasilia 120 (EMB-120) aircraft. **Table 1B** summarizes the scheduled flights for the airport as of April 2002. All flights either arrive from or depart to Los Angeles International Airport.

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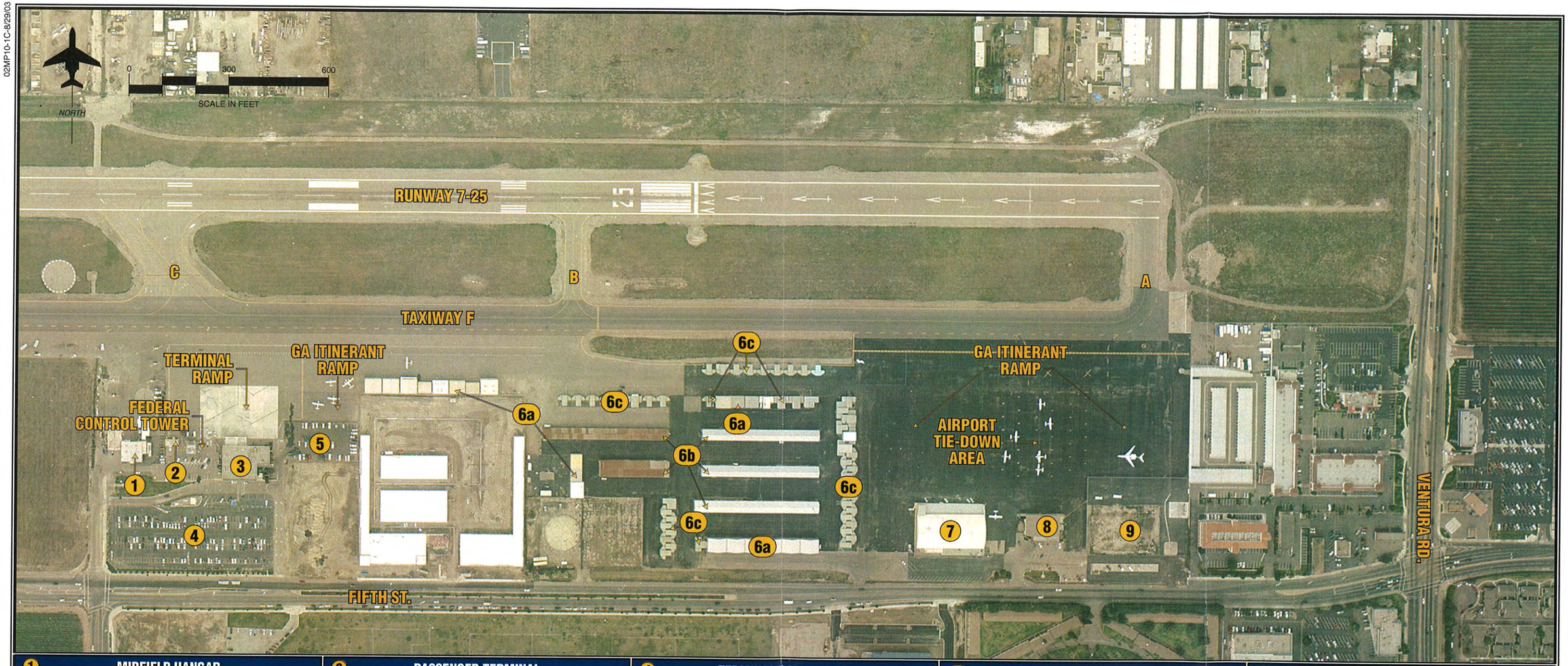
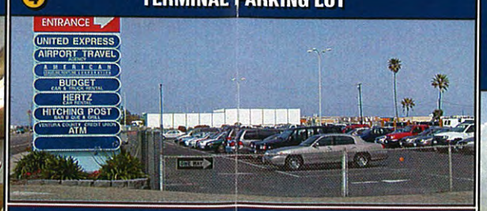


1 MIDFIELD HANGAR

2 ARFF FACILITY

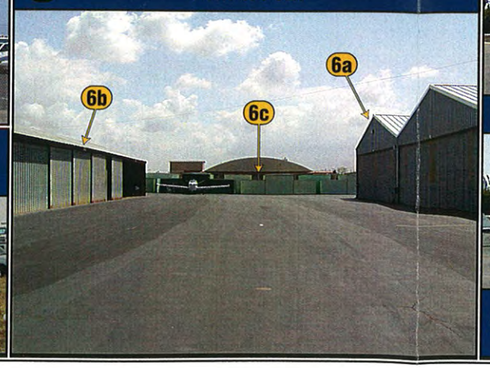
3 PASSENGER TERMINAL

4 TERMINAL PARKING LOT



5 RENTAL CAR READY-RETURN PARKING LOT

6a EXECUTIVE HANGARS
6b T-HANGARS
6c PORT-A-PORT



7 HANGAR 3

8 HANGAR 2

9 FUTURE LOCATION FOR HANGAR 1

Exhibit 1C
LANDSIDE FACILITIES

02MP10-1D-4/17/03

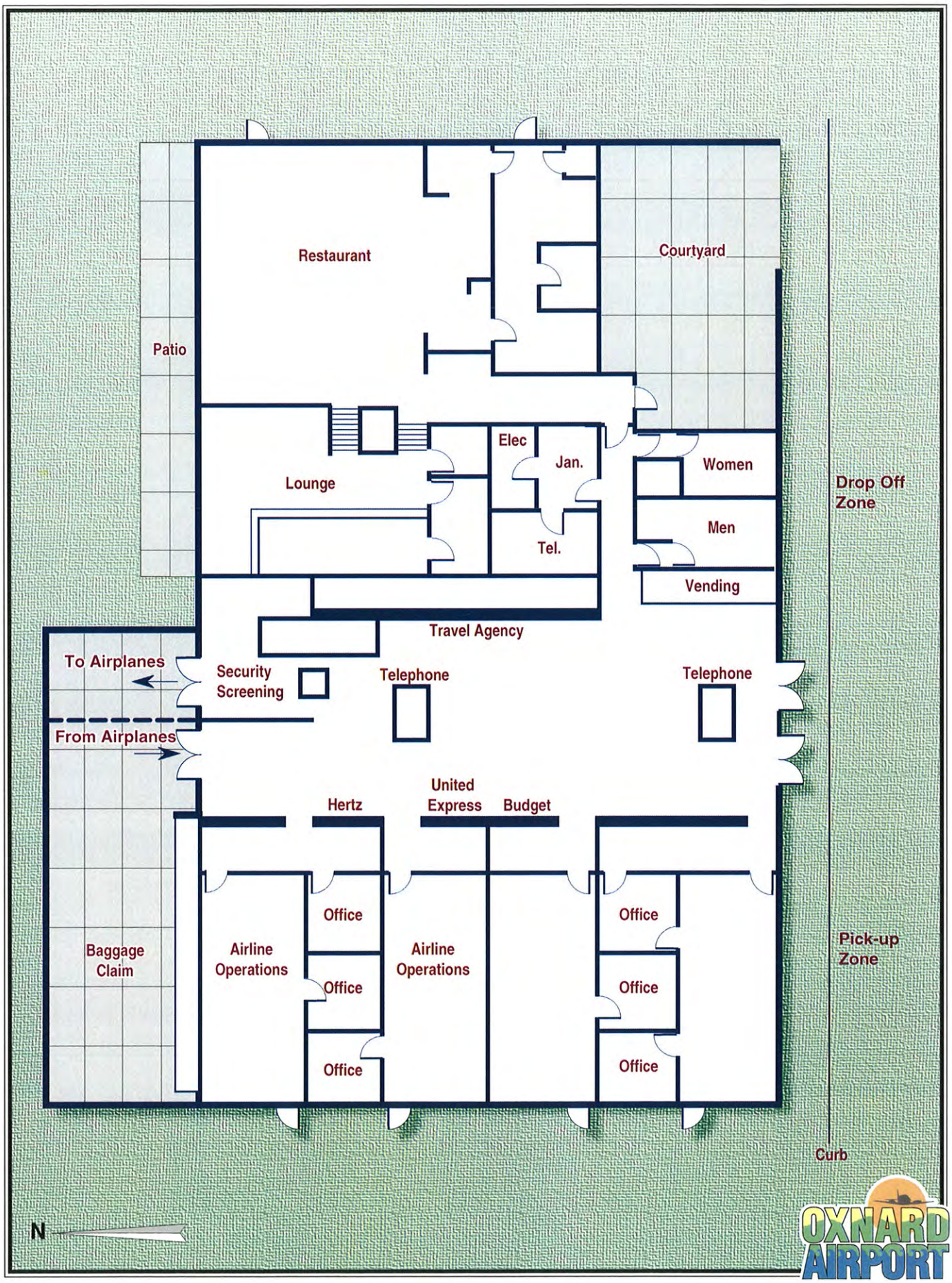


Exhibit 1D
EXISTING TERMINAL BUILDING

TABLE 1B Commercial Air Service Flight Schedule (April 2002)		
Flight Number	**Departure Time**	**Destination**
5133	7:15 a.m.	Los Angeles
5135	9:26 a.m.	Los Angeles
5137	11:40 a.m.	Los Angeles
5139	4:28 p.m.	Los Angeles
5141	8:29 p.m.	Los Angeles

General Aviation Facilities And Services

Oxnard Airport is also a full service general aviation airport. The general aviation facilities at Oxnard Airport are located both east and west of the terminal and are described in the following sections.

- FIXED BASE OPERATORS

One fixed base operator (FBO), Oxnard Jet Center, currently provides service at the airport. This FBO occupies Hangars Two and Three on the southeast side of the airport, as well as a hangar immediately west of the FCT. The FBO leases approximately 3,786 square feet of office space, 15,671 square feet of hangar space, and 10,000 square feet of ramp space in Hangars Two and Three. Aircraft parking, charters, fuel, catering services, aircraft maintenance, oxygen, pilot training, and aircraft rental are some of the services provided by this FBO within these hangars.

The midfield hangar contains 2,575 square feet of office space, 4,485 square feet of hangar space, and fronts 55,000 square feet of ramp space. Helicopter services are provided from this location.

- HANGAR AND AIRCRAFT STORAGE FACILITIES

Hangar facilities at Oxnard Airport include conventional hangars, executive hangars, T-hangars, and Port-a-Ports (portable hangars). All hangars, except the one occupied at midfield by Aspen Helicopters, are located east of the terminal facilities and are depicted on **Exhibit 1C.**

A total of three conventional hangars, 20 executive hangars, 53 T-hangars, and 51 Port-a-Ports are located at the airport. Of these hangars, 55 are privately-owned and 69 are owned by the airport. All of the conventional hangar space is presently occupied by the FBO or by other business enterprises.

There are 39 aircraft tie-downs located in front of Hangar Two. A total of 11 of these spaces are leased to the FBO: four are leased privately, and the rest are utilized by transient aircraft.

- FUEL FACILITIES

Fuel storage facilities consist of two 12,000-gallon Jet A fuel tanks and two 12,000-gallon AvGas fuel tanks. The FBO provides fueling services to both commercial and general aviation aircraft with the use of two Jet A fuel trucks and one AvGas fuel truck.

- AIRPORT RESCUE AND FIREFIGHTING

Airport rescue and firefighting (ARFF) services at Oxnard Airport are provided 24 hours a day. The ARFF facility, located at the base of the ATCT, is continuously staffed by one of five trained ARFF officers. ARFF quick response equipment includes one truck with the capacity for 600 gallons of water, 110 gallons of aqueous film forming foam (AFFF), and 500 gallons of dry chemicals.

- AIRPORT MAINTENANCE

Airport maintenance equipment is stored in a secured storage area in the maintenance and storage facility located north of the midpoint of Runway 7-25.

- GENERAL AVIATION AUTOMOBILE PARKING

A number of parking spaces are available near the various general aviation facilities at Oxnard Airport. The parking spaces include approximately 21 spaces at the midfield location of Aspen Helicopters, 23 spaces in front of Hangar Two, and 42 spaces in front of Hangar Three.

Weather Observations

An Automatic Surface Observation System (ASOS) is installed at Oxnard Airport. The ASOS provides automated aviation weather observations 24 hours a day. The system updates weather observations every minute, continuously reporting significant weather changes as they occur. The ASOS system reports cloud ceiling, visibility, temperature, dew point, wind direction and speed, and barometric pressure. The ASOS is located on the west side of the airfield.

Utilities

The City of Oxnard provides water and sewer services to the airport. Electrical service is provided by Edison and natural gas service is provided by the Southern California Gas Company.

Tenants

Table 1C contains a summary of the airport tenants at Oxnard Airport. The location of many of these business was previously depicted on **Exhibit 1C**.

AIRSPACE AND AIR TRAFFIC CONTROL

The Federal Aviation Administration (FAA) Act of 1958 established the FAA as the responsible agency for the control and use of navigable airspace within the United States. The FAA Western-Pacific Region, with offices in Lawndale, CA, controls the airspace in southern California.

TABLE 1C
Airport Tenants
Oxnard Airport

Tenant	Type of Business	Space Leased	Location
AeroSpaceNews.com	aviation publication	office	Hangar Three
Aspen Helicopters/ Oxnard Jet Control	FBO, agricultural application services	office, hangar, ramp, storage	Hangar Two, midfield hangar
Bailey Industries	aircraft research and development	office, hangar, storage	Hangar Three
Camarillo Electronics	avionics storage	storage	general hangar area
Metro Computers	computers	office	Hangar Three
Reel Graphics	aircraft graphics	office	Hangar Three
TwinMill	aircraft research and development	land	east end of airport
ETR Graphics	printing	storage	general hangar area
Airport Travel	travel agency	airport counter	terminal building
Budget	car rental	airport counter, cargo	terminal building
Hertz	car rental	office, airport counter	terminal building
United Airlines	airline	office, airport counter, cargo	terminal building
Buky's BBQ	restaurant	restaurant	terminal building

The FAA has established the National Airspace System (NAS) to protect persons and property on the ground and to establish a safe and efficient airspace environment for civil, commercial, and military aviation. The NAS covers the common network of U.S. airspace, including: air navigation facilities; airports and landing areas; aeronautical charts; associated rules, regulations, and procedures; technical information; personnel and material. The system also includes components shared jointly with the military.

AIR TRAFFIC CONTROL

Air Route Traffic Control Center (ARTCC)

The FAA has established 21 ARTCCs in the continental United States to control aircraft operating under instrument flight rules (IFR) within controlled airspace and while in the enroute phase of flight. An ARTCC assigns specific routes and altitudes along federal airways to maintain separation and orderly air traffic flow. ARTCCs use

radio communication and long range radar with automatic tracking capability to provide enroute air traffic services. Typically, the ARTCC splits its airspace into sectors and assigns a controller or team of controllers to each sector. As an aircraft travels through the ARTCC, one sector hands off control to another. Each sector guides the aircraft using discrete radio frequencies.

The Los Angeles ARTCC controls IFR aircraft entering and leaving the southern California area. The area of jurisdiction for the Los Angeles center includes most of the State of California, and portions of Nevada, Arizona, and Utah.

Radar Air Traffic Control Facility (RATCF)

The ARTCC delegates certain airspace to local terminal facilities which are responsible for the orderly flow of air traffic arriving and departing the major terminals. The Los Angeles ARTCC has delegated airspace to Point Mugu radar air traffic control facility (RATCF). The RATCF is staffed and operated by the U.S. Navy and is under contract with the FAA for terminal control of civilian aircraft.

RATCF uses direct radio communications and an automated radar terminal tracking system to control air traffic within its jurisdiction. Air traffic control services provided by Point Mugu RATCF include radar vectoring, sequencing and separation of IFR aircraft, and traffic advisories for all aircraft. The RATCF provides air traffic control services between 7:00 a.m. and 11:00 p.m. Between 10:00 p.m. and 6:00 a.m., air traffic control services are provided by the Los Angeles ARTCC.

Oxnard Airport Federal Control Tower (FCT)

The Oxnard Airport federal control tower operates daily from 7:00 a.m. to 9:00 p.m. local time, controlling aircraft movement within the Class D airspace and on the runway and taxiway systems. The IFR arrivals and departures from Oxnard Airport are coordinated with Point Mugu RATCF.

AIRSPACE STRUCTURE

To ensure a safe and efficient airspace environment for all aspects of aviation, the FAA has established an airspace structure that regulates and establishes procedures for aircraft using the National Airspace System. The U.S. airspace structure provides for two basic categories of airspace, controlled and uncontrolled, and identifies them as Classes A, B, C, D, E, and G as described below.

Class A Airspace

Class A airspace is designated in F.A.R. Part 71.33 for positive control of aircraft. The area includes specified airspace within the coterminous United States from 18,000 feet above mean sea level (MSL) to and including Flight Level 600 (60,000 feet MSL). Within Class A airspace, only IFR operations are allowed. The aircraft must have

special radio and navigation equipment and the pilot must obtain an air traffic control (ATC) clearance to enter Class A airspace. The pilot must have at least an instrument rating.

Class B Airspace

Class B airspace has been established at 29 high density airports in the United States as a means of regulating air traffic activity in these areas. They are established on the basis of a combination of enplaned passengers and volume of operations. Los Angeles International Airport (LAX), located 41 nautical miles (nm) south of Oxnard, is the only airport with Class B airspace in the area.

Class B airspace is designed to regulate the flow of uncontrolled traffic above, around, and below the arrival and departure airspace required for high performance, passenger-carrying aircraft at major airports. Aircraft operating in Class B airspace must have special radio and navigation equipment and must obtain an air traffic control (ATC) clearance. In order to operate within Class B airspace, a pilot must have at least a private pilot's certificate or be a student pilot who has met the requirements of F.A.R. 61.95, requiring special ground and flight training for Class B airspace. The LAX Class B airspace has an irregular shape due to the terrain and the number of airports in the vicinity of the airport.

The Mode C veil, an area associated with Class B airspace, extends for 30 nautical miles from LAX. When operating within this area, all aircraft must be equipped with a transponder with altitude encoder (Mode C).

Class C Airspace

The FAA has established Class C airspace at 120 airports around the country as a means of regulating air traffic activity in these areas. In order to fly inside Class C airspace, the aircraft must have a two-way radio and an encoding transponder, and the pilot must obtain an ATC clearance. Pilots must have at least a student pilot's certificate to fly in Class C airspace.

Burbank-Glendale-Pasadena Airport, located approximately 41 nautical miles east-southeast, and Santa Barbara Airport, located 40 nautical miles northwest of Oxnard Airport, are surrounded with Class C airspace. Oxnard Airport, however, does not have Class C airspace.

Class D Airspace

Class D airspace is normally a circular area with a radius of four to five miles around the primary airport and any extensions necessary to include instrument approach and departure paths. This controlled airspace typically extends upward from the surface to about 2,500 feet above the elevation of airports with operating control towers. Oxnard Airport, Camarillo Airport, and Naval Air Weapons Station (NAWS) Point Mugu are encompassed by Class D airspace.

As depicted on **Exhibit 1E**, Oxnard's Class D airspace is interrupted to the

southeast by NAWS Point Mugu's Class D airspace, and to the east by Camarillo Airport's Class D airspace. The ceiling of Oxnard and Camarillo Class D airspace is 2,000 feet mean sea level (MSL). NAWS Point Mugu's Class D airspace has a ceiling of 3,000 feet MSL.

Class E Airspace

The Class E category contains airspace formerly designated as control zones for non-towered airports and transition surfaces. The Class E airspace for a non-towered airport extends from the surface upward to overlying or adjacent controlled airspace. Otherwise, Class E airspace terminates at the base of Class A airspace. When Class E airspace is designated as a surface area, it is configured to contain all instrument approaches. When designated as an extension of Class B, Class C, or Class D airspace, the extension allows standard instrument approach procedures without communications requirements for VFR operations.

Class G Airspace

Airspace not designated as Class A, B, C, D, or E is considered uncontrolled, or Class G, airspace. Air traffic control does not have the authority or responsibility to exercise control over air traffic within this airspace. Class G airspace lies between the surface and 700 feet above the surface underneath much of the Class E transition surfaces in the study area. Also, the Oxnard and Camarillo Class D airspace reverts to Class G airspace when the ATCT is not operational.

Special Use Airspace

Immediately adjacent to and south of NAWS Point Mugu lies an area of restricted airspace (R-2519). This area is operated continuously and has an unlimited floor and ceiling. The airspace is restricted due to ground-to-air missile firings from NAWS Point Mugu out over the Pacific Ocean.

Approximately 10 nautical miles due south of Oxnard Airport is Warning Area 289. In general, restricted and warning areas indicate the existence of unusual, often invisible, hazards to aircraft such as artillery firing, aerial gunnery, or guided missiles. Warning areas are established beyond the three-mile limit along U.S. coastlines. Though the activities conducted within warning areas may be as hazardous as those in restricted areas, warning areas cannot be legally designated as restricted areas because they are over international waters. Penetrations of warning areas during periods of activity may be hazardous to aircraft not participating in national defense operations. Los Angeles ARTCC is the controlling facility for the warning area. The warning area extends from NAWS Point Mugu out into the Pacific Ocean in a triangular shape. The warning area is used for weapons training by Navy and Marine high performance aircraft.

Approximately 20 nautical miles north of Oxnard, an eight-mile wide corridor, which runs in an east-west direction, is designated as special military use airspace. Flights in this area are not restricted, however, pilots must be aware of the potential airspace conflict

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LEGEND

- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VOR
- VORTAC
- VOR-DME
- Compass Rose
- Wilderness Areas
- Class B Airspace
- Class C Airspace
- Class D Airspace
- Class E Airspace
- Class E Airspace with Floor 700 ft. or greater above surface
- Restricted Areas
- Special Airport Traffic Areas
- Victor Airways
- Military Training Routes

Source: Los Angeles Sectional Chart, US Department of Commerce, National Oceanic and Atmospheric Administration December 27, 2001

OXNARD AIRPORT

Exhibit 1E
AREA AIRSPACE

in the area. The sectional chart lists the floors and ceilings of the operations, and instructs navigators to contact Hawthorne Flight Service Station (FSS) to receive activity status of military operations in the area.

Airspace Conflicts

There are a number of airspace conflicts in the Oxnard Airport area including obstructions, terrain, and congested airspace.

The location of Oxnard Airport in proximity to NAWS Point Mugu and Camarillo Airport limits the available area near the airport for unrestricted VFR flying. For safety purposes, air traffic controllers at Oxnard must call RATCF and wait for approval, prior to releasing aircraft on instrument departures from Oxnard Airport. After permitting an instrument departure from Oxnard Airport, RATCF will not permit another departure until positive radar contact is established with the first aircraft.

NAVIGATIONAL AIDS

Navigational aids are electronic devices that transmit radio frequencies which pilots of properly equipped aircraft translate into point-to-point guidance and position information. The types of electronic navigational aids available for aircraft flying to or from Oxnard Airport include the very high frequency omnidirectional range facility (VOR), non-directional beacon (NDB), and the global positioning system (GPS).

The VOR, in general, provides azimuth readings to pilots of properly equipped aircraft by transmitting a radio signal at every degree to provide 360 individual navigational courses. Frequently, distance measuring equipment (DME) is combined with a VOR facility (VOR/DME) to provide distance as well as direction information to the pilot. The Camarillo VOR and the Ventura VOR are used by pilots flying to or from Oxnard Airport.

The NDB transmits nondirectional radio signals whereby pilots of properly equipped aircraft can determine the bearing to or from the NDB facility and "home on" or track to or from the station. Pilots flying to or from Oxnard Airport can use the Pacoima NDB.

GPS is an additional navigational aid for pilots enroute to the airport. This system was initially developed by the United States Department of Defense for military navigation around the world and is currently being utilized more and more in civilian aircraft. GPS uses satellites placed in orbit around the earth to transmit electronic signals, which properly equipped aircraft use to determine altitude, speed, and navigational information. With GPS, pilots can directly navigate to any airport in the country and are not required to navigate using a specific navigational facility. The FAA is proceeding with a program to gradually replace all traditional enroute navigational aids with GPS over the next 20 years.

LOCAL OPERATING PROCEDURES

Oxnard Airport is situated at 43 feet MSL. The traffic pattern altitude for all aircraft at the airport is 1,000 feet above the airfield elevation (1,043 feet MSL). Both runways utilize a left-hand traffic pattern. In this manner, aircraft approach the desired runway end following a series of left-hand turns.

Instrument Approach Procedures

Instrument approach procedures are a series of predetermined maneuvers, established by the FAA, which utilize electronic navigational aids such as those discussed in the previous section. The use of approach procedures assist pilots in locating and landing at an airport during low visibility and cloud ceiling conditions.

The capability of an instrument approach is defined by the visibility and cloud ceiling minimums associated with the approach. Visibility minimums define the horizontal distance that the pilot must be able to see to complete the approach. Cloud ceilings define the lowest level a cloud layer (defined in feet above the ground) can be situated for a pilot to complete the approach. If the observed visibility or cloud ceilings is below the minimums prescribed for the approach, the pilot cannot complete the instrument approach.

- PRECISION INSTRUMENT APPROACHES

Most precision approaches in use in the United States today are instrument landing systems (ILS). An ILS provides an approach path for the exact alignment and descent of an aircraft on final approach to a runway. The system provides three functions: guidance, provided vertically by a glide slope antenna and horizontally by a localizer; range, furnished by marker beacons or distance measuring equipment; and visual alignment, supplied by the approach light systems and runway edge lights.

Oxnard Airport has one published precision approach to Runway 25. Runway 25 is equipped with an ILS consisting of a localizer, glide slope, and a MALSR in addition to middle and outer marker beacons. The precision ILS approach to Runway 25 at Oxnard Airport uses a standard 3.0 degree glide slope.

Typically, a precision ILS approach aided by a localizer, glideslope, and MALSR will provide Category I minimums (one-half mile visibility and 200-foot cloud ceilings). However, for Oxnard Airport, obstructions located in the approach require weather minimums for the ILS Runway 25 approach to be at or above one mile visibility and 300-foot cloud ceilings.

- NON-PRECISION APPROACHES

Utilizing the Camarillo VOR/DME or the global positioning system (GPS), two non-precision approaches are available at Oxnard. The VOR or GPS Runway 25 approach can be flown when cloud ceilings are 500 feet above ground level (AGL) or greater and visibility is one mile for aircraft with approach speeds of up to 121 knots, 1-1/4 miles for aircraft with approach speeds less than 141 knots, and 1-1/2 miles for aircraft with approach speeds less than 166 knots. The VOR or GPS Runway 25 approach also provides for a circling approach. The circling approach also requires a cloud ceiling of 500 feet AGL for aircraft with approach speeds less than 141 knots. Visibility requirements are the same for aircraft with approach speeds less than 121 knots, but increase to 1-1/2 miles for aircraft with approach speeds less than 141 knots. For aircraft with approach speeds greater than 141 knots but less than 166 knots, the circling approach minimums increase to 700 feet AGL cloud ceilings and 2-1/4 miles visibility.

The GPS approach to Runway 7 is the second published non-precision approach at Oxnard Airport. GPS signals ensure adequate terrain and obstruction clearances during final approach to the runway. The GPS approach to Runway 7 can be flown when cloud ceilings are 500 feet AGL or greater and visibility is one mile for aircraft with approach speeds of less than 121 knots, 1-1/4 miles for aircraft with approach speeds greater than 121 but less than 141 knots, and 1-1/2 miles for aircraft with approach speeds greater than 141 knots but less than 166 knots. The GPS Runway 7 approach also allows a circling approach. The minimums for the circling approach are the same as the circling VOR or GPS approach to Runway 25.

Standard Instrument Departures

Currently, two Standard Instrument Departure (SID) procedures are published for Oxnard Airport -- the Skiff Four and the Camarillo Three SID. Each of these SIDs have two procedures: take-off and transition routing. The take-off procedures are designed to get the aircraft off the ground to a specified point. Once aircraft reach the designated point, they continue to their destination via transition routes or routes assigned by air traffic control. Transition routes are paths delineated by VOR/DME radials.

Aircraft departing Runway 7 utilizing the Skiff Four SID are directed to turn left after take-off and intercept the Camarillo VOR/DME radial 249. Aircraft are to continue climbing westbound to the Skiff intersection then via a transition or assigned route. Aircraft departing Runway 25 climb via the Camarillo VOR/DME radial 249 to the Skiff intersection. Once at the Skiff intersection, aircraft continue via a transition route or other route assigned by air traffic control.

Aircraft departing Runway 7 utilizing the Camarillo Four departure climb to the Camarillo VOR/DME via an assigned or transition route. Aircraft utilizing the Camarillo Three SID

departing Runway 25 turn right after take-off and intercept the Camarillo VOR/DME radial 249 via an assigned or transition route.

Although the airport is supported by the aforementioned SIDs, discussions with Oxnard ATCT staff indicate that they are not often used. For noise abatement purposes, radar vectors are given to aircraft in order to avoid noise-sensitive areas. ATCT staff indicate that aircraft departing Runway 25 are assigned a heading of 270 degrees between 7:00 a.m. and 8:00 a.m. and 255 degrees between 8:00 a.m. and 9:00 p.m.

Customary ATC And Flight Procedures

Flights to and from Oxnard Airport are conducted using both Instrument Flight Rules (IFR) and Visual Flight Rules (VFR). Instrument Flight Rules are those that govern the procedures for conducting instrument flight. Visual Flight Rules govern the procedures for conducting flight under visual conditions (good weather). Most air carrier, military, and general aviation jet operations are conducted under IFR regardless of the weather conditions.

Visual Flight Rule Procedures: Under VFR conditions, the pilot is responsible for collision avoidance and will typically contact the tower when approximately 10 miles from the airport for sequencing into the traffic pattern.

Generally, VFR general aviation traffic stays clear of the more congested airspace and follows recommended VFR flyways in the area. There are no VFR fly routes located in the vicinity of Oxnard Airport; however, many VFR fly routes are located to the southeast in the greater Los Angeles area.

Instrument Flight Rule Procedures: The Point Mugu RATCF handles all IFR traffic to and from Oxnard Airport. IFR arrival traffic is transferred to the RATCF by the ARTCC as traffic enters RATCF airspace. Traffic approaching from the southeast is typically vectored to the Camarillo or Ventura VOR/DME and then to the airport via the precision approach procedure. Aircraft approaching from the north/northwest are typically provided vectors to intercept the ILS signal. IFR departures require clearance from the Point Mugu RATCF before takeoff unless RATCF is closed. When the RATCF is closed, aircraft receive IFR clearance once airborne from the Los Angeles ARTCC.

Local ATC Procedures: At present there is no formal runway use program at Oxnard Airport that dictates the use of one runway over another. Arrivals and departures, however, are almost exclusively on Runway 25 due to the prevailing westerly winds. Arrivals and departures occur occasionally on Runway 7. Operations on this runway usually occur in Santa Ana wind conditions (strong winds from the north and east) or if requested by the pilot.

Noise Abatement Procedures

At Oxnard Airport, the airport traffic control tower, the Ventura County Department of Airports, and the airport users have developed noise abatement

procedures for VFR operations. Instructions are outlined regarding departures, arrivals, and pattern procedures at the airport which are aimed at minimizing noise exposure over noise-sensitive areas without compromising safety. Pilots are requested to follow the published procedures unless it is considered unsafe, weather conditions do not allow, or they are otherwise instructed to deviate by the airport traffic control tower. A voluntary curfew is in effect for all operations between the hours of 11:00 p.m. and 6:00 a.m.

COMMUNITY PROFILE

The purpose of this section is to summarize various studies and data to provide an understanding of the characteristics of the local area. Within this section is a description of ground access systems near the airport, a description of land use around the airport now and planned for the future, local climate data, and a historical summary of the local economy and demographics.

REGIONAL SETTING, ACCESS AND TRANSPORTATION

The City of Oxnard is situated along the coastal edge of the 200-square mile Oxnard Plain. Immediately adjacent to the City of Oxnard is the City of Port Hueneme. The Oxnard Harbor District operates the largest deep sea port between San Francisco and Los Angeles.

Oxnard Airport lies one and one-half miles east of the Pacific Ocean. **Exhibit 1E** depicts the location of Oxnard Airport in its regional setting. The airport is bordered on three sides by major arterial roadways: Ventura Road and Victoria Avenue run north-south along the eastern and western edges of airport property, and Fifth Avenue runs east-west along the southern edge of airport property between Ventura Road and Victoria Avenue. The airport is afforded regional access by the Ventura Freeway (U.S. Highway 101) located four miles north of the airport and the Pacific Coast Highway (State Highway 1) located approximately one mile east of the airport.

Regional Airports

Oxnard Airport is the only airport served by commercial (commuter) airlines in the immediate vicinity. The Los Angeles Basin, however, is served by a number of commercial service airports. They include Los Angeles International, Burbank-Glendale-Pasadena, Long Beach, Ontario International, and John Wayne-Orange County, all of which are served by major airlines. Approximately 40 nautical miles to the northwest, Santa Barbara Airport is the only other commercial service airport within relatively close proximity of Oxnard Airport.

Two other public use general aviation airports and one military airport are located in or near the Oxnard Airport study area. Camarillo Airport is a

public use general aviation airport approximately five miles east of Oxnard Airport. Owned and operated by Ventura County, this airport is served by a single runway and has more than 500 based aircraft and over 180,000 operations annually. Santa Paula Airport is a privately-owned, public use airport. Located approximately nine nautical miles northeast of Oxnard, Santa Paula Airport has one runway and more than 250 based aircraft.

NAWS Point Mugu is a Navy/Marine Airbase located approximately eight miles southeast of Oxnard Airport. The airbase serves military aircraft ranging from the large C-130 transport to the high performance F-18A fighter/attack jet aircraft. Due to the orientation of the airbase's two runways, Point Mugu's flight pattern does not conflict with Oxnard Airport's airspace.

Although only three other airports are within the vicinity of Oxnard Airport, it is important to note the large number of airports in the greater Los Angeles area. In addition to the commercial service airports, 20 public use general aviation airports, seven private airports, and four military airports are in the greater Los Angeles area.

AREA LAND USE AND CONTROL

Land uses immediately surrounding Oxnard Airport are varied and include a mix of agriculture, open space, residential, commercial and industrial development. The airport itself and development to the east and south are under the jurisdiction of the City of Oxnard. Undeveloped agricultural land to the north and west are unincorporated and are therefore under the jurisdiction of Ventura County.

The nearest school to the airport is located approximately two blocks east of the airport. The nearest church is also located two blocks east of the airport.

Land Use Plans

Land use surrounding the airport is under the jurisdiction of both the City of Oxnard and Ventura County. To guide development in the area, both of these entities have prepared and adopted general plans as required by California State Law.

The Public Utilities Code of the State of California, Sections 21670 et. seq., requires the County Board of Supervisors to establish an Airport Land Use Commission (ALUC) in each county with an airport operated for the benefit of the general public. The Code also sets forth the range of responsibilities, duties, and powers of the Commission.

Instead of creating a new body to serve as the ALUC, state law allows the county board of supervisors to authorize an appropriately designated body to fulfill ALUC responsibilities. (See Section 21670.1.) In Ventura County, the Board of Supervisors has designated the Ventura County Transportation Commission to act as the ALUC for the County.

Section 21675 requires the Airport Land Use Commission to formulate a comprehensive land use plan for the

area surrounding each public use airport.

As part of these general plans, various future land use maps were prepared. Review of these future land use maps indicate that future land uses within the vicinity are planned to be compatible with airport operations. Commercial and industrial land uses are planned for the area immediately surrounding the airport.

CLIMATE

Weather conditions are important to the planning and development of an airport. Temperature is an important factor in determining runway length requirements, while wind direction and speed are used to determine optimum runway orientation. The need for navigational aids and lighting is determined by the percentage of time that visibility is impaired due to cloud coverage or other conditions.

The Oxnard region experiences steady temperatures throughout the year. The average high temperature only varies nine degrees, as December, January, February, and March are the coolest months with an average high of 66 degrees Farenheit (F), and August and September are the warmest months with an average high of 75 degrees F. The average precipitation in Oxnard is 14.3 inches per year. Average temperature and precipitation totals by month are summarized in **Table 1D**.

TABLE 1D
Weather Summary
Oxnard, California

Month	Daily Minimum (degrees F)	Daily Maximum (degrees F)	Average Total Precipitation (inches)
January	44	66	3.0
February	45	66	3.1
March	46	66	2.4
April	48	68	0.9
May	51	69	0.1
June	55	71	0.0
July	57	74	0.0
August	59	75	0.1
September	57	75	0.4
October	53	74	0.3
November	48	70	2.0
December	44	66	2.0
Yearly Average	**34.9**	**65.3**	**14.3**

Source: National Weather Service, Los Angeles/Oxnard Weather Forecast Office.

SOCIOECONOMIC CHARACTERISTICS

A variety of historical and forecast socioeconomic data, related to the regional area, has been collected for use in various elements of this master plan. This information provides essential background for use in determining aviation service level requirements. Aviation forecasts are often related to the population base, economic strength of a region, and the ability of a region to sustain a strong economic base over an extended period of time.

POPULATION

Historical population data for the City of Oxnard, Ventura County, and the State of California are presented in **Table 1E**. As shown in the table, the population of Oxnard, with an average annual growth rate of 2.30 percent, has grown at a faster pace than both Ventura County and the State of California, which have similar growth rates of 1.81 and 1.78 percent, respectively. According to the **City of Oxnard 2020 General Plan**, these population trends are not expected to continue as the city is expected to grow at a slower pace through the year 2020 than it has historically.

TABLE 1E
Historical Population

	1980	1990	2000	Average Annual Growth Rate
City of Oxnard	108,195	142,216	170,358	2.30%
Ventura County	525,818	669,016	753,197	1.81%
State of California	23,796,800	29,760,021	33,871,648	1.78%

Source: U.S. Census

EMPLOYMENT

Analysis of a community's employment base can be valuable in determining the overall well-being of that community. In most cases, the community's make-up and health is significantly determined by the availability of jobs, the variety of employment opportunities, and the types of wages provided by local employers. A breakdown of historical and current employment data for Ventura County is presented in **Table 1F**.

TABLE 1F
Employment by Sector
Ventura County

Industry	1997	1998	1999	2000	2001	% Change
Farming	17,300	17,700	17.500	19,300	22,300	6.55
Mining	1,500	1,300	1,000	900	900	-11.99
Construction	11,100	12,700	14,500	15,100	15,500	8.71
Manufacturing	32,800	36,000	38,600	41,000	41,100	5.80
Transportation and Utilities	9,700	10,600	11,500	11,100	11,000	3.19
Trade	59,200	59,700	62,100	65,000	66,400	2.91
Finance, Insurance & Real Estate	12,600	13,600	14,900	16,300	18,100	9.48
Services	72,400	75,500	77,100	81,300	81,800	3.10
Government	43,300	43,100	43,900	44,300	45,300	1.14

Source: California Economic Development Department

As indicated in the table, the services industry is the largest employer in the county followed by the trade industry. The greatest increases in activity during the five-year period were experienced in the construction and financial sectors. The only decrease experienced during the time period was in the mining industry. Overall, the county has experienced strong growth in the majority of the industries.

Table 1G summarizes labor force data for Ventura County. As shown in the table, the labor force available in Ventura County increased by 45,000 persons from 1990 to 2000. During that same time period, the unemployment rate increased by 1.80 percent from 1990 to 1995 but then decreased 3.0 percent in 2000 to a level below that reported in 1990.

TABLE 1G
Labor Force Data and Economic Indicators
Ventura County

	1990	1995	2000
Labor Force Data			
Civilian Labor Force	368,000	382,100	413,000
Unemployment	21,100	28,500	18,700
Unemployment Rate	5.7%	7.5%	4.5%

Source: California Economic Development Department

SUMMARY

The information discussed in this chapter provides a foundation upon which the remaining elements of the planning process will be constructed. This information will provide guidance, along with additional analysis and data collection, for the development of forecasts of aviation demand and facility requirements.

OXNARD AIRPORT

Chapter Two
FORECASTS

CHAPTER TWO

FORECASTS

OXNARD AIRPORT

An important initial factor in facility planning is a definition of demand that may reasonably be expected to occur during the useful life of its key components. In airport master planning, this involves projecting potential aviation activity over at least a twenty-year time frame. For general aviation/commuter service airports such as Oxnard Airport (OXR), forecasts of passengers, based aircraft, and operations (takeoffs and landings) serve as the basis for facility planning.

FAA Advisory Circular 150/5070-6A outlines six standard steps involved in the forecast process, including:

1) Obtain existing FAA and other related forecasts for the area served by the airport.

2) Determine if there have been significant local conditions or changes in the forecast factors.

3) Make and document any adjustments to the aviation activity forecasts.

4) Where applicable, consider the effects of changes in uncertain factors affecting demand for airport services.

5) Evaluate the potential for peak loads within the overall forecasts of aviation activity.

6) Monitor actual activity levels over time to determine if adjustments are necessary in the forecasts.

Aviation activity can be affected by many influences on the local, regional, and national levels, making it virtually impossible to predict year-to-year fluctuations of activity over twenty years with any certainty into the future. Therefore, it is important to remember

that forecasts are to serve only as guidelines and planning must remain flexible enough to respond to a range of unforseen developments.

The following forecast analysis examines recent developments, historical information, and current aviation trends to provide an updated set of aviation demand projections for Oxnard Airport. The intent is to permit the County of Ventura and its Department of Airports to make planning adjustments necessary to ensure that the facility meets projected demands in an efficient and cost-effective manner.

One of the longest and strongest growth periods in aviation history came to an abrupt halt on September 11, 2001 (9-11). Immediately following the terrorist attacks, the national airspace system was closed and all commercial flights were grounded. Following the resumption of flights, commercial airline traffic declined, which led to schedule reductions and layoffs by many of the commercial airlines. The federal government provided billions of dollars in financial assistance to the commercial airlines, along with loan guarantees. The cumulative impacts of September 11 may only be determined over time.

Prior to updating the airport's forecasts, the following section further discusses the trends in aviation at the national level.

NATIONAL AVIATION TRENDS

Each year, the Federal Aviation Administration (FAA) publishes its national aviation forecast. Included in this publication are forecasts for air carriers, regional/commuters, general aviation, and FAA workload measures. The forecasts are prepared to meet budget and planning needs of the constituent units of the FAA and to provide information that can be used by state and local authorities, the aviation industry, and by the general public. The current edition when this chapter was prepared was FAA **Aerospace Forecasts-Fiscal Years 2003-2014**, published in March 2003. The forecasts use the economic performance of the United States as an indicator of future aviation industry growth. Similar economic analyses are applied to the outlook for aviation growth in international markets.

In 2002, the overall demand for aviation services declined for the first time in more than seven years. A modest recovery is expected in 2003 as aviation user groups redefine themselves, in the post 9-11 environment. More stable levels of growth are not anticipated until 2005.

U.S. air carriers reduced capacity approximately 20 percent immediately after 9-11. Extensive route restructuring by the major carriers was expected to reduce domestic capacity another 0.8 percent in 2003. Passenger enplanements, however, are forecast to increase by 2.0 percent in 2003, 4.7

percent in 2004, then average 3.5 percent annually through 2014.

Air cargo traffic declined 5.9 percent in domestic markets in 2002, but the all-cargo carriers were down just 2.8 percent. Domestic cargo is forecast to grow at 3.9 percent annually through 2014. General aviation is expected to achieve low-to-moderate increases in the active fleet and hours flown, with most of the growth occurring in business/corporate flying. Combined aviation activity at FAA and contract airport traffic control facilities is expected to increase at significantly higher rates than those predicted for general aviation.

The forecasts prepared by the FAA assume that aviation demand will follow a similar path to recovery, as with previous terrorist or war-related incidents. In each instance, traffic and revenue growth resumed within a year. However, the events of September 11 had a much more significant effect on the aviation industry and, therefore, must be taken into consideration in the following forecasts.

REGIONAL/COMMUTER AIRLINES

The regional/commuter airline industry, defined as air carriers providing regularly scheduled passenger service and fleets composed primarily of aircraft having 60 seats or less, continues to be the strongest growth sector of the commercial air carrier industry. Dramatic growth in agreements with the major carriers, followed by a wave of air carrier acquisitions and purchases of equity interests, has resulted in the transfer of large numbers of short-haul jet routes to their regional partners, fueling the industry's growth.

Despite the events of September 11, many regionals/commuters were able to maintain their previous flight schedules. In fact, many have even increased their flight schedules in response to the transfer of additional routes from their larger code-sharing partners. Regional/ commuter capacity and traffic continued to grow in 2002, enplaning 90.7 million passengers in the fiscal year. This is an increase of 8.5 percent more than 2001. The regionals/commuters achieved an all-time high load factor of 61.3 percent in 2002, an increase of 2.6 percent over the previous year.

Industry growth is expected to continue to outpace that of the larger commercial air carriers. The introduction of new state-of-the-art aircraft, especially high-speed turboprops and regional jets with ranges of well over 1,000 miles, is expected to open up new opportunities for growth in non-traditional markets. The regional airline industry will also continue to benefit from integration with the larger air carriers. The further need for larger commercial air carriers to reduce costs and fleet size will insure that these carriers continue to transfer smaller, marginally profitable routes to the regional air carriers.

Likewise, the increased use of regional jets is expected to lead to another round of route rationalization by the larger commercial carriers, particularly on

low-density routes in the 500-mile range. Regional jet aircraft can serve these markets with the speed and comfort of a large jet, while at the same time providing greater service frequency that is not economically feasible with larger jets. This is expected to contribute to strong growth during the early portion of the planning period, although this phenomenon is expected to diminish during the mid-to-latter portion of the planning period.

Passenger enplanements are expected to increase at an average annual rate of 5.6 percent during the FAA's 12-year forecast period, from 90.7 million in 2002 to 174.1 million in 2014. In 2014, regionals/commuters are expected to transport 17.5 percent of all passengers in scheduled domestic air service. This is an increase of 3.0 percent from 2002. This greater use of regional jets results in the average seating capacity of the regional fleet increasing from 42.8 seats in 2002 to 50.4 seats in 2014. **Exhibit 2A** depicts passenger enplanements and fleet mix forecasts for the U.S. regional/commuter market.

GENERAL AVIATION

Following more than a decade of decline, the general aviation industry was revitalized with the passage of the *General Aviation Revitalization Act* in 1994, which limits the liability on general aviation aircraft to 18 years from the date of manufacture. This legislation sparked an interest to renew the manufacturing of general aviation aircraft, due to the reduction in product liability, as well as renewed optimism for the industry. The high cost of product liability insurance was a major factor in the decision by many American aircraft manufacturers to slow or discontinue the production of general aviation aircraft.

However, this continued growth in the general aviation industry slowed considerably in 2001, negatively impacted by the events of September 11. Thousands of general aviation aircraft were grounded for weeks, due to "no-fly zone" restrictions imposed on operations of aircraft in security-sensitive areas. Some U.S. airports in and around Washington, D.C. and New York City remain closed to visual flight rules (VFR) traffic. This, in addition to the economic recession which began in March 2001, has had a profoundly negative impact on the general aviation industry.

According to a report released by the General Aviation Manufacturers Association (GAMA), aircraft shipments in 2002 were down 16.9 percent for the three quarters of fiscal year 2002. The Aerospace Industries Association of America (AIAA) expected general aviation shipments in 2002 to decline 17.7 percent, to 2,153 aircraft. The number of general aviation hours flown declined by 5.9 percent in 2002 and is projected to increase by only 1.1 percent in 2003 and 1.4 percent in 2004.

The events of September 11 have not had as negative an impact on the business/corporate side of general aviation. The increased security measures placed on commercial flights has increased interest in fractional and

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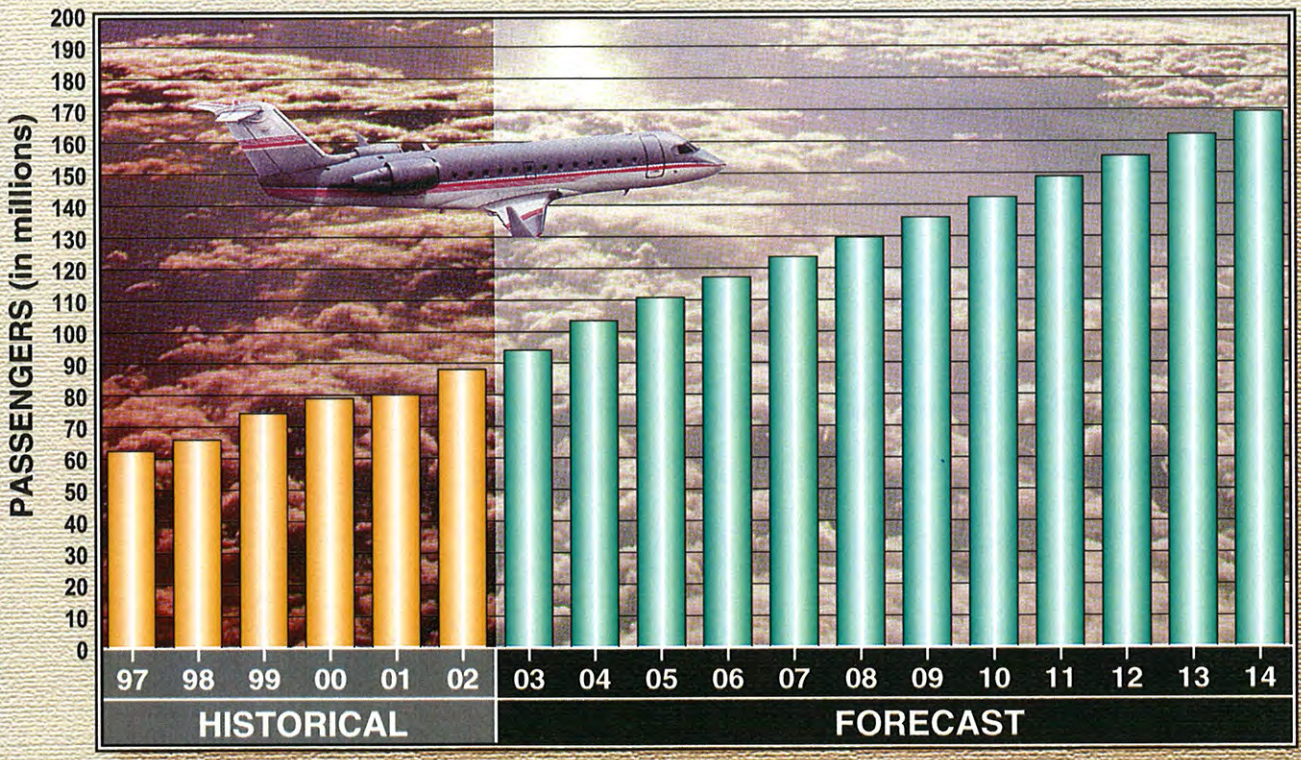
U.S. REGIONAL/COMMUTER SCHEDULED PASSENGER ENPLANEMENTS



Source: FAA Aerospace Forecasts, FY 2003-2014

PERCENT BY AIRCRAFT SEAT SIZE

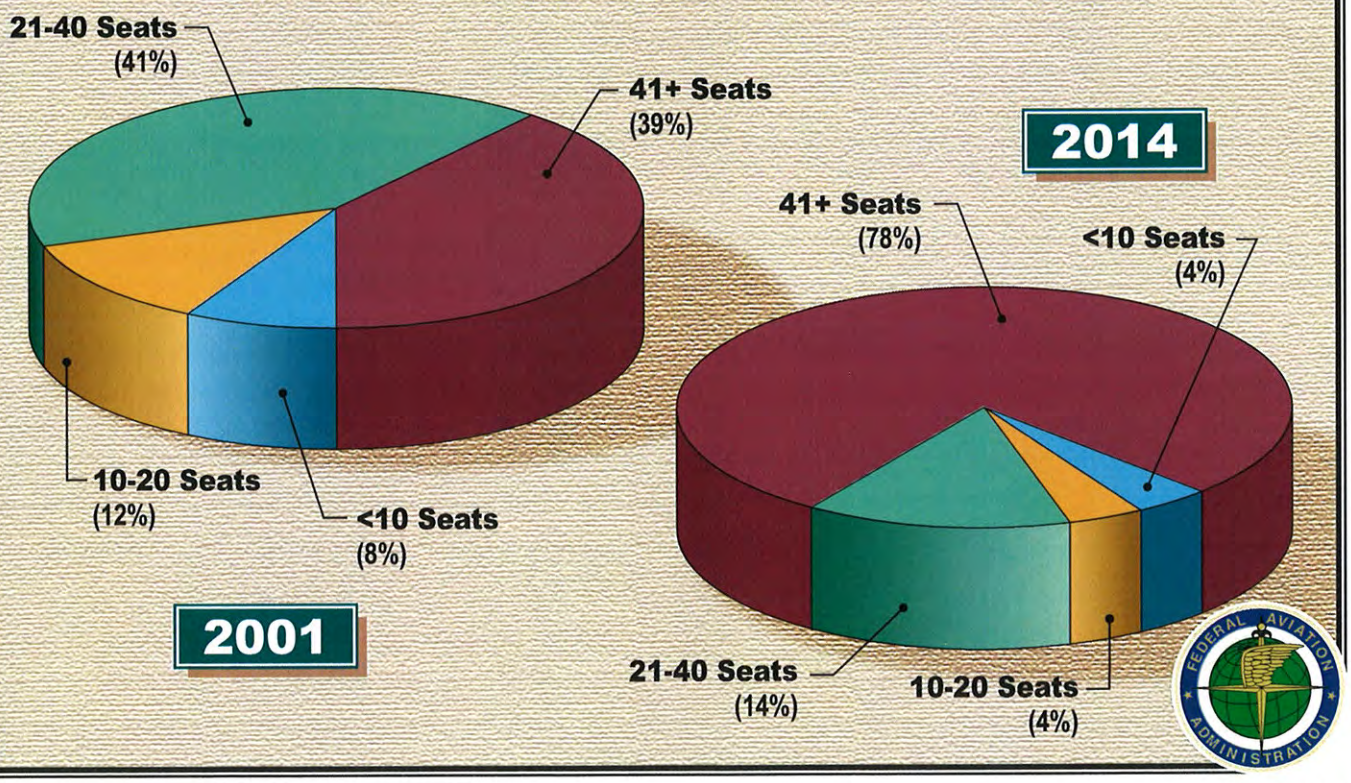


Exhibit 2A
U.S. REGIONAL/COMMUTER FORECASTS

corporate aircraft ownership, as well as on-demand charter flights. This is reflected in the forecast of active general aviation pilots (excluding air transport pilots), which are projected to increase by 81,000 (1.2 percent annually) over the forecast period.

According to the FAA, general aviation operations and general aviation aircraft handled at enroute traffic control centers increased for the ninth consecutive year. The forecast for general aviation aircraft assumes that business use of general aviation will expand much more rapidly than personal/sport use, due largely to the expected growth in fractional ownership.

In 2002, there were an estimated 211,040 active general aviation aircraft, representing a decrease of 0.2 percent from the previous year and the third straight decline in five years of increases. **Exhibit 2B** depicts the FAA forecast for active general aviation aircraft in the United States. The FAA forecasts general aviation aircraft to increase at an average annual rate of 0.7 percent over the 12-year forecast period. Piston-powered aircraft are expected to grow at an average annual rate of 0.2 percent. This is due, in part, to declining numbers of multi-engine piston aircraft, while single engine and rotorcraft increase at rates of 0.3 and 1.1 percent, respectively.

Turbine-powered aircraft (turboprop and jet) are expected to grow at an average annual rate of 2.3 percent over the forecast period. The jet portion of this fleet is expected to grow at an annual average growth rate of 3.6 percent. This growth rate for jet aircraft can be attributed to growth in the fractional ownership industry, new product offerings (which include new entry level aircraft and long-range global jets), and a shift away from commercial travel by many travelers and corporations.

Manufacturer and industry programs and initiatives continue to revitalize the general aviation industry with a variety of programs. For example, Piper Aircraft Company has created Piper Financial Services (PFS) to offer competitive interest rates and/or leasing of Piper aircraft. Manufacturer and industry programs include the "No Plane, No Gain" program promoted jointly by the General Aviation Manufacturers Association (GAMA) and the National Business Aircraft Association (NBAA). This program was designed to promote the use of general aviation aircraft as an essential, cost-effective tool for businesses. Other programs are intended to promote growth in new pilot starts and to introduce people to general aviation. These include "Project Pilot" sponsored by the Aircraft Owners and Pilots Association (AOPA), "Flying Start" and "Young Eagles" sponsored by the Experimental Aircraft Association (EAA), "Be a Pilot" jointly sponsored and supported by more than 100 industry organizations, and "Av Kids" sponsored by the NBAA. Over the years, programs such as these have played an important role in the success of general aviation and will continue to be vital to its growth in the future.

SOCIOECONOMIC TRENDS

Local and regional forecasts developed for key socioeconomic variables provide an indicator for identifying changes in demand for aviation activities at an airport. Three variables typically useful in evaluating potential for increased demand are population, employment, and per capita personal income (PCPI).

Table 2A presents historic and forecast demographics for Ventura County. These forecasts were obtained from **The Complete Economic and Demographic Data Source (CEDDS 2001)**, by Woods and Poole Economics, Inc., January 2002. This source forecasts population in Ventura County to grow at an average annual rate of 1.2 percent through 2025. Total employment is projected to grow by an average annual rate of 1.4 percent. Inflation-adjusted PCPI is projected to grow at 1.1 percent annually.

The Southern California Association of Governments (SCAG) prepared a Socioeconomic Forecast in 2001 for the six-county metropolitan region including Ventura County. The regional forecasts were adopted by the SCAG Regional Council in April 2001, and the Ventura County forecasts were adopted by the Ventura Council of Governments in May 2001. These are depicted on **Table 2B**.

The six-county region includes Ventura, Imperial, Los Angeles, Orange, Riverside, and San Bernardino counties. Overall, population is projected to grow 1.4 percent annually in the region. While Ventura County's population grew an average of 1.25 percent annually over the decade of the 1990s, the SCAG forecast calls for a 1.1 percent average increase through 2025. This is slightly lower than the 1.2 percent average population growth projected by Woods and Poole. While Woods and Poole anticipates that Ventura County will top one million residents by 2025, SCAG forecasts 951,000.

Table 2B also includes the SCAG forecast for the City of Oxnard. The projections for the city actually anticipate that the population will grow from the 2000 census count of 173,316 to 227,460 residents by 2025.

While using a different benchmark for employment, SCAG projected Ventura County employment to increase at an average annual rate of 1.3 percent through 2025. Like population, this growth is slightly lower than that projected by Woods and Poole.

According to SCAG, a key change anticipated to occur in future employment is a decline in agricultural employment from ten percent to just three percent by 2025. Similarly, manufacturing employment is projected to decline while the services sector increases.

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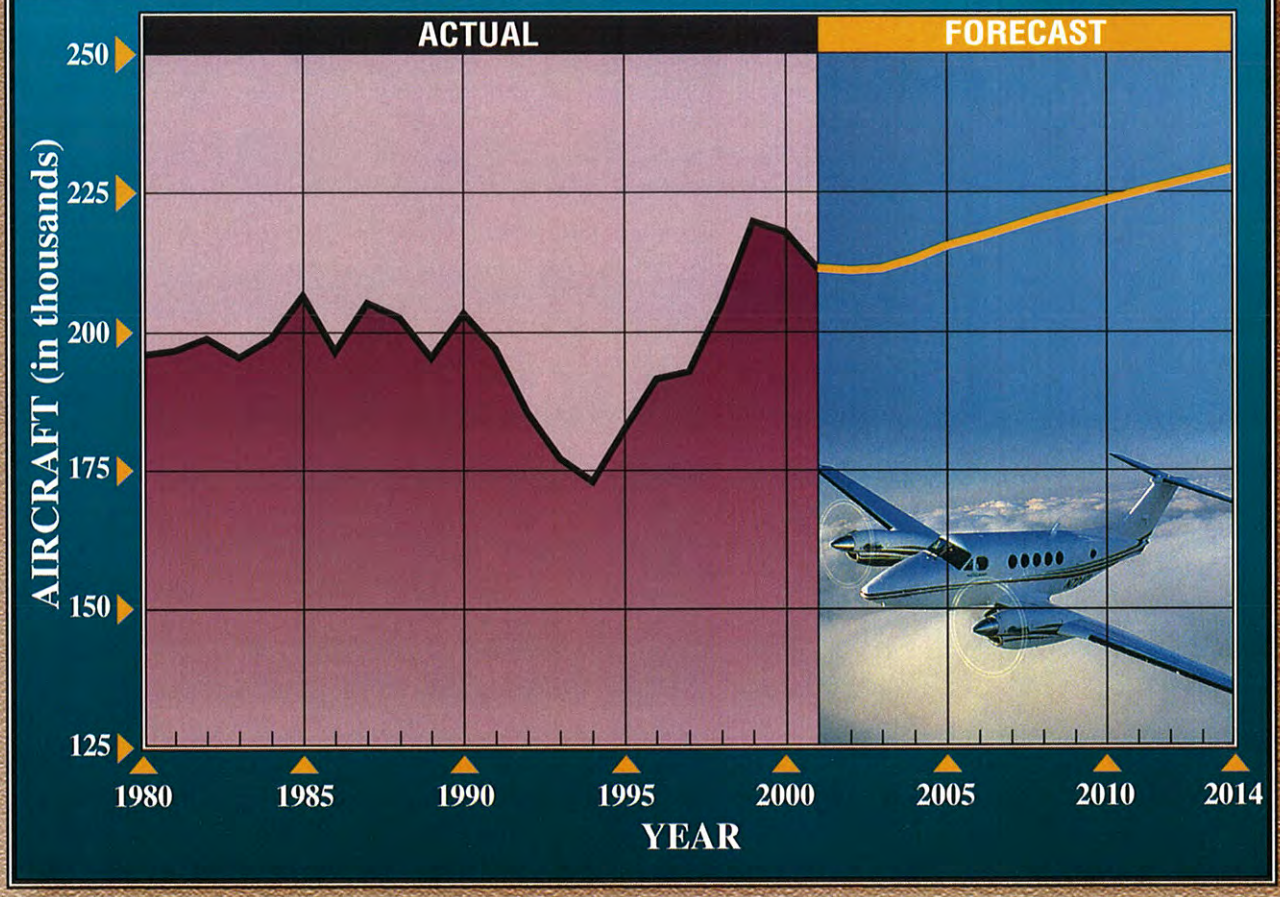
U.S. ACTIVE GENERAL AVIATION AIRCRAFT



U.S. ACTIVE GENERAL AVIATION AIRCRAFT (in thousands)

Year	FIXED WING				ROTORCRAFT		Experimental	Sport	Other	Total
	PISTON		TURBINE							
	Single Engine	Multi-Engine	Turbo-prop	Turbojet	Piston	Turbine				
2001 (Actual)	145.0	18.3	6.6	7.8	2.3	4.5	20.4	NA	6.5	211.4
2004	144.9	18.2	6.8	8.4	2.5	4.4	20.4	1.0	6.5	213.1
2009	147.6	18.0	7.4	10.3	2.6	4.5	21.0	4.1	6.6	222.2
2014	149.6	17.8	8.0	12.3	2.8	4.6	21.4	6.2	6.7	229.5

Sources: FAA General Aviation and Air Taxi Activity (and Avionics) Surveys.
FAA Aerospace Forecasts, Fiscal Years 2003-2014.

Notes: An active aircraft is one that has a current registration and was flown at least one hour during the calendar year.

Exhibit 2B
U.S. ACTIVE GENERAL AVIATION
AIRCRAFT FORECASTS

TABLE 2A
Socioeconomic Statistics
Ventura County

Year	County Population	Employment	PCPI (1996$)
1980	532,890	219,778	$21,388
1981	546,389	225,242	$21,644
1982	562,142	230,219	$21,353
1983	575,586	236,821	$21,807
1984	588,790	249,289	$22,810
1985	602,819	261,866	$23,537
1986	615,422	272,055	$24,849
1987	632,062	287,856	$25,430
1988	650,851	306,656	$25,835
1989	664,692	319,790	$25,707
1990	670,164	332,120	$26,291
1991	675,558	330,242	$25,644
1992	684,118	332,643	$25,318
1993	690,195	337,770	$25,185
1994	698,921	348,310	$24,908
1995	704,080	355,310	$26,099
1996	711,000	361,750	$26,054
1997	722,470	360,580	$26,733
1998	732,820	379,040	$27,272
1999	746,220	390,770	$28,259
2000	753,197	400,290	$28,728
2001	770,630	408,750	$29,203
FORECAST			
2005	805,520	438,700	$30,813
2010	855,590	471,650	$32,644
2015	907,710	503,990	$34,351
2020	961,360	535,390	$35,980
2025	1,016,980	565,940	$37,525

Notes: Historic information from U.S. Department of Commerce. Forecasts from CEDDS 2002, Woods & Poole, January 2002.

TABLE 2B
Population Forecasts
Southern California Association of Governments (SCAG)

	Actual 2000	2010	2015	2020	2025
SCAG Region	16,516,006	19,061,000	20,062,000	21,305,000	22,621,000
Ventura County	753,197	836,000	875,000	915,000	951,000
City of Oxnard	173,316	197,532	208,005	218,194	227,460

COMMUTER SERVICE FORECASTS

Airline activity at Oxnard Airport is exclusively comprised of commuter airline service. As of the late fall of 2002, when these forecasts were completed, service was provided by SkyWest Airlines operating as United Express. There were five daily flights to Los Angeles International Airport (LAX) utilizing 30-seat Embraer 120 turboprop aircraft.

Since airline deregulation in the late 1970s, airline passenger activity at Oxnard Airport has fluctuated widely. As can be seen in **Table 2C**, annual enplaned passengers began the 1980s decade at 36,553 before dropping to a low of just 11,604 in 1986. By the end of the decade, however, traffic had risen to a high of 46,275 enplanements in 1990. That remains the highest enplanement level in the last twenty years. During that peak year, OXR had 18 daily flights to LAX, San Francisco, and Las Vegas. Two years later, traffic had dropped by more than 50 percent to 22,767 enplanements as service had been reduced to just one airline and seven daily flights.

By the base year of the **1996 Draft Master Plan** (1994), traffic was back up to 39,989 enplanements. At that time, the airport was being served by two commuters (United Express and American Eagle), both providing service to LAX on 30-seat turboprop aircraft. In the ensuing years, traffic fluctuated but remained in the 30,000 to 40,000 enplanement range. During this period, American Eagle dropped service, but Mesa Airlines added service in November 2000 with 37-seat DeHavilland Dash 8 aircraft, and 19-seat Beech 1900s.

Exhibit 2C depicts 12-month moving totals for enplanements at Oxnard Airport since December 1998. The moving totals represent a year's worth of enplanements ending with the month shown. Moving totals provide a means by which to analyze annualized trends on a monthly basis. As indicated, the moving totals reached a peak with the 12 months ending in August 1999 totaling 39,863 enplanements. At that time, United Express was the only airline serving OXR, but it was providing eight flights per day. Shortly thereafter, United Airlines began to reduce its schedule at LAX. The 12-month total began to decline each month after that until November 2000, when Mesa Airlines began service under the code-share name America West Express.

The 12-month total began to increase until reaching a peak of 38,345 in August 2001. Mesa Airlines announced it was discontinuing service to OXR on September 6, 2001. Five days after the airline left, came the events of September 11, 2001.

During the full nine months of operation, Mesa Airlines averaged 1,073 enplanements. During that same period, SkyWest's enplanements declined to an average of 586 per month. This resulted in a net gain of

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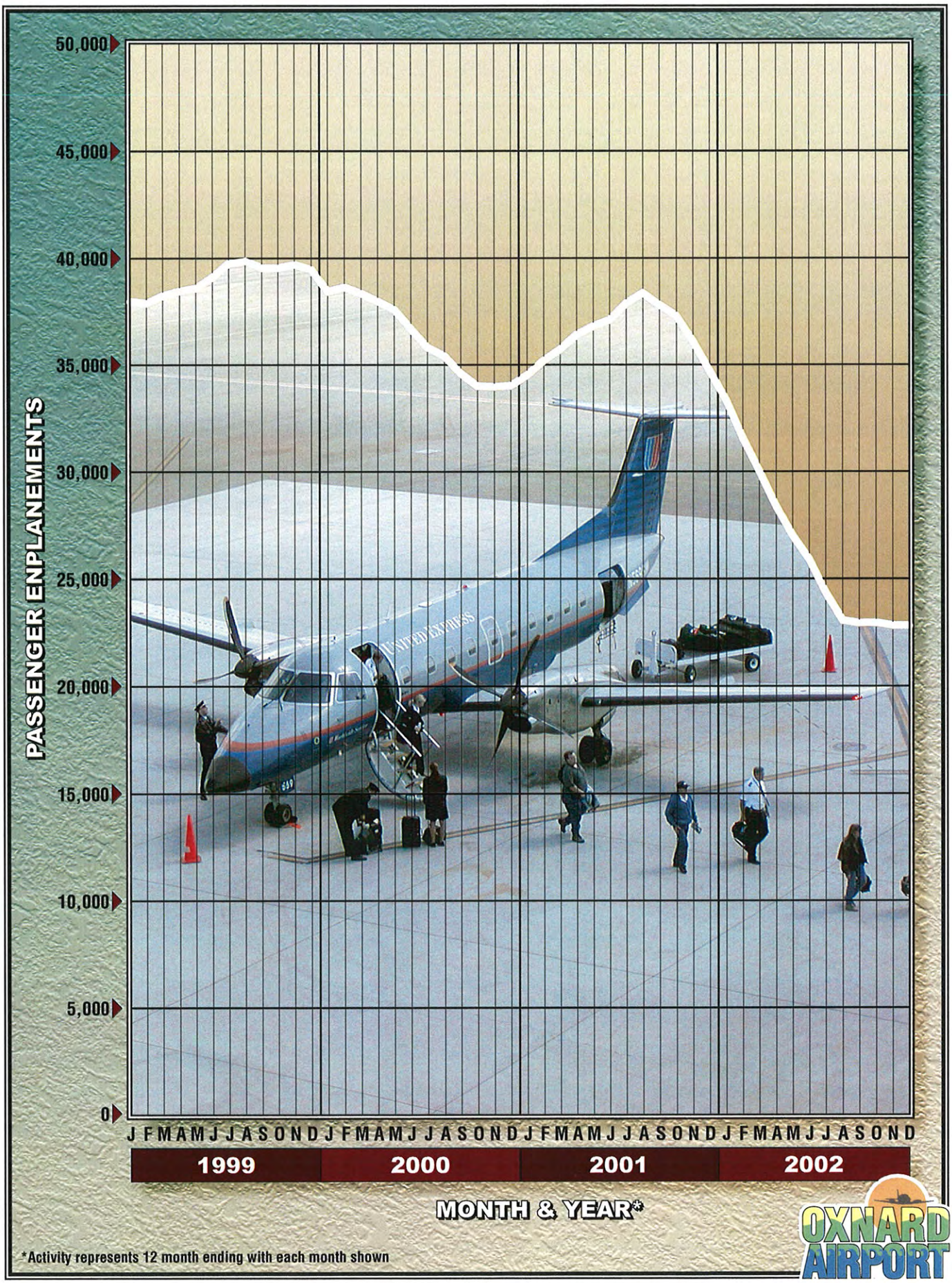

Exhibit 2C
12-MONTH MOVING TOTAL
PASSENGER ENPLANEMENTS

487 passengers per month at OXR. Statistics after 9-11, however, indicate that SkyWest traffic did not increase, but continued to decline.

TABLE 2C
Annual Enplanements
Oxnard Airport

Year	OXR Annual Enplaned[1]	U.S. Domestic Enplanements (millions)[2]	OXR % Market Share
ACTUAL			
1980	36,553	287.9	0.0127%
1981	30,020	274.7	0.0109%
1982	22,100	286.0	0.0077%
1983	21,595	308.1	0.0070%
1984	17,063	333.8	0.0051%
1985	19,097	369.9	0.0052%
1986	11,604	404.7	0.0029%
1987	12,456	441.2	0.0028%
1988	15,696	441.2	0.0036%
1989	27,545	443.6	0.0062%
1990	46,275	456.6	0.0101%
1991	39,047	445.9	0.0088%
1992	22,767	464.7	0.0049%
1993	34,857	470.4	0.0074%
1994	39,989	511.3	0.0078%
1995	37,840	531.1	0.0071%
1996	36,696	558.1	0.0066%
1997	31,152	577.8	0.0054%
1998	36,723	590.4	0.0062%
1999	39,448	610.9	0.0065%
2000	33,999	639.8	0.0053%
2001	34,696	626.7	0.0055%
2002	22,829	576.8	0.0040%
CONSTANT SHARE PROJECTION			
2005	26,304	651.1	0.0040%
2010	31,516	780.1	0.0040%
2015	38,130	943.8	0.0040%
2025	56,443	1,397.1	0.0040%
FAA-TAF 2002[3]			
2005	23,001	651.1	0.0035%
2010	24,327	780.1	0.0031%
2015	25,653	943.8	0.0027%
2020	26,980	1,148.3	0.0023%
RECAPTURE SHARE PROJECTION			
2005	30,000	651.1	0.0046%
2010	38,000	780.1	0.0049%
2015	45,000	943.8	0.0048%
2025	60,000	1,397.1	0.0043%

Sources:
1 Airport records.
2 FAA *Aerospace Forecasts, FY 2003-2014*, March 2003. Projections for 2015, 2020, and 2025 extrapolated by Coffman Associates.
3 FAA *Terminal Area Forecasts, 2002-2020*, December 2002.

In fact, the 12-month totals continued to decline until a slight increase was observed in October. This reflects the October 2002 enplanements of 2,060, being slightly higher than the 2,045 in October 2001. The 12-month total ending October 2002 was 22,904; a 40 percent decline from the 12-month total ending in August 2001. Enplanements for calendar year 2002 totaled approximately 22,829. Since August 2001, not only had service been reduced to one airline, but frequency was down to five flights per day.

ENPLANEMENT FORECASTS

It is evident from the discussion in the previous section that passenger traffic at Oxnard Airport is directly affected by the level of service provided. As with many smaller commuter airports located near a major metropolitan area, most of the local air travelers bypass the local airport and go directly to the larger hub airports in the metropolitan area.

In 1993, SCAG performed origin-destination studies that estimated there were more than 2.3 million commercial air passengers with an origin or final destination in Ventura County. That year, Oxnard Airport's total passengers (enplaned and deplaned) were approximately 70,000, or approximately 3.0 percent of the County's total passengers.

In the **Regional Aviation Plan for 2001**, published in August 2001, SCAG estimated that Ventura County's passenger demand was 4.23 million passengers. Total passengers at OXR that year totaled approximately 62,000, or just 1.5 percent of the county's demand. The **Regional Aviation Plan** indicated that Ventura County, Orange County, and Riverside County were each generating far more demand than the commercial service airports in each county were supporting. In Ventura County's case, the County was generating 5.2 percent of the demand but serving only 0.1 percent.

An emphasis of the **Regional Aviation Plan** was to move toward a decentralized airport system including former military bases and joint-use facilities rather than expanding existing urbanized airports. According to the **Regional Aviation Plan**, Ventura County's passenger demand will increase to 8.3 million by the year 2025.

While it is recognized that Ventura County's airport does not support a significant portion of the demand generated by the county's commercial air travelers, it must also be recognized that Oxnard Airport is one of the airports located in an urbanized setting with little or no room for expansion.

This is reflected in Oxnard Airport's Mission Statement which includes the following point: "Continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County."

As a result, the forecast for passenger enplanements at Oxnard Airport must reflect that the airport is limited in expansion potential and the county will continue to search for a regional airport to accommodate the long range commercial service demands generated

in Ventura County. With this in mind, the passenger potential at Oxnard Airport was examined with the following qualifiers:

- No increase in runway length.
- No significant increase in terminal building space.
- As more commuter airlines convert to all-jet fleets, a decision regarding air service in the County will become necessary.

This generally means that commercial service at Oxnard Airport will continue to be provided by commuter aircraft that can operate within the design characteristics of the runway. It is likely that various commuter airlines will continue to come and go in the market. Depending upon success, airlines will likely adjust the frequency of flights to serve the demand they generate. Competitive air fares and reliable, frequent flights will be the recipe for success. Still, the size of equipment and the availability of discount airlines at the larger hub airports in the Los Angeles basin will keep the market share at Oxnard Airport low.

Because of this, the typical regression correlation and trend analyses do not apply at Oxnard Airport. As a result, passengers were forecast based upon the potential to capture market share. **Table 2C** depicts Oxnard Airport's share of the United States domestic passenger market every year since 1980. Over this time frame, the market share has ranged from 0.0127 percent in 1980 to a low of 0.0028 percent in 1987. The market share in 1990 increased to 0.0101 percent, while by 2000, it had dropped to 0.0053 percent. In 2002, the market share dropped to 0.0040 percent.

It is evident that the general trend in market share at OXR has been downward with highs and lows depending upon the level of air service. The constant share projection presented in **Table 2C** indicates where Oxnard Airport's enplanements would go if the airport followed the growth rate of the national domestic passenger market.

Exhibit 2D compares the constant market share with the forecasts of the **1996 Draft Master Plan**. It should be noted that the **1996 Draft Master Plan** forecasts were developed based upon the potential that a variety of regional jets could serve the airport in the future. In addition, the FAA forecasts of U.S. domestic enplanements at that time were approximately 14 percent higher than the current projections. Subsequently, these forecasts are now considered too high for continued use.

Exhibit 2D and **Table 2C** also provide a comparison of the market share projections to forecasts for OXR prepared by the FAA and presented in their **Terminal Area Forecasts (TAF) 2002-2020.** It should be noted that these TAF projections were the first to take into account 9-11. The TAF projections show only marginal growth from the 2002 passenger levels. The 2020 forecast of 26,980 remains well below the 34,696 enplanements experienced in 2001.

The table shows that the enplanement projections in the TAF would result in a significant erosion in the Oxnard Airport market share of domestic enplanements. As shown in the table, the market share would decline incrementally to 0.0023 percent by 2020.

The history of passenger traffic at Oxnard Airport shows a definite reaction to the air service provided. Airline choices, frequency of service, air fares, etc. have played a role in the up-and-down nature of traffic levels. The drop in traffic of the past two years is indicative of this.

Given the Mission Statement for Oxnard Airport, it is highly unlikely that the airport will see a significant recapture of the local market of air travelers. Still, history has shown that OXR traffic can recover from similar setbacks in air service.

As a result, a market share recapture scenario was also considered. This scenario is also depicted on **Table 2C** and assumes the market share would recover to 0.0050 percent by 2010 and grow at the national forecast rate. The market share can be expected to decline over the long term as the airport becomes more limited in the types of commuter aircraft that can be served. For the planning purposes of this Master Plan, the following enplanement forecasts are recommended:

Near Term (2005): 30,000
Short Term (2010): 38,000
Intermediate Term (2015): ... 45,000
Long Term (2025): 60,000

COMMUTER OPERATIONS AND FLEET MIX

The fleet mix defines a number of key parameters in airport planning, including critical aircraft, stage length capabilities, and terminal gate configurations. Changes in equipment, airframes, and engines have always had a significant impact on airlines and airport planning. There are many on-going programs by the manufacturers to improve performance characteristics. These programs are focusing on improvements in fuel efficiency, noise suppression, and the reduction of air emissions. A fleet mix projection for Oxnard Airport has been developed by reviewing the aircraft currently used and anticipated transitions.

As previously mentioned, scheduled passenger service at Oxnard Airport is provided by SkyWest under a code-sharing agreement with United Airlines. As United Express, the airline offers five daily flights to LAX. SkyWest's aircraft fleet consists of 76 Embraer, 120 turboprops, and 73 Canadair Regional Jets (CRJs). Only the turboprops operate into Oxnard Airport.

The FAA views the regional jet as the most significant change in the composition of the future regional/ commuter fleet. These aircraft have a range in seating capacity, stand-up headroom, and lower operating costs. The long-term outlook in fleet transition is dependent on traffic growth, technological improvements, aircraft leasing and financing arrangements, and airfield facilities which can meet aircraft demand.

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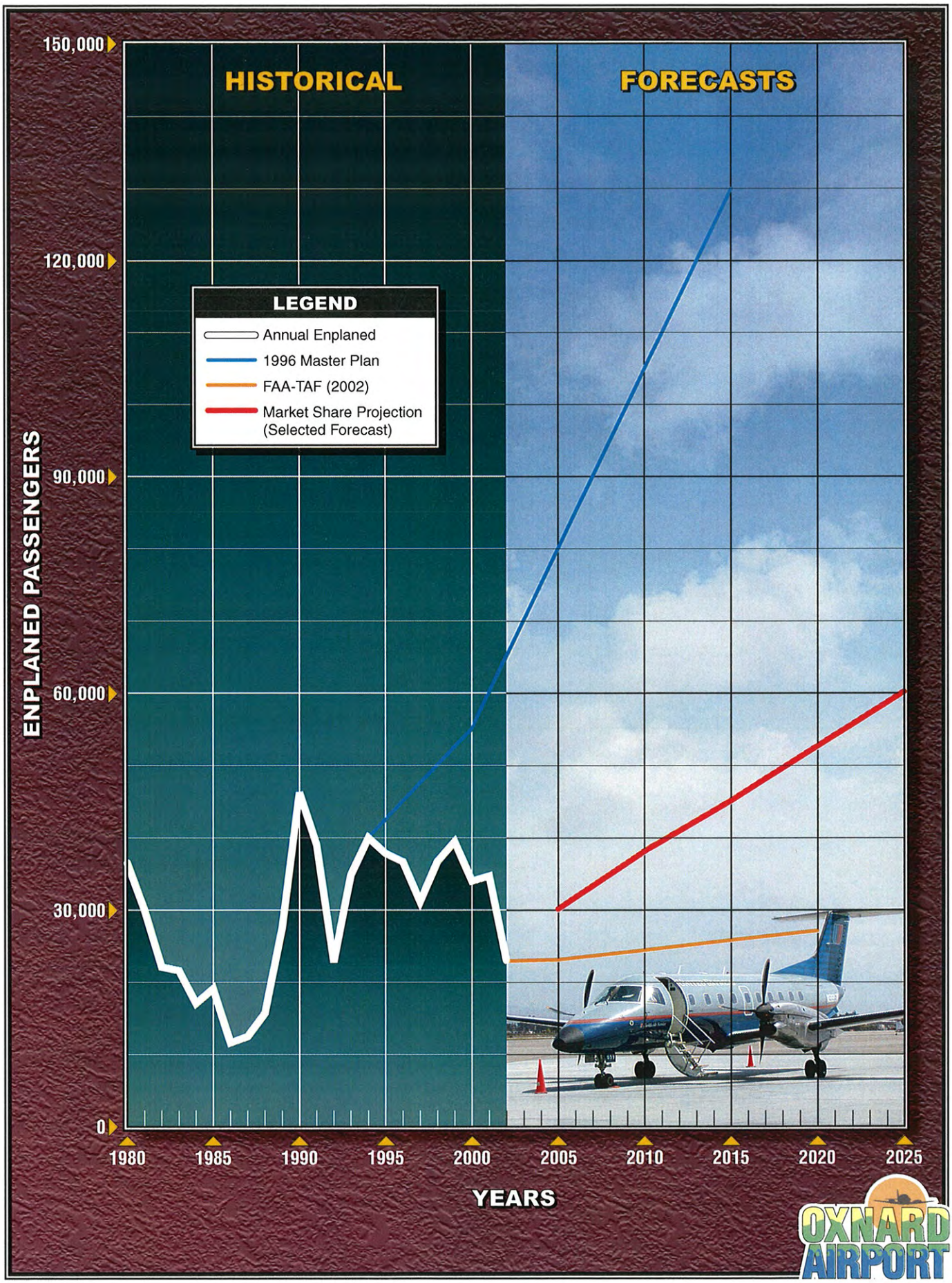

Exhibit 2D
ENPLANEMENT FORECASTS

SkyWest is adding more CRJs while reducing its turboprop fleet. The airline has orders or options for 109 more CRJs over the next four years. Over that same time frame, it expects to remove 21 Embraer 120s from service. While SkyWest has not indicated that it plans to transition to an all-regional jet fleet, other airlines, such as Mesa, have. Given the constraints on runway improvements, and the airport's Mission Statement, as more commuter airlines transition to all-jet, the County will eventually need to make decisions regarding improvements that may become necessary to accommodate available commuter aircraft.

The fleet mix projections have been used to calculate the average seats per departure, which (after applying a load factor) were used to project annual departures. The boarding load factor for Oxnard Airport may fluctuate with periodical changes in air service, but it is expected to remain around 50 percent over the planning period. Annual operations were then calculated based on boarding load factors. **Table 2D** summarizes the fleet mix and operations forecast for Oxnard Airport.

TABLE 2D
Airline Fleet Mix and Operations Forecast
Oxnard Airport

	Actual			Forecast			
Fleet Mix Seating Capacity	**2000**	**2001**	**2002**	**2005**	**2010**	**2015**	**2025**
Commuter Airlines							
45-59	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%
35-44	2.5%	18.4%	0.0%	0.0%	25.0%	35.0%	40.0%
20-34	96.1%	79.3%	100.0%	100.0%	75.0%	65.0%	40.0%
< 19	1.4%	2.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Seats/Departure	30.0	31.0	30.0	30.0	31.8	32.5	36.8
Boarding Load Factor	50.3%	48.1%	41.7%	50.0%	50.0%	50.0%	50.0%
Enplanements/Departure	15.1	14.9	12.5	15.0	15.9	16.2	18.4
Annual Enplanements	33,999	34,696	22,829	30,000	38,000	45,000	60,000
Annual Departures	2,250	2,325	1,825	2,000	2,400	2,800	3,250
Annual Operations	4,500	4,650	3,650	4,000	4,800	5,600	6,500

GENERAL AVIATION FORECASTS

General aviation is defined as that portion of civil aviation which encompasses all portions of aviation except commercial operations. To determine the types and sizes of facilities that should be planned to accommodate general aviation activity, certain elements of this activity must be

forecast. These indicators of general aviation demand include based aircraft, aircraft fleet mix, and annual operations.

BASED AIRCRAFT

The number of based aircraft is the most basic indicator of general aviation demand. By first developing a forecast of based aircraft, the growth of other general aviation activities and demands can be projected.

Aircraft basing at an airport is somewhat dependent upon the nature and magnitude of aircraft ownership in the local service area. As a result, aircraft registrations in the area were reviewed and forecast first.

Aircraft Registrations

The **1996 Draft Master Plan** included a historical listing of aircraft registrations in Ventura County from 1983 through 1994. Additional information was obtained from the FAA's Aircraft Registry to update this information through 2002. This is presented in **Table 2E**, as well as on **Exhibit 2E.**

In contrast to many locations around the country, registered aircraft in Ventura County grew throughout the 1980s. In the 1990s, however, the growth leveled out and registered aircraft fluctuated between 1,000 and 1,060. The turn of the century saw some renewed growth with registered aircraft growing to 1,080 in 2000 and an all-time high of 1,120 in 2001.

Exhibit 2E displays the forecast of registered aircraft from the **1996 Draft Master Plan**. That forecast expected 1,100 aircraft registered in the county by 2000 and 1,200 in 2005. While the 1,120 aircraft in 2001 is right on the forecast, the prior years tended to be below the anticipated growth. In addition, 2002 registered aircraft dropped slightly to 1,012. As a result, the methodology used to produce the previous forecast was revisited, and updated data was incorporated into the analysis.

First, an updated trend line or "time-series" analysis was conducted for the period of 1983-2002. The historical data provided a correlation coefficient or r-value of 0.77. An r-value of at least 0.90 is necessary to be considered a significant statistical fit. Still, the time-series analysis does reflect the average growth trend over the 20-year period.

Next, several multiple variable regression analyses were revisited. In the 1996 plan, county employment and inflation-adjusted per capita personal income provided r-values over 0.90. These two variables, as well as county population, were tested for the period of 1983-2001. PCPI still provided the highest correlation ® = 0.88), but was below the level to be considered significant. Employment had a correlation coefficient of 0.82, while population had an r-value of 0.80. For comparative purposes, a projection was developed from the registered aircraft correlation with county PCPI. This projection is also depicted on **Exhibit 2E.**

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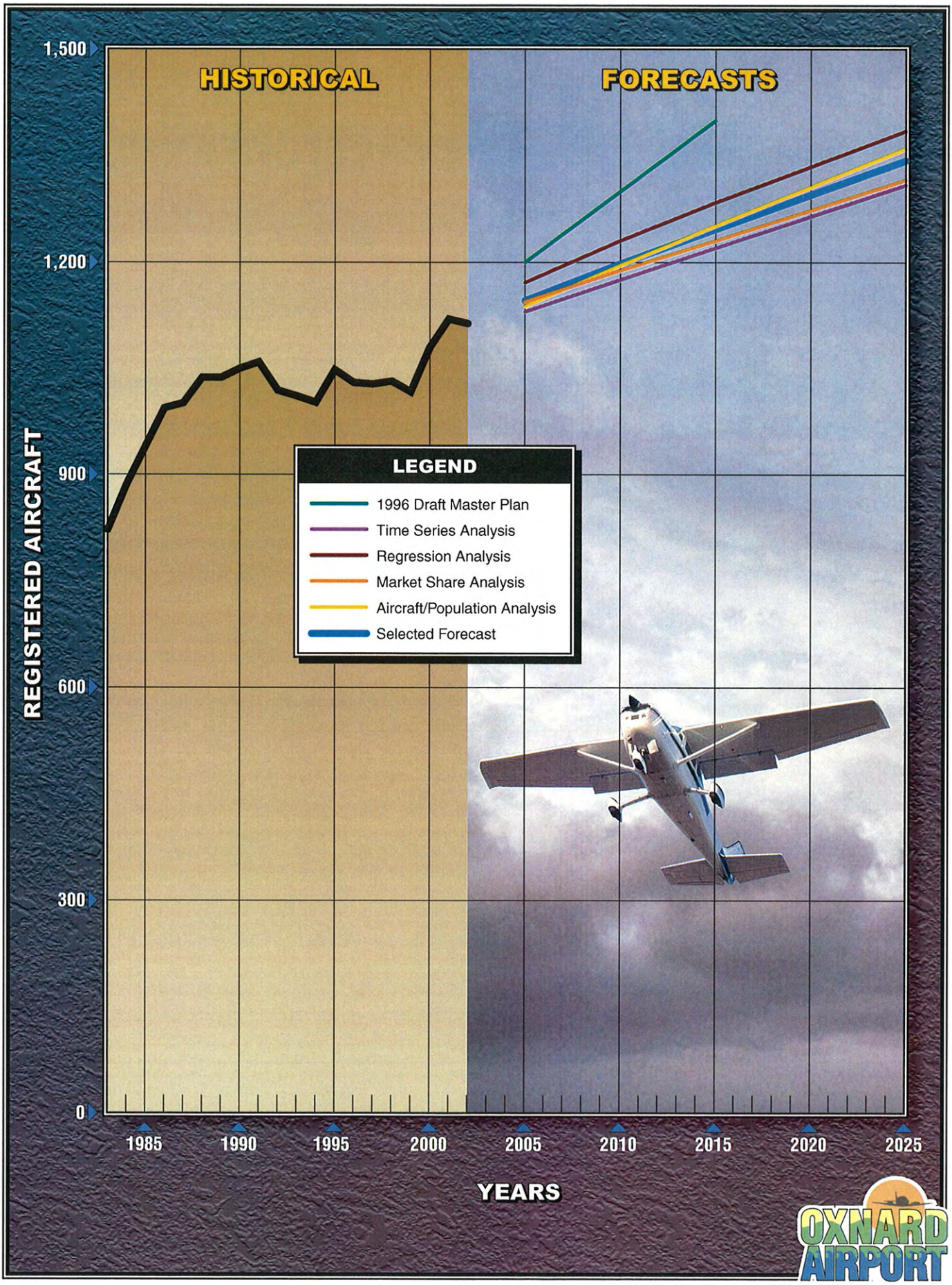

Exhibit 2E
AIRCRAFT REGISTRATIONS
VENTURA COUNTY

TABLE 2E
Registered Aircraft
Ventura County

Year	County Registered Aircraft	Reg. AC/1,000 pop.	County Population
1983	822	1.428	575,586
1984	886	1.505	588,790
1985	940	1.559	602,819
1986	994	1.615	615,422
1987	1,001	1.584	632,062
1988	1,037	1.593	650,851
1989	1,037	1.560	664,692
1990	1,050	1.567	670,164
1991	1,059	1.568	675,558
1992	1,019	1.490	684,118
1993	1,011	1.465	690,195
1994	1,002	1.434	698,921
1995	1,048	1.488	704,080
1996	1,030	1.449	711,000
1997	1,028	1.423	722,470
1998	1,032	1.408	732,820
1999	1,017	1.363	746,220
2000	1,080	1.434	753,197
2001	1,120	1.453	770,630
2002	1,112	1.425	780,089
Population Ratio Forecast			
2005	1,137	1.43	795,000
2010	1,195	1.43	836,000
2015	1,251	1.43	875,000
2025	1,360	1.43	951,000

Table 2F examines Ventura County's registered aircraft growth as a percentage of the U.S. active general aviation fleet. Because of a change in how the FAA counts active aircraft, this comparison could only be extended back to 1993. From 1993 through 1999, Ventura County's market share was declining. The past two years, however, the county has reclaimed some market share. Over the period from 1993-2001, the county's share has averaged 0.53 percent of the market. This average was extended through the planning period to provide a constant, or static, market share projection. This is presented on **Exhibit 2E**,as well as on **Table 2G**, for comparison to the other projections.

TABLE 2F
Registered Aircraft Market Share
Ventura County

Year	County Registered Aircraft	U.S. Active GA Aircraft	Market Share %
1993	1,011	177,719	0.569%
1994	1,002	172,936	0.579%
1995	1,048	188,089	0.557%
1996	1,030	191,129	0.539%
1997	1,028	192,414	0.534%
1998	1,032	204,710	0.504%
1999	1,017	219,464	0.463%
2000	1,080	217,533	0.496%
2001	1,120	211,447	0.530%
2002	1,112	211,040	0.527%
FORECASTS			
2005	1,142	215,490	0.50%
2010	1,186	223,720	0.50%
2015	1,228	231,620	0.50%
2025	1,314	248,000	0.50%

Table 2E also examines the ratio of registered aircraft per 1,000 population. Through this period, the ratio has fluctuated between 1.49 and 1.36. A projection at a constant ratio of 1.43 aircraft per 1,000 population was used to show the potential if registrations continue to grow in a similar proportion to county population.

TABLE 2G
Registered Aircraft Projections
Ventura County

	(r-value)	2005	2010	2015	2025
1996 Draft Master Plan	NA	1,200	1,300	1,400	NA
Time Series Analysis (1983-2002)	0.77	1,128	1,173	1,218	1,307
Regression Analysis vs. County PCPI	0.88	1,171	1,230	1,284	1,385
Market Share Analysis Constant Share	NA	1,142	1,186	1,228	1,314
Aircraft/Population Ratio 1.43 per 1,000 Pop.	NA	1,137	1,195	1,251	1,360
Selected Forecast	NA	1,144	1,196	1,295	1,342

All four of the updated projections are lower than the **1996 Draft Master Plan** forecast and represent a relatively narrow band. In the long term (2025), the PCPI regression projection is highest at 1,385 registered aircraft, while the time series analysis is lowest at 1,307, for a range of less than six percent over 23 years. In the immediate term (2005), the time series analysis projects 1,128 aircraft, or just slightly higher than the actual 1,120 aircraft in 2001. The PCPI regression projects 1,171 for a four percent range.

Because of the narrow grouping, an average of the four projections was selected for use in this update. This takes into account the local demographic and economic factors as well as the national general aviation industry.

Based Aircraft Forecast

Having updated the aircraft ownership demand in Ventura County, the historic basing at Oxnard Airport was reviewed to examine the change in market share over the years to project potential based aircraft demand. The market share at OXR is somewhat dependent upon what is happening at other area airports.

As depicted on **Table 2H**, the based aircraft totals at Oxnard Airport have generally been declining for at least the last 16 years. The rate of decline, however, has slowed in the last eight years. At the same time, the number of aircraft registered in the County has generally been growing.

A check of based aircraft at the other two public-use general aviation airports in the County shows they have not seen any growth in basing either. Camarillo Airport's based aircraft has dropped from 580 in 1994 to 510 in 1997, but has since grown back to 558. Santa Paula Airport has maintained its basing around 255. Overall, there was a total of 995 based aircraft in 1994, dropping to 910 in 1997, then rebounding to 957 in 2002.

In its **General Aviation Forecast for the SCAG Region**, in 1999, the Southern California Association of Governments forecast minimal growth at the three Ventura County airports through 2020. Camarillo was projected to grow from 510 to 523. This, of course, has already been exceeded. Oxnard Airport was projected to grow to only 156 based aircraft, while Santa Paula Airport would grow to 259. This was a total of 940 aircraft, or 30 more than were based at the three airports in 1997. This projection has proven to be too conservative as there are presently a combined 957 based aircraft.

The **1996 Draft Master Plan** projected the based aircraft to maintain a 16 percent share of the registered aircraft through 2015. As is evident from **Table 2H**, the airport's share has continued to drop and was 12.6 percent in 2001. In 2002, the share rebounded slightly to 12.8 percent. The historic graph on **Exhibit 2F** shows that the decline in based aircraft may be flattening out in the range of 140 to 150. If the airport were to maintain a current market share consistent with the last two

years, based aircraft could be expected to grow to 170 by the end of the planning period. If the airport simply maintained the current level of basing, its market share would decline to approximately 11 percent.

TABLE 2H
Based Aircraft Forecast
Oxnard Airport

Year	OXR Based	Registered Aircraft	OXR Market Share
1985	253	940	26.9%
1986	246	994	24.7%
1987	214	1,001	21.4%
1988	211	1,037	20.3%
1989	210	1,037	20.3%
1990	167	1,050	15.9%
1991	190	1,059	17.9%
1992	175	1,019	17.2%
1993	165	1,011	16.3%
1994	159	1,002	15.9%
1995	155	1,048	14.8%
1996	151	1,030	14.7%
1997	147	1,028	14.3%
1998	151	1,032	14.6%
1999	143	1,017	14.1%
2000	150	1,080	13.9%
2001	141	1,120	12.6%
2002	142	1,112	12.8%
FORECAST			
2005	146	1,144	12.8%
2010	152	1,196	12.7%
2015	158	1,245	12.7%
2025	170	1,342	12.7%
FAA-TAF 2002			
2005	146	1,144	12.8%
2010	150	1,196	12.5%
2015	155	1,245	12.4%
2020	161	1,294	12.4%

The FAA-TAF forecast for based aircraft at OXR is also included for comparison in **Table 2H**. This forecast is only slightly below that of the market share projection. In fact, the two projections differ by just two percent (three based aircraft) in 2020.

For the planning purposes of this Master Plan update, the market share

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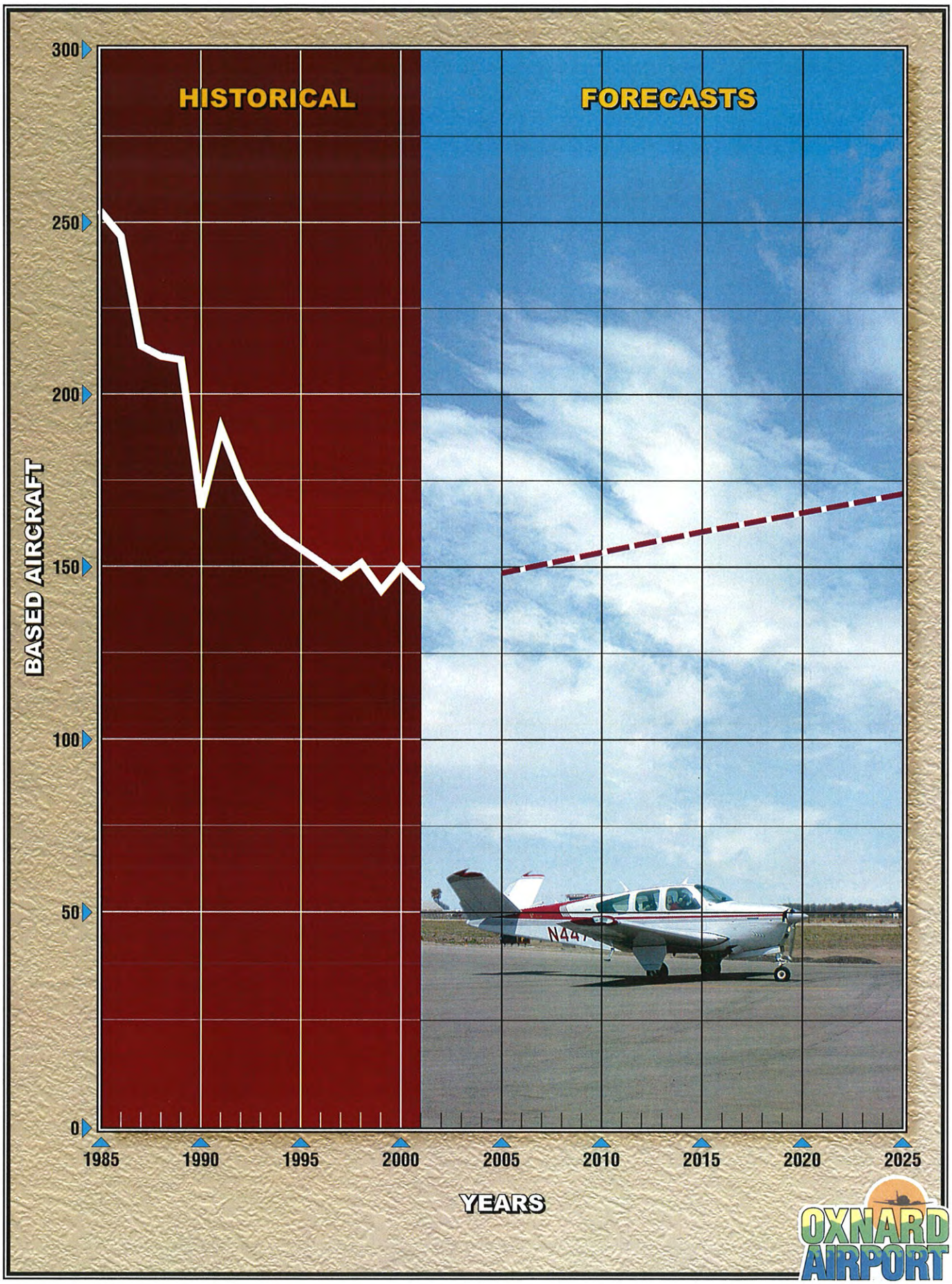

Exhibit 2F
BASED AIRCRAFT FORECAST

for Oxnard Airport was projected to follow the growth of demand for general aviation aircraft in Ventura County. This is consistent with the Mission Statements of the Oxnard Airport and the Ventura County Department of Airports. The latter Mission Statement reads, "To limit the development of Camarillo and Oxnard Airports to meet forecasted needs of general aviation and commuter airline services in a manner that will complement each other."

Planning OXR to serve and maintain its current share of the County's future demand would meet this objective. Thus, the constant market share projection depicted in **Table 2H** and on **Exhibit 2F** is the recommended forecast for based aircraft.

Based Aircraft Fleet Mix

The based aircraft fleet mix at Oxnard Airport (**Table 2J**) was compared to the existing and forecast U.S. general aviation fleet mix trends as presented in FAA **Aerospace Forecasts Fiscal Years 2003-2014**. The current based aircraft fleet mix at Oxnard Airport has a higher than average percentage of rotorcraft and multi-engine piston aircraft, lower-than-average turboprops, and no business jets.

TABLE 2J
Based Aircraft Fleet Mix
Oxnard Airport

Year	Single Engine	Multi-Engine	Turbo-prop	Jet	Rotor	Total
2002	100	28	2	0	12	142
FORECAST						
2005	102	28	2	1	12	146
2010	106	28	3	2	13	152
2015	109	28	4	3	14	158
2025	116	27	6	6	15	170

According to the FAA forecasts, active single engine aircraft will have a slow growth trend of 0.3 percent per year. So the overall percentage of single engine and experimental aircraft will remain fairly constant in the future.

The number of multi-engine piston aircraft will actually decline slightly as older aircraft are retired according to the FAA forecasts. Turboprop aircraft are expected to experience gains, approximately 120 per year nationwide (1.6 percent annually).

The largest percentage growth nationwide is anticipated in the business jet market, where an average

annual increase of 3.6 percent is expected. This relates to a net gain of nearly 360 business jets a year. Rotorcraft are anticipated to show a growth rate slightly better than the single engine and experimental aircraft.

The fleet mix for Oxnard Airport is forecast to evolve into a similar make-up as that on the national level, although the rotorcraft percentage will remain high due to the helicopter business on the airport. The single engine percentage will remain relatively constant. The number of multi-engine piston aircraft is forecast to decline by one, resulting in a percentage decline. The low percentages of turbine-powered aircraft at the airport can be expected to increase with a net increase of four turboprops and six business jets over the planning period.

GENERAL AVIATION OPERATIONS

General aviation operations are classified by the federal contract tower (FCT) as either local or itinerant. A local operation is a take-off or landing performed by an aircraft that operates within sight of the airport, or which executes simulated approaches or touch-and-go operations at the airport. Itinerant operations are those performed by aircraft with a specific origin or destination away from the airport. Generally, local operations are characterized by training operations. Typically, itinerant operations increase with business and commercial use, since business aircraft are operated on a higher frequency of use compared to personal and pleasure flights.

Itinerant Operations Forecast

Table 2K depicts the history of general aviation itinerant operations since 1990. The FCT counted 65,890 itinerant operations in 1990; this dropped to a low of 34,591 operations in 1995. The count rose to 51,749 in 1997, but has hovered around the mid-40,000s ever since.

The table also presents a history of the total general aviation itinerant operations at all airports with FAA airport traffic control towers. As with Oxnard Airport, the national itinerant operations were higher in 1990 than anytime since, and hit a low point in 1995.

The table further includes the OXR market share of the towered itinerant operations. While the market share declined in the early and middle part of the 1990s, it has since remained relatively constant.

In FAA **Aerospace Forecasts Fiscal Years 2003-2014**, the FAA projects itinerant general aviation operations will be recovering the operation level lost in 2001 in the immediate term, then grow at approximately 1.4 percent annually. **Table 2K** presents this forecast and includes a projection for Oxnard Airport based upon maintaining its share of the itinerant market.

The itinerant operation growth rate is higher than the 0.7 percent rate

forecast for active aircraft in the U.S., indicating that aircraft will be flown more in the coming years. As a result, the operations per based aircraft at the airport can be expected to increase in the future. The operations per based aircraft ratio was utilized to check the reasonableness of the itinerant operations forecast. As shown on **Table 2K**, the ratio of operations per based aircraft at Oxnard Airport would increase in the future from 316 to 354.

Table 2K also compares the Master Plan forecast with that of the FAA-TAF. As with based aircraft, the two projections are relatively close. The Master Plan forecast is just 3.4 percent higher than the FAA-TAF in 2020.

TABLE 2K
General Aviation Itinerant Operations Forecast
Oxnard Airport

Year	OXR GA Itinerant	U.S. ATCT GA Itinerant (millions)	OXR Market Share (%)	OXR Based AC	Itinerant Ops Per AC
1990	65,890	23.1	0.285%	167	395
1991	62,013	22.2	0.279%	190	326
1992	58,146	22.1	0.263%	175	332
1993	55,311	21.1	0.262%	165	335
1994	36,811	21.1	0.174%	159	232
1995	34,591	20.9	0.166%	155	223
1996	50,395	20.8	0.242%	151	334
1997	51,749	21.7	0.238%	147	352
1998	46,222	22.1	0.209%	151	306
1999	44,274	23.0	0.192%	143	310
2000	43,158	22.9	0.188%	150	288
2001	44,506	21.4	0.208%	141	316
2002	44,822	21.4	0.209%	142	316
FORECAST					
2005	46,200	22.1	0.209%	146	316
2010	49,500	23.7	0.209%	152	326
2015	52,900	25.3	0.209%	158	335
2025	60,200	28.8	0.209%	170	354
FAA-TAF 2002					
2005	45,913	22.1	0.208%	146	314
2010	48,806	23.7	0.206%	150	325
2015	51,699	25.3	0.204%	155	334
2020	54,592	27.0	0.202%	161	339

Local Operations

A similar methodology was utilized to forecast local operations. **Table 2L** depicts the history of local operations at Oxnard Airport and examines its historic market share of local operations at towered airports in the United States. By 2000, local operations at OXR had declined by more than 50 percent from 59,660 in 1993. Local operations nationally had remained relatively constant over the past decade. While the local operations declined in 2001, primarily due to September 11, they recovered in 2002 to 28,981.

The FAA **Aerospace Forecasts** projects a 1.2 percent per year increase in local operations nationwide. As with itinerant operations, this would indicate an increase in operations per active aircraft since general aviation is projected to grow at a slower rate.

Training activity is not expected to increase significantly at Oxnard Airport, thus the local operations forecast assumes growth associated with maintaining a slightly declining operations per based aircraft ratio. The table shows the forecast as well as the slight decline of operations per based aircraft over the planning period.

The table also presents the **FAA-TAF 2002** projections for general aviation and local operations. While the TAF forecasts show virtually no growth, the Master Plan forecast is within seven percent for 2020.

Table 2M and **Exhibit 2G** provide a summary of the general aviation forecasts for Oxnard Airport. The **FAA-TAF 2002** general aviation operations are also shown on the exhibit for comparison.

AIR TAXI

The air taxi category includes aircraft involved in on-demand passenger or small parcel transport. The control tower counts air taxi in the same category as commuter airline operations. Since the airport keeps track of airline operations from the airline landing reports, the commuter operations can be subtracted from the tower count to determine the air taxi operations.

In 2000, the tower counted 15,422 air taxi and commuter operations. The commuter airlines reported a total of 2,325 landings for a total of 4,650 annual operations. Thus, there were 10,922 air taxi operations. In 2001, there were 14,046 operations in the tower count, and 4,500 were by commuter airlines, leaving 9,396 air taxi operations.

In 2002, there were 13,406 operations in the tower count, and 3,650 were commuters. This left 9,756 air taxi operations. In 1994, the base year for the **1996 Draft Master Plan**, there were 8,057 air taxi operations. The Master Plan forecast 12,700 operations for 2000.

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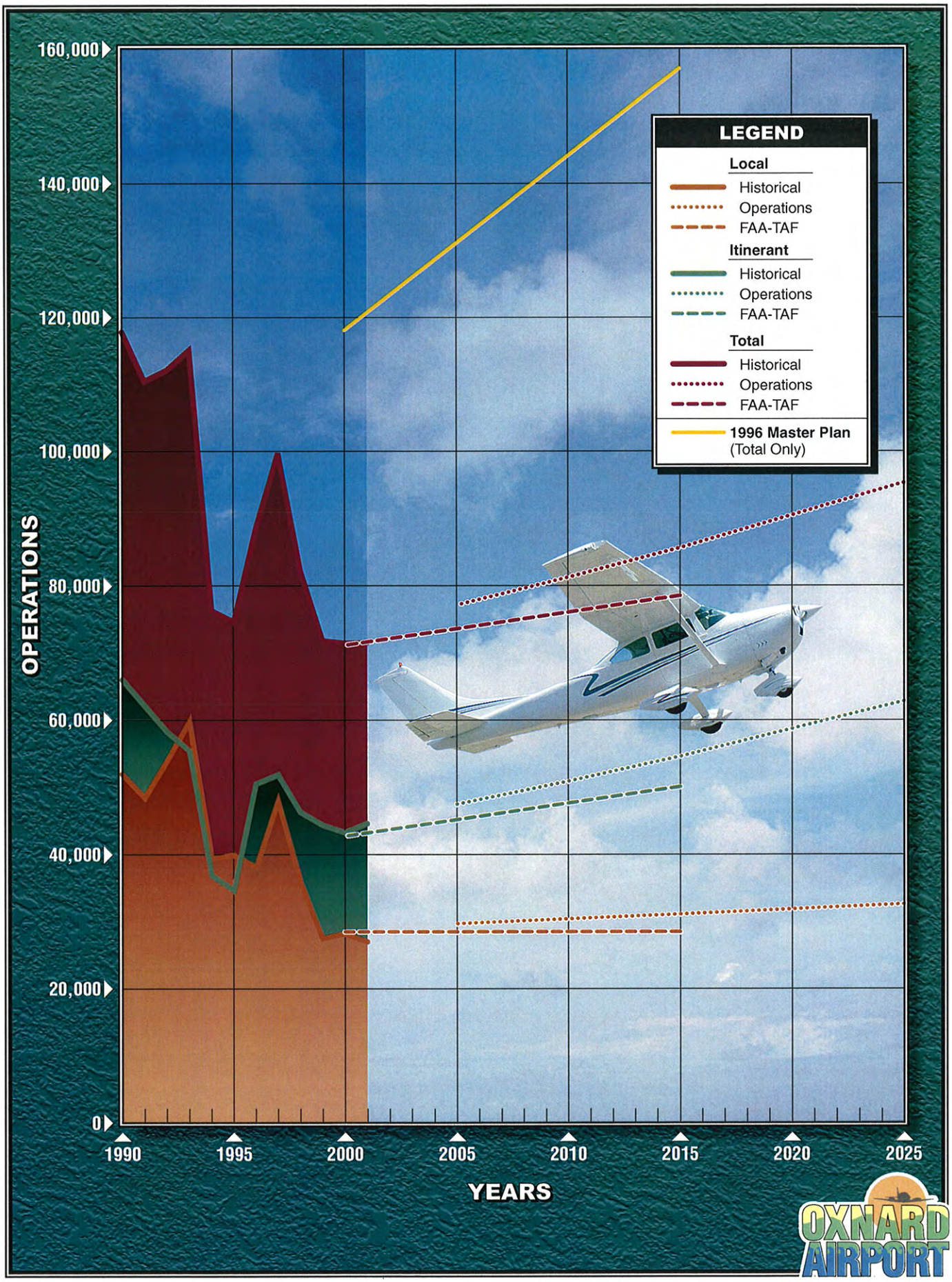

OXNARD AIRPORT

Exhibit 2G
GENERAL AVIATION
OPERATIONS FORECAST

TABLE 2L
General Aviation Local Operations Forecast
Oxnard Airport

Year	OXR GA Local	U.S. ATCT GA Local (millions)	OXR Market Share (%)	OXR Based AC	Local Ops Per AC
1990	51,844	17.1	0.303%	167	310
1991	48,328	16.6	0.291%	190	254
1992	53,866	16.3	0.330%	175	308
1993	59,660	15.5	0.385%	165	362
1994	39,293	15.2	0.259%	159	247
1995	39,865	15.1	0.264%	155	257
1996	38,020	14.5	0.262%	151	252
1997	47,853	15.2	0.315%	147	326
1998	35,911	16.0	0.224%	151	238
1999	27,372	17.0	0.161%	143	191
2000	28,138	17.0	0.166%	150	188
2001	26,885	16.2	0.166%	141	191
2002	28,981	16.2	0.179%	142	204
FORECAST					
2005	29,600	16.7	0.177%	148	202
2010	30,300	17.8	0.170%	154	199
2015	31,000	18.9	0.164%	160	196
2025	32,500	21.3	0.153%	171	191
FAA-TAF 2002					
2005	29,167	16.7	0.175%	146	200
2010	29,367	17.8	0.165%	150	196
2015	29,567	18.9	0.156%	155	191
2020	29,768	20.1	0.148%	161	185

TABLE 2M
General Aviation Forecast Summary
Oxnard Airport

		Operations			
Year	Based Aircraft	Total	Itinerant	Local	% Local
2000	150	71,296	43,158	28,138	39%
2001	141	71,391	44,506	26,885	38%
2002	142	73,803	44,802	28,981	39%
FORECAST					
2005	148	75,800	46,200	29,600	39%
2010	154	79,800	49,500	30,300	38%
2015	160	83,900	52,900	31,000	37%
2025	171	92,700	60,200	32,500	35%

For this Master Plan update, air taxi operations are projected to recover, then grow at a rate similar to that of general aviation itinerant operations. The air taxi forecasts are presented in **Table 2N.**

TABLE 2N
Air Taxi and Military Operations Forecast
Oxnard Airport

		Military		
	Air Taxi	**Itinerant**	**Local**	**Total**
ACTUAL				
2000	10,922	1,461	64	1,525
2001	9,396	958	37	995
2002	9,756	1,523	18	1,541
FORECAST				
2005	11,000	1,400	100	1,500
2010	11,800	1,400	100	1,500
2015	12,600	1,400	100	1,500
2025	14,500	1,400	100	1,500

MILITARY

Military activity accounts for the smallest portion of the operational traffic at OXR. Since 1990, annual military operations have fluctuated between a high of 2,626 in 1993 and a low of 995 in 2001. Since 1998, local military operations have totaled less than 100 each year. For the purposes of this Master Plan update, military operations were projected to average 1,500 per year over the planning period. This includes 1,400 itinerant and 100 local operations. This is down from the **1996 Draft Master Plan** which projected an average of 2,200 annually. **Table 2N** includes the military forecast.

SUMMARY

This chapter has outlined the various aviation demand levels to be anticipated over the planning period. The next step in the master plan is to reassess the capacity of the existing facilities and determine what facilities will be necessary to meet both existing and future demands. This will be examined in the following chapter. **Table 2P** provides a summary of the aviation forecasts for Oxnard Airport.

TABLE 2P
Aviation Activity Forecasts
Oxnard Airport

	ACTUAL		FORECAST			
	2001	**2002**	**2005**	**2010**	**2015**	**2025**
ANNUAL OPERATIONS						
General Aviation						
Itinerant	44,506	44,822	46,200	49,500	52,900	60,200
Local	26,885	28,981	29,600	30,300	31,000	32,500
Total GA	71,391	73,803	75,800	79,800	83,900	92,700
Commuter	4,650	3,650	4,000	4,800	5,600	6,500
Other Air Taxi	9,396	9,756	11,000	11,800	12,600	14,500
Military	995	1,541	1,500	1,500	1,500	1,500
Total Operations	86,432	88,750	92,300	97,900	103,600	115,200
Enplanements	34,696	22,829	30,000	38,000	45,000	60,000
Based Aircraft						
Single Engine	100	100	103	106	109	116
Multi-Engine	27	28	28	28	28	27
Turboprop	2	2	2	3	4	6
Jet	0	0	1	2	3	6
Rotorcraft	12	12	12	13	14	15
Total Based	141	142	146	152	158	170

OXNARD AIRPORT

Chapter Three
FACILITY REQUIREMENTS

CHAPTER THREE

FACILITY REQUIREMENTS

The objective of the facility requirements effort is to identify, in general terms, the capability of the existing airport facilities and outline what deficiencies there are or may be created by the forecast demands.

It is important to note that most of the activity levels forecast in the previous chapter have been exceeded in the past. For example, the 170 based aircraft forecast for 2002 are less than the 175 that were based at the airport in 1992. The 115,000 operations forecast for 2025 are less than the 137,880 operations counted in 1993. Since most of the forecast activity has been accommodated at this airport before, the emphasis will be more on re-development to ensure a safe, secure, and efficient operation. Once the deficiencies are identified, a more specific determination can be made as to how to address them in relation to the Mission Statements of Oxnard Airport and the Ventura County Department of Airports.

PLANNING HORIZONS

Cost-effective, safe, efficient, and orderly development of an airport should rely more upon actual demand at that airport than a time-based forecast figure. Thus, in order to develop a master plan that is demand-based rather than time-based, a series of planning horizon milestones have been established that take into consideration the reasonable range of aviation demand projections.

It is important to consider that, over time, the actual activity at the airport may be higher or lower than what the annualized forecast portrays. By planning according to activity milestones, the resultant plan can

accommodate unexpected shifts, or changes, in the area's aviation demand. It is important to plan for these milestones so that airport officials can respond to unexpected changes in a timely fashion. As a result, these milestones provide flexibility, while potentially extending this plan's useful life if aviation trends slow over the period.

The most important reason for utilizing milestones is to allow the airport to adapt facilities according to need generated by actual demand levels. The demand-based schedule provides flexibility in development, as the schedule can be slowed or expedited according to actual demand at any given time over the planning period. The resultant plan provides airport officials with a financially responsible and need-based program. **Table 3A** presents the planning horizon milestones for each activity demand category.

TABLE 3A
Aviation Demand Planning Horizons
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
ANNUAL OPERATIONS				
Commuter	3,650	4,500	5,600	6,500
Air Taxi	9,756	11,500	12,600	14,500
Military	1,541	1,500	1,500	1,500
General Aviation	73,803	78,200	83,900	92,700
Total Operations	88,750	95,700	103,600	115,200
ANNUAL PASSENGERS				
Enplanements	22,829	35,000	45,000	60,000
Based Aircraft	142	150	158	170

The planning horizons represent current, short, intermediate, and long term activity levels. The short term generally relates to the expected activity five years in the future (2008). The intermediate and long term are quite similar to the forecast levels for 2015 and 2025 in the previous chapter, with modifications to round the numbers.

FCT COUNT ADJUSTMENT

The planning horizon operational activity levels in **Table 3A** represent

the actual operations counted by the federal control tower (FCT). They will remain the milestones for monitoring growth and activity because tower count is readily available.

The Oxnard federal control tower (FCT) is not a 24-hour tower, so the count is not all-inclusive of operations at the airport. Certain elements of the planning analyses, however, require that all airport activity be considered. For these evaluations, it is necessary to estimate and adjust for operations that occur when the tower is closed.

The Oxnard FCT hours are from 7:00 a.m. to 9:00 p.m. daily. **Table 3B** outlines the adjusted tower count. The commercial service operations were derived from the landing reports of the airline and do not need to be adjusted. The other operations are adjusted based upon information obtained from flight plans and airport management estimates.

TABLE 3B
Adjusted Aircraft Operations
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
Commuter	3,650	4,500	5,600	6,500
Air Taxi	10,634	12,500	13,700	15,800
Military	1,618	1,600	1,600	1,600
General Aviation				
Itinerant	46,615	50,100	55,000	62,600
Local	29,561	30,600	31,600	33,100
Total	92,078	99,300	107,500	119,600

Note: Traffic count adjusted to include estimated operations when Oxnard Federal Control Tower is closed (9:00 p.m. to 7:00 a.m.)

KEY PEAKING CHARACTERISTICS

While the planning horizons are statistical benchmarks that can be easily monitored, much of facility planning must be directly related to levels of peak activity. The following planning definitions apply to the peak periods:

- **Peak Month** - The calendar month when peak activity occurs.
- **Design Day** - The average day in the peak month.

- **Busy Day** - The busy day of a typical week in the peak month.

- **Design Hour** - The peak hour within the design day.

The design day is normally derived by dividing the peak month operations or enplanements by the number of days in the month. However, if commercial activity is heavier on weekdays, it may require an adjustment to reflect design weekday activity.

It is important to realize that only the peak month is an absolute peak within the year. Each of the other periods will be exceeded at various times during the year. However, each provides reasonable planning standards that can be applied without overbuilding or being too restrictive.

AIRLINE DESIGN PEAKS

Historical airport records over the last six years were examined to determine the peak month for passenger enplanements at Oxnard Airport. The peak month has occurred in a different month each year since 1997. The peak month has averaged 9.7 percent of annual enplanements during this time. Design day enplanements were then calculated by dividing total enplanements in the peak month by the number of days in the month.

With five flights currently dispersed throughout the day, the design hour enplanements presently match the seating capacity of the aircraft. This will vary in the future as airline service or aircraft seating capacity changes.

According to airport records, there were 3,650 total airline operations in 2002. The flight schedule at Oxnard Airport does not fluctuate significantly with the season. Changes in operations are more related to weather cancellations than seasonal flight schedule changes. The lower peaking percentages for passengers also suggest that the operations peaks do not vary significantly. Therefore, the peak month percentage will be forecast at 9.0 percent.

Hourly operational peaks will vary depending upon the service as well. With one airline, the activity will be dispersed throughout the day. With two airlines, there is more probability for more operations per hour. This is accounted for in the peak activity forecast in **Table 3C.**

TABLE 3C
Peaking Characteristics
Oxnard Airport

	Current	Short Term	Intermediate Term	Long Term
AIRLINE				
Enplanements				
Annual	22,829	35,000	45,000	60,000
Peak Month	2,169	3,400	4,360	5,820
Design Day	73	113	145	194
Design Hour	30	43	51	63
Operations				
Annual	3,650	4,500	5,600	6,500
Peak Month	316	406	504	584
Design Day	10	14	18	20
Design Hour	2	4	4	4
GENERAL AVIATION				
Itinerant Operations				
Annual	44,822	48,200	52,900	60,200
Peak Month	4,503	4,920	5,400	6,140
Design Day	145	159	174	198
Busy Day	186	218	238	271
Design Hour	24	26	28	32
TOTAL OPERATIONS				
Annual	88,750	95,700	103,600	115,200
Peak Month	8,570	9,760	10,590	11,730
Design Day	276	315	342	378
Design Hour	42	48	52	57

GENERAL AVIATION DESIGN PEAKS

The key peaking characteristic for general aviation (GA) activity is related to itinerant operations. Busy day and design hour itinerant operations are utilized to determine space requirements for transient ramp, terminal services, and auto parking in GA areas.

The peak month for GA itinerant operations over the past six years has averaged 10.2 percent of annual operations. Forecasts of peak month itinerant activity have been developed

by applying this percentage to the forecasts of annual itinerant operations.

Design day operations were calculated by dividing the total number of itinerant operations in the peak month by the number of days in the month. Busy day itinerant operations were examined over the past six years. It was found that the busy day typically averaged 19.6 percent of the weekly itinerant operations. As a result, the busy day itinerant operations factor was determined to be 1.37. The design hour itinerant operations were projected at 16 percent of the design day operations over the planning period. **Table 3C** summarizes the general aviation peak activity forecasts.

TOTAL OPERATIONS DESIGN PEAKS

The total number of takeoffs and landings becomes a factor when evaluating the capacity of the airfield. The design day and design hour are factors in calculating the airport's annual service volume as well as evaluating the hourly capacity. The peak month was evaluated over the last decade as a percentage of annual operations. Although the peak month occurred during several different months over the years, May was most common, followed by April. The percentage of operations in the peak month varied between 9.3 percent and 12.1 percent, but has averaged 10.2 percent since 1990. The peak month was projected at this percentage over the planning horizons.

As with the GA itinerant operations, design day was calculated by dividing the peak month activity by 31. The design hour averages 15.0 percent of the daily operations. This percentage was projected throughout the planning horizons. **Table 3C** summarizes the peak activity forecasts for total operations.

AIRFIELD CAPACITY

Airfield capacity is measured in a variety of different ways. The **hourly capacity** of a runway measures the maximum number of aircraft that can take place in an hour. The **annual service volume (ASV)** is an annual level of service that may be used to define airfield capacity needs. **Aircraft delay** is the total delay incurred by aircraft using the airfield during a given time frame. FAA Advisory Circular 150/5060-5, **Airport Capacity and Delay**, provides a methodology for examining the operational capacity of an airfield for planning purposes. This analysis takes into account specific factors about the airfield. These various factors are depicted in **Exhibit 3A**. The following describes the input factors as they relate to Oxnard Airport:

- **Runway Configuration** - A single runway configuration with a full length parallel taxiway and instrument approaches.

- **Runway Use** - There is no formal runway use program in place, but prevailing winds dictate the use of

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AIRFIELD LAYOUT

Runway Configuration

Runway Use

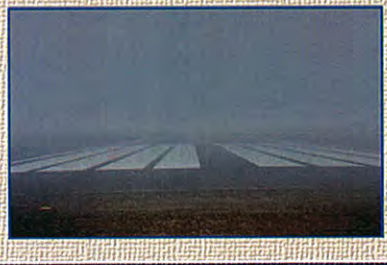
Number of Exits

WEATHER CONDITIONS

VFR

IFR

PVC



AIRCRAFT MIX

A&B

< 12,500#


Small Turboprop


Twin Piston


Single Piston

C

> 12,500#
< 300,000#


Business Jet


Commuter

D

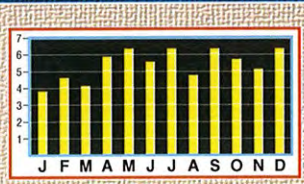
> 300,000#

not applicable
to Oxnard Airport

OPERATIONS

Arrivals and Departures

Total Annual Operations



Touch-and-Go Operations

OXNARD AIRPORT

Exhibit 3A
AIRFIELD CAPACITY
FACTORS

Runway 25 approximately 80 percent of the time.

- **Exit Taxiways** - Based upon mix, only taxiways between 2,000 feet and 4,000 feet from the runway threshold count in the exit rating. The exits must also be at least 750 feet apart to be credited. Therefore, Runway 25 is credited for only one taxiway exit, while Runway 7 gets credited for two.

- **Weather Conditions** - The airport operates under visual flight rules (VFR) 84 percent of the time. Instrument flight rules (IFR) occur when cloud ceilings are between 500 and 1,000 feet, and visibility is between one and three statute miles. This occurs 13 percent of the time. Poor visibility conditions (PVC) apply for minimums below 500 feet and one mile. This occurs three percent of the time.

- **Aircraft Mix** - Description of the classifications and the percentage mix for each planning horizon is presented on **Table 3D**.

- **Percent Arrivals** - Generally follows the typical 50-50 percent split.

- **Touch-and-Go Activity** - Percentages of touch-and-go activity are presented in **Table 3D**.

- **Operational Levels** - Operational planning horizons were outlined in the previous section of this chapter. The peak month averages 10.2 percent of the year. The peak hour currently averages 16 percent of the operations in a day, and will decline to 15 percent as operations increase over the long term.

HOURLY RUNWAY CAPACITY

Based upon the input factors, current and future hourly capacities for the various operational scenarios at Oxnard Airport were determined. The hourly operational capacity during VFR ranges between 98 and 108 operations per hour. During IFR, the hourly capacity of the runway drops to between 58 and 62 operations per hour, and during PVC the capacity drops to 49 operations per hour. This is due to increased spacings required between aircraft during IFR conditions.

As the mix of aircraft operating at an airport changes to include a higher percentage of large aircraft (weighing over 12,500 pounds), the hourly capacity of the system declines. As indicated on **Table 3D**, the percentages of Class C aircraft will increase with the planning horizon activity milestones. This results in a decline in the hourly capacity.

TABLE 3D
Aircraft Operational Mix - Capacity Analysis
Oxnard Airport

Aircraft Classification	Current	Short Term	Intermediate Term	Long Term
VFR				
Classes A & B	87%	85%	83%	81%
Class C	13%	15%	17%	19%
Class D	0%	0%	0%	0%
IFR				
Classes A & B	70%	68%	65%	63%
Class C	30%	32%	35%	37%
Class D	0%	0%	0%	0%
Touch-and-Go's	33%	32%	30%	28%

Definitions:
- Class A: Small single engine aircraft with gross weight of 12,500 pounds or less.
- Class B: Small twin-engine aircraft with gross weight of 12,500 pounds or less.
- Class C: Large aircraft with gross weights over 12,500 pounds up to 300,000 pounds.*
- Class D: Large aircraft with gross weights over 300,000 pounds.*

* OXR's published pavement strength is 70,000 pounds.

The weighted hourly capacity reflects the average capacity of the airfield taking into account VFR, IFR, and PVC conditions. The current and future weighted hourly capacities are depicted in **Table 3E**. At Oxnard Airport, the current weighted hourly capacity is 84 operations. This is expected to decline to 78 operations in the long term. This is still well above the design hour of 57 operations expected in the long term.

ANNUAL SERVICE VOLUME

The weighted hourly capacity is utilized to determine the annual service volume in the following equation:

$$ASV = C \times D \times H$$

- C = weighted hourly capacity;
- D = ratio of annual demand to the average daily demand during the peak month; and
- H = ratio of average daily demand to the design hour demand during the peak month.

The ratio of annual demand to average daily demand (D) was determined to be 304 for OXR. This is expected to remain relatively constant over the long range planning period. The ratio of average daily demand to average peak hour demand (H) was determined to be 6.57. This ratio was also projected to increase slightly to 6.63 by the long term planning horizon.

The current ASV was determined to be 167,000 operations. As mentioned earlier, the percentage of Class C aircraft utilizing the airport is expected to increase as activity increases. This will result in a decline in the annual service volume to 157,000 as operations increase over the planning horizons. With adjusted operations in 2002 totaling over 92,000, the airport is currently at 55 percent of its annual service volume. Long range adjusted annual operations are forecast to reach over 119,000 operations which would be 76 percent of the airport's ASV. **Table 3E** summarizes the airport's ASV over the long range planning horizon.

TABLE 3E
Airfield Demand/Capacity Summary
Oxnard Airport

	PLANNING HORIZON			
	Base Year (2002)	**Short Term**	**Intermediate Term**	**Long Term**
Operational Demand				
Annual (Adjusted)	92,078	99,300	107,500	119,600
Design Hour	42	48	52	57
Operational Capacity				
Annual Service Volume	167,000	163,000	157,000	158,000
Weighted Hourly Capacity	83.7	81.6	77.9	78.4
Delay				
Per Operation (Min.)	0.41	0.50	0.65	0.81
Total Annual (Hrs.)	629	828	1,167	1,612

AIRCRAFT DELAY

As the number of annual aircraft operations approaches the airfield's capacity, increasing amounts of delay to aircraft operations begin to occur. Delays occur to arriving and departing aircraft in all weather conditions. Arriving aircraft delays result in aircraft holding outside the airport traffic area. Departing aircraft delays result in aircraft holding at the runway end until released by air traffic control.

Table 3E summarizes the aircraft delay analysis conducted for Oxnard Airport. Current annual delay is a minimal 629 hours. As an airport's operations increase toward its annual service volume, delay increases exponentially. Analysis of delay factors for the long range planning horizon indicate that annual delay can be expected to reach 1,612 hours. This should still be a very manageable level of delay.

CAPACITY ANALYSIS CONCLUSIONS

This section has examined the capability of the airfield to handle aircraft operations without excessive capacity and delay. **Exhibit 3B** compares annual service volume to existing and forecast operational levels at Oxnard Airport. The current operations level represents 55 percent of the airfield's annual service volume. By the end of the planning period, total annual operations are expected to represent 76 percent of annual service volume. Thus, the airfield has adequate operational capacity for the long range planning horizon.

CRITICAL AIRCRAFT

The selection of appropriate FAA design standards for the development and location of airport facilities is based primarily upon the characteristics of the aircraft which are currently using, or are expected to use, the airport. The critical design aircraft is defined as the most demanding category of aircraft, or family of aircraft, which conducts at least 500 operations per year at the airport. Planning for the type of aircraft use is of particular importance since design standards are used to plan separation distances between facilities. These standards must be considered to ensure the airport operates with maximum safety.

The FAA has established a coding system to relate airport design criteria to the operational and physical characteristics of aircraft expected to use the airport. This airport reference code (ARC) has two components: the first component, depicted by a letter, is the aircraft approach category and relates to aircraft approach speed (operational characteristic); the second component, depicted by a Roman numeral, is the airplane design group and relates to aircraft wingspan (physical characteristic). Generally, aircraft approach speed applies to runways and runway-related facilities, while airplane wingspan primarily relates to separation criteria involving taxiways, taxilanes, and landside facilities.

According to FAA Advisory Circular (AC) 150/5300-13, *Airport Design*, an aircraft's approach category is based upon 1.3 times its stall speed in landing configuration at that aircraft's maximum certificated weight. The five approach categories used in airport planning are as follows:

Category A: Speed less than 91 knots.

Category B: Speed 91 knots or more, but less than 121 knots.

Category C: Speed 121 knots or more, but less than 141 knots.

Category D: Speed 141 knots or more, but less than 166 knots.

Category E: Speed greater than 166 knots.

The airplane design group (ADG) is based upon the aircraft's wingspan. The six ADG's used in airport planning are as follows:

Exhibit 3B
AIRFIELD DEMAND VS. CAPACITY

Group I: Up to but not including 49 feet.

Group II: 49 feet up to but not including 79 feet.

Group III: 79 feet up to but not including 118 feet.

Group IV: 118 feet up to but not including 171 feet.

Group V: 171 feet up to but not including 214 feet.

Group VI: 214 feet or greater.

Exhibit 3C summarizes representative aircraft by ARC.

In order to determine several airfield design requirements, the critical aircraft and critical ARC should first be determined, then appropriate airport design criteria can be applied. This begins with a review of the type of aircraft using and expected to use Oxnard Airport. **Table 3F** provides a projected breakdown of planning horizon operations by airport reference code.

TABLE 3F
Airport Reference Code (ARC) Mix
Oxnard Airport

			ANNUAL OPERATIONS					
	2002		Short Term		Intermediate Term		Long Term	
Reference Code	Ops	%	Ops	%	Ops	%	Ops	%
A, B-I	83,247	90.41	88,022	88.64	93,461	86.94	101,776	85.10
A, B-II	7,903	8.58	9,219	9.28	10,261	9.55	12,002	10.04
A, B-III	220	0.47	977	0.98	2.278	2.12	3,642	3.05
C-I	333	0.36	489	0.49	700	0.65	1,000	0.84
C-II	189	0.21	316	0.32	400	0.37	600	0.50
C-III	6	0.01	12	0.01	30	0.03	50	0.04
D-I	74	0.08	116	0.12	160	0.15	200	0.17
D-II	53	0.06	94	0.09	140	0.13	230	0.19
D-III	53	0.06	60	0.06	70	0.07	100	0.08
Total	92,078	100.00	99,300	100.00	107,500	100.00	119,600	100.00

Note: Operations based upon adjusted ATCT count.

Aircraft in Approach Category C or higher comprise over 700 annual operations currently. C-I has the most with 333 while C-II has 189 operations. There are also operations by aircraft up to D-III, but they do not comprise at least 500 annual operations to be considered the critical ARC.

Consideration must also be given to aircraft at a slower approach speed but larger wingspans. Even at the slower

speeds, the size of the wingspan will determine ground taxiway design standards. The largest ADG utilizing the airport is ADG III. The aircraft in this group currently total an estimated 400 operations. The Dash 8 that was flown on regularly scheduled flights in 2001 is in ADG III. In fact, many short takeoff and landing aircraft (STOL) used for commuter airline purposes have wingspans in ADG III. As long as Oxnard Airport continues as a commuter service facility, the airport should maintain ADG III standards. **For planning purposes, Oxnard Airport should continue to plan based upon the combination of ARC D-II and B-III.**

AIRFIELD CAPABILITIES

The analyses of the operational capacity and the critical design aircraft are used to examine airfield capabilities. This includes runway configuration, runway length, pavement strength, safety design standards as well as navigational aids, lighting, and marking.

RUNWAY CONFIGURATION

The present single-runway configuration was evaluated based upon its operational capability and wind coverage. The earlier demand-capacity analysis indicated that the runway has adequate operational capacity for the activity that can reasonably be expected over the planning horizons.

The other consideration in the runway's capability involves the orientation for wind coverage. FAA Advisory Circular 150/5300-13, Change 1, **Airport Design**, considers an airport to have adequate wind coverage if aircraft can use it at least 95 percent of the time. The 95 percent wind coverage is computed on the basis of the crosswind component not exceeding 10.5 knots (12 mph) for ARC A-I and B-I; 13 knots (15 mph) for ARC A-II and B-II; and 16 knots (18 mph) for ARC A-III, B-III, and C-I through D-II.

The most recent 10 years of wind data specific to Oxnard Airport at the time of this analysis was 1993-2002. This data is graphically depicted on the wind rose in **Exhibit 3D**. The east-west orientation of Runway 7-25 provides 97.0 percent coverage for 10.5 knot crosswinds. Thus, the existing runway orientation has adequate wind coverage for all sizes and speeds of aircraft.

RUNWAY LENGTH

The evaluation of the operational capabilities of the available runway length is based upon four primary elements including the elevation of the airport, the air temperature, the gradient of the runway, and the operating weight of the aircraft. The airport elevation at Oxnard Airport is 43 feet above mean sea level (MSL). The temperature commonly used for design is the mean maximum daily temperature during the hottest month. According to the National Weather Service, that occurs in August and September and is 75.0 degrees Fahrenheit (F). The elevation varies by 11 feet from its high (43 feet) to its low

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A-I

Beech Baron 55
Beech Bonanza
Cessna 150
Cessna 172
Piper Archer
Piper Seneca

B-I
less than 12,500 lbs.

Beech Baron 58
Beech King Air 100
Cessna 402
Cessna 421
Piper Navajo
Piper Cheyenne
Swearingen Metroliner
Cessna Citation I

B-II
less than 12,500 lbs.

Super King Air 200
Cessna 441
DHC Twin Otter

B-I, II
over 12,500 lbs.

Super King Air 300
Beech 1900
Jetstream 31
Falcon 10, 20, 50
Falcon 200, 900
Citation II, III, IV, V
Saab 340
Embraer 120

A-III, B-III

DHC Dash 7
DHC Dash 8
DC-3
Convair 580
Fairchild F-27
ATR 72
ATP

C-I, D-I

Lear 25, 35, **55**
Israeli Westwind
HS 125

C-II, D-II

Gulfstream II, **III**, IV
Canadair 600
Canadair Regional Jet
Lockheed JetStar
Super King Air 350
Embraer 132

C-III, D-III

Boeing Business Jet
B 727-200
B 737-300 Series
MD-80, DC-9
Fokker 70, 100
A319, A320
Gulfstream V
Global Express

C-IV, D-IV

B-757
B-767
DC-8-70
DC-10
MD-11
L1011

D-V

B-747 Series
B-777

Note: Aircraft pictured is identified in bold type.

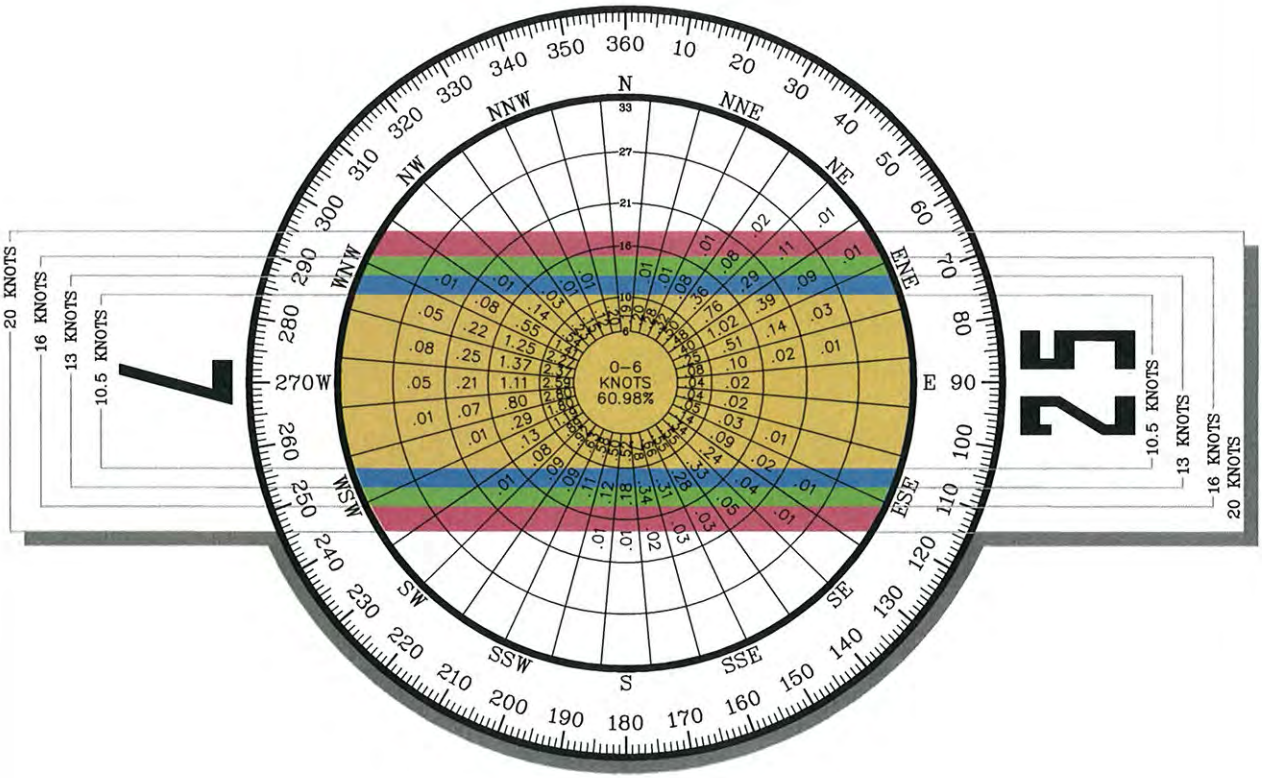
OXNARD AIRPORT

Exhibit 3C
AIRPORT REFERENCE CODES

02MP10-3D-04/30/03

ALL WEATHER WIND COVERAGE

Runways	10.5 Knots	13 Knots	16 Knots	20 Knots
Runway 7–25	*97.05%*	*98.64%*	*99.69%*	*99.93%*



Magnetic Variance
13° 41' East (April 2003)
Annual Rate of Change
2.31' West (April 2003)

SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Point Mugu Naval Air Station
Point Mugu, California

OBSERVATIONS:
78,602 All Weather Observations
1989 – 1998

OXNARD AIRPORT

Exhibit 3D
ALL WEATHER WIND ROSE

(32 feet) for a runway gradient of 0.18 percent.

The critical aircraft for runway length at Oxnard Airport are business jets. The turboprop aircraft used by the commuter airlines generally require less runway length than jets. The introduction of regional jets into many commuter airline fleets has changed at many airports. Regional jet service that would require either additional runway length or runway weight-bearing capacity at Oxnard Airport is not a consideration of this master plan.

The aircraft load is dependent upon the payload of passengers and/or cargo, plus the amount of fuel on board. For departures, the amount of fuel varies depending upon the length of a nonstop flight, or trip length. This can vary for commuter and general aviation aircraft. As a result, the runway requirements for each are evaluated to determine the critical length for Oxnard Airport.

Table 3G outlines the runway length requirements for various classifications of general aviation aircraft at Oxnard Airport. These were derived utilizing the FAA Airport Design Computer Program for **Runway Lengths Recommended for Airport Design.** These runway lengths are based upon groupings or "families" of aircraft. As discussed earlier, the runway design required should be based upon the most critical family with at least 500 annual operations.

TABLE 3G
Runway Length Requirements
Oxnard Airport

AIRPORT AND RUNWAY DATA	
Airport elevation	43 feet
Mean daily maximum temperature of the hottest month	75.0 F
Maximum difference in runway centerline elevation	11 feet
Wet runway	
RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with less than 10 passenger seats	
75 percent of these airplanes	2,400 feet
95 percent of these airplanes	2,900 feet
100 percent of these airplanes	3,500 feet
Small airplanes with 10 or more passenger seats	4,000 feet
Business jets of 60,000 pounds or less	
75 percent of these airplanes at 60 percent useful load	5,300 feet
75 percent of these airplanes at 90 percent useful load	6,600 feet
100 percent of these airplanes at 60 percent useful load	5,500 feet
100 percent of these airplanes at 90 percent useful load	7,300 feet

REFERENCE: Chapter 2 of AC 150/5325-4A, **Runway Length Requirements for Airport Design**, no Changes included.

Small aircraft are defined as aircraft weighing 12,500 pounds or less. Small airplanes make up the vast majority of general aviation activity at OXR as they do at most nonhub airports. While piston-powered aircraft make up the majority of the small airplane operations, there are several turboprops, and even some business jets, that can be characterized as small airplanes.

Runway 7-25 is 5,950 feet long. As is evident from the table, this is adequate to accommodate business jets for at least shorter haul flights (60 percent useful load). The length is not adequate to accommodate many business jets on longer haul flights (90 percent useful load). Most destinations for business jets departing from Oxnard Airport are in the western United States, although recent flight plan records indicate non-stop destinations as far east as Chicago.

PAVEMENT STRENGTH

An important feature of airfield pavement is the ability to withstand repeated use by aircraft of significant weight. Runway 7-25 is strength-rated at 50,000 pounds single wheel loading (SWL) and 70,000 pounds dual wheel loading (DWL).

The Embraer 120 turboprop aircraft currently utilized by United Express (SkyWest) Airlines has a maximum ramp weight of 26,500 pounds on dual wheel gear. Most of the business jets currently utilizing the airport weigh less than 70,000 pounds on dual wheel gear. The Gulfstream V and the Global Express are the largest business jets to visit, but use the airport on an infrequent basis. Infrequent use of an aircraft weighing slightly more than the rated pavement strength will not seriously impact the pavement. The Gulfstream V has a maximum weight of 91,400 pounds on dual wheel gear, while the Bombardier Global Express weighs a maximum of 95,000 pounds. They are not considered the critical aircraft for future planning, so the present pavement strength should be adequate.

RUNWAY SAFETY DESIGN STANDARDS

Runway safety design standards define the widths, and clearances required to optimize safe operations in the landing and takeoff area. These dimensional standards vary depending upon the ARC for each runway. **Table 3H** outlines key dimensional standards for the airport reference codes most applicable to Oxnard Airport. The runway at OXR should currently meet at least C/D-II and A/B-III standards, the airport's current critical ARCs. The following discusses the various standards as they relate to OXR.

Runway Width

The runway width is currently 100 feet, with paved shoulders of 10 feet or more. This meets the design standards for both B-III and D-II.

TABLE 3H
Airfield Design Standards
Oxnard Airport

Airport Reference Code	Current Dimensions (ft.)	B-III Standard (ft.)	C-II Standard (ft.)
Runway Width	100	100	100
Runway Safety Area			
Width	500	400	500
Length Beyond End	720	**800**	**1,000**
Runway Object Free Area			
Width	700	**800**	**800**
Length Beyond End	720	**800**	**1,000**
Runway Blast Pad			
Width	N/A	140	120
Length	N/A	200	150
Runway Centerline to:			
Holding Position	250	200	250
Parallel Taxiway	365	350	**400**
Taxiway Width	75	50	35
Taxiway Centerline to:			
Fixed or Movable Object	135	93	65.5
Parallel Taxilane	N/A	152	105
Taxilane Centerline to:			
Fixed or Movable Object	N/A	81	57.5
Parallel Taxilane	N/A	140	97
Runway Protection Zones - One mile or greater visibility			
Inner width	500	500	500
Length	1,700	1,700	1,700
Outer width	1,010	1,010	1,010
Category I			
Inner Width	1,000	1,000	1,000
Length	2,500	2,500	2,500
Outer Width	1,750	1,750	1,750

Note: Dimensions in bold indicate that design standard exceeds the current dimensions on the airport.

Runway Safety Area

The single-most critical design standard is the runway safety area. FAA Advisory Circular (AC) 150/5300-13 defines the runway safety area (RSA) as, "A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot or excursion from the runway." According to the AC, the RSA shall be:

1) cleared and graded and have no potentially hazardous ruts, depressions, or other surface variations;
2) drained by grading or storm sewers to prevent water accumulation;
3) capable, under dry conditions, of supporting aircraft rescue and firefighting equipment, and the occasional passage of aircraft without causing structural damage to the aircraft; and
4) free of objects, except for objects that need to be located in the safety area because of their function.

Approach Categories C and D have the most extensive standards for the RSA. OXR meets the RSA width standard of 500 feet. The extended RSA to the west of the runway meets the full standard of 1,000 feet, but the extended RSA to the east of the runway does not. There is presently 720 feet of RSA beyond the east end of the runway. This is 280 feet short of the design standard.

Runway Object Free Area

A related standard to the RSA is the runway object free area (ROFA) which is defined as, "A two dimensional ground area surrounding runways, taxiways, and taxilanes which is clear of objects except for objects whose location is fixed by function." Except where precluded by other clearing standards, it is acceptable to place objects that need to be located in the ROFA for air navigation purposes or aircraft ground maneuvering purposes, and to taxi and hold aircraft in the ROFA. Objects nonessential for air navigation or aircraft ground maneuvering purposes are not to be placed in the ROFA.

As with the RSA, Approach Categories C and D standards are the most demanding with a width of 800 feet and an extended length of 1,000 feet beyond the runway end. The airport's north property line is located 300 feet north of the runway centerline, resulting in a 100-foot encroachment into the width of the ROFA. The west end of the runway meets the extended ROFA standard, but the east end has an extended ROFA of 720 feet.

Runway Centerline Separations

The dimensional standards for separations of aircraft on the ground from the runway centerline include the hold position and parallel taxiway separation. The holding positions at 250 feet are adequate for D-II. The parallel taxiway centerline is located 365 feet from the runway centerline. This does not meet the Approach Categories C and D standard of 400 feet.

Taxiway Standards

As indicated earlier, the Airplane Design Group (ADG) sets the taxiway standards. The current taxiway width of 75 feet exceeds the design standard for ADG III. Key taxiway separation requirements include the distance to fixed or movable objects. The minimum separation available is 135 feet. This exceeds the design standard of 93 feet for ADG III.

Runway Protection Zones

The runway protection zone (RPZ) is defined as an area off the runway end to enhance the protection of people and property on the ground. The RPZ is a trapezoidal shape varying in size depending upon approach minimums and the approach category of the design aircraft. For a runway with a precision instrument approach the RPZ is 1,000 feet x 2,500 feet x 1,750 feet. For runways with approach minimums of one mile visibility or more, the RPZ is 500 feet x 1,700 feet x 1,010 feet for Approach Categories C and D aircraft.

TAXIWAYS

Taxiways facilitate aircraft movements to and from the runway system. Some taxiways are necessary simply to provide access between the aprons and runways, whereas other taxiways become necessary as activity increases at an airport to provide safe and efficient use of the airfield.

As detailed in Chapter One, Runway 7-25 is served by a full length parallel taxiway, and five exit/entrance taxiways on the south side of the runway. With all the landside facilities currently being located on the south side of the airport, the parallel taxiway meets the circulation needs.

NAVIGATIONAL APPROACH AIDS

Navigational aids provide two primary services to airport operations, precision guidance to specific runway and/or non-precision guidance to a runway or the airport itself. The basic difference between a precision and non-precision navigational aid is that the former provides electronic descent, alignment (course), and position guidance, while the non-precision navigational aid provides only alignment and position location information. The necessity for such equipment is usually determined by design standards predicated on safety considerations and operational needs. The type, purpose, and volume of aviation activity expected at the airport are factors in the determination of the airport's eligibility for navigational aids.

The advancement of technology has been one of the most important factors in the growth of the aviation industry in the twentieth century. Many of the civil aviation improvements have been derived and enhanced from initial development for military purposes. The use of orbiting satellites to confirm an aircraft's location is one of the latest military developments to be made available to the civil aviation community.

Global positioning systems (GPS) use multiple satellites to derive an aircraft's location by a triangulation method. The accuracy of these systems has been remarkable, with initial degrees of error of only a few meters. As the technology improves, it is anticipated that GPS may be able to provide accurate enough position information to allow Category II and III precision instrument approaches, independent of any existing ground-based navigational facilities. In addition to the navigational benefits, it has been estimated that GPS equipment will be much less costly than existing precision instrument landing systems.

Currently, the best minimums to Oxnard Airport are provided by the ILS approach to Runway 25. This approach provides weather minimums down to 300-foot AGL cloud ceilings and one-mile visibility. The only published approach to Runway 7 is provided by a GPS approach with a 500-foot ceiling and one mile visibility for Approach Categories A and B aircraft, and 500 feet and 1-1/4-mile visibility for Category C. Category D minimums on Runway 7 are 500 feet and 1-1/2 miles.

While this is adequate for most current operations, improved minimums can enhance the safety of the airport and minimize flight cancellations. If opportunities to reduce minimums to 3/4- or ½-mile become available with GPS, they should be considered for Oxnard Airport.

Visual glide slope indicators provide visual descent guidance information during approach. There are two forms of these aids that have been regularly installed by the FAA at airports. They include precision approach path indicators (PAPI) and visual approach path indicators (VASI). Both are in use at OXR. Runway 25 is equipped with PAPI-2 while Runway 7 has VASI-4.

Two types of automated weather observing systems are currently deployed at airports around the country. ASOS (automated surface observing system) and AWOS (automated weather observing system) both measure and process surface weather observations 24 hours a day, with reporting varying from one minute to hourly. The systems provide near real-time measurements of atmospheric conditions.

ASOS is typically commissioned by the National Weather Service or the Department of Defense. AWOS is often commissioned by the Federal Aviation Administration for airports that meet criteria of either 8,250 annual itinerant operations or 75,500 annual local operations. Oxnard Airport currently has an ASOS operating on-site.

OXR is presently served by a federal control tower operated on a contract basis. While hours may change based upon activity, the tower should be adequate for the planning period.

AIRFIELD LIGHTING, MARKING, AND SIGNAGE

Runway approach lighting provides the pilot with a rapid and positive identification of the runway end for final approach. Runway 25 is presently equipped with a medium intensity

approach light system with runway alignment indicator lights (MALSR). The MALSR will also be needed for any improved minimums. A similar system would be needed to achieve lower minimums on Runway 7.

Medium intensity runway edge lighting (MIRL) is currently available along Runway 7-25 and will be adequate for the planning horizons. The taxiway system is lighted with medium intensity taxiway lighting (MITL), and will also be adequate for the planning period. Lighted airfield signage on the primary runway currently meets standards for certificated commercial service airports.

Precision runway marking should be maintained on Runway 25, and will be needed for any approach improvements. The non-precision markings on Runway 7 will be adequate for the current approach. Basic taxiway marking will continue to be adequate.

The airport also has a lighted wind cone and segmented circle which provide pilots with information about wind conditions and the airport traffic pattern. In addition, an airport beacon assists in identifying the airport from the air at night. Each of these facilities should be maintained in the future.

AIRLINE TERMINAL

Components of the terminal area complex include the terminal building, gate positions, and apron area. This section identifies the facilities required to meet the airport's needs through the planning period.

Review of the capacity and requirements for various terminal complex functional areas was performed with the guidance of the FAA Advisory Circular 150/5360-13, **Planning and Design Guidelines for Airport Terminal Facilities**. Facility requirements were updated to reflect the planning horizon milestones for enplanements. This included the current level (23,000) as well as milestone levels of 35,000, 45,000, and 60,000 annual enplaned passengers.

Airline terminal capacity and requirements were developed for the following functional areas:

- Airline Ticketing and Operations
- Security Screening
- Gates and Hold Areas
- Baggage Claim
- Terminal Services

The methodology utilized in the analysis involves the design hour passenger demands and comparison of those demands with the existing facilities. **Table 3J** presents the existing terminal building space and compares it to the space necessary to accommodate each of the planning horizon levels. In general, it was found that the current 12,250 square-foot terminal should be marginally adequate through the intermediate planning horizon of 45,000 enplanements.

TABLE 3J
Terminal Building Requirements (square feet unless noted)
Oxnard Airport

		Enplanement Milestones			
	Available	**Current**	**35,000**	**45,000**	**60,000**
AIRLINE TICKETING AND OPERATIONS					
Counter Frontage (l.f.)	30	12	18	18	24
Counter Area	240	120	180	180	240
Counter Queue	240	180	270	270	**360**
Lobby Area	1,500	1,140	**1,630**	**2,010**	**2,380**
Airline Operations	1,060	960	**1,440**	**1,440**	**1,920**
SECURITY					
Checked Baggage Search	180	120	170	**210**	**250**
Screening Station (#)	1	1	1	1	1
Screening Area	440	**600**	**600**	**600**	**600**
TSA Office	620	400	400	400	400
DEPARTURE HOLD AREA					
Aircraft Positions/Gates	2	2	2	3	3
Hold Area	420	420	**600**	**710**	**880**
BAGGAGE CLAIM					
Claim Display (l.f.)	40	24	34	40	**50**
Display Area	100	**120**	**170**	**200**	**250**
Lobby Area	1,200	630	900	1,110	**1,320**
Bag Input	120	**230**	**330**	**400**	**480**
RENTAL CAR					
Counter Frontage (l.f.)	40	16	24	28	34
Counter/Office	850	320	480	560	680
Queue Area	320	100	140	170	200
TERMINAL SERVICES					
Food and Beverage	3,050	760	1,100	1,300	1,600
Shops	0	0	**300**	**380**	**480**
Other Concessions	270	200	200	260	**320**
Restrooms	500	500	500	500	500
TOTAL PROCESSING SPACE	11,110	7,000	9,400	10,500	**12,900**
Circulation/Mech./Util.	1,140	1,000	1,400	1,600	**1,900**
TOTAL TERMINAL PROGRAM	12,250	8,000	10,800	12,100	**14,800**

Note: Figures in bold indicate that the requirement exceeds the space presently available.

GENERAL AVIATION (GA) FACILITIES

General aviation facilities are those used for handling general aviation aircraft, passengers, and cargo while on the ground. To identify GA capabilities, the following types of facilities normally associated with general aviation terminal areas are examined:

- Hangars
- Aircraft Parking Apron
- General Aviation Terminal Services

HANGARS

The demand for hangar facilities typically varies with the number and type of aircraft based at the airport. Hangar facilities are generally classified as T-hangars (including port-a-ports), executive/corporate hangars, and conventional hangars. Conventional hangars are typically larger, multi-use hangars that may also be utilized for fixed base operator (FBO) purposes. Conventional hangars can hold a varying number of aircraft depending upon size and parking arrangements. The different types of hangars offer varying levels of privacy, security, and protection from the elements.

While weather extremes in Oxnard are not considered severe, the airport's close proximity to the ocean can still have an effect on hangar decisions. Moist, salty air can be corrosive to aircraft with prolonged exposure. At Oxnard Airport, most of the based aircraft stored on the ramp are Aspen's helicopters.

It is anticipated that most based aircraft will continue to be stored in hangars over the planning horizons. The resulting facility demand for each planning horizon is shown on **Table 3K**. The new Hangar One is included in the available totals. It is estimated that 80 percent of the 20,000 square-foot hangar will be available for aircraft storage. A lease for 20 additional executive hangars has also been approved. Timing is less certain, so they are not included as currently available.

The next step in the process of determining hangar requirements involves estimating the area necessary to accommodate the required hangar space. The T-hangars and port-a-ports at OXR average 1,200 square feet per hangar space. The executive hangars at OXR average 2,500 square feet per aircraft. Planning figures for conventional hangars suggest an area of 1,200 square feet for piston and rotary aircraft, and 2,500 square feet for turbine aircraft. These figures were applied to the aircraft to be hangared. Requirements for maintenance and shop hangar area were estimated at 150 square feet per based aircraft.

Table 3K compares the existing hangar availability to the future hangar demand. The new Hangar One and the previously approved lease for 20 additional executive hangars will assist in meeting future hangar needs.

TABLE 3K
Hangar Storage Requirements
Oxnard Airport

		PLANNING HORIZONS			
	Available	**Current**	**Short Term**	**Inter-mediate**	**Long Term**
Based Aircraft					
Piston		128	133	137	143
Turbine		2	4	7	12
Rotor		12	13	14	15
Total Based Aircraft		142	150	158	170
Hangar Storage Capacity*					
Shade/T-Hangars*	104	104	104	104	104
Executive Hangars*	20	26	32	38	40
Conventional Hangars*	22	2	3	4	14
Total Hangar Capacity	146	132	139	146	158
Hangar Area Requirements					
T-Hangars (s.f.)	124,800	124,800	124,800	124,800	124,800
Executive (s.f.)	41,000	65,000	70,000	75,000	82,500
Conventional. (s.f.)	36,000	2,900	4,900	7,400	27,200
Service Hangar Area (s.f.)	19,600	21,300	22,500	23,700	25,500
Total Hangar Area (s.f.)	221,400	213,500	222,200	230,900	260,000

* Indicates number of aircraft (stored or to be stored) in this type of hangar.

GA PARKING APRON

Parking apron should be provided for at least the number of locally-based aircraft that are not stored in hangars, as well as transient aircraft. Although most will prefer hangars, a small number of based aircraft owners may still prefer ramp storage over the long range. FAA planning criterion of 350 square yards per tie-down was used to estimate the ramp area that would be needed for based fixed-wing aircraft. Based helicopter spaces were estimated at 450 square yards per aircraft. The number of local tie-downs and ramp space for the planning period is presented in **Table 3L.**

FAA Advisory Circular 150/5300-13 suggests a methodology by which transient apron requirements can be determined as 17.5 percent of busy-day itinerant operations. Planning criterion of 600 square yards per aircraft was applied to the number of transient positions to determine transient apron area. The transient apron space ratio is higher than that of the local apron, because it serves a larger variety of aircraft and is typically designed for taxi-through parking spaces.

The results of this analysis are presented in **Table 3L**. While there are currently 48 marked tie-downs, there are approximately 58,000 square yards

of GA parking apron located around the airport. As shown in the table, the existing apron area should be adequate through the planning horizons.

TABLE 3L
GA Apron Requirements
Oxnard Airport

		PLANNING HORIZONS			
	Available	**Current**	**Short**	**Intermediate**	**Long**
Non-hangared Fixed-Wing		2	2	2	2
Non-hangared Rotorcraft		8	9	10	10
Busy Day Itinerant Operations		186	218	238	271
Local Ramp Positions	NA	10	11	12	12
Transient Ramp Positions	NA	33	38	42	47
Total Ramp Positions	48	43	49	54	59
Apron Area (s.y.)	58,000	24,100	27,600	30,400	33,400

GA TERMINAL SERVICES

The general aviation facilities are often the first impression of the community that corporate officials and vacationers will encounter. General aviation terminal facilities at an airport provide space for passenger waiting, pilots' lounge and flight planning, concessions, management, storage, and various other needs. This can be accommodated in a single facility or spread throughout several fixed base operators.

The methodology used in estimating general aviation terminal facility needs was based upon the number of airport users expected to utilize general aviation facilities during the design hour.

Space requirements for terminal facilities were based on providing 120 square feet per design hour itinerant passenger. Space within the offices of the fixed base operator is used for general aviation terminal facilities.

Table 3M outlines the space requirements for general aviation terminal services at Oxnard Airport through the long term planning horizon. The general aviation terminal facilities were undersized prior to the replacement of Hangar One. Now, it will be generally sufficient through the long term.

TABLE 3M
GA Terminal Services Requirements
Oxnard Airport

		PLANNING HORIZONS			
	Available	**Current**	**Short Term**	**Intermediate**	**Long Term**
Itinerant Operations					
Annual		44,822	48,200	52,900	60,200
Design Hour		24	26	28	32
Pax/OP		1.9	2.0	2.1	2.3
Des. HR Pax		46	52	59	74
Terminal Space (s.f.)	8,600	5,500	6,300	7,100	8,800

TERMINAL ACCESS AND PARKING

The airport's ground access and parking system begins with the off-airport access route, and extends to the on-airport access and circulation, as well as the interface at the terminal curb and vehicle storage in the parking lots.

AIRPORT ACCESS ROUTES

With all aviation-related facilities located on the south side of the airfield, Fifth Street is the primary access to the airport. The east-west roadway intersects with four-lane, arterial roadways that run north-south at either end of the airport. At the east signalized intersection with Ventura Road, Fifth Street is also four lanes divided with left turn lanes. As it extends to the west in front of the FBO facilities, Fifth Street reduces to two lanes plus a center turn lane. It remains in this configuration for approximately 1,500 feet before widening to a divided four-lane once more on the approach to the terminal entrance road. There are left turn lanes at the terminal entrance as well as at the signalized intersection with Patterson Road. West of Patterson Road, Fifth Street again narrows to two lanes before widening back to four lanes on the approach to the intersection with Victoria Boulevard at the west end of the airport.

Patterson Road is a secondary access option to the airport. Patterson Road is also a four-lane roadway that begins at the airport and extends south to Channel Islands Boulevard.

According to City of Oxnard traffic counts from July 2001, Fifth Street handles 16,800 vehicles per day east of Patterson Road and 9,200 vehicles per day west of Patterson Road. Patterson Road, south of Fifth Street, carries 9,000 vehicles per day. While the current road system will be adequate to meet the airport's needs, other development along Fifth Street will likely require that the rest of this roadway be developed to four lanes, divided with left turn lanes.

The terminal access road system consists of a two-lane, one-way road system extending from Fifth Street north to the terminal building, then west along the front of the terminal building and parking lot, before ending at an intersection with Patterson Road. Vehicles wishing to return to the terminal either from the access road or the parking lot, must turn onto Patterson Road, left onto Fifth Street, then left onto the terminal access road.

Ideally, a loop road system maintained entirely on airport property would be preferred. Given the airport's Mission Statement and the projected demand, the airport traffic levels are not anticipated to create significant problems for the existing system.

TERMINAL CURB FRONTAGE

The curb element is the interface between the terminal building and the ground transportation system. The length of curb required for the loading and unloading of passengers and baggage is determined by the type and volume of ground vehicles anticipated in the peak period on the design day.

A typical problem for terminal curb capacity is the length of dwell time for vehicles utilizing the curb. At airports where the curb front has not been strictly patrolled, vehicles have been known to be parked at the curb while the driver and/or riders are inside the terminal checking in, greeting arriving passengers, or awaiting baggage pick-up. With most curbs not designed for vehicles to remain curbside for more than two to three minutes, capacity problems can ensue. Since the events of September 11, 2001, commercial service airports police the curb-front much more strictly for security reasons. This alone, has reduced the curb-front capacity problems at most airports.

At OXR, the terminal roadway provides one lane for loading and unloading of passengers. The curb frontage is approximately 160 feet in length. **Table 3N** presents the curb frontage requirements for the planning horizons. The available curb length should be adequate through the long term planning horizon.

VEHICLE PARKING

Airline Passenger Terminal

Vehicle parking in the airline passenger terminal area of the airport includes those spaces utilized by passengers, visitors, and employees of the airline terminal facilities. Parking spaces are classified as public, employee, and rental car.

Public parking is located in a surface lot immediately south of the terminal building. This parking lot contains 256 spaces including 36 rental car ready/return spaces. The 220 public spaces include 26 short term spaces where parking is limited to two hours or less.

Table 3N presents the parking demand for the planning horizons. A standard ratio of 4.0 spaces per 1,000 annual enplanements was utilized for this analysis. Short term parking typically comprises 15 percent of the public

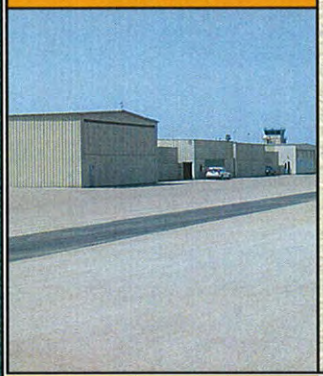
02MP09-3D-5/6/03

CATEGORY	EXISTING	SHORT TERM	LONG RANGE
RUNWAYS 	**Runway 7-25** 5,950' x 100' Displaced Threshold: 1,372' (25) 70,000# DWL	**Runway 7-25** Same	**Runway 7-25** Same
TAXIWAYS 	**Runway 7-25** Full Length Parallel 75' Wide Five Exits	**Runway 7-25** Same	**Runway 7-25** Same
NAVIGATIONAL AIDS 	Federal Control Tower (FCT) ASOS **Runway 7-25** ILS (25) GPS VASI-4 (7) PAPI-2 (25) VOR/DME	Federal Control Tower (FCT) ASOS **Runway 7-25** Same	Federal Control Tower (FCT) ASOS **Runway 7-25** CAT I GPS VASI-4 (7) PAPI-2 (25)
LIGHTING AND MARKING 	Wind Cone Segmented Circle Airport Beacon, MITL **Runway 7-25** MIRL MALSR (25) Precision Marking	Wind Cone Segmented Circle Airport Beacon, MITL **Runway 7-25** Same	Wind Cone Segmented Circle Airport Beacon, MITL **Runway 7-25** MIRL MALSR Precision Marking

OXNARD AIRPORT

Exhibit 3E
AIRFIELD FACILITY REQUIREMENTS

02MP10-3F-4/17/03

CATEGORY	AVAILABLE	CURRENT	SHORT TERM	INTERMEDIATE	LONG RANGE
HANGARS					
					
Conventional Hangars	±22	2	3	4	14
T-Hangars	104	104	104	104	104
Executive Hangars	20	26	32	38	40
Total	**146**	**132**	**139**	**146**	**158**
APRON TIE-DOWNS					
					
Aircraft Positions	48	43	49	54	59
Area (sq. yds.)	58,000	34,000	38,900	42,400	47,600
TERMINAL					
					
Airline Gross Area (sq. ft.)	12,250	8,000	10,800	12,100	14,800
Aircraft Gate Positions	2	2	2	3	3
General Aviation Gross Area (sq. ft.)	8,600	5,500	6,300	7,100	8,800
AUTO PARKING					
					
Public Airline	220	80	140	180	240
Employee	43	21	28	34	42
Rental					
• Ready/Return	56	27	39	45	54
• Service/ Storage (ac)	0.5	0.3	0.4	0.5	0.7
General Aviation	186	95	105	116	138

OXNARD AIRPORT

Exhibit 3F
LANDSIDE FACILITY REQUIREMENTS

OXNARD AIRPORT

Chapter Four
ALTERNATIVES

CHAPTER FOUR

ALTERNATIVES

The previous chapter evaluated the ability of the airside and landside facilities to satisfy a demand potential reflective of the mission statements for both Oxnard Airport and the Ventura County Department of Airports. The next step in the planning process is to consider the ways that these limited needs can be provided.

The facility considerations for Oxnard Airport (OXR) can be categorized into two functional areas: The **airside** (airfield) and **landside** (terminal, hangars, apron, and auto parking). Within each of these areas, specific facilities are required for safety and security. Others are related to demand that is still likely to be generated within the constraints of the mission statements. Although each functional area is treated separately, planning must integrate the individual requirements so they complement one another.

As indicated in the introduction, this Master Plan has the specific objective of reexamining the recommended direction of the **1996 Draft Master Plan**. This will include incorporating changes where conditions and circumstances may have invalidated the previous recommendations. Still valid concepts may be retained while new concepts are developed for those concepts that are either no longer valid or considered to be unacceptable or unworkable. Thus, the discussions of this chapter lead off with a review of the **1996 Draft Master Plan**.

REVIEW OF 1996 DRAFT MASTER PLAN

The **1996 Draft Master Plan** was developed based upon a premise of serving reasonable growth in aviation demand in the Ventura County area. The study recognized the basic limitations of Oxnard Airport and examined means by which it could continue to operate as a safe, efficient facility that served its reasonable share of area aviation demand.

The draft plan was also demand-based and was designed to allow the airport to respond to aviation demand as it presented itself. **Exhibit 4A** is a drawing depicting the primary recommendations of the draft plan.

The plan did not call for any change in the runway pavement. Airfield recommendations focused on enhancing safety and approach minimums. This included recommendations to clear and control the runway object free area (OFA) to the extent practical, as well as to establish positive control over the areas within the runway protection zones (RPZs). Other airfield recommendations included improved minimums for both approaches, a perimeter service road, two additional taxiway exits, and pavement maintenance.

An alternative that was considered, but removed from the final recommendations involved relocating the Runway 25 displaced threshold further to the east. This would have provided an additional margin of safety for all landing aircraft as well as improve the landing length on the airport's instrument landing system (ILS) approach. The landing length would have been increased from 4,578 feet to 5,500 feet. This would have served to reduce the number of flight cancellations by the airlines as well as to reduce the number of diversions and delays to the business and corporate aircraft that use the airport.

On the landside, the draft plan included recommendations for passenger terminal and parking improvements that would allow the airport to serve a long-range planning horizon milestone of 130,000 enplanements. This included improvements to the existing terminal building, additional auto parking, and a redevelopment of the terminal access roadway to include an interior loop circulation system. This was designed to keep the terminal's recirculating traffic off of Fifth Street.

In the general aviation areas, the plan recommended a reconfiguration of the T-hangar area over time to provide more clearance from the runway, improve circulation, and increase hangar storage. The plan recommended acquisition of the parcel located between the terminal and the east general aviation area. It showed how the parcel could be developed for corporate aircraft storage and terminal parking and circulation. The plan included locations for a consolidated fuel farm and additional fixed base operator (FBO) development. As with the airfield, pavement maintenance and rehabilitation were also included for the terminal and general aviation aprons.

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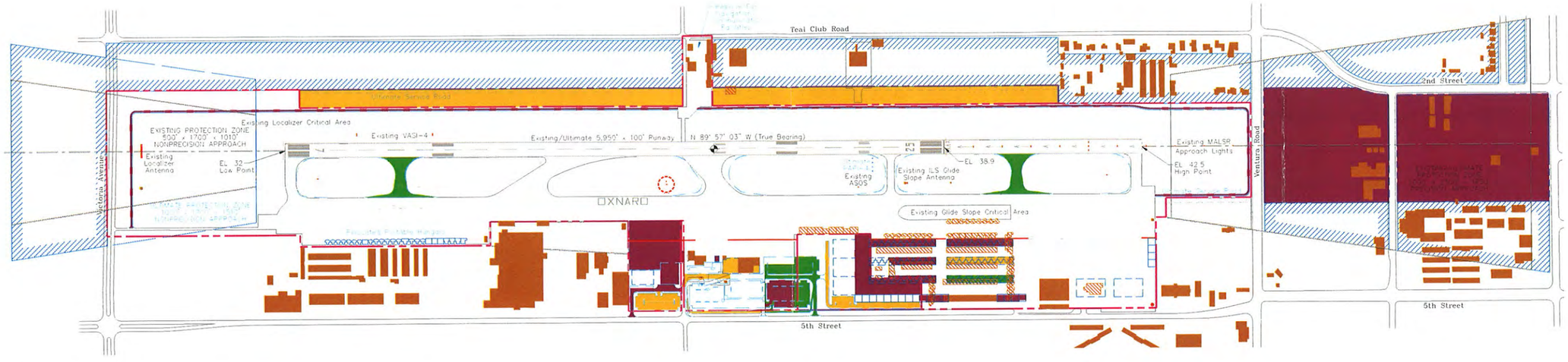

SHORT TERM IMPROVEMENTS (FY 1996-FY 2000)

- Prepare Consolidated Fuel Farm Site
- Construct Fuel Farm/FBO Access Road
- Construct ARFF Shelter
- Construct East Terminal Parking Lot (Phase I)
- Construct Perimeter Service Road
- East RPZ Acquisition Program
- Install PAPI-4 on Runway 7-25
- Hangar Area Taxiway Improvements (Phase I)
- Replace 12-unit with 20-unit T-hangar & relocate 29 port-a-ports and 8 executive hangars

INTERMEDIATE TERM HORIZON IMPROVEMENTS

- Construct Employee/Overflow Parking Lot
- Expand Terminal Building
- Straighten Terminal Access Road
- Construct Terminal Loop Return Lane
- Replace 12-unit with 20-unit T-hangar
- Extend Hangar Area Access Road
- North Property Acquisition Program

LONG RANGE HORIZON IMPROVEMENTS

- Move Terminal Entrance Road East
- Relocate Rental Car Lot
- Extend Parking Lot East
- Construct Two Exit Taxiways
- Replace 12-unit with 20-unit T-hangar

LEGEND

- Short Term Improvements
- Intermediate Term Horizon Improvements
- Long Range Horizon Improvements

0 800 1600

SCALE IN FEET

NORTH

OXNARD AIRPORT

Exhibit 4A
1996 DRAFT AIRPORT
MASTER PLAN

The **1996 Draft Master Plan** and Airport Layout Plan (ALP) contained within never received environmental concurrence from the Ventura County Board of Supervisors, so it was never officially adopted by the County, and subsequently, was never submitted to the Federal Aviation Administration (FAA) for approval of the ALP.

NON-OXR ALTERNATIVES

Alternatives that do not involve improvements at Oxnard Airport include the "No Action" alternative, transferring services to another existing airport, or developing an airport at a different location. The mission statement for the Ventura County Department of Airports recognizes the need for providing "*safe, efficient, and accessible facilities for the provision of general aviation and limited commercial service needs of the citizens of Ventura County.*"

The mission statement also limits "*the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.*" It also calls for optimizing "*the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.*"

The Oxnard Airport Mission Statement also places "*a strong emphasis on safety, cooperation with neighbors, and responsible flight operations*" while maintaining "*a viable center for air commerce which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.*"

While development may be limited, the other aspects of the mission statements render a pure "No Action" alternative impractical. There are several improvements that need to be considered for safety and security, as well as to maintain a viable aviation facility. This leaves only service from another airport as an option to at least limited improvements at Oxnard Airport.

It is not uncommon for those living closest to an airport, such as OXR, to support relocating the facility elsewhere. This has been an issue in the past and will invariably be an issue in the future. Relocating an airport, however, is a complex and expensive task. In addition to a major financial investment, a replacement airport also can require a commitment of extensive land area. Even though the ideal location for a new airport may be undeveloped, the potential for impacts to wildlife habitat, wetlands, farmland, and cultural resources will typically be higher than at an existing airport site. In addition, a new site is also likely to be more distant and less convenient to its users.

The Department of Airport's Mission Statement recognizes that Camarillo and Oxnard Airports should provide services in a manner that complement each other. Transferring services from Oxnard Airport to Camarillo Airport is not considered to be consistent with either mission statement.

The transfer of civil aviation services to Naval Base Ventura County (Pt. Mugu) has been a much discussed issue in Ventura County over the past decade with the uncertainty surrounding base closures. A joint-use feasibility study was conducted in the mid-1990s as a means to show the impact Pt. Mugu could make as a joint-use commercial service/military facility. The study concluded that Pt. Mugu could facilitate scheduled commercial air carrier service.

Recommendations by the Base Realignment and Closure Commission (BRACC), however, spared Pt. Mugu from the closure list. With the events of 9-11 leading to the ongoing war on terrorism and heightened military alert, it does not appear that Pt. Mugu will be closing anytime soon. In addition, there presently appears to be little or no desire expressed on the part of the U.S. Department of Defense to consider Pt. Mugu as a joint-use facility.

As was indicated in Chapter Two, Ventura County generates 5.2 percent of the commercial service passengers in the Los Angeles Basin, but Oxnard Airport serves only 0.1 percent. The **Regional Aviation Plan for 2001** prepared by the Southern California Council of Governments (SCAG) calls for a more decentralized airport system including former miliary bases and joint-use facilities, rather than expanding existing urban airports.

The Oxnard Airport Mission Statement recognizes the fact that the airport is limited in expansion potential, as well as the need to accommodate the commercial service demands generated in Ventura County. As a result the mission statement calls for a continued *"search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County."*

Thus, the relocation of commercial service to another airport remains an alternative to be considered by the County at some point in the future. Even if that movement was to begin immediately, it would likely be a minimum of eight years before the site evaluations, master plan environmental impact reports, property acquisition or release, environmental mitigation, design, and construction were completed and the first commercial service aircraft landed. In the interim, the Oxnard Airport's role is to continue to provide safe and efficient commercial air service to the area.

With or without air service in the future, the purpose and scope of this Master Plan also remains to fulfill the other aspects of the two mission statements. As a result, the remainder of this chapter will focus on the issues and considerations that are a part of maintaining Oxnard Airport as a limited, but viable commercial service aviation facility, at least until a suitable commercial alternative is found. At such time, the airport may continue to serve general aviation needs in the local community.

KEY PLANNING ISSUES

With no plan on the immediate horizon for a regional airport to serve the commercial service needs of Ventura County, the existing Oxnard Airport

must be maintained to accommodate not only local general aviation needs, but also limited commuter airline service in accordance with the mission statements. The previous chapter identified the facility improvements necessary to maintain a limited, but safe, secure, and efficient airport facility. **Exhibit 4B** outlines the key considerations that need to be addressed.

At the top of the list is airport operational safety. The airfield design standards review in the previous chapter indicated the runway does not meet FAA standards for runway safety area (RSA), object free area (OFA), and runway-taxiway separation. In addition, the runway protection zone (RPZ) encompasses several homes and other buildings. Alternatives need to be reviewed to ensure the airport meets the design standards to the extent practical.

Another consideration involves the installation of a blast pad off the east end of Runway 25. Approximately 80 percent of the departures from this airport use this runway. A blast pad would reduce the propensity to scour the turf beyond the runway end due to engine blast from aircraft beginning their takeoff roll. Improved approach minimums to both ends of the runway continue to be desirable.

In the passenger terminal area, security will be an ongoing issue as the airport continues to adapt to new security measures. The terminal building will be marginally adequate for the long-range planning horizon, but could become severely overextended if future changes in security require additional space. Efficiencies within the existing terminal should be considered, as well as a plan to add space if needed to meet future security mandates.

Another issue that is currently being addressed is the aircraft ramp that is currently being used to service and store rental cars. Since this ramp was built with FAA funds, the airport is required to relocate the rental cars elsewhere so the ramp can be used for aviation purposes as originally intended.

With leases for 20 new hangars at the west end of the airport approved, basic aircraft storage needs should be met in the short-to-intermediate term. Consideration should still be given to updating/redeveloping the east FBO and hangar areas. Many of these facilities are aging, thus providing an opportunity to develop a replacement plan that is more efficient.

AIRFIELD CONSIDERATIONS

With the airfield pavements to remain unchanged, the airfield considerations focus on safety, security, and navigational aids. The primary issue is safety. The runway-taxiway system currently does not fully meet FAA design standards for RSA and OFA as outlined in FAA Advisory Circular 150/5300-13, **Airport Design**, through Change 7.

The design standards can also affect any new instrument approach

procedures, such as a reduction in minima. According to Appendix 16 of the above-referenced advisory circular, FAA Order 8260.19, **Flight Procedures and Airspace**, reflects the design standards as the "minimum airport landing surface requirements that must be met prior to the establishment of (new) instrument approach procedures."

The most critical safety design standard is the RSA. A runway safety area analysis is provided below.

RUNWAY SAFETY AREA ANALYSIS

The runway safety area is defined in AC 150/5300-13 as: "A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway."

FAA Order 5300.1F, **Modification of Agency Airport Design, Construction, and Equipment Standards** indicates in Paragraph 6.d. the following:

". . . Runway safety areas at both certificated and non-certificated airports that do not meet dimensional standards are subject to FAA Order 5200.8, **Runway Safety Area Program**. Modifications of Standards are **not** issued for nonstandard runway safety areas."

FAA Order 5200.8 establishes the procedures that the FAA will follow in implementing the Runway Safety Area Program. Paragraph 5 of this Order states:

"The objective of the Runway Safety Area Program is that all RSAs at federally obligated airports . . . shall conform to the standards contained in AC 150/5300-13, **Airport Design**, to the extent practicable."

The Order goes on to indicate in Paragraph 8.b.:

"The Regional Airports Division Manager shall review all data collected for each RSA in Paragraph 7, along with the supporting documentation prepared by the region/ADO for that RSA, and make one of the following determinations:

(1) The existing RSA meets the current standards contained in AC 150/5300-13.

(2) The existing RSA does not meet the current standards, but it is practicable to improve the RSA so that it will meet current standards.

(3) The existing RSA can be improved to enhance safety, but the RSA will still not meet current standards.

(4) The existing RSA does not meet current standards, and it is not practicable to improve the RSA."

Appendix 2 of FAA Order 5200.8 provides the direction for an RSA determination. This includes the alternatives that must be evaluated. Paragraph 3 of Appendix 2 states:

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AIRFIELD CONSIDERATIONS

- Runway Design Standards
  - Runway Safety Area (RSA)
  - Object Free Area (OFA)
  - Runway Protection Zones (RPZ)
- Runway 25 Blast Pad
- Improved Approach Minimums
  - Runway 7
  - Runway 25

TERMINAL CONSIDERATIONS

- Future Security
- Efficiency Improvements
- Move Rental Cars Off Aircraft Ramp (Under Design)

GENERAL AVIATION CONSIDERATIONS

- Redevelop/Modernize FBO/Hangar Areas

OXNARD AIRPORT

Exhibit 4B
AIRPORT IMPROVEMENT CONSIDERATIONS

"The first alternative that must be considered in every case is constructing the traditional graded runway safety area surrounding the runway. **Where it is not practicable to obtain the entire safety area in this manner, as much as possible should be obtained.** Then, the following alternatives shall be addressed in the supporting documentation . . .:

a. Relocation, shifting, or realignment of the runway.

b. Reduction in runway length where the existing runway length exceeds that which is required for the existing or projected design aircraft.

c. A combination of runway relocation, shifting, grading realignment, or reduction.

d. Declared distances.

e. Engineered Materials Arresting Systems (EMAS)."

Exhibit 4C depicts the current extended runway safety areas and object free areas off the ends of Runway 7-25. The RSA extends for the full 1,000 feet off the west end, but the localizer is located just inside the RSA. Ideally, it should be relocated outside the RSA, but the minimal improvement to be gained in the RSA may not justify the cost to relocate the localizer, until such time it needs to be replaced or removed.

The east end has room for only 750 feet of extended RSA. Extending the RSA to the east by 250 feet would require the relocation of Ventura Road, a four-lane arterial roadway. Under the pretext of the mission statements for the airport and the Department of Airports, such an alternative was not considered as prudent or feasible.

The next option is to relocate, shift, or realign the runway. Relocating or shifting the runway would require additional room off the west end of the runway. This would involve relocating Victoria Avenue, which is also a four-lane arterial roadway. Realigning the runway would gain very little room for additional RSA without affecting the same two roadways, plus it has the added cost of rebuilding the entire runway. Subsequently, these alternatives were also considered as neither prudent nor feasible.

A reduction in runway length would leave the airport with less length than it presently has, making it even less suitable to serve the aircraft presently utilizing the airport.

This next option involves the application of declared distances. Declared distances are used by the FAA to define the effective runway length for landing and takeoff when either a displaced or relocated threshold is involved. Declared distances are defined as the amount of runway that is declared available for certain takeoff and landing operations. The four types of declared distances, as defined in FAA Advisory Circular 150/530-13, **Airport Design** are as follows:

Takeoff Run Available (TORA) - The runway length declared available and

suitable for the ground run of an airplane taking off.

Takeoff Distance Available (TODA) - The TORA plus the length of any remaining runway and/or clearway beyond the far end of the TORA.

Accelerate-Stop Distance Available (ASDA) - The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff.

Landing Distance Available (LDA) - The runway length declared available and suitable for landing.

The most critical distances to the aircraft pilot are the ASDA and the LDA. To accommodate the full RSA off the east end of the runway the threshold must be displaced at least 250 feet to the west. The current landing threshold displacement on Runway 25 is 1,372 feet. Since this is more than is needed to meet the RSA requirements, the LDA for Runway 25 would remain unchanged at 4,578 feet. Since RSA is not needed behind the start of takeoff roll, the ASDA for Runway 25 would remain the full 5,950 foot length.

The displacement for the RSA would affect LDA and ASDA for Runway 7. The minimum displacement would be 250 feet to allow room to maintain the perimeter service road along the fence line and outside the RSA. This would leave an LDA and ASDA of 5,700 feet for landing and departing from the west. Since Runway 7 is used less than 20 percent of the time, the shorter available runway length will have less of an impact on airport users than any further reduction of runway length in the Runway 25 direction.

The resulting recommendation is to continue to maintain the displaced landing threshold to Runway 25 at its present location, but to also mark and light a runway end threshold for Runway 7 at 250 feet from the east end of the runway. This would require distance-to-go markers for Runway 7 to be adjusted accordingly. In addition, the departure threshold lights would need to be moved 250 feet east and the departure threshold marked accordingly. Upon approval, the FAA would publish the declared distances for Runway 7-25 as depicted on **Table 4A**.

The segmented circle is also located within the RSA near midfield, between the runway and parallel taxiway. While the segmented circle and wind sock are on frangible mounts, they do not need to be located within the RSA, and should be relocated if possible. A location near midfield would be preferred. Potential relocation sites will be further examined later in the chapter.

TABLE 4A
Proposed Declared Distances
Oxnard Airport

	Runway 7	Runway 25
LDA	5,700'	4,578'
ASDA	5,700'	5,950'
TORA	5,950'	5,950'
TODA	5,950'	5,950'

The only other objects within the RSA are navigational aids such as the VASI and PAPI, runway lights, and the

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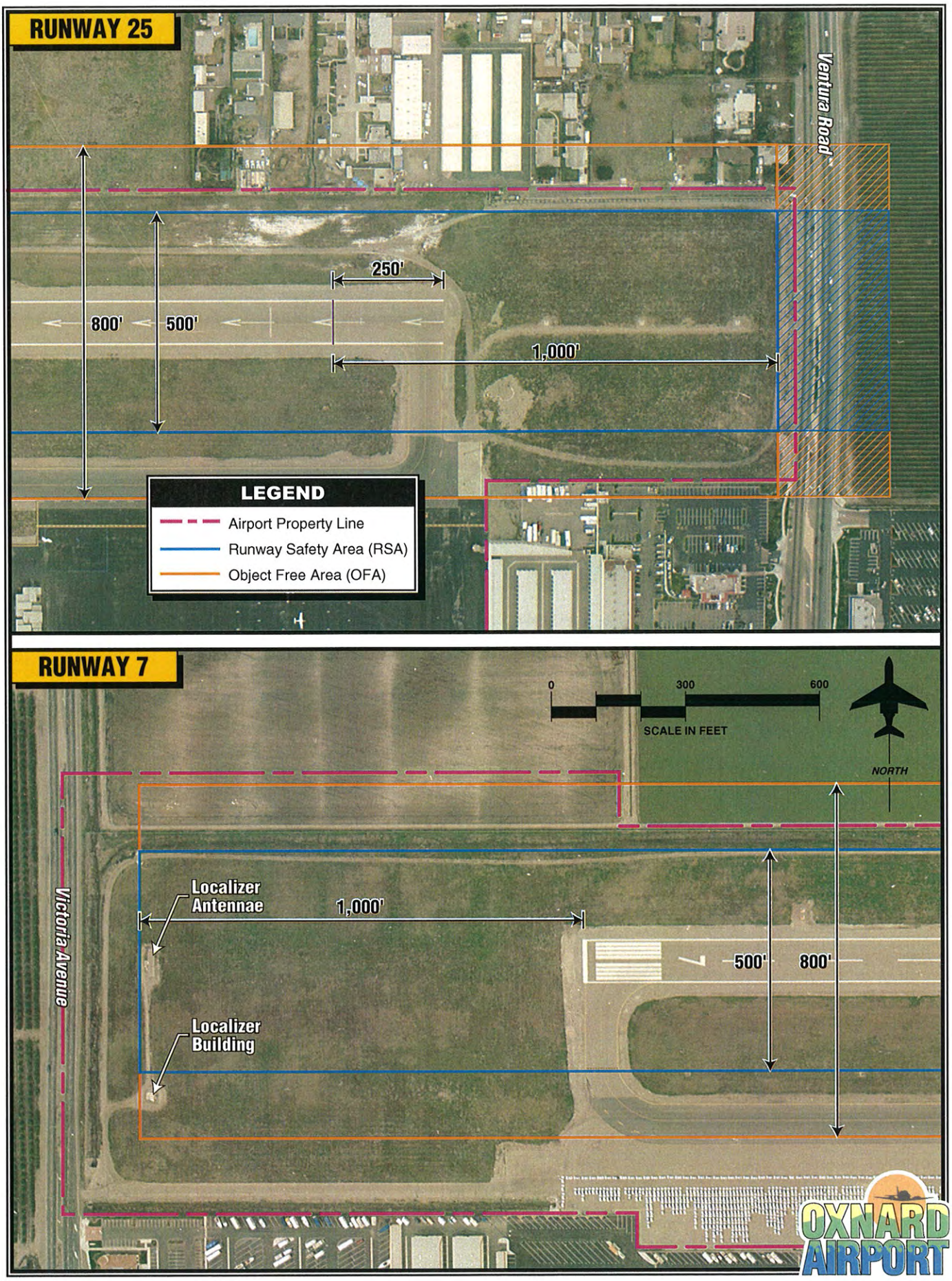

Exhibit 4C
EXTENDED RSA/OFA

MALSR. These are all fixed by their functional purpose, and are on frangible mountings, making them acceptable within the RSA.

RUNWAY OBJECT FREE AREA

Exhibit 4C also depicts the runway object free area (OFA) requirements off the end of each runway. While the OFA standard extends the same distance beyond the runway as the RSA, the OFA is 150 feet wider on each side, for a total width of 800 feet. The OFA must provide clearance of all ground-based objects protruding above the RSA edge elevation unless the object is fixed by purpose serving air or ground navigation.

The remedies for the extended RSA also apply to the extended OFA. The primary OFA concern is along the length of the runway. As shown on **Exhibit 4D**, the OFA along much of the north side and a section of the southeast side of the runway is not within the confines of the airport property. Several residences and off-airport industrial/commercial buildings are within the OFA on the northeast side of the runway. Other areas are in agricultural uses. Portions of the auto and truck parking lots are within the OFA on the southeast side.

Ideally, the Department of Airports should seek to acquire any property that is within the OFA, and remove all objects. In locations where the acquisition of property is not practical, however, the Department of Airports should request a "modification of design standards" from the FAA for the off-airport areas of the OFA that are currently developed. While the modification may be granted, it should be noted that failure to meet the design standard could still preclude obtaining improved approach minima.

The undeveloped agricultural property within the OFA should be acquired to maintain as much of the OFA within airport property as possible. This would comprise approximately 10 acres of property that is presently farmed or undeveloped. Avigation easements should also be considered for all other properties located between the airport and Teal Club Road.

RUNWAY PROTECTION ZONES

As indicated in the previous chapter, the runway protection zone (RPZ) is defined as an area off the runway end to enhance the protection of people and property on the ground. This is achieved through airport sponsor control of the RPZ. Control is preferably exercised through the acquisition of sufficient property interest in the RPZ.

The visibility minimums of the runway approach establish the dimensional standards of the RPZ. The present visibility minimums at Oxnard Airport are one mile or greater for each runway end, even though Runway 25 has an instrument landing system (ILS). Thus, the current RPZs have an inner width of 500 feet, an outer width of 1,010 feet, and are 1,700 feet long beginning two hundred feet behind the end of the runway or displaced threshold. The

RPZs at Oxnard Airport are depicted on **Exhibit 4D.**

Off the west end of the runway, the westernmost 750 feet of the RPZ is outside of the airport's boundaries. This area is presently in agricultural use, a land use that is typically compatible with the RPZ.

The displaced threshold results in the east approach having two RPZs. Both presently have the same dimensions, but the RPZ begins 200 feet behind the displaced threshold, while the departure RPZ begins 200 hundred feet beyond the physical end of the runway. Both RPZs extend beyond the existing airport boundaries, and encompass land uses considered as incompatible with the purpose of the RPZ.

For a Category I instrument approach with visibility minimums less than 3/4 mile, the approach RPZ dimensions are 1,000 feet inner width, 1,750 feet outer width, and 2,500 feet long. Off the west end, this is over compatible agricultural uses. Off the east end, however, are more incompatible uses.

If the airport is to obtain Category I instrument approach minimums, Runway 7 appears to have the best potential. Several obstructions combined with the incompatible uses within the RPZ, could make it difficult to achieve Category I minimums on Runway 25.

PARALLEL TAXIWAY SEPARATION

The present parallel Taxiway A centerline is located 365 feet from the runway centerline. With the present instrument minimums of one mile visibility, this separation exceeds the minimum standard separation of 350 feet. If the runway visibility minimums are improved to less than 3/4 mile, the design standard would increase to 400 feet.

Presently, the distance from the Taxiway A centerline to the closest fixed object is 135 feet. There is a row of tie-downs to the west of the terminal area and two helicopter parking spaces on Aspen Helicopter's ramp that would be closer. The design standard separation for ADG III aircraft is 93 feet. Moving the taxiway out 35 more feet to meet the standard would still leave the closest object 100 feet from the taxiway centerline. **Exhibit 4E** depicts this relocation.

There are other advantages to be gained with the relocation of the parallel taxiway. It would provide more space between the hold lines on the taxiway exits and the parallel taxiway. This would help improve ground circulation.

The primary drawback could be the development cost. While much of the pavement is in place, some of it may have to be rehabilitated to be put back

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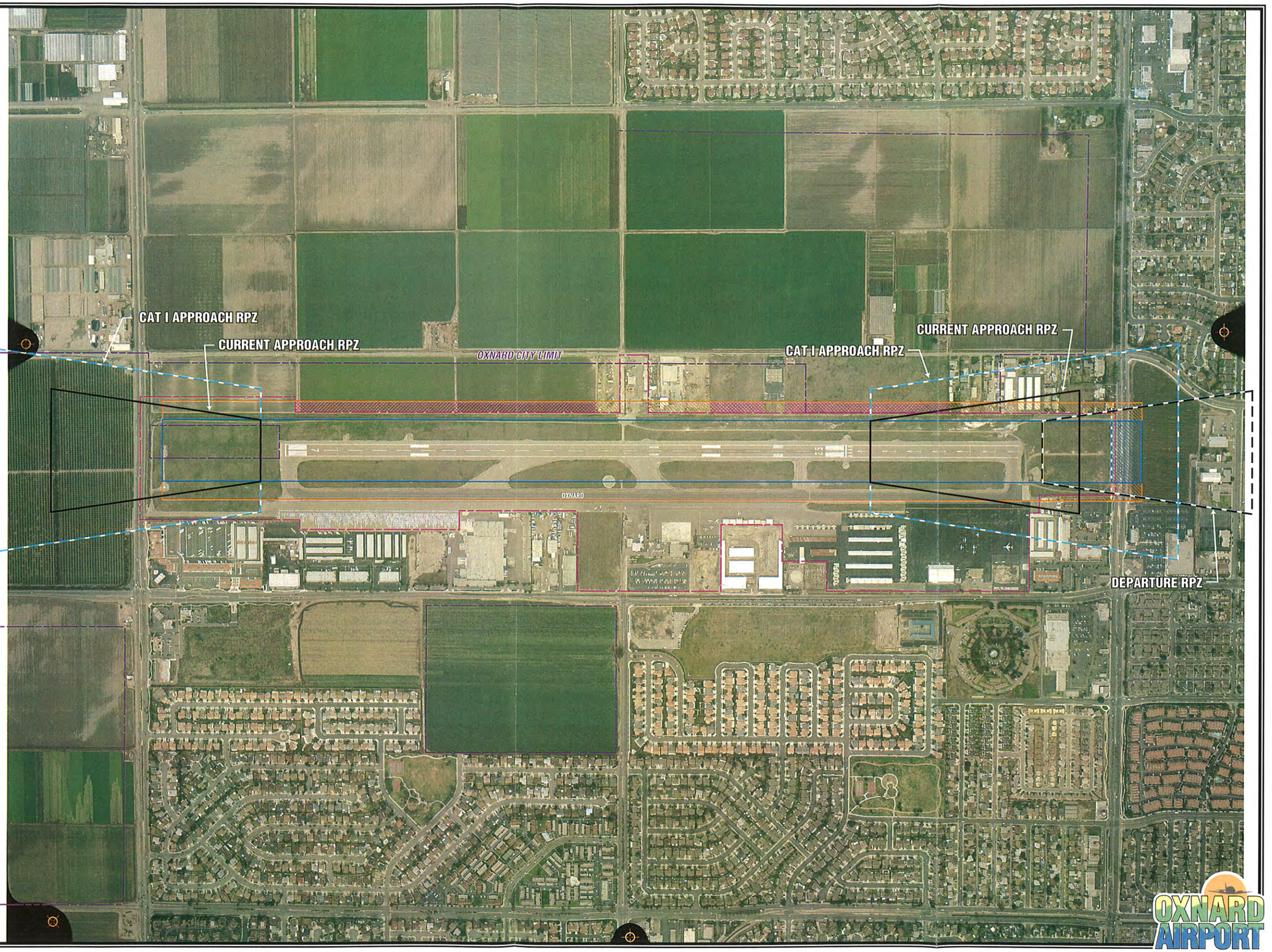
LEGEND

- Airport Property Line
- Object Free Area (OFA)
- Runway Safety Area (RSA)
- Property Acquisition
- OFA Encroachment
- RSA Encroachment



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SCALE IN FEET

OXNARD AIRPORT

Exhibit 4D
SAFETY ZONES / PROPERTY CONTROL

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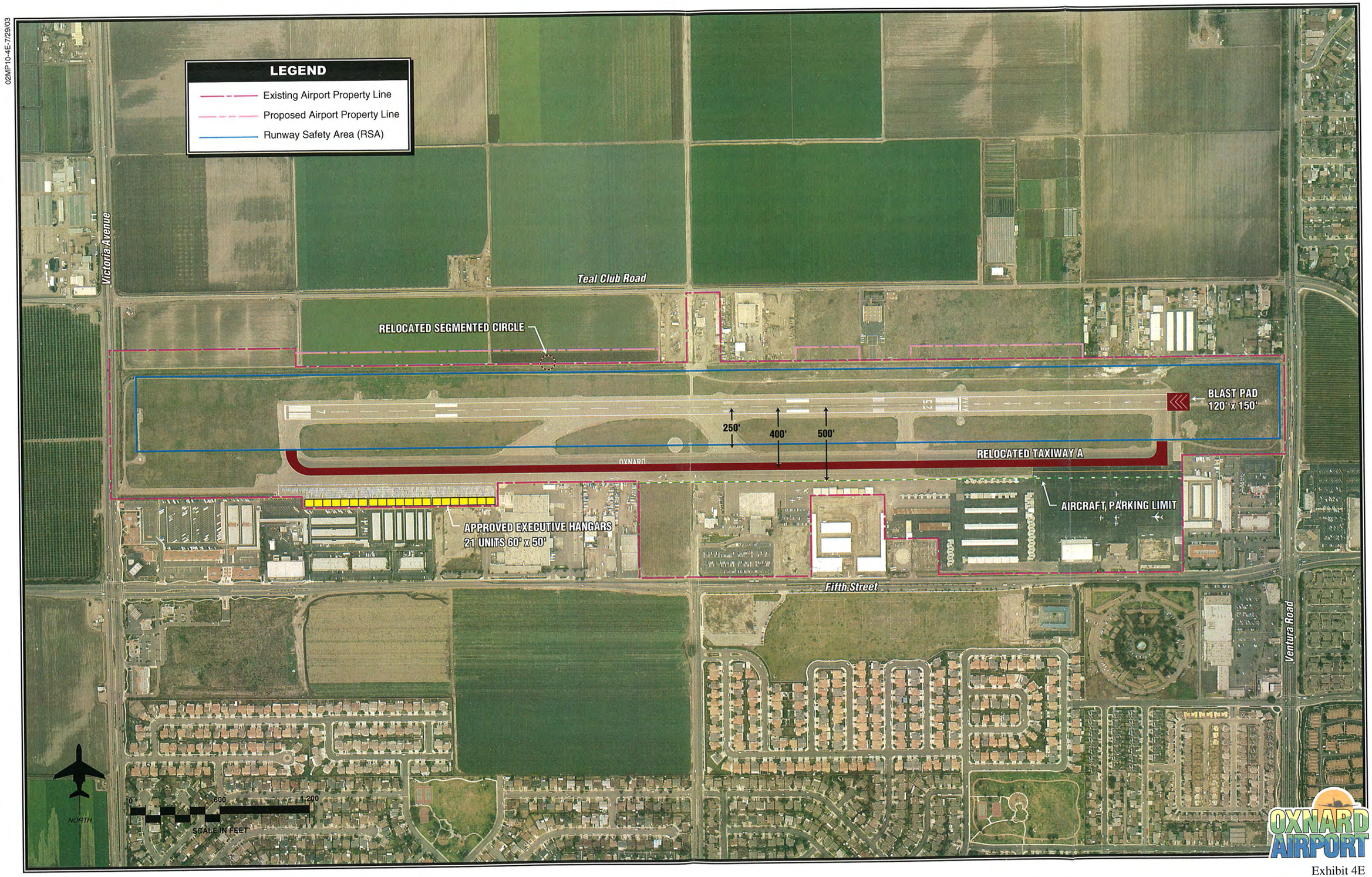

Exhibit 4E
OTHER AIRFIELD CONSIDERATIONS

into service. The drainage system may also need to be modified for the shift in pavement. Several tie-downs, including two of Aspen's helicopter spaces would need to be relocated. The other option would be to request a "modification to standards" from the FAA, if a Category I instrument approach is to be implemented.

OTHER AIRFIELD CONSIDERATIONS

Two other improvements that should be considered for the airfield are the relocation of the segmented circle and the installation of a blast pad beyond the east end of the runway.

The segmented circle presently encroaches upon the RSA and OFA. While it would be preferred to remove the segmented circle entirely outside both areas, there is no suitable location that would not require additional property acquisition. At a minimum, the segmented circle should be relocated from the RSA.

Exhibit 4E depicts a potential location on the north side of the airfield. This location is within the area recommended earlier for property acquisition. The site would be visible from the air, as well as from the control tower, and would still be near midfield. While located within the OFA, it is outside the RSA. The location in the OFA would still require a modification to design standards.

A blast pad 120 feet wide and 150 long, extending from the west end of the runway would keep the engine blast of departing business aircraft from scouring and damaging the turf in the proximity of the runway end. Since this runway end is used over 80 percent of departures, the blast pad would be most advantageous.

PASSENGER TERMINAL AREA

With the passenger terminal marginally adequate through the long-range planning horizon, internal modifications will be limited to requirements for security and efficient circulation. It is not the scope or purpose of this Master Plan to develop alternative internal floor plan layouts. That is reserved for terminal designers when the need for security or circulation adaptations present themselves. Rather, the Master Plan will focus on the exterior layout and needs of the terminal area.

If space should be needed in the future to meet security mandates, consideration should first be given to enclosing the space between the terminal building and the apron. If this is not practical for the need, space could be added to the west, as previously determined in the **1996 Draft Master Plan**. This direction would have the least impact on other terminal area uses and functions.

As with the terminal building, the facility requirements found the terminal parking and circulation to be at least marginally adequate through the long range horizon of 60,000 annual enplanements. A relocation of the rental car return and service area is

under design. Presently, the return and service area is located on pavement that was constructed with federal funds as aircraft parking apron. The grant agreement attached to the construction of the apron requires it to be used for that purpose. The FAA has directed that the ramp area be returned to aviation uses.

Exhbit 4F depicts how the rental car return and service lot can be relocated immediately south of the parking ramp. The size of the lot would also allow the provision of twelve parking spots for restaurant patrons. This would allow the existing restaurant in the terminal building to have dedicated and convenient public parking.

This relocation remains within existing airport property and room remains for the development of additional parking should demand require. Other on-airport alternatives would require either additional property or the transport of passengers to a remote lot well away from the terminal. Similarly, off-airport locations for rental cars would require transporting passengers elsewhere. This would increase the amount of shuttle bus traffic on Fifth Street and other streets. Remote locations could also increase rental car costs, as well as significantly reduce airport revenues from rental car fees.

GENERAL AVIATION CONSIDERATIONS

The general aviation (GA) considerations focus primarily on re-use and modernization of facilities, as well as ensuring that setbacks meet current design standards.

All new or relocated tie-downs and buildings will need to be planned at least 500 feet from the runway centerline, to allow for the parallel taxiway to ultimately be relocated in the future. Any building that would penetrate the imaginary surfaces as outlined in F.A.R. Part 77 will be subject to an aeronautical study by the FAA before approval.

For a structure reaching 20 feet above the runway elevation, the Part 77 setback would be 640 feet from the runway centerline for a Category I instrument approach. For a structure 35 feet above the runway elevation, the setback would be 745 feet.

Leases for 20 additional hangars have been previously approved for Oxnard Airport. These hangars are intended to be developed on the existing apron at the west end of the airport as shown on **Exhibit 4E.**

The relocation of the rental car facility will return a section of apron to aviation uses. The apron is highlighted on **Exhibit 4F.** This apron will provide aircraft parking spaces, wash rack, and self-maintenance area.

Much of the improvements in the east GA area should involve redevelopment and modernization of the facilities. The completion of a new replacement fixed base operator (FBO) hangar indicates how the area can be updated. As older facilities become impractical to maintain, they should be replaced by

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Exhibit 4F
TERMINAL/GA CONSIDERATIONS

similar new facilities. This could eventually include several older T-hangars, as well as the remaining large World War II hangar.

Exhibit 4F also depicts an area where additional airport facilities can be developed if and when the need arises. This area is on the east side of the terminal area and would be reserved for development as needed to meet future demand or to replace facilities that need to be relocated for safety-related improvements. All the landside development options remain on the south side of the runway and within existing airport property.

SUMMARY

The process utilized in formulating and assessing airport improvement considerations involved an analysis of need based upon the mission statements of Oxnard Airport and the Ventura County Department of Airports. Operational safety was the highest priority, followed by maintaining and preserving the existing airport functions. Updating to current airport design standards was considered at every stage.

After further discussion with the Planning Advisory Committee, a concept will be recommended. The ultimate plan should represent an airport facility that fulfills safety design standards and carries out the goals and objectives of the mission statements.

The final two chapters will be dedicated to refining a basic concept into a final plan that can be approved and implemented by Ventura County with assistance from the FAA.

OXNARD AIRPORT

Chapter Five
DEVELOPMENT PLANNING PROGRAM

CHAPTER FIVE

DEVELOPMENT PLANNING PROGRAM

The airport master planning process for Oxnard Airport has evolved through the analytic efforts in the previous chapters, intended to establish potential aviation demand, establish airside and landside facility needs, and evaluate options for the improvement of airside and landside facilities. The planning process to this point, has included a presentation and review of phase reports (representing the first four chapters of the master plan) to the Planning Advisory Committee (PAC). A conceptual plan for Oxnard Airport has evolved, considering PAC input. The purpose of this chapter is to describe, in narrative and graphic form, the development plan and capital improvement program for the airport.

RECOMMENDED MASTER PLAN CONCEPT

The recommended master plan concept provides for anticipated facility needs, in concert with the airport's and Department of Aviation's mission statements. A review of how the master plan concept fits with the mission statements is included in the conclusions at the end of this chapter. The recommended concept is depicted on **Exhibit 5A**. The following section summarizes the airport design standards, as well as airside and landside recommendations.

DESIGN STANDARDS

Oxnard Airport (OXR) is identified as a primary commercial service airport in the FAA's **National Plan of Integrated Airport Systems** (NPIAS). As a commercial service airport certificated under Federal Aviation Regulation (FAR) Part 139, OXR must comply with FAA design and safety standards. Advisory Circular 150/5300-13, *Airport Design*, is the key reference used to ensure compliance with these standards. These design and safety standards are based primarily upon the characteristics of the aircraft that are expected to use the airport on a regular basis. As previously discussed in Chapter Three, the design airport reference code (ARC) is based upon the approach speed and wingspan of the "critical" aircraft. Frequently, as is the case at Oxnard Airport, more than one aircraft can make up the design aircraft.

The critical ARC for planning at OXR was determined to be a combination of D-II and B-III. This includes a range of general aviation aircraft up to the Gulfstream IV, as well as commuter turboprops such as the Dash 8.

Since a number of design standards are affected by these classifications, a summary of the runway and taxiway standards (as they will be applied to the airfield) has been provided in **Table 5A**. It is possible that some areas on the airfield (such as T-hangar storage areas) may be designed to a lesser Group I standard, requiring lower set-back requirements. This has been noted in the table, under the taxiway and taxilane design standards.

AIRFIELD RECOMMENDATIONS

The principal airfield recommendations focus upon safety, security, and compatibility. It is of key importance to ensure that airport design standards are upheld to the maximum extent feasible, particularly in relation to the runway safety area (RSA). Other recommendations are provided to improve the efficiency and circulation on the airfield. **Exhibit 5A** depicts the airfield recommendations. The following subsections discuss the recommendations as they pertain to the runway and taxiway system.

Runway 7-25 will remain the only runway at Oxnard Airport. The runway is 5,950 feet long and 100 feet wide, with a pavement strength of 70,000 pounds dual wheel loading. It is planned to remain at this pavement strength to continue to accommodate the design aircraft indicated earlier.

An analysis of the runway's safety area requirements indicated that the runway does not meet the FAA design standard for approach category C and D aircraft. The RSA beyond the east end of the runway extends for approximately 750 feet before reaching the airport's perimeter service road. Immediately east of the service road, the perimeter fence and Ventura Road also lie within the RSA. On the west end, the localizer is 970 feet from the end of Runway 7.

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LEGEND

- Existing Airport Property Line
- Future Airport Property Line
- Object Free Area (OFA)
- Runway Safety Area (RSA)
- Existing Easements
- Proposed Avigation Easement

Victoria Avenue

CAT I APPROACH RPZ

CURRENT APPROACH RPZ

Teal Club Road

RELOCATED SEGMENTED CIRCLE

CURRENT APPROACH RPZ

CAT I APPROACH RPZ

RUNWAY 7 MALSR

LIGHT LANE EASEMENT

RUNWAY 7 DEPARTURE THRESHOLD

BLAST PAD 120' x 150'

OXNARD

APPROVED EXECUTIVE HANGARS 21 UNITS 60' x 50'

5th Street

DEPARTURE RPZ

Ventura Road

NORTH

0 800 1600

SCALE IN FEET

OXNARD AIRPORT

Exhibit 5A
RECOMMENDED AIRFIELD PLAN

TABLE 5A
Runway Design Standards
Oxnard Airport

	D-II, B-III	
Runway		
Width (ft.)	100	
Runway Blast Pad		
Width (ft.)	140	
Length Beyond End (ft.)	200	
Runway Safety Area (RSA)		
Width (centered on runway centerline) (ft.)	500	
Length Beyond Runway End (ft.)	1,000	
Object Free Area (OFA)		
Width (ft.)	800	
Length Beyond Runway End (ft.)	1,000	
Obstacle Free Zone (OFZ)		
Width (ft.)	400	
Length Beyond Runway End (ft.)	200	
Runway Centerline to:		
Parallel Taxiway Centerline (ft.)	400	
Edge of Aircraft Parking Apron (ft.)	500	
Runway Protection Zones (RPZ)	Approach	Departure
Inner Width (ft.)	1,000	500
Outer Width (ft.)	1,425	1,010
Length (ft.)	1,700	1,700

Taxiway and Taxilane Design Standards

	ADG III	ADG II	ADG I
Taxiways			
Width (ft.)	50	35	25
Shoulder Width (ft.)	20	10	10
Safety Area Width (ft.)	118	79	49
Object Free Area Width (ft.)	186	131	89
Taxiway Centerline to:			
Parallel Taxiway/Taxilane (ft.)	152	105	69
Fixed or Moveable Object (ft.)	93	65.5	44.5
Taxilanes			
Taxilane Centerline to:			
Parallel Taxilane Centerline (ft.)	140	97	64
Fixed or Moveable Object (ft.)	81	57.5	39.5

Source: FAA Airport Design Software Version 4.2D

The recommended plan for the east end involves relocating the departure end threshold for Runway 7, 250 feet to the west. Besides marking the departure threshold, the departure end threshold lights will be moved to the new threshold and the distance-to-go markers for Runway 7 will need to be relocated accordingly.

Off the west end of the runway, the localizer penetrates the west end of the RSA by just 30 feet, and the utility of the localizer will ultimately be replaced by GPS. With these circumstances, as long as the localizer is on fragile mountings, there is little margin of safety gained by relocating it 30 feet further west.

As a result of the runway safety area improvements, the takeoff and landing capabilities of Runway 25 remain the same. The landing length and accelerate-stop-distance-available for takeoff on Runway 7 are reduced by 250 feet, to 5,700 feet.

The segmented circle should be removed from the RSA and relocated on the north side of the airport. Relocation will be dependent upon the acquisition of property within the OFA that is discussed in the following paragraphs.

Exhibit 5A depicts the property acquisition recommendations. All property acquisitions are related to direct control of land use for the enhancement of safety. With the exception of relocation of the segmented circle and an approach-light lane for Runway 7, none of the property acquisitions proposed will be used for airport development. In fact, the ultimate intent is to clear the properties, or at least maintain current uses, with no new development.

The most critical property is that within the runway object free area (OFA). It is desirable to hold fee simple ownership of the entire object free area. The plan recommends acquisition of approximately ten (10.0) acres of undeveloped property within the OFA on the north side of the airport. Avigation easements are recommended for developed off-airport properties within the OFA. Still, the County should consider fee simple acquisition of properties from willing sellers within these areas when opportunities arise.

Another area where more positive control of property is necessary is in the approaches to the runway. The function of the runway protection zone (RPZ) is to enhance the protection of people and property on the ground. FAA Advisory Circular 150/5300-13, **Airport Design,** indicates that, "control is preferably exercised through the acquisition of sufficient property interest in the RPZ."

While fee simple acquisition is desirable, at a minimum, avigation easements should be obtained over all property within the RPZ. For Oxnard Airport, avigation easements should be obtained within the RPZs, both east and west of the airport. As with the OFA, however, the County should consider fee simple acquisition of properties from willing sellers within the RPZ. Because these areas are intended to be kept clear, no airport development is planned for these areas, other than the relocation of the segmented circle and the future installation of a medium intensity approach light system with runway alignment indicator lights (MALSR) on the Runway 7 approach.

Additional easements are recommended for approximately 57 acres on the north side between the airport and Teal Club Road. Like the easements currently

being acquired in the Runway 25 approach, these easements are designed to control development heights.

The MALSR is recommended to provide for Category I instrument approach minimums from the west. This approach provides 5,700 feet for landing, compared to just 4,578 feet on Runway 25. While Runway 25 will remain the primary direction of operations, an instrument approach to Runway 7 would allow it to be used more during wet runway conditions. Runways are more slippery during wet conditions, and the additional landing length would provide a higher margin of safety for operations.

The location of the future MALSR is depicted on **Exhibit 5A**. This approach light system would have light stations extending outward from the end of the runway for every 200 feet along the runway centerline, to a distance of 2,400 feet. This would include a series of light stations west of Victoria Avenue. Property acquisition of a 200-foot-wide path centered on the light lane is preferred, however, a right-of-way easement for the light stations and a service road would be the minimum requirement.

Exhibit 5A also depicts the proposed blast pad at the east end of the runway. This is recommended to protect the ground immediately behind the runway from being eroded by the blast of wind created as aircraft begin their takeoff roll. Since this end is used by 80 percent of the airport's takeoffs, the blast pad is warranted.

LANDSIDE RECOMMENDATIONS

Recommended landside improvements are primarily associated with maintenance, redevelopment, and modernization of existing facilities. The facility requirements indicated that, with the addition of previously approved executive hangars and the replacement of Hangar One, facilities' area should be adequate from a space standpoint. Older hangar facilities may require replacement during the planning period. In addition, future mandates in security could require alterations in the terminal area.

The terminal building footprint is not planned for any changes unless required for security. It may become necessary to modify the interior for security and/or circulation over the planning period. It should be remembered that the terminal building will be marginally adequate at 60,000 annual enplanements. If demand continues to grow beyond this level, the County will need to seriously consider its options for providing for air service in the region. If a new commercial service airport site is not in place by that time, it may become necessary to reconsider the facility needs for maintaining commercial service at Oxnard Airport.

The pending construction of a new rental car parking lot will allow the return to aviation use of the apron on the east side of the terminal building. This will be used to support general aviation activity. It will re-establish transient parking, as well as include a wash rack and self-maintenance area.

The recent completion of the new fixed base operator (FBO) hangar is an example of the modernization of facilities that can be expected in the future. This hangar was actually a replacement of Hangar One, which was lost to a fire in 1994. The new hangar is designed to better accommodate the modern aircraft and the services that an FBO provides today. The flexibility to work with the other FBOs and tenants to redevelop and modernize the airport's general aviation facilities is recommended. This will improve safety, energy efficiency, and functionality, as well as the architecture and aesthetics associated with the airport.

Exhibit 5B depicts the ongoing development and proposed plans for the landside facilities discussed above. Other improvements include the replacement of the existing ARFF shelter, located to the west of the tower. In addition, the Port-a-Ports closest to the taxiway will be relocated further south to improve runway safety and taxiway circulation.

THROUGH-THE-FENCE ACTIVITIES

There are instances when adjacent landowners may wish to gain direct airfield access to a publicly-owned landing area such as the Oxnard Airport. This type of an arrangement is commonly called a through-the-fence operation, whether the perimeter fence is imaginary or real. It is Federal Aviation Administration (FAA) policy to discourage through-the-fence activities.

The obligation to make an airport available for the use and benefit of the public does **not** impose any requirement to permit access by aircraft from adjacent property. On the contrary, the existence of such an arrangement has been recognized as an encumbrance upon the airport property itself. Airport obligations arising from federal grant agreements and conveyance instruments apply to dedicated airport land and facilities, and not to private property adjacent to the airport, even when the property owner is granted a through-the-fence privilege.

The owner of a public airport is entitled to seek recovery of the initial and continuing costs of providing a public use landing area. The owners of airports receiving federal funds have been required to establish a fee and rental structure designed to make the airports as self-sustaining as possible. Most public airports seek to recover a substantial part of airfield operating costs indirectly, through various arrangements affecting commercial activities **on** the airport. The development of aeronautical businesses on land uncontrolled by the airport owner may give the through-the-fence operation a competitive advantage that will be detrimental to the on-airport operators on whom the airport owner relies for revenue and service to the public. To avoid a potential imbalance, the airport owner **may refuse** to authorize a through-the-fence operation.

Allowing private property owners to gain a competitive advantage could

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Exhibit 5B
RECOMMENDED TERMINAL AREA PLAN

jeopardize the economic vitality of the airport and impede its ability to remain self-sustaining. Additionally, any economic advantage gained by adjacent property owners will diminish the economic viability of the airport's own aeronautical commercial operators.

Arrangements that permit aircraft to gain access to a public landing area from off-site property introduce safety considerations, along with additional hazards that complicate the control of vehicular and aircraft traffic. Airport improvements designed to accommodate access to the airport and landing areas from an off-site location for the sole benefit and convenience of an off-airport neighbor, present a substantial and continuing burden to the airport owner. In addition, the airport must contend with legal, insurance, and management implications represented by increased costs, liability, and administrative and operational controls. For the airport owner, it may become an unexpected challenge to balance airport needs with the increasing demands on the airport by off-airport users.

It is FAA policy to strongly discourage any agreement that grants access to public landing areas by aircraft normally stored on adjacent property. Airport owners must guard against any through-the-fence operation that can become detrimental to the airport and threaten its economic viability. Any agreement for a through-the-fence operation must include provisions making such operations subject to the same federal obligations as tenants on airport property. Furthermore, the airport owner must ensure that the through-the-fence operators contribute a fair share toward the cost of the operation, maintenance, and improvement of the airport, so that they do not gain an unfair economic advantage over on-airport operators.

For all the above reasons, it is recommended that Ventura County adopt a general policy to discourage the consideration of through-the-fence activities at Oxnard Airport.

CAPITAL IMPROVEMENT PROGRAM

Once the specific needs and improvements for the airfield have been established, the next step is to determine a realistic schedule and costs for implementing the plan. This subsection examines the overall cost of development and a demand-based schedule for airport improvements.

The development schedule can be initially established by dividing the improvement needs into three planning horizons of short term, intermediate term, and long range. For the airfield, the key activity indicator is aircraft operations. For hangar development, based aircraft will be the indicator. **Table 5B** summarizes the operational milestones for each planning horizon.

It should be remembered that most of the activity levels in the planning horizons have been experienced by the airport in the past. Thus, there are actually minimal improvements needed, based upon the activity levels. Rather,

it is a matter of responding to rehabilitation and modernization, as well as safety and security enhancements.

TABLE 5B
Aviation Demand Planning Horizons
Oxnard Airport

	2002	Short Term	Intermediate Term	Long Term
ANNUAL OPERATIONS				
Commuter	3,650	4,500	5,600	6,500
Air Taxi	9,756	11,500	12,600	14,500
Military	1,541	1,500	1,500	1,500
General Aviation	73,803	78,200	83,900	92,700
Total Operations	88,750	95,700	103,600	115,200
ANNUAL PASSENGERS/BASED AIRCRAFT				
Enplanements	22,829	35,000	45,000	60,000
Based Aircraft	142	150	158	170

Table 5C summarizes capital needs for Oxnard Airport through the planning horizons of this master plan. An estimate has been included with each project of federal and state funding eligibility, although this amount is not guaranteed. For larger capital projects, it may be necessary for Ventura County to apply for discretionary funds (discussed in more detail in the following paragraphs).

Individual project cost estimates account for engineering and other contingencies that may be experienced during the implementation of the project, and are in current (2004) dollars. Due to the conceptual nature of a master plan, implementation of capital improvement projects should occur only after further refinement of their design and costs through engineering and/or architectural analyses. Capital costs in this chapter should be viewed only as estimates subject to further refinement during design.

The short term horizon covers items of highest priority, as well as items that should be developed as the airport approaches the short term activity milestones. Priority items should include improvements related to the runway safety areas and the approaches. Improvements to facilities that are inadequate for present demand should also be included in the short term. Because of their priority, these items will need to be incorporated into FAA and Department of Airports five-year programming. With improvements to the airfield in the short term, there are no airfield projects listed in the long term.

TABLE 5C
Capital Improvement Program
Oxnard Airport

No.	Project	Total Costs	FAA Eligible	Airport Share
FY 2003-04				
1	Apron Pavement/Drainage Rehabilitation	$336,000	$302,400	$33,600
2	North OFA Property Acquisition	715,000	643,500	71,500
3	Replace ARFF Vehicle	528,000	475,200	52,800
4	Gate/Access Control Security Improvements	35,000	31,500	3,500
5	Rehabilitate Runway and Exit Taxiways	485,000	436,500	48,500
6	Aircraft Wash Rack	30,000	27,000	3,000
7	Security Improvements	50,000	0	50,000
8	Torbit South Hangar Roof	75,000	0	75,000
9	Parking Lot Slurry Seal	40,000	0	40,000
10	Rehabilitate Terminal Loop Road	191,000	171,900	19,100
11	Hangar #3 Lower South Roof	24,000	0	24,000
Subtotal FY 2003-04		**$2,509,000**	**$2,088,000**	**$421,000**
FY 2004-05				
1	Apron Pave/Drainage Rehab/Blast Pad Design	$277,000	$263,150	$13,850
2	Obstruction Removal (Relocate Port-a-Ports)	25,000	22,500	2,500
3	Relocate Runway 7 Departure Threshold	35,000	33,250	1,750
4	Torbit North Hangar Roof	75,000	0	75,000
5	Aspen, Midfield West Hangar Roof	17,000	0	17,000
Subtotal FY 2004-05		**$429,000**	**$318,900**	**$110,100**
FY 2005-06				
1	Apron Pave/Drainage Rehab/Blast Pad	$1,350,000	$1,282,500	$67,500
2	Upgrade Security Fencing	370,000	351,500	18,500
3	Relocate Segmented Circle	20,000	19,000	1,000
4	Pavement Rehabilitation Design	41,000	38,950	2,050
5	Maintenance Facility Roof	34,000	0	34,000
Subtotal FY 2005-06		**$1,815,000**	**$1,691,950**	**$123,050**
FY 2006-07				
1	Pavement Rehabilitation	$960,000	$912,000	$48,000
2	Overlay Taxiways A and C Design	40,000	38,000	2,000
Subtotal FY 2006-07		**$1,000,000**	**$950,000**	**$50,000**
FY 2007-08				
1	Northside Avigation Easement Program	$674,000	$640,300	$33,700
2	West End Drainage Improvements Design	105,000	99,750	5,250
3	Overlay Taxiways A and C	220,000	209,000	11,000
4	ATCT Roof and Deck Repairs	5,000	0	5,000
Subtotal FY 2007-08		**$1,004,000**	**$949,050**	**$54,950**
SHORT TERM HORIZON TOTAL		**$6,757,000**	**$5,977,900**	**$759,100**

TABLE 5C (Continued)
Capital Improvement Program
Oxnard Airport

No.	Project	Total Costs	FAA Eligible	Airport Share
INTERMEDIATE HORIZON				
1	Runway 7 RPZ Avigation Easements	$718,000	$682,100	$35,900
2	West End Drainage Improvements	993,000	943,350	49,650
3	Install Runway 7 MALSR	650,000	617,500	32,500
4	Runway 7 Precision Marking	60,000	57,000	3,000
5	Rehabilitate Runway Lighting	150,000	142,500	7,500
6	Terminal Remodel	600,000	570,000	30,000
7	FBO Hangar Rehab/Modernization (By Lessee)	0	0	0
INTERMEDIATE HORIZON TOTAL		**$3,171,000**	**$3,012,450**	**$158,550**
LONG RANGE HORIZON				
1	FBO Hangar Rehab/Modernization (By Lessee)	$0	$0	$0
2	T-Hangar Improvements	2,000,000	1,900,000	100,000
3	ARFF Vehicle Replacement	600,000	570,000	30,000
4	Runway/Taxiway Rehabilitation	2,000,000	1,900,000	100,000
5	Apron Rehabilitation	1,500,000	1,425,000	75,000
6	Parking Lot Pavement Rehabilitation	400,000	0	400,000
LONG RANGE HORIZON TOTAL		**$6,500,000**	**$5,795,000**	**$705,000**
TOTAL PROGRAM COSTS		**$16,428,000**	**$14,805,350**	**$1,622,650**

When short term horizon activity milestones are reached, it will be time to program for the intermediate term based upon the next milestones. Maintenance and rehabilitation projects that are not likely to be necessary within the next five years, are also included in the intermediate term.

CAPITAL IMPROVEMENTS FUNDING

Financing for capital improvements comes from several sources. Contributors to the airport's development are its users, through a system of user taxes, lease rents, fees, and charges. These sources include not only the rates and charges for airport use imposed by the Ventura County Department of Airports, but also federal airport improvement programs and passenger facility charges. The following paragraphs outline the key sources for funding.

FEDERAL GRANTS

The United States Congress has long recognized the need to develop and maintain a system of aviation facilities across the nation for the purpose of national defense and promotion of interstate commerce. Various grants-in-aid programs to public airports have been established over the years for this purpose. The most recent legislation is the Airport Improvement Program (AIP) of 1982. The AIP has been reauthorized several times, with the

most recent reauthorization enacted in late 2003. It is entitled the *Vision 100 - Century of Aviation Reauthorization Act*. The new four-year program covers FAA fiscal years 2004 through 2007.

The source for AIP funds is the Aviation Trust Fund. The Trust Fund is the depository for all federal aviation taxes such as those on airline tickets, aviation fuel, lubricants, tires and tubes, aircraft registrations, and other aviation-related fees. The funds are distributed under appropriations set by Congress to airports in the United States which have certified eligibility. The distribution of grants is administered by the Federal Aviation Administration.

Under the AIP program, examples of eligible development projects include the airfield, aprons, and access roads. Passenger terminal building improvements (such as bag claim and public waiting lobbies) may also be eligible for a limited amount of FAA funding. However, improvements such as automobile parking, fueling facilities, utilities, hangar buildings, airline ticketing and airline operations areas, are not generally eligible for AIP funds. Under Vision 100, Oxnard Airport is eligible for 95 percent funding assistance, an increase from the previous 90 percent level.

AIP provides funding for eligible projects at airports through an entitlement program. Primary commercial service airports receive a guaranteed minimum of federal assistance each year, based on their enplaned passenger levels and Congressional appropriation levels. A primary airport is defined as any commercial service airport enplaning at least 10,000 passengers annually.

Under the formula, if AIP is appropriated at the authorized levels, airports enplaning at least 10,000 passengers annually are entitled to a minimum of $1,000,000 annually. (If AIP was funded below the authorized levels, the minimum is $650,000.)

In addition, airports that have over 100 million pounds of landed weight by all-cargo carriers, receive a cargo entitlement. This entitlement is based upon the airport's percentage of the total landed weight at all eligible airports.

Vision 100 also establishes special set-asides for noise programs, general aviation and non-primary airports, and other special programs.

In a number of cases, airports face major projects that will require funds in excess of the airport's annual entitlements. Thus, additional funds from discretionary apportionments under AIP become desirable. The primary feature about discretionary funds is that they are distributed on a priority basis. These priorities are established by the FAA, utilizing a priority code system. Under this system, projects are ranked by their purpose. Projects ensuring airport safety and security are ranked as the most important priorities, followed by maintaining current infrastructure development, mitigating noise and other environmental impacts, meeting standards, and increasing system capacity.

Other funds can come through the Facilities and Equipment (F&E) section of the FAA. As activity conditions warrant, the airport will be considered by F & E for various navigational aids to be installed, owned, and maintained by the FAA.

Whereas entitlement monies are guaranteed on an annual basis, discretionary funds are not assured. If the combination of entitlement and discretionary funding does not provide enough capital for planned development, projects would either be delayed, or require funding from the airport's revenues or other authorized sources such as those described in the following subsections.

PASSENGER FACILITY CHARGES

The **Aviation Safety and Capacity Expansion Act of 1990** contained a provision for airports to levy passenger facility charges (PFCs) for the purposes of enhancing airport safety, capacity, or security or to reduce noise or enhance competition.

14 CFR Part 158 of May 29, 1991, establishes the regulations that must be followed by airports choosing to levy PFCs. Passenger facility charges may be imposed by public agencies controlling a commercial service airport with at least 2,500 annual passengers with scheduled service. Authorized agencies were allowed to impose a charge of $1.00, $2.00, or $3.00 per enplaned passenger. Legislation (AIR 21) passed in early 2000, allowed the cap to increase to $4.50.

Prior approval is required from the Department of Transportation (DOT) before an airport is allowed to levy a PFC. The DOT must find that the projected revenues are needed for specific, approved projects. Any AIP-eligible project, whether development or planning related, is eligible for PFC funding. Gates and related areas for the movement of passengers and baggage are eligible, as are on-airport ground access projects. Any project approved must preserve or enhance safety, security, or capacity; reduce/ mitigate noise impacts; or enhance competition among carriers.

PFCs may be used only on approved projects. However, PFCs can be utilized to fund 100 percent of a project. They may also be used as matching funds for AIP grants or to augment AIP-funded projects. PFCs can be used for debt service and financing costs of bonds for eligible airport development. These funds may also be commingled with general revenue for bond debt service. Before submitting a PFC application, the airport must give notice and an opportunity for consultation with airlines operating at the airport.

PFCs are to be treated similar to other airport improvement grants, rather than as airport revenues, and will be administered by the FAA. Participating airlines are able to retain up to eight cents per passenger for administrative handling purposes.

The Ventura County Department of Airports imposes the maximum PFC of $4.50 per enplanement, to support improvements at Oxnard Airport. The

funds from the PFC are currently obligated to a total of $872,000 to fund several projects including this Master Plan. Also included are two projects within fiscal year (2003-04) of the Master Plan CIP; the runway and exit taxiway rehabilitation, and the terminal loop road rehabilitation. With this PFC, the Department of Airports should annually collect funds between $90,000 and $250,000 depending upon enplanements each year. The PFC authorization runs through 2010. If the passenger levels forecast in Chapter Two are achieved, the committed funds could be collected by as early as 2008.

STATE FUNDS

In support of the state airport system, the California Transportation Commission (CTC) also participates in state airport development projects. An aeronautics account has been established within the state transportation fund, from which all airport improvement monies are drawn. Tax revenues have been collected and deposited in the aeronautics account from the sale of general aviation jet fuel ($0.02 per gallon) and avgas ($0.18 per gallon). The CTC has established three grant programs to distribute funds deposited in the aeronautics account: annual grants, acquisition and development (A & D) grants, and AIP matching grants. Another funding source provided by the CTC is low-interest loans. Because Oxnard Airport is a commercial service airport, it is ineligible to receive annual and AIP matching grants from the State Aeronautics Account. However, the airport is eligible to receive A&D Grants and low-interest loans from the state. Each of these is discussed below.

Acquisition and Development (A & D) Grants

A & D grants are designed to provide funding to airports for the purpose of land acquisition and development. This grant has a minimum allocation level of $10,000 and provides up to $500,000 per fiscal year (maximum allowable funding to a single airport yearly). Grant requests are initiated through the CIP process and require a local match of 10 to 50 percent of the project's cost (the level has been 10 percent for the last 10+ years). Unlike annual and AIP matching grants, reliever and commercial service airports are eligible for the A & D grant. Oxnard Airport could utilize these grants as a means to acquire land listed in the CIP. Considering the current financial crisis facing the State of California, no assumption should be made that any funding will be available to Oxnard Airport through this program, at least in the short term.

California Airport Loan Program

The loan program provides funding for all airports within the State of California which are owned by an eligible public agency and open to the public without exception. These loans provide funding to eligible airports for construction and land acquisition projects which will benefit the airport and improve its self-sufficiency. The loans can be used for nearly any

airport-related project and the funding limits are not bound by law or regulation. The amount of the loan is determined in accordance with project feasibility and the sponsor's financial status. Terms of the loan provide eight to 15 years for its payback and the interest rate is based upon the most recent State of California bond sale.

FUNDING PLAN

The underlying strategy used to develop the financial plan of the capital improvement program involves first applying projected annual entitlement funding to eligible project costs. Potential state funding is then considered. The net balances of AIP eligible costs, local matching shares, and the costs of non-eligible projects result in the remaining costs to be funded.

Table 5D outlines the maximum potential FAA entitlement funding that could be attained during each planning horizon, based upon the activity levels forecast. Funding from the state is assumed to be zero. This analysis assumes that the short term horizon would be attained in five years, the intermediate horizon would be achieved in another seven years, and the long range horizon would be achieved in an additional 10 years.

TABLE 5D
CIP Financial Assumptions (2004 $)

	Short Term	Intermediate Term	Long Range
Total Project Costs	$6,757,000	$3,171,000	$6,500,000
Grant Eligible	$5,997,900	$3,012,450	$5,795,000
AIP Entitlements	$5,000,000	$7,000,000	$10,000,000
State Funding	$0	$0	$0
Remaining Grant Eligible Costs	$997,900	$0	$0
Matching Share Costs	$439,100	$158,550	$305,000
Remaining PFC-Eligible Costs	$1,437,000	$158,550	$305,000
Passenger Facility Charges (PFC)	$722,400	$1,227,650	$2,289,750
Remaining Matching Share	$714,600	$0	$0
Non-Eligible Costs	$320,000	$0	$400,000
Remaining Airport CIP Costs	$1,034,600	$0	$400,000

The airport's entitlement funding of $1.0 million annually will be more than sufficient to fund FAA-eligible projects for the intermediate and long term planning horizons. The short term projects, however, exceed the entitlement funding by $997,900. This combined with matching share costs of $439,100 will total $1,437,000 that would be eligible for funding by PFC's. With an estimated $722,400 in PFC's in the short term, this will leave approximately $714,600 to be funded. The County will still be able to seek discretionary funding from the FAA for up to 95 percent of this total.

If the PFCs are renewed beyond 2010 for use in funding other projects, it should provide more than adequate monies to fund the matching share through the remainder of the planning period. This leaves costs that are not eligible for funding. Most of these projects have to do with maintenance and modernization of hangar facilities. Since these projects are related to revenue-producing facilities, they would need to be funded through the rates and charges of the airport. Over the course of the intermediate and long range planning horizons, this is estimated to be approximately $720,000.

CONCLUSIONS

In conclusion, the Master Plan is reviewed with regard to the Department of Airports and Oxnard Airport Mission Statements.

DEPARTMENT OF AIRPORTS MISSION STATEMENT

- ***To provide safe, efficient, maintained, and accessible facilities for the provision of general aviation and limited commuter airline service needs of the citizens of Ventura County.***

The Master Plan concept preserves the current general aviation and commuter activities for which Oxnard Airport is used. It includes recommendations to enhance safety and efficiency, as well as to maintain existing facilities.

- ***To limit the development of Camarillo and Oxnard Airports to meet the forecasted needs of general aviation and commuter airline services in a manner that will complement each other.***

The Master Plan utilizes a forecast that takes into account the following development qualifiers:

- No increase in runway length.
- No significant increase in terminal space.
- Planning to maintain and serve based aircraft levels equal to its current market share of registered aircraft in the county.

- ***To optimize the use of present airport land, maximize safety, assure financial feasibility, and minimize the negative environmental effects on the surrounding communities.***

With the exception of an approach light system, segmented circle relocation, and perimeter fencing, all development in the Master Plan will occur on current airport property. The only property acquisitions recommended are those designed to enhance operational safety.

OXNARD AIRPORT
MISSION STATEMENT

Oxnard Airport shall:

- ***be a publicly owned, operated, and managed general aviation airport with a strong emphasis on safety, cooperation with its neighbors, and responsible flight operations.***

The Master Plan is based upon maintaining the Oxnard Airport as a County-owned and operated airport. It remains open to general aviation activity that can operate within the constraints of its facilities. The major improvement recommendations for the airfield are based upon meeting airport design standards to the extent feasible.

- ***maintain a viable center for air commerce, which enhances trade and business for the economic development and transportation needs of the City of Oxnard and Ventura County.***

The Master Plan continues to provide for maintenance and modernization of existing terminal area facilities to serve the needs of its users. The plan does consider growth in traffic beyond the current levels of activity in support of economic development and transportation needs of the City and County.

- ***make every reasonable effort to limit the hours of air operations through a curfew, and to reduce noise and air pollution nuisances caused by airport users and operations.***

Since the Master Plan is primarily a facility-related plan, the consideration of limited hours and/or curfews is beyond the purview of the Master Plan. The Master Plan is also limited in means to reduce noise and air pollution. The Master Plan, however, does not recommend any improvements that would increase the potential for noise and air pollution.

- ***provide the region with safe and efficient access to the national air transportation system and general aviation.***

Safety, maintenance, and modernization of the Oxnard Airport is the primary emphasis of the Master Plan. The plan will allow the airport to continue to be a regional access to the national air transportation system.

- ***continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County.***

The limited development recommendations of the Master Plan are based in large part on the continued search for a new airport. The Master Plan recognizes that the forecasts for Oxnard Airport fall well short of meeting the commercial service demand in Ventura County. As other commercial airports in the Los Angeles Basin reach their capacities, it will become more incumbent upon the County to have access to adequate airport facilities to serve the needs of its citizens, businesses, and economic well-being.

OXNARD AIRPORT

Appendix A
GLOSSARY AND ABBREVIATIONS

Appendix A
GLOSSARY OF TERMS

ACCELERATE-STOP DISTANCE AVAILABLE (ASDA): see declared distances.

AIR CARRIER: an operator which: (1) performs at least five round trips per week between two or more points and publishes flight schedules which specify the times, days of the week, and places between which such flights are performed; or (2) transport mail by air pursuant to a current contract with the U.S. Postal Service. Certified in accordance with Federal Aviation Regulation (FAR) Parts 121 and 127.

AIRPORT REFERENCE CODE (ARC): a coding system used to relate airport design criteria to the operational (Aircraft Approach Category) to the physical characteristics (Airplane Design Group) of the airplanes intended to operate at the airport.

AIRPORT REFERENCE POINT (ARP): The latitude and longitude of the approximate center of the airport.

AIRPORT ELEVATION: The highest point on an airport's usable runway expressed in feet above mean sea level (MSL).

AIRPORT LAYOUT DRAWING (ALD): The drawing of the airport showing the layout of existing and proposed airport facilities.

AIRCRAFT APPROACH CATEGORY: a grouping of aircraft based on 1.3 times the stall speed in their landing configuration at their maximum certificated landing weight. The categories are as follows:

- *Category A:* Speed less than 91 knots.
- *Category B:* Speed 91 knots or more, but less than 121 knots.
- *Category C:* Speed 121 knots or more, but less than 141 knots.
- *Category D:* Speed 141 knots or more, but less than 166 knots.
- *Category E:* Speed greater than 166 knots.

AIRPLANE DESIGN GROUP (ADG): a grouping of aircraft based upon wingspan. The groups are as follows:

- *Group I:* Up to but not including 49 feet.
- *Group II:* 49 feet up to but not including 79 feet.
- *Group III:* 79 feet up to but not including 118 feet.
- *Group IV:* 118 feet up to but not including 171 feet.
- *Group V:* 171 feet up to but not including 214 feet.
- *Group VI:* 214 feet or greater.

AIR TAXI: An air carrier certificated in accordance with FAR Part 135 and authorized to provide, on demand, public transportation of persons and property by aircraft. Generally operates small aircraft "for hire" for specific trips.

AIRPORT TRAFFIC CONTROL TOWER (ATCT): a central operations facility in the terminal air traffic control system, consisting of a tower, including an associated instrument flight rule (IFR) room if radar equipped, using air/ground communications and/or radar, visual signaling, and other devices to provide safe and expeditious movement of terminal air traffic.

AIR ROUTE TRAFFIC CONTROL CENTER (ARTCC): a facility established to provide air traffic control service to aircraft operating on an IFR flight plan within controlled airspace and principally during the enroute phase of flight.

ALERT AREA: see special-use airspace.

ANNUAL INSTRUMENT APPROACH (AIA): an approach to an airport with the intent to land by an aircraft in accordance with an IFR flight plan when visibility is less than three miles and/or when the ceiling is at or below the minimum initial approach altitude.

APPROACH LIGHTING SYSTEM (ALS): an airport lighting facility which provides visual guidance to landing aircraft by radiating light beams by which the pilot aligns the aircraft with the extended centerline of the runway on his final approach and landing.

APPROACH MINIMUMS: the altitude below which an aircraft may not descend while on an IFR approach unless the pilot has the runway in sight.

AUTOMATIC DIRECTION FINDER (ADF): an aircraft radio navigation system which senses and indicates the direction to a non-directional radio beacon (NDB) ground transmitter.

AUTOMATED WEATHER OBSERVATION STATION (AWOS): equipment used to automatically record weather conditions (i.e. cloud height, visibility, wind speed and direction, temperature, dewpoint, etc...)

AUTOMATED TERMINAL INFORMATION SERVICE (ATIS): the continuous broadcast of recorded non-control information at towered airports. Information typically includes wind speed, direction, and runway in use.

AZIMUTH: Horizontal direction expressed as the angular distance between true north and the direction of a fixed point (as the observer's heading).

BASE LEG: A flight path at right angles to the landing runway off its approach end. The base leg normally extends from the downwind leg to the intersection of the extended runway centerline. See "traffic pattern."

BEARING: the horizontal direction to or from any point, usually measured clockwise from true north or magnetic north.

BLAST FENCE: a barrier used to divert or dissipate jet blast or propeller wash.

BUILDING RESTRICTION LINE (BRL): A line which identifies suitable building area locations on the airport.

CIRCLING APPROACH: a maneuver initiated by the pilot to align the aircraft with the runway for landing when flying

a predetermined circling instrument approach under IFR.

CLASS A AIRSPACE: see Controlled Airspace.

CLASS B AIRSPACE: see Controlled Airspace.

CLASS C AIRSPACE: see Controlled Airspace.

CLASS D AIRSPACE: see Controlled Airspace.

CLASS E AIRSPACE: see Controlled Airspace.

CLASS G AIRSPACE: see Controlled Airspace.

CLEAR ZONE: see Runway Protection Zone.

CROSSWIND: wind flow that is not parallel to the runway of the flight path of an aircraft.

COMPASS LOCATOR (LOM): a low power, low/medium frequency radiobeacon installed in conjunction with the instrument landing system at one or two of the marker sites.

CONTROLLED AIRSPACE: airspace of defined dimensions within which air traffic control services are provided to instrument flight rules (IFR) and visual flight rules (VFR) flights in accordance with the airspace classification. Controlled airspace in the United States is designated as follows:

- *CLASS A:* generally, the airspace from 18,000 feet mean sea level (MSL) up to but not including flight level FL600. All persons must operate their aircraft under IFR.

- *CLASS B:* generally, the airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports. The configuration of Class B airspace is unique to each airport, but typically consists of two or more layers of air space and is designed to contain all published instrument approach procedures to the airport. An air traffic control clearance is required for all aircraft to operate in the area.

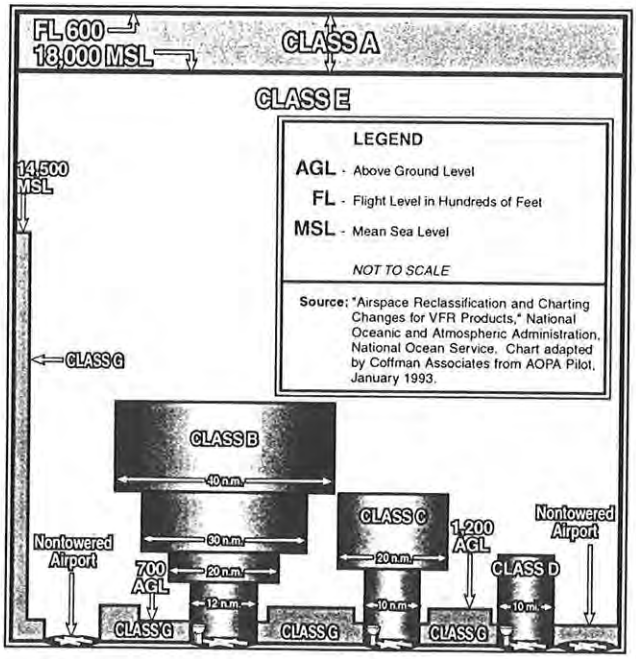
- *CLASS C:* generally, the airspace from the surface to 4,000 feet above the air port elevation (charted as MSL) surrounding those airports that have an operational control tower and radar approach control and are served by a qualifying number of IFR operations or passenger enplanements. Although individually tailored for each airport, Class C airspace typically consists of a surface area with a five nautical mile (nm) radius and an outer area with a 10 nautical mile radius that extends from 1,200 feet to 4,000 feet above the airport elevation. Two-way radio communication is required for all aircraft.

- *CLASS D:* generally, that airspace from the surface to 2,500 feet above the air port elevation (charted as MSL) surrounding those airport that have an operational control tower. Class D air space is individually tailored and configured to encompass published instrument approach procedures. Unless otherwise authorized, all

persons must establish two-way radio communication.

- *CLASS E:* generally, controlled airspace that is not classified as Class A, B, C, or D. Class E airspace extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. When designated as a surface area, the airspace will be configured to contain all instrument procedures. Class E airspace encompasses all Victor Airways. Only aircraft following instrument flight rules are required to establish two-way radio communication with air traffic control.

- *CLASS G:* generally, that airspace not classified as Class A, B, C, D, or E. Class G airspace is uncontrolled for all aircraft. Class G airspace extends from the surface to the overlying Class E airspace.



CONTROLLED FIRING AREA: see special-use airspace.

CROSSWIND LEG: A flight path at right angles to the landing runway off its upwind end. See "traffic pattern."

DECLARED DISTANCES: The distances declared available for the airplane's takeoff runway, takeoff distance, accelerate-stop distance, and landing distance requirements. The distances are:

- *TAKEOFF RUNWAY AVAILABLE (TORA):* The runway length declared available and suitable for the ground run of an airplane taking off;

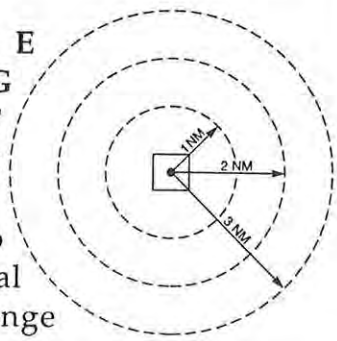
- *TAKEOFF DISTANCE AVAILABLE (TODA):* The TORA plus the length of any remaining runway and/or clear way beyond the far end of the TORA;

- *ACCELERATE-STOP DISTANCE AVAILABLE (ASDA):* The runway plus stopway length declared available for the acceleration and deceleration of an aircraft aborting a takeoff; and

- *LANDING DISTANCE AVAILABLE (LDA):* The runway length declared available and suitable for landing.

DISPLACED THRESHOLD: a threshold that is located at a point on the runway other than the designated beginning of the runway.

DISTANCE MEASURING EQUIPMENT (DME): Equipment (airborne and ground) used to measure, in nautical miles, the slant range



distance of an aircraft from the DME navigational aid.

DNL: The 24-hour average sound level, in A-weighted decibels, obtained after the addition of ten decibels to sound levels for the periods between 10 p.m. and 7 a.m. as averaged over a span of one year. It is the FAA standard metric for determining the cumulative exposure of individuals to noise.

DOWNWIND LEG: A flight path parallel to the landing runway in the direction opposite to landing. The downwind leg normally extends between the crosswind leg and the base leg. Also see "traffic pattern."

EASEMENT: The legal right of one party to use a portion of the total rights in real estate owned by another party. This may include the right of passage over, on, or below the property; certain air rights above the property, including view rights; and the rights to any specified form of development or activity, as well as any other legal rights in the property that may be specified in the easement document.

ENPLANED PASSENGERS: the total number of revenue passengers boarding aircraft, including originating, stop-over, and transfer passengers, in scheduled and non-scheduled services.

FINAL APPROACH: A flight path in the direction of landing along the extended runway centerline. The final approach normally extends from the base leg to the runway. See "traffic pattern."

FIXED BASE OPERATOR (FBO): A provider of services to users of an airport. Such services include, but are not limited to, hangaring, fueling, flight training, repair, and maintenance.

FRANGIBLE NAVAID: a navigational aid which retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft.

GENERAL AVIATION: that portion of civil aviation which encompasses all facets of aviation except air carriers holding a certificate of convenience and necessity, and large aircraft commercial operators.

GLIDESLOPE (GS): Provides vertical guidance for aircraft during approach and landing. The glideslope consists of the following:

1. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS; or

2. Visual ground aids, such as VASI, which provide vertical guidance for VFR approach or for the visual portion of an instrument approach and landing.

GLOBAL POSITIONING SYSTEM: See "GPS."

GPS - GLOBAL POSITIONING SYSTEM: A system of 24 satellites

used as reference points to enable navigators equipped with GPS receivers to determine their latitude, longitude, and altitude.

HELIPAD: a designated area for the takeoff, landing, and parking of helicopters.

HIGH-SPEED EXIT TAXIWAY: a long radius taxiway designed to expedite aircraft turning off the runway after landing (at speeds to 60 knots), thus reducing runway occupancy time.

INSTRUMENT APPROACH: A series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight conditions from the beginning of the initial approach to a landing, or to a point from which a landing may be made visually.

INSTRUMENT FLIGHT RULES (IFR): Rules governing the procedures for conducting instrument flight. Also a term used by pilots and controllers to indicate type of flight plan.

INSTRUMENT LANDING SYSTEM (ILS): A precision instrument approach system which normally consists of the following electronic components and visual aids:

1. Localizer.
2. Glide Slope.
3. Outer Marker.
4. Middle Marker.
5. Approach Lights.

LANDING DISTANCE AVAILABLE (LDA): see declared distances.

LOCAL TRAFFIC: aircraft operating in the traffic pattern or within sight of the tower, or aircraft known to be departing or arriving from the local practice areas, or aircraft executing practice instrument approach procedures. Typically, this includes touch-and-go training operations.

LOCALIZER: The component of an ILS which provides course guidance to the runway.

LOCALIZER TYPE DIRECTIONAL AID (LDA): a facility of comparable utility and accuracy to a localizer, but is not part of a complete ILS and is not aligned with the runway.

LORAN: long range navigation, an electronic navigational aid which determines aircraft position and speed by measuring the difference in the time of reception of synchronized pulse signals from two fixed transmitters. Loran is used for enroute navigation.

MICROWAVE LANDING SYSTEM (MLS): an instrument approach and landing system that provides precision guidance in azimuth, elevation, and distance measurement.

MILITARY OPERATIONS AREA (MOA): see special-use airspace.

MISSED APPROACH COURSE (MAC): The flight route to be followed if, after an instrument approach, a landing is not effected, and occurring normally:

1. When the aircraft has descended to the decision height and has not established visual contact; or

2. When directed by air traffic control to pull up or to go around again.

MOVEMENT AREA: the runways, taxiways, and other areas of an airport which are utilized for taxiing/hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and parking areas. At those airports with a tower, air traffic control clearance is required for entry onto the movement area.

NAVAID: a term used to describe any electrical or visual air navigational aids, lights, signs, and associated supporting equipment (i.e. PAPI, VASI, ILS, etc..)

NOISE CONTOUR: A continuous line on a map of the airport vicinity connecting all points of the same noise exposure level.

NONDIRECTIONAL BEACON (NDB): A beacon transmitting nondirectional signals whereby the pilot of an aircraft equipped with direction finding equipment can determine his or her bearing to and from the radio beacon and home on, or track to, the station. When the radio beacon is installed in conjunction with the Instrument Landing System marker, it is normally called a Compass Locator.

NONPRECISION APPROACH PROCEDURE: a standard instrument approach procedure in which no electronic glide slope is provided, such as VOR, TACAN, NDB, or LOC.

OBJECT FREE AREA (OFA): an area on the ground centered on a runway, taxiway, or taxilane centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

OBSTACLE FREE ZONE (OFZ): the airspace below 150 feet above the established airport elevation and along the runway and extended runway centerline that is required to be kept clear of all objects, except for frangible visual NAVAIDs that need to be located in the OFZ because of their function, in order to provide clearance for aircraft landing or taking off from the runway, and for missed approaches.

OPERATION: a take-off or a landing.

OUTER MARKER (OM): an ILS navigation facility in the terminal area navigation system located four to seven miles from the runway edge on the extended centerline indicating to the pilot, that he/she is passing over the facility and can begin final approach.

PRECISION APPROACH: a standard instrument approach procedure which provides runway alignment and glide slope (descent) information. It is categorized as follows:

- *CATEGORY I (CAT I):* a precision approach which provides for approaches with a decision height of not less than 200 feet and visibility not less than 1/2 mile or Runway Visual Range (RVR) 2400 (RVR 1800) with operative touchdown zone and runway centerline lights.

- *CATEGORY II (CAT II):* a precision approach which provides for approaches with a decision height of not less than 100 feet and visibility not less than 1200 feet RVR.

- *CATEGORY III (CAT III):* a precision approach which provides for approaches with minima less than Category II.

PRECISION APPROACH PATH INDICATOR (PAPI): A lighting system providing visual approach slope guidance to aircraft during a landing approach. It is similar to a VASI but provides a sharper transition between the colored indicator lights.

PRECISION OBJECT FREE AREA (POFA): an area centered on the extended runway centerline, beginning at the runway threshold and extending behind the runway threshold that is 200 feet long by 800 feet wide. The POFA is a clearing standard which requires the POFA to be kept clear of above ground objects protruding above the runway safety area edge elevation (except for frangible NAVAIDS). The POFA applies to all new authorized instrument approach procedures with less than 3/4 mile visibility.

PROHIBITED AREA: see special-use airspace.

REMOTE COMMUNICATIONS OUTLET (RCO): an unstaffed transmitter receiver/facility remotely controlled by air traffic personnel. RCOs serve flight service stations (FSSs). RCOs were established to provide ground-to-ground communications between air traffic control specialists and pilots at satellite airports for delivering enroute clearances, issuing departure authorizations, and acknowledging instrument flight rules cancellations or departure/landing times.

REMOTE TRANSMITTER/RECEIVER (RTR): see remote communications outlet. RTRs serve ARTCCs.

RELIEVER AIRPORT: an airport to serve general aviation aircraft which might otherwise use a congested air-carrier served airport.

RESTRICTED AREA: see special-use airspace.

RNAV: area navigation - airborne equipment which permits flights over determined tracks within prescribed accuracy tolerances without the need to overfly ground-based navigation facilities. Used enroute and for approaches to an airport.

RUNWAY: a defined rectangular area on an airport prepared for aircraft landing and takeoff. Runways are normally numbered in relation to their magnetic direction, rounded off to the nearest 10 degrees. For example, a runway with a magnetic heading of 180 would be designated Runway 18. The runway heading on the opposite end of the runway is 180 degrees from that runway end. For example, the opposite runway heading for Runway 18 would be Runway 36 (magnetic heading of 360). Aircraft can takeoff or land from either end of a runway, depending upon wind direction.

RUNWAY BLAST PAD: a surface adjacent to the ends of runways provided to reduce the erosive effect of jet blast and propeller wash.

RUNWAY END IDENTIFIER LIGHTS (REIL): Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

RUNWAY GRADIENT: the average slope, measured in percent, between the two ends of a runway.

RUNWAY PROTECTION ZONE (RPZ): An area off the runway end to enhance the protection of people and property on the ground. The RPZ is trapezoidal in shape. Its dimensions are determined by the aircraft approach speed and runway approach type and minima.

RUNWAY SAFETY AREA (RSA): a defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

RUNWAY VISUAL RANGE (RVR): an instrumentally derived value, in feet, representing the horizontal distance a pilot can see down the runway from the runway end.

RUNWAY VISIBILITY ZONE (RVZ): an area on the airport to be kept clear of permanent objects so that there is an unobstructed line-of-site from any point five feet above the runway centerline to any point five feet above an intersecting runway centerline.

SEGMENTED CIRCLE: a system of visual indicators designed to provide traffic pattern information at airports without operating control towers.

SHOULDER: an area adjacent to the edge of paved runways, taxiways or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection. The shoulder does not necessarily need to be paved.

SLANT-RANGE DISTANCE: The straight line distance between an aircraft and a point on the ground.

SPECIAL-USE AIRSPACE: airspace of defined dimensions identified by a surface area wherein activities must be confined because of their nature and/or wherein limitations may be imposed upon aircraft operations that are not a part of those activities. Special-use airspace classifications include:

- *ALERT AREA:* airspace which may contain a high volume of pilot training activities or an unusual type of aerial activity, neither of which is hazardous to aircraft.

- *CONTROLLED FIRING AREA:* airspace wherein activities are conducted under conditions so controlled as to eliminate hazards to nonparticipating aircraft and to ensure the safety of persons or property on the ground.

- *MILITARY OPERATIONS AREA (MOA):* designated airspace with defined vertical and lateral dimensions established outside Class A airspace to separate/segregate certain military activities from instrument flight rule (IFR) traffic and to identify for visual flight rule (VFR) traffic where these activities are conducted.

- *PROHIBITED AREA:* designated airspace within which the flight of aircraft is prohibited.

- *RESTRICTED AREA:* airspace designated under Federal Aviation Regulation (FAR) 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use. When not in use by the using agency, IFR/VFR operations can be authorized by the controlling air traffic control facility.

- *WARNING AREA:* airspace which may contain hazards to nonparticipating aircraft.

STANDARD INSTRUMENT DEPARTURE (SID): a pre-planned IFR departure procedure.

STANDARD TERMINAL ARRIVAL (STAR): a pre-planned IFR arrival procedure.

STOP-AND-GO: a procedure wherein an aircraft will land, make a complete stop on the runway, and then commence a takeoff from that point. A stop-and-go is recorded as two operations: one operation for the landing and one operation for the takeoff.

STRAIGHT-IN LANDING/APPROACH: a landing made on a runway aligned within 30 degrees of the final approach course following completion of an instrument approach.

TACTICAL AIR NAVIGATION (TACAN): An ultra-high frequency electronic air navigation system which provides suitably-equipped aircraft a continuous indication of bearing and distance to the TACAN station.

TAKEOFF RUNWAY AVAILABLE (TORA): see declared distances.

TAKEOFF DISTANCE AVAILABLE (TODA): see declared distances.

TAXILANE: the portion of the aircraft parking area used for access between taxiways and aircraft parking positions.

TAXIWAY: a defined path established for the taxiing of aircraft from one part of an airport to another.

TAXIWAY SAFETY AREA (TSA): a defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an airplane unintentionally departing the taxiway.

TETRAHEDRON: a device used as a landing direction indicator. The small end of the tetrahedron points in the direction of landing.

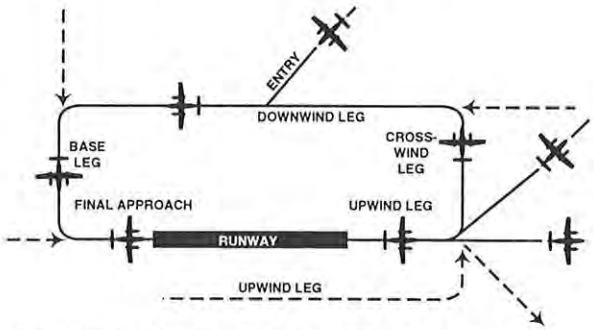
THRESHOLD: the beginning of that portion of the runway available for landing. In some instances the landing threshold may be displaced.

TOUCH-AND-GO: an operation by an aircraft that lands and departs on a runway without stopping or exiting the runway. A touch-and-go is recorded as two operations: one operation for the landing and one operation for the take-off.

TOUCHDOWN ZONE LIGHTING (TDZ): Two rows of transverse light bars located symmetrically about the runway centerline normally at 100-foot intervals. The basic system extends 3,000 feet along the runway.

TRAFFIC PATTERN: The traffic flow that is prescribed for aircraft landing at or taking off from an airport. The components of a typical traffic pattern are the upwind leg, crosswind leg, downwind leg, base leg, and final approach.

UNICOM: A nongovernment communication facility which may provide

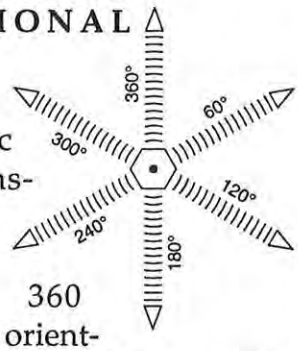


airport information at certain airports. Locations and frequencies of UNICOM's are shown on aeronautical charts and publications.

UPWIND LEG: A flight path parallel to the landing runway in the direction of landing. See "traffic pattern."

VECTOR: A heading issued to an aircraft to provide navigational guidance by radar.

VERY HIGH FREQUENCY/ OMNIDIRECTIONAL RANGE STATION (VOR): A ground-based electronic navigation aid transmitting very high frequency navigation signals, 360 degrees in azimuth, oriented from magnetic north. Used as the basis for navigation in the national airspace system. The VOR periodically identifies itself by Morse Code and may have an additional voice identification feature.



VERY HIGH FREQUENCY OMNIDIRECTIONAL RANGE STATION/TACTICAL AIR NAVIGATION (VORTAC): A navigation aid providing VOR azimuth, TACAN azimuth, and TACAN distance-measuring equipment (DME) at one site.

VICTOR AIRWAY: A control area or portion thereof established in the form of a corridor, the centerline of which is defined by radio navigational aids.

VISUAL APPROACH: An approach wherein an aircraft on an IFR flight plan, operating in VFR conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR conditions.

VISUAL APPROACH SLOPE INDICATOR (VASI): An airport lighting facility providing vertical visual approach slope guidance to aircraft during approach to landing by radiating a directional pattern of

high intensity red and white focused light beams which indicate to the pilot that he is on path if he sees red/white, above path if white/white, and below path if red/red. Some airports serving large aircraft have three-bar VASI's which provide two visual guide paths to the same runway.

VISUAL FLIGHT RULES (VFR): Rules that govern the procedures for conducting flight under visual conditions. The term VFR is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, it is used by pilots and controllers to indicate type of flight plan.

VOR: See "Very High Frequency Omnidirectional Range Station."

VORTAC: See "Very High Frequency Omnidirectional Range Station/Tactical Air Navigation."

WARNING AREA: see special-use airspace.

ABBREVIATIONS

AC: advisory circular

ADF: automatic direction finder

ADG: airplane design group

AFSS: automated flight service station

AGL: above ground level

AIA: annual instrument approach

AIP: Airport Improvement Program

AIR-21: Wendell H. Ford Aviation Investment and Reform Act for the 21st Century

ALS: approach lighting system

ALSF-1: standard 2,400-foot high intensity approach lighting system with sequenced flashers (CAT I configuration)

ALSF-2: standard 2,400-foot high intensity approach light ing system with sequenced flashers (CAT II configuration)

APV: instrument approach procedure with vertical guidance

ARC: airport reference code

ARFF: aircraft rescue and fire-fighting

ARP: airport reference point

ARTCC: air route traffic control center

ASDA: accelerate-stop distance available

ASR: airport surveillance radar

ASOS: automated surface observation station

ATCT: airport traffic control tower

ATIS: automated terminal information service

AVGAS: aviation gasoline - typically 100 low lead (100LL)

AWOS: automated weather observation station

BRL: building restriction line

CFR: Code of Federal Regulations

CIP: capital improvement program

DME: distance measuring equipment

DNL: day-night noise level

DWL: runway weight bearing capacity for air

craft with dual-wheel type landing gear

DTWL: runway weight bearing capacity for aircraft with dual-tandem type landing gear

FAA: Federal Aviation Administration

FAR: Federal Aviation Regulation

FBO: fixed base operator

FY: fiscal year

GPS: global positioning system

GS: glide slope

HIRL: high intensity runway edge lighting

IFR: instrument flight rules (FAR Part 91)

ILS: instrument landing system

IM: inner marker

LDA: localizer type directional aid

LDA: landing distance available

LIRL: low intensity runway edge lighting

LMM: compass locator at middle marker

LOC: ILS localizer

LOM: compass locator at ILS outer marker

LORAN: long range navigation

MALS: medium intensity approach lighting system

MALSR: medium intensity approach lighting system with sequenced flashers

MALSR: medium intensity approach lighting system with runway alignment indicator lights

MIRL: medium intensity runway edge lighting

MITL: medium intensity taxiway edge lighting

MLS: microwave landing system

MM: middle marker

MOA: military operations area

MSL: mean sea level

NAVAID: navigational aid

NDB: nondirectional radio beacon

NM: nautical mile (6,076 .1 feet)

NPIAS: National Plan of Integrated Airport Systems

NPRM: notice of proposed rulemaking

ODALS: omnidirectional approach lighting system

OFA: object free area

OFZ: obstacle free zone

OM: outer marker

PAC: planning advisory committee

PAPI: precision approach path indicator

PFC: porous friction course

PFC: passenger facility charge

PCL: pilot-controlled lighting

PIW: public information workshop

PLASI: pulsating visual approach slope indicator

POFA: precision object free area

PVASI: pulsating/steady visual approach slope indicator

RCO: remote communications outlet

REIL: runway end identifier lighting

RNAV: area navigation

RPZ: runway protection zone

RTR: remote transmitter/receiver

RVR: runway visibility range

RVZ: runway visibility zone

SALS: short approach lighting system

SASP: state aviation system plan

SEL: sound exposure level

SID: standard instrument departure

SM: statute mile (5,280 feet)

SRE: snow removal equipment

SSALF: simplified short approach lighting system with sequenced flashers

SSALR: simplified short approach lighting system with runway alignment indicator lights

STAR: standard terminal arrival route

SWL: runway weight bearing capacity for aircraft with single-wheel type landing gear

STWL: runway weight bearing capacity for aircraft with single-wheel tandem type landing gear

TAF: Federal Aviation Administration (FAA) Terminal Area Forecast

TACAN:	tactical air navigational aid
TORA:	takeoff runway available
TODA:	takeoff distance available
TRACON:	terminal radar approach control
VASI:	visual approach slope indicator
VFR:	visual flight rules (FAR Part 91)
VHF:	very high frequency
VOR:	very high frequency omni-directional range
VORTAC:	VOR and TACAN collo-cated

OXNARD AIRPORT

Appendix B
PAC COMMENTS

OXNARD AIRPORT

PHASE I PAC COMMENTS

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

May 15, 2003

Transmitted herewith is the Phase One Report for the Airport Master Plan. This draft document will be presented at the first PAC meeting on **Thursday, May 15, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE ONE REPORT
INTRODUCTION
CHAPTER ONE - INVENTORY
CHAPTER TWO - FORECASTS
CHAPTER THREE - FACILITY REQUIREMENTS
APPENDIX A - GLOSSARY OF TERMS

☐ *I have read the Phase One Report and have no comments.*

☒ *I have read the Phase One Report and have the following comments. (Please add extra sheets if necessary.)*

Somewhat dissappointed that the report appeared to be constrained and does not reflect in my opinion the many possibilities available and necessary in the near future.

Please send this response sheet by May 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: Eugene Fussell
Representing: _____
Phone: _____

TIMOTHY CLIFFORD RILEY
ATTORNEY AT LAW

MEMBER OF THE NEW YORK BAR

5246 OUTRIGGER WAY
* CHANNEL ISLANDS HARBOR *
OXNARD SHORES
CALIFORNIA 93035

MEMBER OF THE CALIFORNIA BAR

TELEPHONE (805) 984-2350 * FACSIMILE (805) 984-2FAX * EMAIL Tim.Riley@gte.net

Coffman Associates, Inc.
4835 East Cactus Road, Suite 235
Scottsdale, AZ 85254

Via Facsimile Only: 602-993-7196

Attention: Steve Benson

May 19, 2003

Re: Oxnard Airport Master Plan
From: Tim Riley, Planning Advisory Committee Member from the Neighborhood Oxnard Shores

I have read the Phase One Report and have the following comments:

The Mission statements for Oxnard Airport and Ventura County Department of Airports make it clear that Oxnard Airport airside as well as landside facilities should not be further developed.

This conclusion is further supported by the fact that the forecasted activity levels are less than those which have already been accommodated by the existing airport facilitities in the past. This conclusion is supported and documented in the Airport Master Plan for Oxnard Airport, Phase One draft at p. 3-1.

"It is important to note that most of the activity levels forecast in the previous chapter have been exceeded in the past." It then soundly reasons, "Since most of the forecast activity has been accommodated at this airport before, the emphasis will be more on re-development to ensure a safe, secure, and efficient operation."

Accordingly, the Master Plan should provide for safe, secure, and efficient operation - without any airside or landside expansion or development.

Also, and most importantly, the Master Plan should include a detailed plan with timetables describing the plan that will be implemented in order to comply with the Oxnard Airport Mission Statement mandate, "Oxnard airport shall: continue to search for a regional airport to serve the air carrier and commercial needs of the City of Oxnard and Ventura County."

The Master Plan should also include detailed plans and timetables on how to scale down the Oxnard Airport facilities and phase-out Oxnard Airport activities once that Oxnard Airport Mission Statement goal has been achieved.

Sincerely,

Timothy Clifford Riley
TCR/mc

10. Pg. 2-8. Please explain the purpose of using a 12-month moving total. The last paragraph should state "...SkyWest's enplanements declined to an average of 586 per month." The new text is underlined.
11. Pg. 2-11. We support the qualifiers listed for examining passenger potential in the Master Plan.
12. Pg. 2-12. The selected growth forecast projects a "recapture scenario." We believe the constant share growth rate of 0.004% is more realistic than the selected recapture market scenario of escalating percentages to 0.005% over 20 years in light of the County Board of Supervisors' directions to the Department of Airports and the Oxnard Airport mission statement. Consequently, we recommend that the Master Plan projections be revised slightly downward to reflect the constant share growth rate of 0.004%.
13. Exhibit 2D should identify that the selected forecast is actually the "market share recapture projection."
14. Pg. 2-13. What does SkyWest say specifically about its planes serving Oxnard, do they intend to continue with turboprop planes? Where is the term "load factor" defined in the text?
15. Pg. 2-17. In the Based Aircraft Forecast, last paragraph, the text states Table 2H says the airport's share has continued to drop and was 12.9 percent in 2001. The Table 2H indicates the share was 12.6%. Which figure is correct?
16. Pg. 2-19. The text states a constant market share of 12.9% was used in Table 2H and Exhibit 2F. However, the previous comment No. 15 indicates the constant market share is not clear (it is either 12.6% in 2001 or 12.9% in 2001, but in 2002 it was 12.8%). Why is the 12.9% based aircraft market share forecast used if the latest data show a declining trend? Exhibit 2F and Table 2H demonstrate a 16-year decline. The text does not appear to support its use of the 12.9% market share. The evidence suggests the market share should be a constant of 12.8%.
17. Pg. 2-25 Revise Table 2P to reflect the City's suggested growth rates.
18. Pg. 3-13. In the Pavement Strength section, the text should explain to the public why airplanes weighing more than Runway 7-25's strength rating of 70,000 pounds per dual wheel loading are allowed to land and are considered a safe landing at the airport.
19. Pg. 3-14 Table 3H. Why are some numbers in bold and italic type? The table should have a legend explaining the importance of different typefaces.
20. Pg. 3-19 Table 3J. Same comment as No. 19 above for Table 3H.
21. Pg. 3-20. The Hangars section uses the term "rustic" incorrectly. We suggest using a clearer term to explain that the salt air causes airplanes to corrode.
22. Pg. 3-21, 3-22. Tables 3K and 3L and 3M have a column for "available" with a blank area next to the left-hand column. It is unclear what the difference is in the first row between "available" and "current," and why one square of the table is blank in each table.
23. Pg. 3-23. In the Airport Access Routes, correct the street name to say "Channel Islands Boulevard."

OXNARD AIRPORT

PHASE II PAC COMMENTS

oxnard neighborhood councils

Wilson Neighborhood Council

August 8, 2003

James M. Harris, P.E.
Coffman Associates
4835 E. Cactus Road, Suite 235
Scottsdale, Arizona 85254

RE: Oxnard Airport Master Plan

Dear Mr. Harris:

As Chairman of a neighborhood directly impacted by the Oxnard Airport, I would like to bring to your attention the inconvenience of the PAC mid morning meeting times. Wilson Neighborhood Council has several residents interested in participating in the Airport Master Plan Advisory Committee, however their daily work schedules, in and out of Ventura County, prevent their attendance. Wilson Neighborhood then has no representation.

Wilson Neighborhood Council would like to recommend that a more convenient evening meeting be scheduled to allow full participation and fair representation.

Steve Fleischer has resigned his position as the Wilson PAC representative due to scheduling conflicts. Steve Buratti will now represent the Wilson Neighborhood Council on the Planning Advisory Committee. Mr. Buratti's address is 234 South "F" Street, Oxnard, CA 93030, for all future correspondence.

In addition to scheduling difficulties, the reports to be reviewed should be provided in a more timely manner. Here it is the 8th of August, and neither Steve Fleischman or Tim Reily have received their report to review as promised.

I ask that these accommodations be made in the interest of fairness and a true desire to obtain valuable neighborhood input.

Sincerely,

Bill Winter

Bill Winter
Chairman, Wilson Neighborhood Council

Cc: Scott Smith – Ventura County Department of Airports
Andres Herrera, Oxnard City Councilmember
Edmund F. Sotelo – City of Oxnard, City Manager
Granville Bowman – City of Oxnard, Director of Public Works
Donna Helms – City of Oxnard, Neighborhood Services

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

August 6, 2003

Transmitted herewith is the Phase Two Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Thursday, August 14, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE TWO REPORT
CHAPTER FOUR - ALTERNATIVES
APPENDIX B - PHASE ONE PAC COMMENTS

☐ *I have read the Phase Two Report and have no comments.*

☒ *I have read the Phase Two Report and have the following comments. (Please add extra sheets if necessary.)*

- WOULD LIKE TO SEE THE FORECASTS FOR AUTO RELIABILITY
- SEE ATTACHED NOTES FOR ADDITIONAL COMMENTS.

Please send this response sheet by August 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: STEVE SARCHET
Representing: [illegible]
Phone: 805 382 [illegible]

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

August 6, 2003

Transmitted herewith is the Phase Two Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Thursday, August 14, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE TWO REPORT
CHAPTER FOUR - ALTERNATIVES
APPENDIX B - PHASE ONE PAC COMMENTS

☑ *I have read the Phase Two Report and have no comments.*

☐ *I have read the Phase Two Report and have the following comments. (Please add extra sheets if necessary.)*

Please send this response sheet by August 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: STEVE KINNEY
Representing: ECONOMIC DEVELOPMENT CORP.
Phone: 805. 385. 7444

Phase II Comments, continued:

Issue: Runway Protection Zones (RPZ)
Issue: Property Within the Object Free Area (OFA)

Recommendation:

First Option: Request "modification of design standards" from the FAA for the RPZ and the OFA;
Second Option: Reduce runway length to accommodate for the RPZ and OFA;
Third Option: Adjust declared distances to accommodate the RPZ and OFA

Discussion:

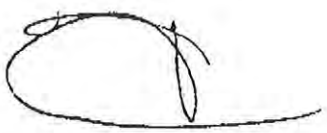
An issue relative to the sufficient control of property in the Runway Protection Zone (RPZ), and within the Object Free Area (OFA) has been raised in the Phase II report.

I am against the purchase of any property or procurement of any avigational easements over property for the purposes of the RPZ or the OFA

A purchase of property or easement is unnecessary and would be wasteful of public funds. Moreover, it would be contrary to the mission statements, which have limited expansion of the airport. If it were argued that said purchase would be required for safety reasons, then those proponents would have to publicly admit that thus far the Oxnard Airport has been operating in an unsafe and dangerous manner, which presents an embarrassing position for the Department of Airports to take.

The options stated above, would be less embarrassing for the Department of Airports, more practical to implement, more cost effective for the taxpayer, more consistent with the mission statements, less inflammatory to the community, and would resolve the issue readily.

Sincerely,



Timothy Clifford Riley
TCR/me

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

August 6, 2003

Transmitted herewith is the Phase Two Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Thursday, August 14, 2003 at 10:00 a.m.** As a reminder, it will be held at the City of Oxnard Main Library, 251 South A Street in Oxnard.

PHASE TWO REPORT
CHAPTER FOUR - ALTERNATIVES
APPENDIX B - PHASE ONE PAC COMMENTS

☐ *I have read the Phase Two Report and have no comments.*

☒ *I have read the Phase Two Report and have the following comments. (Please add extra sheets if necessary.)*

I THINK THE COMMITTEE IS TO NARROW THERE IS NO REPRESENTATION FROM THE GENERAL OXNARD COMMUNITY, NOR IS THERE ANY REPRESENTATION FROM COMMUNITIES OUTSIDE THE CITY OF OXNARD WHO USE THE AIRPORT OR DERIVE ECONOMIC BENEFITS FROM THE AIRPORT.

Please send this response sheet by August 30, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: GARY JACOBS
Representing: AIRPORT ADVISORY COM
Phone: 641-9400

OXNARD AIRPORT

PHASE III PAC COMMENTS

OXNARD AIRPORT
Oxnard, California

Airport Master Plan
Planning Advisory Committee Members

November 6, 2003

Transmitted herewith is the Draft Report for the Airport Master Plan. This draft document will be presented at the second PAC meeting on **Wednesday, November 19, 2003 at 3:00 p.m.** As a reminder, it will be held at the Oxnard City Hall Council Chambers, 305 West 3rd Street in Oxnard. The Draft Report contains revisions to the chapters in the Phase One and Two Reports as well as the following new information:

DRAFT FINAL MASTER PLAN
CHAPTER FIVE - AIRPORT PLANS
APPENDIX B-2 - PHASE TWO PAC COMMENTS
APPENDIX C - AIRPORT LAYOUT PLAN

☐ *I have read the Draft Final Report and have no comments.*

☑ *I have read the Draft Final Report and have the following comments. (Please add extra sheets if necessary.)*

1. A GOOD DOCUMENT THAT SHOULD BE ADOPTED WITHOUT CONTROVERSY
2. ADDITION OF AN EXHIBIT THAT COMPARES PROJECTED SHORT, MEDIUM & LONG TERM TOTAL OPERATIONS WITH PAST PEAKS WOULD BE HELPFUL. I BELIEVE IT WOULD DEMONSTRATE THAT EVEN THE LONG TERM PROJECTION IS WITHIN PAST PEAK VOLUMES & FITS WITHIN OUR CAPACITY
3. LARGER (QUIETER) EQUIPMENT RESULTS IN FEWER A/C OPERATIONS & LESS ENVIRONMENTAL IMPACT.

Please send this response sheet by December 8, 2003 to:

COFFMAN ASSOCIATES, INC.
4835 E. Cactus Road, Suite 235
Scottsdale, AZ 85254
FAX: (602) 993-7196
Attn: Steve Benson
stevebenson@coffmanassociates.com

Name: MARK FINGERLIN
Representing: OXNARD AIRPORT ASSOCIATION
Phone: _____

OXNARD AIRPORT

Appendix C
AIRPORT LAYOUT PLAN

AIRPORT LAYOUT PLANS
FOR
OXNARD AIRPORT
OXNARD, CALIFORNIA

Prepared for the

County of Ventura
Department of Airports

INDEX OF DRAWINGS

Coffman Associates
Airport Consultants
www.coffmanassociates.com

RUNWAY DATA

	RUNWAY 7-25	
	EXISTING	ULTIMATE
AIRCRAFT APPROACH CATEGORY-DESIGN GROUP	D-II	D-II/B-III
RUNWAY AZIMUTH	270.54° / 90.52°	SAME
RUNWAY BEARING	N90.52°W	SAME
RUNWAY DIMENSIONS	5,950' x 100'	5,950' x 100'
RUNWAY INSTRUMENTATION	Nonprecison/Precision	Precision
FAR PT?? CATEGORY	34.1/50:1	50:1
RUNWAY THRESHOLD DISPLACEMENT	0'/1,372'	0'/1,372'
RUNWAY SAFETY AREA (RSA)	7,700' x 500'	7,700' x 500'
RUNWAY OBSTACLE FREE ZONE (OFZ)	6,350' x 400'	6,350' x 400'
RUNWAY OBJECT FREE AREA (OFA)	7,630' x 800'	7,700' x 800'
TAKEOFF RUN AVAILABLE (TORA)	NA	5,950'/ 5,950'
TAKEOFF DISTANCE AVAILABLE (TODA)	NA	5,950'/ 5,950'
ACCELERATE-STOP DISTANCE AVAILABLE (ASDA)	NA	5,750'/ 5,950'
LANDING DISTANCE AVAILABLE (LDA)	NA	5,750'/ 4,578'
PAVEMENT MATERIAL	Asphalt	Asphalt
RUNWAY SURFACE TREATMENT	Grooved	Grooved
PAVEMENT STRENGTH (in thousand lbs.)[1]	50(S)/70(D)	50(S)/70(D)
RUNWAY EFFECTIVE GRADIENT	0.19%	0.19%
RUNWAY TOUCHDOWN ZONE ELEVATION	38.0MSL/38.9MSL	38.0MSL/38.9MSL
RUNWAY MARKING	Nonprecison/Precision	Precision
RUNWAY LIGHTING	MIRL	MIRL
TAXIWAY SURFACE TREATMENT	Asphalt	Asphalt
TAXIWAY LIGHTING	MITL	MITL
TAXIWAY MARKING	Centerline, Signage	Centerline, Signage
RUNWAY NAVIGATIONAL AIDS	GPS VOR (25) ILS (25)	GPS CAT I GPS --
RUNWAY VISUAL AIDS	VASI-4 (7) PAPI-2 (25)	VASI-4 (7) PAPI-4 (25) MALSR

[1]Pavement strengths are expressed in Single(S), Dual(D), Dual Tandem(DT), and/or Double Dual Tandem(DDT), wheel loading capacities.

AIRPORT DATA

Oxnard Airport (OXR)

CITY: Oxnard, California — COUNTY: Ventura, California

RANGE: 21 West — TOWNSHIP: 2 North — CIVIL TOWNSHIP: N/A

		EXISTING	ULTIMATE
AIRPORT SERVICE LEVEL		Commercial	Commercial
AIRPORT REFERENCE CODE		D-II	D-II/B-III
AIRPORT ELEVATION		42.5' MSL	42.5' MSL
MEAN MAXIMUM TEMPERATURE OF HOTTEST MONTH		75° F (July)	75° F (July)
AIRPORT REFERENCE POINT (ARP) COORDINATES (NAD 83)	Latitude	34° 12' 02.883" N	34° 12' 02.883" N
	Longitude	119° 12' 25.979" W	119° 12' 25.979" W
AIRPORT and TERMINAL NAVIGATIONAL AIDS		Rotating Beacon ILS ASOS GPS	Rotating Beacon GPS ASOS

RUNWAY END COORDINATES (NAD 83)

RUNWAY		EXISTING	ULTIMATE
Runway 7	Latitude	34°12'03.1500"N	SAME
	Longitude	119°13'01.3900"W	SAME
Runway 25	Latitude	34°12'02.6200"N	SAME
	Longitude	119°11'50.5700"W	SAME
Runway 25 Dspl	Latitude	34°12'02.7400"N	SAME
	Longitude	119°12'06.9100"W	SAME

BUILDINGS/FACILITIES

EXISTING	ULTIMATE	DESCRIPTION
1		TERMINAL BUILDING
2		AIR TRAFFIC CONTROL TOWER (ATCT)
3	11	AIRPORT RESCUE and FIREFIGHTING (ARFF)
4	12	FIXED BASE OPERATION HANGAR
5		CONVENTIONAL HANGAR
6	13	PORTABLE HANGARS
7		AIRPORT MAINTENANCE
8		FUEL FACILITY
9		ELECTRICAL VAULT
10		WELL
	14	EXECUTIVE HANGAR
	15	SELF MAINTENANCE HANGAR

LEGEND

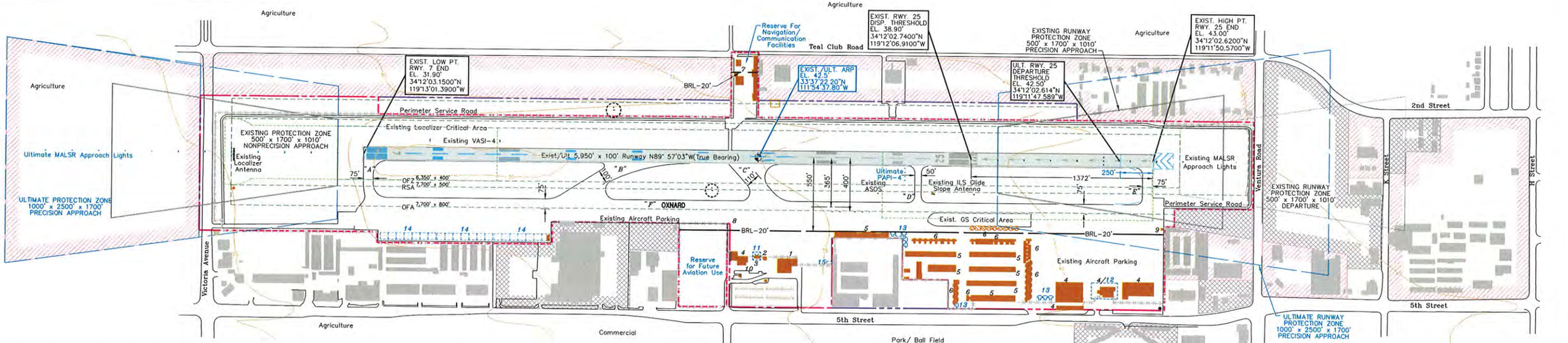
EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
	BRL	BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
		TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)

APPROVED MODIFICATION TO FAA AIRPORT DESIGN STANDARDS

DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	EXISTING CONDITION	PROPOSED DISPOSITION	APPROVAL DATE
None	--	--	--	-

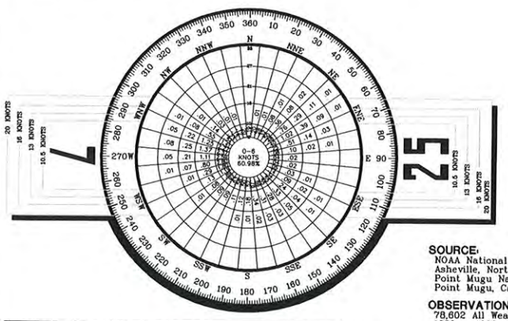
DEVIATIONS TO FAA AIRPORT DESIGN STANDARDS

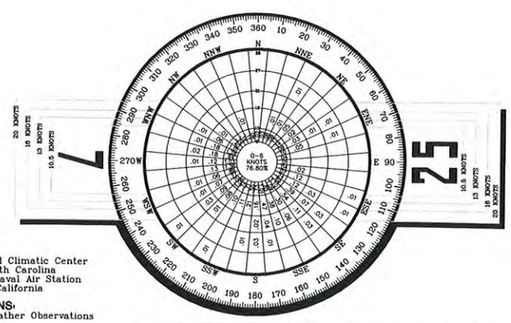
DEVIATION DESCRIPTION	EFFECTED DESIGN STANDARD	STANDARD	EXISTING	PROPOSED DISPOSITION
Commercial/Residential	Runway Object Free Area	400' North of Runway ℄	340' North of Runway ℄	Request Modification to Standards
Commercial Parking Lot	Runway Object Free Area	400' South of Runway ℄	370' South of Runway ℄	Request Modification to Standards
Perimeter Service Road	Runway Object Free Area	400' North of Runway ℄	275' North of Runway ℄	Request Modification to Standards
Perimeter Service Road	Runway Object Free Area	400' South of Runway ℄	345' South of Runway ℄	Request Modification to Standards
Fence Line and Non-airport Property	Runway Object Free Area	400' North of Runway ℄	300' North of Runway ℄	Aquire Property/Relocate Fence
Segmented Circle	Runway Safety Area	250' South of Runway ℄	200' South of Runway ℄	Relocate 300' North of Runway ℄
Segmented Circle	Runway Object Free Area	200' South of Runway ℄	200' South of Runway ℄	Request Modification to Standards
Perimeter Service Road / Ventura Road	Extended Runway Safety Area	1000' Beyond Runway End	750' Beyond Runway End	Displace Rwy 7 Departure Threshold 250'



GENERAL NOTES:

1. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the PROTECTION ZONES PLANS.
2. Details concerning terminal improvements are depicted on the TERMINAL AREA PLAN.
3. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.
4. Building Restriction Line (BRL) is established in accordance with F.A.R. Part 77 criteria, location utilizes 35 foot vertical object height. Building Restriction Line location may be reduced in accordance to Part 77 criteria, to limits of the Runway Object Free Area, Runway Safety Area, and/or Runway Protection Zone criteria.





SOURCE:
NOAA National Climatic Center
Asheville, North Carolina
Point Mugu Naval Air Station
Point Mugu, California

OBSERVATIONS:
78,602 All Weather Observations
1989 - 1998

ALL WEATHER WIND COVERAGE

Runways	10.5 Knots 12 MPH	13 Knots 15 MPH	16 Knots 18 MPH	20 Knots 23 MPH
Runway 7-25	97.05%	98.64%	99.69%	99.93%

IFR CAT-I WIND COVERAGE

Runways	10.5 Knots 12 MPH	13 Knots 15 MPH	16 Knots 18 MPH	20 Knots 23 MPH
Runway 7-25	97.40%	98.60%	99.61%	99.88%

SUBMITTED BY: Coffman Associates — ON THE DATE OF: November 11, 2003

FOR APPROVAL BY:
County of Ventura
Department of Airports

APPROVED BY: _____ ON THE DATE OF: _____

Scott Smith A.A.E.
Director of Airports

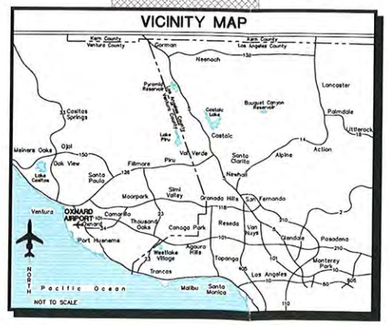
FAA APPROVAL STAMP

NORTH

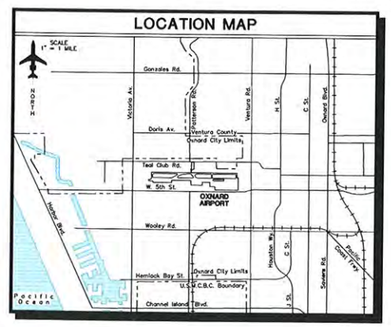
MAGNETIC VARIANCE
13° 22' East (November 2003)

0 400 800
SCALE IN FEET

VICINITY MAP



LOCATION MAP



OXNARD AIRPORT

AIRPORT LAYOUT PLAN

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004 — SHEET 1 OF 8

Coffman Associates — Airport Consultants — www.coffmanassociates.com

No.	REVISIONS	DATE	BY	APP'D.

Agriculture

Agriculture

Reserve For Navigation/ Communication Facilities

Teal Club Road

BRL–20'

Ultimate Service Road

Existing Localizer Critical Area

Existing VASI–4

TDZE 42.5'

EXIST./ULT. ARP
LAT. 33°37'22.20"N
LONG. 111°54'37.80"W

TDZE 42.5'

Exist/Ult 5,950' x 100' Runway N89° 57'03"W(True Bearing)

7

25

OFZ 6,350' x 400'

RSA 7,700' x 500'

OFA 7,700' x 800'

50'

"B"

100'

"B"

75'

"C"

110'

550'

365'

400'

Existing ASOS

Ultimate PAPI–4

"D"

50'

1372'

250'

"B"

75'

75'

Existing ILS Glide Slope Antenna

Ultimate Service

"F" OXNARD

Existing Aircraft Parking

Exist. GS Critical Area

Executive Hangars

BRL–20'

Reserve for Future Aviation Use

Ult. Rental

Ult. Rental Car Lot

BRL–20'

Existing Aircraft Parking

5th Street

Commercial

Park/ Ball Field

Residential

NORTH

MAGNETIC VARIANCE
13° 22' East (November 2003)

0 200 400 600

SCALE IN FEET

BUILDINGS/FACILITIES

EXISTING	ULTIMATE	DESCRIPTION
1	11	TERMINAL BUILDING
2		AIR TRAFFIC CONTROL TOWER (ATCT)
3	12	AIRPORT RESCUE and FIREFIGHTING (ARFF)
4	–	FIXED BASE OPERATION HANGAR
5	14	CONVENTIONAL HANGAR
6	15	PORTABLE HANGARS
7		AIRPORT MAINTENANCE
8	16	FUEL FACILITY
9		ELECTRICAL VAULT
10		WELL
	17	T–HANGAR (20 Unit Nested)
	18	CORPORATE PARCEL
	19	SELF MAINTENANCE HANGAR

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
		BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI–4	PAPI–4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
		TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)

GENERAL NOTES:

1. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the PROTECTION ZONES PLANS.
2. Details concerning terminal improvements are depicted on the TERMINAL AREA PLAN.
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No.	REVISIONS	DATE	BY	APP'D.

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OXNARD AIRPORT

TERMINAL AREA DRAWING

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.

DETAILED BY: Maggie Rogers

APPROVED BY: James M. Harris P.E.

August 9, 2004

SHEET 2 OF 8

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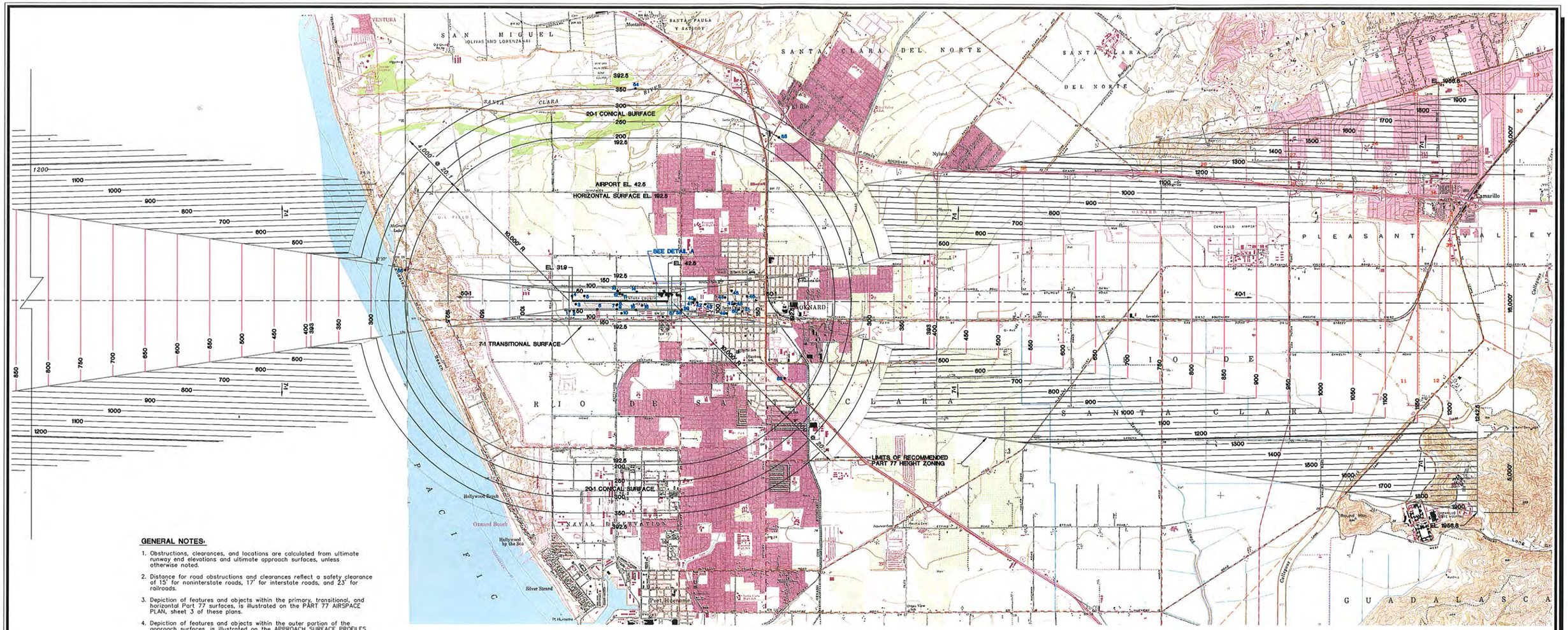


GENERAL NOTES:

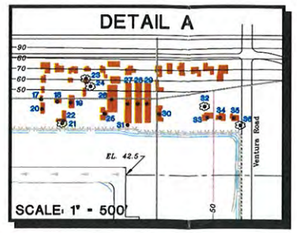
1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted.
2. Distance for road obstructions and clearances reflect a safety clearance of 15' for noninterstate roads, 17' for interstate roads, and 23' for railroads.
3. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the PART 77 AIRSPACE PLAN, sheet 3 of these plans.
4. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES, sheet 4 of these plans.
5. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF RUNWAY 7-25 APPROACH SURFACE, sheet 5 and 6 of these plans.
6. Additional obstruction data is illustrated on National Ocean Survey document OC 674, AIRPORT OBSTRUCTION CHART dated May 1991.
7. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.

OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1. OL ON LIGHT STANDARD	58 MSL	7:1 TRANSITIONAL SURFACE	52 MSL	6'	TO REMAIN LIGHTED
2. OL ON LIGHT STANDARD	59 MSL	7:1 TRANSITIONAL SURFACE	49 MSL	10'	TO REMAIN LIGHTED
3. WINDSOCK	41 MSL	PRIMARY SURFACE	32 MSL	9'	FIX BY FUNCTIONAL PURPOSE
4. FENCE	34 MSL	PRIMARY SURFACE	32 MSL	2'	TO BE RELOCATED
5. FENCE	37 MSL	PRIMARY SURFACE	33 MSL	4'	TO BE RELOCATED
6. VENT ON BUILDING	51 MSL	7:1 TRANSITIONAL SURFACE	38 MSL	13'	TO BE LIGHTED
7. OL ANEMOMETER	57 MSL	PRIMARY SURFACE	36 MSL	21'	TO REMAIN LIGHTED
8. OL WINDSOCK	52 MSL	PRIMARY SURFACE	36 MSL	16'	TO REMAIN LIGHTED
9. FENCE	40 MSL	7:1 TRANSITIONAL SURFACE	38 MSL	2'	TO BE RELOCATED
10. ATCT	115 MSL	7:1 TRANSITIONAL SURFACE	75 MSL	40'	TO REMAIN LIGHTED
11. BUILDING	53 MSL	PRIMARY SURFACE	36 MSL	17'	REQUEST AERONAUTICAL STUDY
12. VENT ON BUILDING	60 MSL	PRIMARY SURFACE	36 MSL	24'	TO BE LIGHTED
13. ANTENNA	97 MSL	7:1 TRANSITIONAL SURFACE	55 MSL	42'	TO BE LIGHTED
14. OL HANGAR	83 MSL	7:1 TRANSITIONAL SURFACE	51 MSL	32'	TO REMAIN LIGHTED
15. WINDVANE ON HANGAR	62 MSL	7:1 TRANSITIONAL SURFACE	46 MSL	16'	TO BE LIGHTED
16. OL GLIDE SLOPE	71 MSL	PRIMARY SURFACE	39 MSL	32'	FIX BY FUNCTIONAL PURPOSE
17. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
18. BUILDING	55 MSL	PRIMARY SURFACE	41 MSL	14'	REQUEST AERONAUTICAL STUDY
19. BUILDING	60 MSL	PRIMARY SURFACE	42 MSL	18'	REQUEST AERONAUTICAL STUDY
20. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
21. TREE	77 MSL	PRIMARY SURFACE	41 MSL	36'	TO BE REMOVED
22. BUILDING	52 MSL	PRIMARY SURFACE	41 MSL	11'	REQUEST AERONAUTICAL STUDY
23. TREE	102 MSL	7:1 TRANSITIONAL SURFACE	61 MSL	41'	TO BE REMOVED
24. TREE	109 MSL	7:1 TRANSITIONAL SURFACE	54 MSL	55'	TO BE REMOVED
25. BUILDING	50 MSL	PRIMARY SURFACE	43 MSL	7'	REQUEST AERONAUTICAL STUDY
26. BUILDING	61 MSL	PRIMARY SURFACE	43 MSL	18'	REQUEST AERONAUTICAL STUDY
27. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
28. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY

OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
29. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
30. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
31. SIGN/LIGHT	68 MSL	PRIMARY SURFACE	43 MSL	25'	TO BE REMOVED
32. TREE	105 MSL	50:1 APPROACH SURFACE	49 MSL	56'	THRESHOLD DISPLACED
33. BUILDING	56 MSL	PRIMARY SURFACE	49 MSL	7'	REQUEST AERONAUTICAL STUDY
34. BUILDING	56 MSL	PRIMARY SURFACE	51 MSL	5'	REQUEST AERONAUTICAL STUDY
35. BUILDING	56 MSL	PRIMARY SURFACE	53 MSL	3'	REQUEST AERONAUTICAL STUDY
36. TREE	92 MSL	50:1 APPROACH SURFACE	53 MSL	39'	THRESHOLD DISPLACED
37. SPIRE	72 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	22'	REQUEST AERONAUTICAL STUDY
38. SPIRE	73 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	23'	REQUEST AERONAUTICAL STUDY
39. LIGHT POLE	76 MSL	50:1 APPROACH SURFACE	55 MSL	21'	THRESHOLD DISPLACED
40. FLAG POLE	88 MSL	50:1 APPROACH SURFACE	71 MSL	17'	THRESHOLD DISPLACED
41. UTILITY POLE	87 MSL	50:1 APPROACH SURFACE	69 MSL	18'	THRESHOLD DISPLACED
42. UTILITY POLE	93 MSL	50:1 APPROACH SURFACE	74 MSL	19'	THRESHOLD DISPLACED
43. FLOODLIGHT	116 MSL	50:1 APPROACH SURFACE	84 MSL	32'	THRESHOLD DISPLACED
44. TREE	144 MSL	50:1 APPROACH SURFACE	109 MSL	35'	THRESHOLD DISPLACED
45. TREE	143 MSL	50:1 APPROACH SURFACE	117 MSL	26'	THRESHOLD DISPLACED
46. TREE	175 MSL	50:1 APPROACH SURFACE	136 MSL	39'	THRESHOLD DISPLACED
47. CHURCH SPIRE	154 MSL	50:1 APPROACH SURFACE	121 MSL	33'	THRESHOLD DISPLACED
48. TREE	163 MSL	50:1 APPROACH SURFACE	121 MSL	42'	THRESHOLD DISPLACED
49. TREE	132 MSL	50:1 APPROACH SURFACE	111 MSL	21'	THRESHOLD DISPLACED
50. TREE	150 MSL	50:1 APPROACH SURFACE	126 MSL	24'	THRESHOLD DISPLACED
51. TREE	140 MSL	50:1 APPROACH SURFACE	131 MSL	9'	THRESHOLD DISPLACED
52. OL RADIO TOWER	196 MSL	HORIZONTAL SURFACE	193 MSL	3'	TO REMAIN LIGHTED
53. OL BUILDING	381 MSL	CONICAL SURFACE	301 MSL	80'	TO REMAIN LIGHTED
54. OL RADIO MAST	366 MSL	CONICAL SURFACE	353 MSL	13'	TO REMAIN LIGHTED
55. OL ROD ON STACK	218 MSL	CONICAL SURFACE	209 MSL	9'	TO REMAIN LIGHTED



OBSTRUCTION LEGEND

- OBSTRUCTION
- GROUP or MULTIPLE OBSTRUCTIONS
- TOPOGRAPHIC OBSTRUCTION

NORTH

0 3000 6000

SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.

OXNARD AIRPORT

PART 77 AIRSPACE DRAWING

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004 | SHEET 3 OF 8

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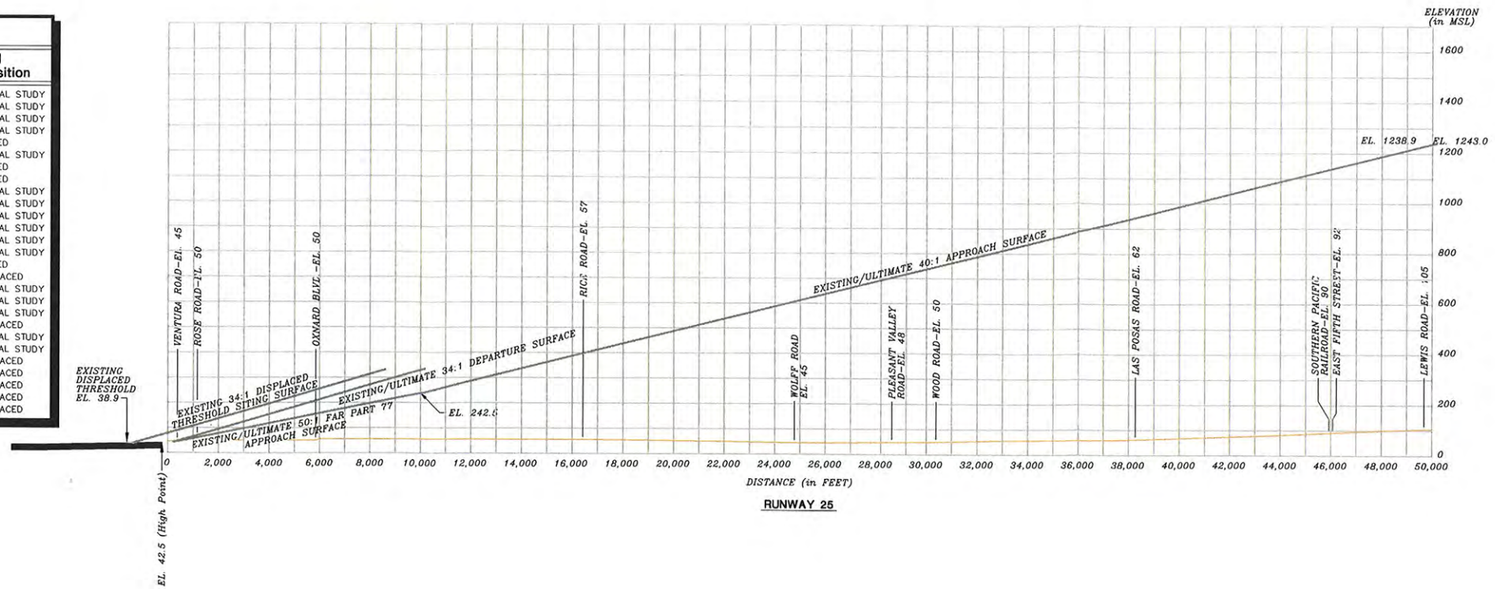
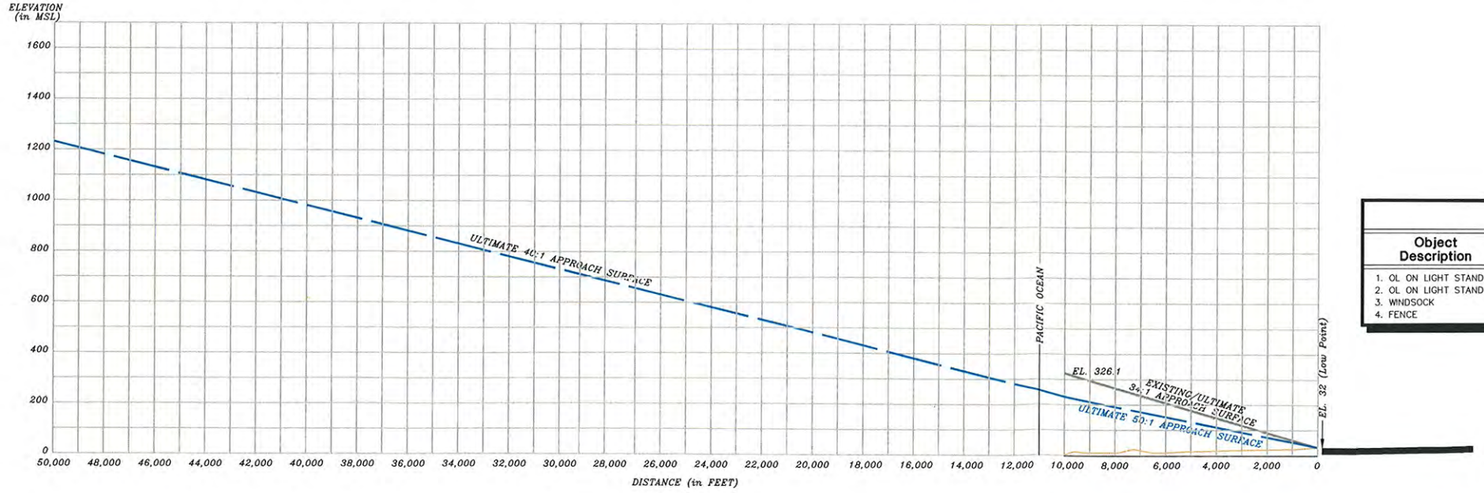
Airport Consultants
www.coffmanassociates.com

RUNWAY 25 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
17. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
18. BUILDING	55 MSL	PRIMARY SURFACE	41 MSL	14'	REQUEST AERONAUTICAL STUDY
19. BUILDING	60 MSL	PRIMARY SURFACE	42 MSL	18'	REQUEST AERONAUTICAL STUDY
20. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
21. TREE	77 MSL	PRIMARY SURFACE	41 MSL	36'	TO BE REMOVED
22. BUILDING	52 MSL	PRIMARY SURFACE	41 MSL	11'	REQUEST AERONAUTICAL STUDY
23. TREE	102 MSL	7:1 TRANSITIONAL SURFACE	61 MSL	41'	TO BE REMOVED
24. TREE	109 MSL	7:1 TRANSITIONAL SURFACE	54 MSL	55'	TO BE REMOVED
25. BUILDING	50 MSL	PRIMARY SURFACE	43 MSL	7'	REQUEST AERONAUTICAL STUDY
26. BUILDING	61 MSL	PRIMARY SURFACE	43 MSL	18'	REQUEST AERONAUTICAL STUDY
27. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
28. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
29. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
30. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
31. SIGN/LIGHT	68 MSL	PRIMARY SURFACE	43 MSL	25'	TO BE REMOVED
32. TREE	105 MSL	50:1 APPROACH SURFACE	49 MSL	56'	THRESHOLD DISPLACED
33. BUILDING	56 MSL	PRIMARY SURFACE	49 MSL	7'	REQUEST AERONAUTICAL STUDY
34. BUILDING	56 MSL	PRIMARY SURFACE	51 MSL	5'	REQUEST AERONAUTICAL STUDY
35. BUILDING	56 MSL	PRIMARY SURFACE	53 MSL	3'	REQUEST AERONAUTICAL STUDY
36. TREE	92 MSL	50:1 APPROACH SURFACE	53 MSL	39'	THRESHOLD DISPLACED
37. SPIRE	72 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	22'	REQUEST AERONAUTICAL STUDY
38. SPIRE	73 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	23'	REQUEST AERONAUTICAL STUDY
39. LIGHT POLE	76 MSL	50:1 APPROACH SURFACE	55 MSL	21'	THRESHOLD DISPLACED
40. FLAG POLE	88 MSL	50:1 APPROACH SURFACE	71 MSL	17'	THRESHOLD DISPLACED
41. UTILITY POLE	87 MSL	50:1 APPROACH SURFACE	69 MSL	18'	THRESHOLD DISPLACED
42. UTILITY POLE	93 MSL	50:1 APPROACH SURFACE	74 MSL	19'	THRESHOLD DISPLACED
43. FLOODLIGHT	116 MSL	50:1 APPROACH SURFACE	84 MSL	32'	THRESHOLD DISPLACED



RUNWAY 25



RUNWAY 7

RUNWAY 7 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1. OL ON LIGHT STANDARD	58 MSL	7:1 TRANSITIONAL SURFACE	52 MSL	6'	TO REMAIN LIGHTED
2. OL ON LIGHT STANDARD	59 MSL	7:1 TRANSITIONAL SURFACE	49 MSL	10'	TO REMAIN LIGHTED
3. WINDSOCK	41 MSL	PRIMARY SURFACE	32 MSL	9'	FIX BY FUNCTIONAL PURPOSE
4. FENCE	34 MSL	PRIMARY SURFACE	32 MSL	2'	TO BE RELOCATED

RUNWAY 7-25 APPROACH SURFACE PROFILES

0 300 600
VERTICAL SCALE IN FEET

0 3000 6000
HORIZONTAL SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.

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OXNARD AIRPORT

APPROACH SURFACE PROFILE DRAWING

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004 SHEET 4 OF 8

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Airport Consultants
www.coffmanassociates.com

RUNWAY 7 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
1. OL ON LIGHT STANDARD	58 MSL	7:1 TRANSITIONAL SURFACE	52 MSL	6'	TO REMAIN LIGHTED
2. OL ON LIGHT STANDARD	59 MSL	7:1 TRANSITIONAL SURFACE	49 MSL	10'	TO REMAIN LIGHTED
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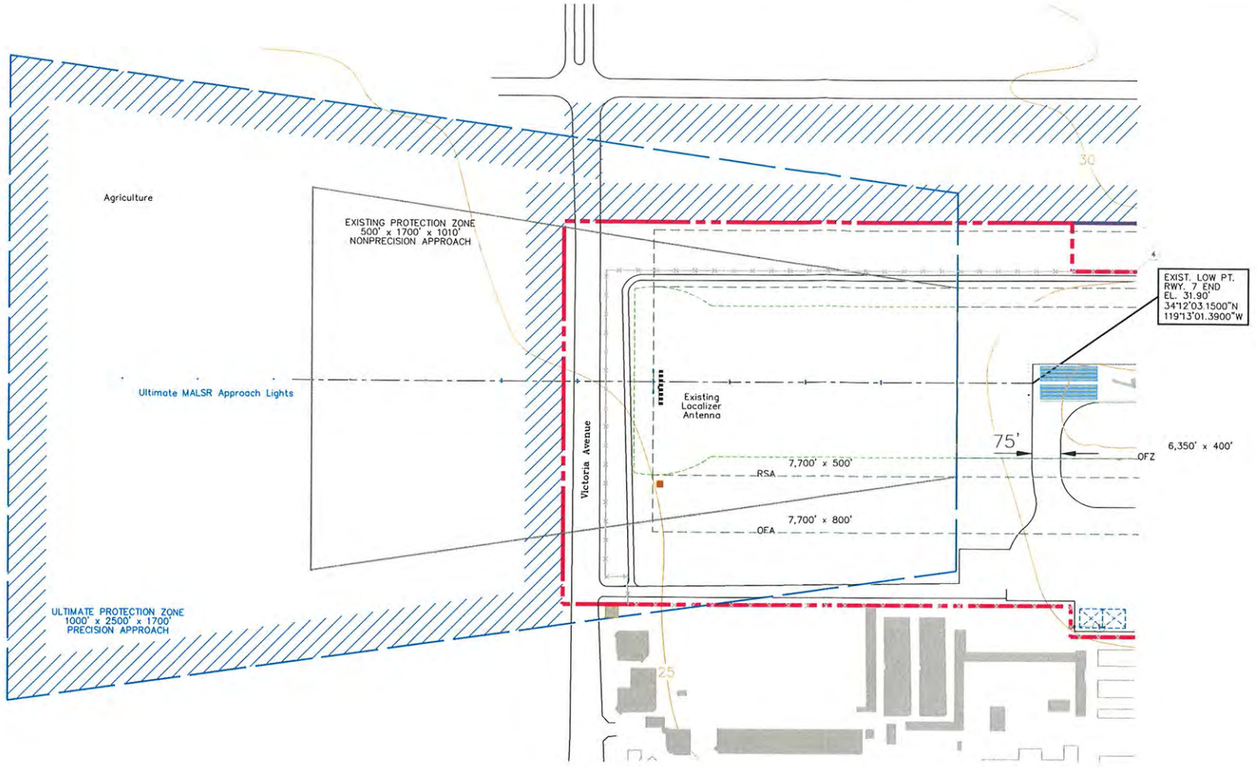

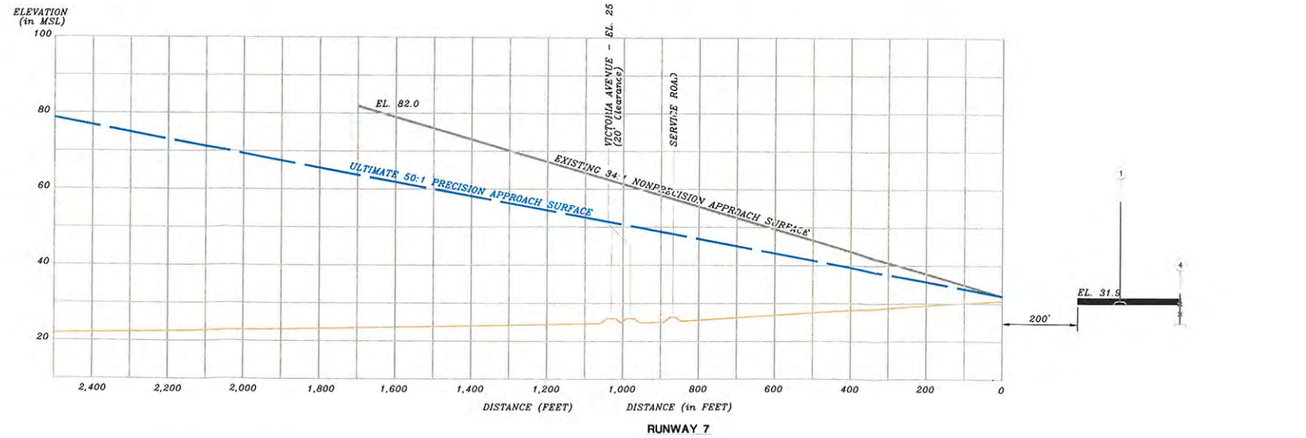

RUNWAY 7 APPROACH SURFACE PLAN and PROFILE

GENERAL NOTES:

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2. Distance for road obstructions and clearances reflect a safety clearance of 15' for noninterstate roads, 17' for interstate roads, and 23' for railroads.
3. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the PART 77 AIRSPACE DRAWING.
4. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES, sheet 4 of these plans.
5. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF RUNWAY APPROACH SURFACE sheet 5 and 6 of these plans.
6. Additional obstruction data is illustrated on National Ocean Survey document OC 674, AIRPORT OBSTRUCTION CHART dated May 1991.
7. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.

0 20 40
VERTICAL SCALE IN FEET

0 200 400
HORIZONTAL SCALE IN FEET

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OXNARD AIRPORT

INNER PORTION OF RUNWAY 7 APPROACH SURFACE

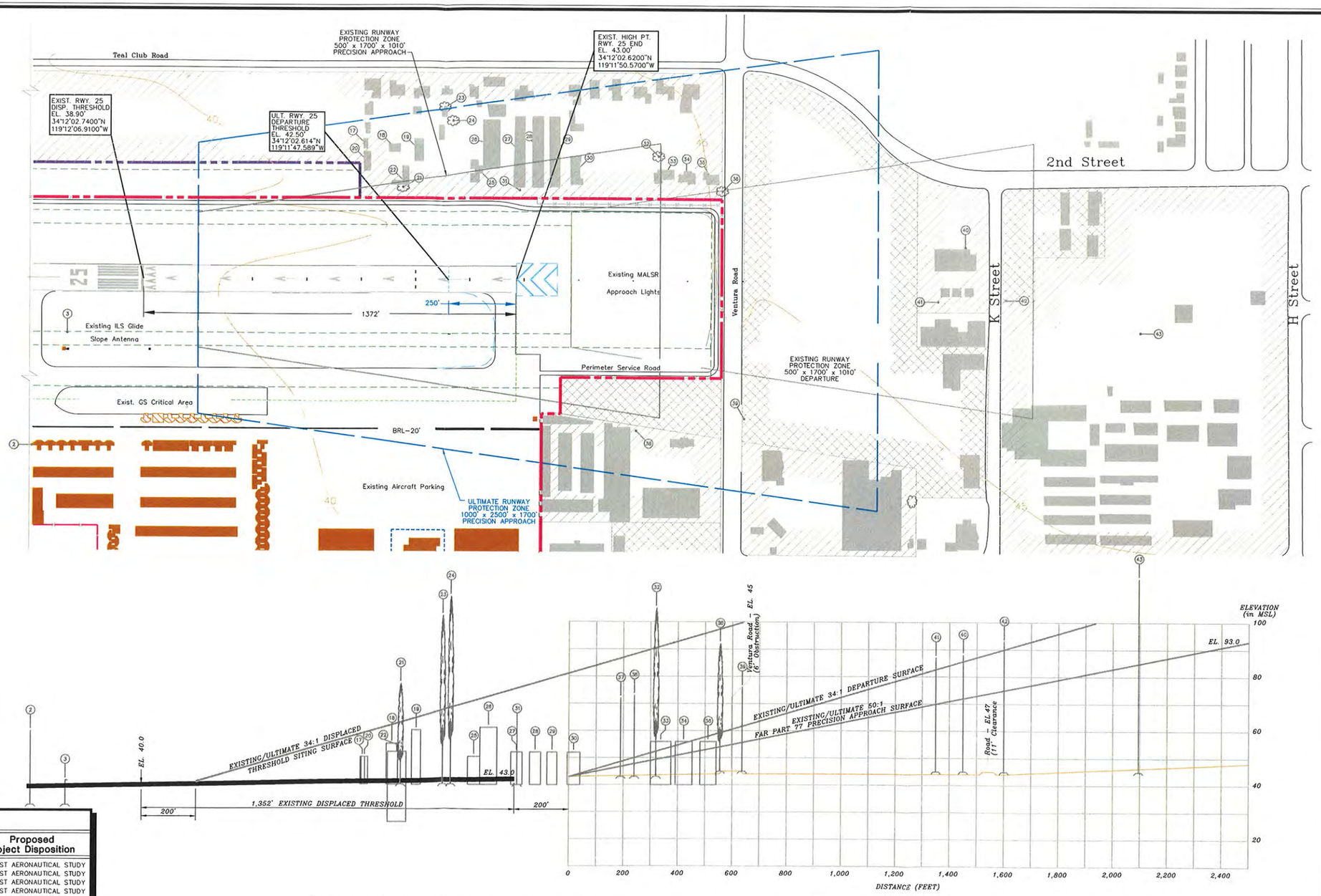
OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.
August 9, 2004

Coffman Associates
Airport Consultants
www.coffmanassociates.com

GENERAL NOTES:

1. Obstructions, clearances, and locations are calculated from ultimate runway end elevations and ultimate approach surfaces, unless otherwise noted.
2. Distance for road obstructions and clearances reflect a safety clearance of 15' for noninterstate roads, 17' for interstate roads, and 23' for railroads.
3. Depiction of features and objects within the primary, transitional, and horizontal Part 77 surfaces, is illustrated on the PART 77 AIRSPACE DRAWING.
4. Depiction of features and objects within the outer portion of the approach surfaces, is illustrated on the APPROACH SURFACE PROFILES, sheet 4 of these plans.
5. Depiction of features and objects within the inner portion of the approach surfaces, is illustrated on the INNER PORTION OF RUNWAY APPROACH SURFACE sheet 5 and 6 of these plans.
6. Additional obstruction data is illustrated on National Ocean Survey document OC 674, AIRPORT OBSTRUCTION CHART dated May 1991.
7. Existing and future height and hazard ordinances are to be amended and/or referenced upon approval of updated PART 77 AIRSPACE PLAN.



RUNWAY 25 APPROACH SURFACE PLAN and PROFILE

RUNWAY 25

RUNWAY 25 OBSTRUCTION TABLE

Object Description	Object Elevation	Obstructed Part 77 Surface	Surface Elevation	Object Penetration	Proposed Object Disposition
17. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
18. BUILDING	55 MSL	PRIMARY SURFACE	41 MSL	14'	REQUEST AERONAUTICAL STUDY
19. BUILDING	60 MSL	PRIMARY SURFACE	42 MSL	18'	REQUEST AERONAUTICAL STUDY
20. BUILDING	50 MSL	PRIMARY SURFACE	41 MSL	9'	REQUEST AERONAUTICAL STUDY
21. TREE	77 MSL	PRIMARY SURFACE	41 MSL	36'	TO BE REMOVED
22. BUILDING	52 MSL	PRIMARY SURFACE	41 MSL	11'	REQUEST AERONAUTICAL STUDY
23. TREE	102 MSL	7:1 TRANSITIONAL SURFACE	61 MSL	41'	TO BE REMOVED
24. TREE	109 MSL	7:1 TRANSITIONAL SURFACE	54 MSL	55'	TO BE REMOVED
25. BUILDING	50 MSL	PRIMARY SURFACE	43 MSL	7'	REQUEST AERONAUTICAL STUDY
26. BUILDING	61 MSL	PRIMARY SURFACE	43 MSL	18'	REQUEST AERONAUTICAL STUDY
27. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
28. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
29. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
30. BUILDING	52 MSL	PRIMARY SURFACE	43 MSL	9'	REQUEST AERONAUTICAL STUDY
31. SIGN/LIGHT	68 MSL	PRIMARY SURFACE	43 MSL	25'	TO BE REMOVED
32. TREE	105 MSL	50:1 APPROACH SURFACE	49 MSL	56'	THRESHOLD DISPLACED
33. BUILDING	56 MSL	PRIMARY SURFACE	49 MSL	7'	REQUEST AERONAUTICAL STUDY
34. BUILDING	56 MSL	PRIMARY SURFACE	51 MSL	5'	REQUEST AERONAUTICAL STUDY
35. BUILDING	56 MSL	PRIMARY SURFACE	53 MSL	3'	REQUEST AERONAUTICAL STUDY
36. TREE	92 MSL	50:1 APPROACH SURFACE	53 MSL	39'	THRESHOLD DISPLACED
37. SPIRE	72 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	22'	REQUEST AERONAUTICAL STUDY
38. SPIRE	73 MSL	7:1 TRANSITIONAL SURFACE	50 MSL	23'	REQUEST AERONAUTICAL STUDY
39. LIGHT POLE	76 MSL	50:1 APPROACH SURFACE	55 MSL	21'	THRESHOLD DISPLACED
40. FLAG POLE	88 MSL	50:1 APPROACH SURFACE	71 MSL	17'	THRESHOLD DISPLACED
41. UTILITY POLE	87 MSL	50:1 APPROACH SURFACE	69 MSL	18'	THRESHOLD DISPLACED
42. UTILITY POLE	93 MSL	50:1 APPROACH SURFACE	74 MSL	19'	THRESHOLD DISPLACED
43. FLOODLIGHT	116 MSL	50:1 APPROACH SURFACE	84 MSL	32'	THRESHOLD DISPLACED

0 20 40
VERTICAL SCALE IN FEET

0 200 400
HORIZONTAL SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.

OXNARD AIRPORT

INNER PORTION OF RUNWAY 25 APPROACH SURFACE

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.

August 9, 2004 SHEET 6 OF 8

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ON-AIRPORT LAND USE LEGEND

AO	AIRFIELD OPERATIONS (293.95 ACRES)	GA	GENERAL AVIATION AREA (39.55 ACRES)
RS	REVENUE SUPPORT (2.79 ACRES)	CO	COMMERCIAL AREA (9.53 ACRES)

BASE MAP: AERIAL PHOTO

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
		BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
		NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
		TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (lighted)

NORTH

MAGNETIC VARIANCE
13° 22' East (November 2003)

0 400 800
SCALE IN FEET

GENERAL NOTES:

1. Depiction of features and objects, including related elevations and clearances, within the runway protection zones are depicted on the PROTECTION ZONES PLANS.
2. Details concerning terminal improvements are depicted on the TERMINAL AREA PLAN.
3. Recommended land uses within the airport environs are depicted on the AIRPORT LAND USE PLAN.
4. Building Restriction Line (BRL) is established in accordance with F.A.R. Part 77 criteria, location utilizes 35 foot vertical object height. Building Restriction Line location may be reduced in accordance to Part 77 criteria, to limits of the Runway Object Free Area, Runway Safety Area, and/or Runway Protection Zone criteria.

No.	REVISIONS	DATE	BY	APP'D.

OXNARD AIRPORT

ON-AIRPORT LAND USE DRAWING

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.
August 9, 2004

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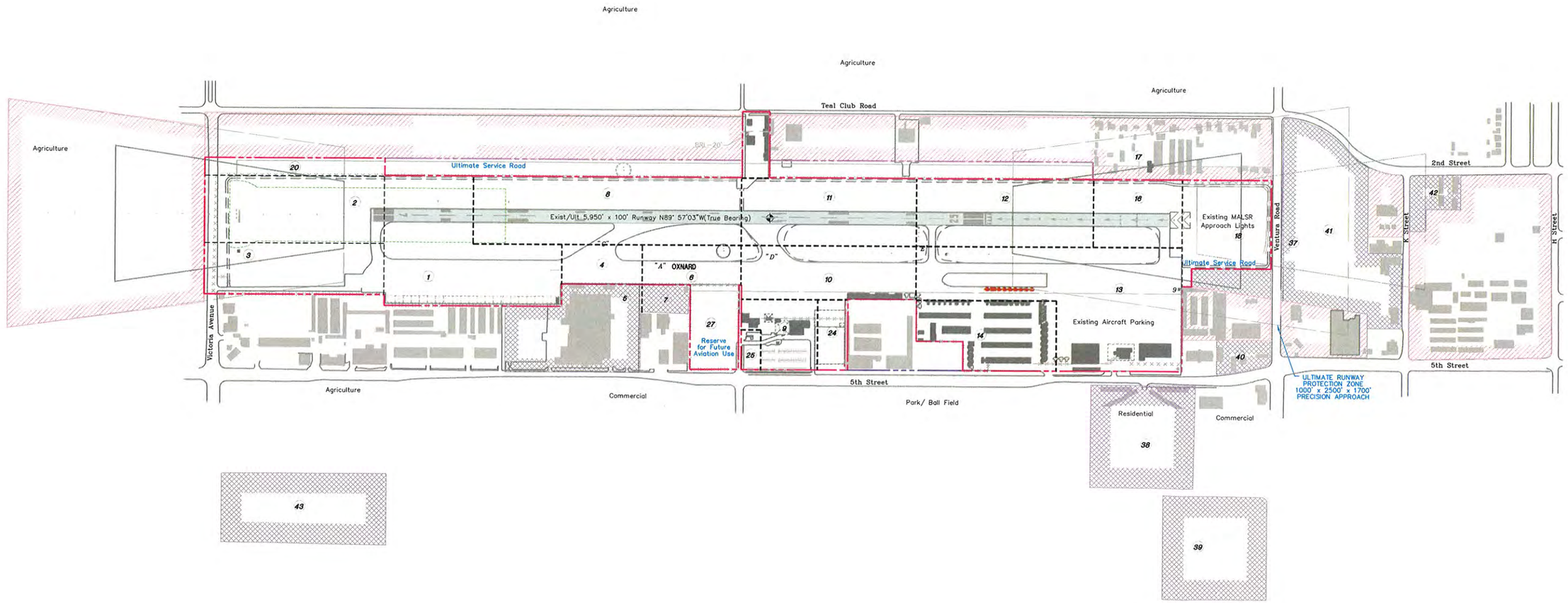
KEY:

- Existing Airport Property
- Ultimate Land Acquisition
- Parcel Boundary
- Existing Airport Avigation Easment
- Ultimate Airport Avigation Easment

LEGEND

EXISTING	ULTIMATE	DESCRIPTION
		PAVEMENT TO BE REMOVED
		AIRPORT PROPERTY LINE
		AIRPORT REFERENCE POINT (ARP)
		AIRPORT ROTATING BEACON
		AVIGATION EASEMENT
		BUILDING TO BE REMOVED OR RELOCATED
		BUILDING
		BUILDING RESTRICTION LINE (BRL)
		PAVEMENT
		FENCING
VASI-4	PAPI-4	NAVIGATIONAL AID INSTALLATION
		RUNWAY END IDENTIFICATION LIGHTS (REIL)
		RUNWAY THRESHOLD LIGHTS
		SEGMENTED CIRCLE/WIND INDICATOR
		TOPOGRAPHY (USGS Maps)
		WIND INDICATOR (Lighted)



EXISTING PROPERTY DATA

PARCEL	ACREAGE	PROPERTY INTEREST	ACQUISITION DATE	FEDERAL PROJECT NUMBER
1	21.71	FEE SIMPLE	3-14-1961	–
2	15.38	FEE SIMPLE	12-5-1961	–
3	11.61	FEE SIMPLE	7-25-1961	–
4	4.13	FEE SIMPLE	1-25-1960	–
6	5.10	FEE SIMPLE	10-21-1959	–
8	22.73	FEE SIMPLE	2-11-1941	–
9	6.30	FEE SIMPLE	9-29-1958	–
10	11.48	FEE SIMPLE	3-20-1936	–
11	14.92	FEE SIMPLE	7-30-1940	–
12	15.15	FEE SIMPLE	7-30-1940	–
13	30.80	FEE SIMPLE	3-16-1934	–
14	11.97	FEE SIMPLE	6-3-1947	–
15	2.31	FEE SIMPLE	3-18-12941	–
16	7.50	FEE SIMPLE	7-30-1940	–
17	0.08	FEE SIMPLE	7-30-1940	–
18	9.99	FEE SIMPLE	12-7-1971	–
20	3.34	FEE SIMPLE	6-3-1964	–
24	2.88	FEE SIMPLE	10-12-1982	–
25	1.03	FEE SIMPLE	6-6-1965	–
27	5.49	FEE SIMPLE	6-30-1934	–
28	0.21	FEE SIMPLE	11-7-1995	–
37	0.014	FEE SIMPLE	3-14-1975	–

AVIGATION EASEMENT DATA

PARCEL	ACREAGE	ACQUISITION DATE	FEDERAL PROJECT NUMBER
5	±12.72	1-25-1960	–
7	±2.55	10-21-1959	–
26	±2.38	4-7-1993	–
38	±13.58	–	–
39	±13.69	–	–
40	±2.03	–	–
41	±21.93	–	–
42	±2.70	–	–
43	±14.70	–	–

GENERAL NOTES:

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NORTH

MAGNETIC VARIANCE
13° 22' East (November 2003)

0 400 800
SCALE IN FEET

No.	REVISIONS	DATE	BY	APP'D.

THE PREPARATION OF THESE DOCUMENTS WAS FINANCED IN PART THROUGH A PLANNING GRANT FROM THE FEDERAL AVIATION ADMINISTRATION AS PROVIDED UNDER SECTION 505 OF THE AIRPORT AND AIRWAY IMPROVEMENT ACT OF 1982, AS AMENDED. THE CONTENTS DO NOT NECESSARILY REFLECT THE OFFICIAL VIEWS OR POLICY OF THE FAA. ACCEPTANCE OF THESE DOCUMENTS BY THE FAA DOES NOT IN ANY WAY CONSTITUTE A COMMITMENT ON THE PART OF THE UNITED STATES TO PARTICIPATE IN ANY DEVELOPMENT DEPICTED HEREIN NOR DOES IT INDICATE THAT THE PROPOSED DEVELOPMENT IS ENVIRONMENTALLY ACCEPTABLE IN ACCORDANCE WITH APPROPRIATE PUBLIC LAWS.

OXNARD AIRPORT

AIRPORT PROPERTY MAP

OXNARD, CALIFORNIA

PLANNED BY: Steven G. Benson P.E.
DETAILED BY: Maggie Rogers
APPROVED BY: James M. Harris P.E.
August 9, 2004
SHEET 8 OF 8

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OXNARD AIRPORT

Appendix D

ENVIRONMENTAL EVALUATION

Appendix D
ENVIRONMENTAL EVALUATION

A review of the potential environmental impacts associated with proposed airport projects is an important consideration in the Airport Master Plan process. The primary purpose of this Appendix is to review the proposed program for the Oxnard Airport to determine whether the proposed actions could, individually or collectively, have the potential to significantly affect the quality of the environment.

A key component of this overview is coordination with appropriate federal, state, and local agencies to identify potential environmental concerns that should be considered prior to the design and construction of new facilities at the airport. Agency coordination consisted of a letter requesting comments and/or information regarding the proposed airport projects. Issues of concern that were identified as part of this process are presented in the following discussion. The letters received from various agencies are included at the end of this Appendix.

Once the airport begins receiving federal funding, improvements planned for Oxnard Airport, as depicted on the Airport Layout Plan (ALP), will require compliance with the *National Environmental Policy ACT (NEPA) of 1969,* as amended. For projects not categorically excluded under FAA Order 5050.4A, *Airport Environmental Handbook*, compliance with NEPA is generally satisfied with the preparation of an Environmental Assessment (EA). In cases where a categorical exclusion is issued, environmental issues such as wetlands, threatened or endangered species, and cultural resources are further evaluated during the federal, state, and/or local permitting processes. This master plan and any major improvements will also be subject to the requirements of

- Construct blast pad at the east end of the runway to protect the ground immediately behind the runway from being eroded by the blast wind created as aircraft begin their takeoff roll.

Landside Recommendations

Recommended landside improvements are primarily associated with maintenance, redevelopment, and modernization of existing facilities. The following outlines the proposed landside improvements at the airport.

- No change to the terminal building footprint, unless required for compliance with federal security mandates.
- Relocate port-a-ports closest to the taxiway to improve runway safety and taxi circulation.
- Construct a new rental car parking lot to allow the return of aviation use of the apron on the east side of the terminal building, which will be used to support general aviation activities.
- Redevelopment of older hangars as needed.

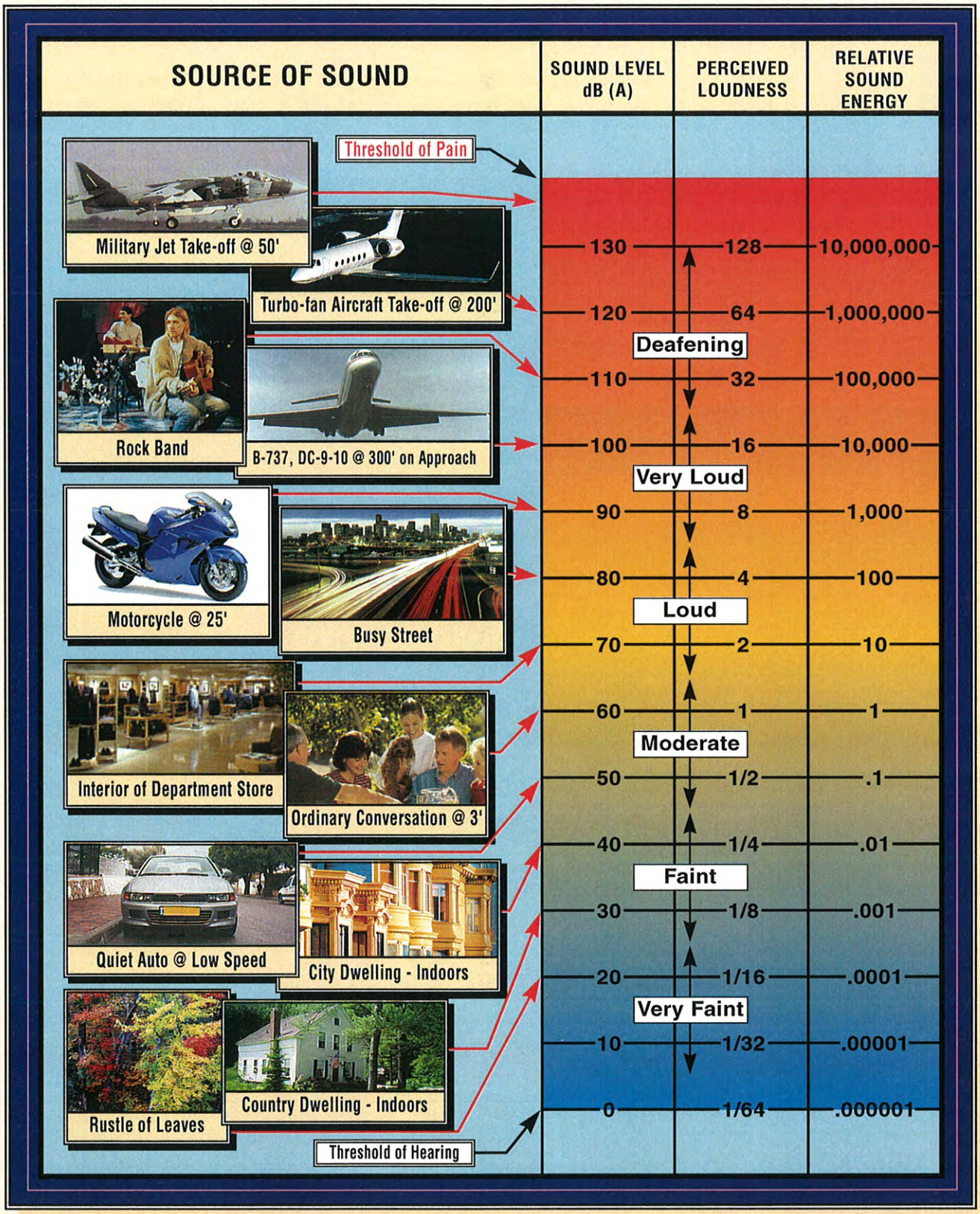
This Plan is based upon maintaining the Oxnard Airport as a County-owned and operated airport, open to general aviation and commuter airline activity that can operate within the constraints of the facility pursuant to both the Ventura County Department of Airports and Oxnard Airport Mission Statements. The draft Oxnard Airport Master Plan 2004 update continues to provide for maintenance and modernization of the existing terminal area facilities to serve the needs of the users with no plans for physical expansion.

ENVIRONMENTAL CONSEQUENCES - SPECIFIC IMPACTS

This environmental evaluation has been prepared using FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures* and FAA Order 5050.4A, *Airport Environmental Handbook*, as guidelines. Several factors are considered in a formal NEPA environmental document, such as an EA or an Environmental Impact Statement (EIS), which are not included in an Environmental Evaluation. These factors include details regarding the project location, historical perspective, existing conditions at the airport, and the purpose and need for the project. This information is available within the Oxnard Airport Master Plan document. A formal environmental document also includes the resolution of issues/impacts identified as significant during the environmental process.

Consequently, this Environmental Evaluation only identifies potential environmental issues and ***does not*** address mitigation or the resolution of environmental impacts. Each of the specific impacts categories outlined in FAA Order 5050.4A are addressed. The following table includes a discussion of each environmental category.

02MP01-D1-7/15/04



Source: Coffman Associates 1990

OXNARD AIRPORT

Exhibit D1
TYPICAL SOUND LEVELS

ber of seconds in a 24-hour day. The multiplication factor applied to nighttime sound events is intended to account for the increased annoyance attributable to noise occurring at night when ambient (background) noise levels are low and people are trying to sleep.

- In California, the Community Noise Equivalent Level (CNEL) metric is used instead of the DNL metric. The two are actually very similar. DNL accumulates the total noise occurring during a 24-hour period, with a 10 decibel weight applied to noise occurring during the nighttime (2200 - 0700 hours), The CNEL metric is the same except it also adds a 4.8 decibel weight for noise occurring between 1900 and 2200 hours. There is little actual difference between the two metrics in practice. Calculations of CNEL and DNL from the same data generally yield values with less than a 0.7 decibels difference (Metropolitan Transportation Commission 1983, p. 37).

CNEL is the metric currently accepted by the Federal Aviation Administration (FAA), Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative average noise exposure in the State of California. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility.

Since noise decreases at a constant rate in all directions from a source, points of equal CNEL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that aircraft noise stops at that line. Nevertheless, CNEL contours can be used to: (1) highlight existing or potential incompatibilities between an airport and any surrounding development; (2) assess relative noise exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations, and building codes.

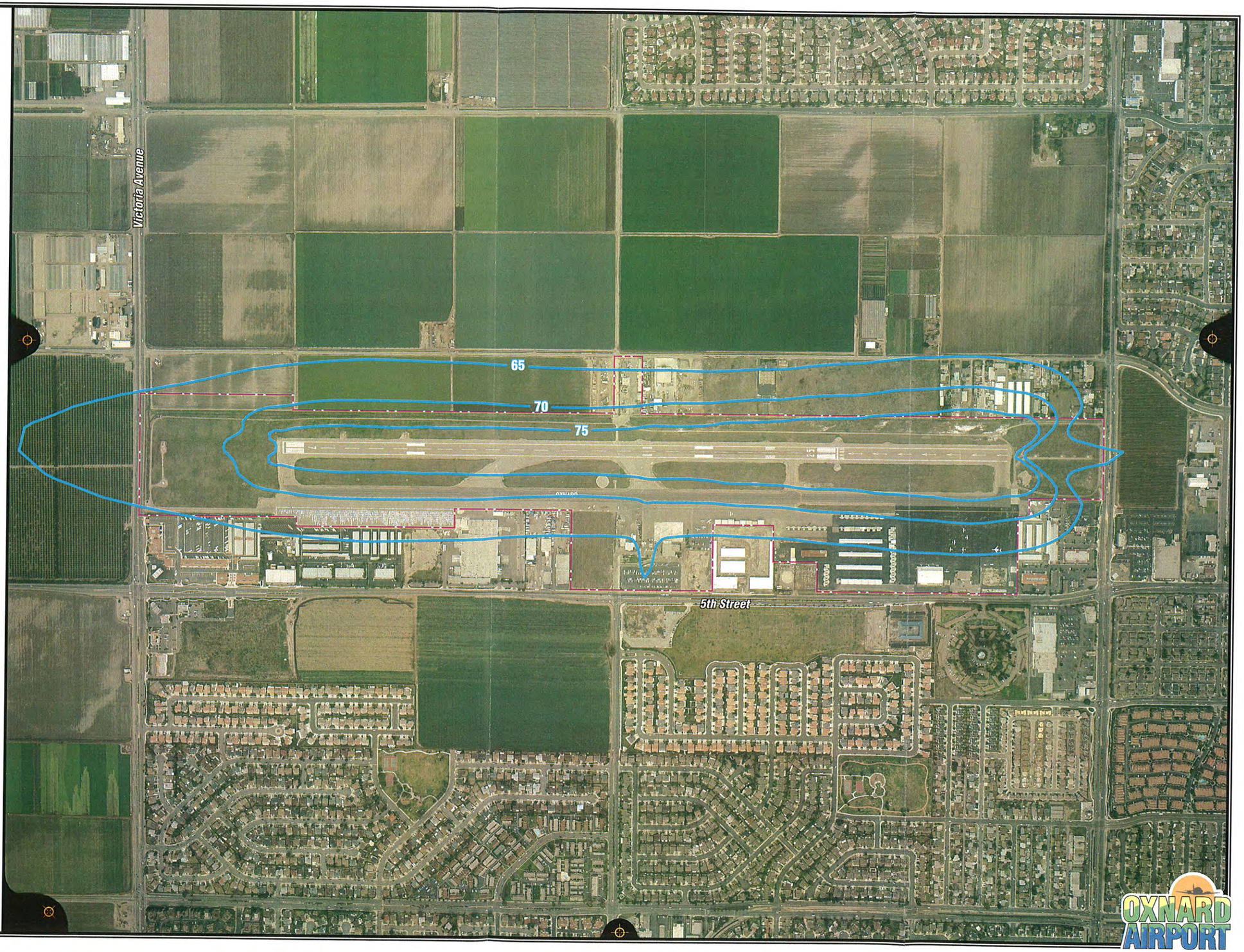
The noise contours for Oxnard Airport have been developed using the Integrated Noise Model (INM), Version 6.1. The INM is a computer model which accounts for each aircraft along approach, departure, and touch-and-go flight tracks during an average 24-hour period. These flight tracks are coupled with separate tables contained in the database of the INM which relate to noise, distances, and engine thrust for each make and model of aircraft selected.

The input files contain operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. **Table D1** summarizes the fleet mix percentages used in the noise contour development for Oxnard Airport. While the federal control tower (FCT) maintains records of aircraft operations (landing and departures), the FCT does not record operations by aircraft type (piston engine, turboprop, or jet). Therefore, the fleet mix percentages included in **Table D1** are estimates based upon the 1998 noise compatibility study. As shown in the table, single and multi-engine piston air-

02MP01-D2-7/15/04

LEGEND

- Existing Airport Property Line
- CNEL Noise Contour



NORTH

0 800 1600

SCALE IN FEET

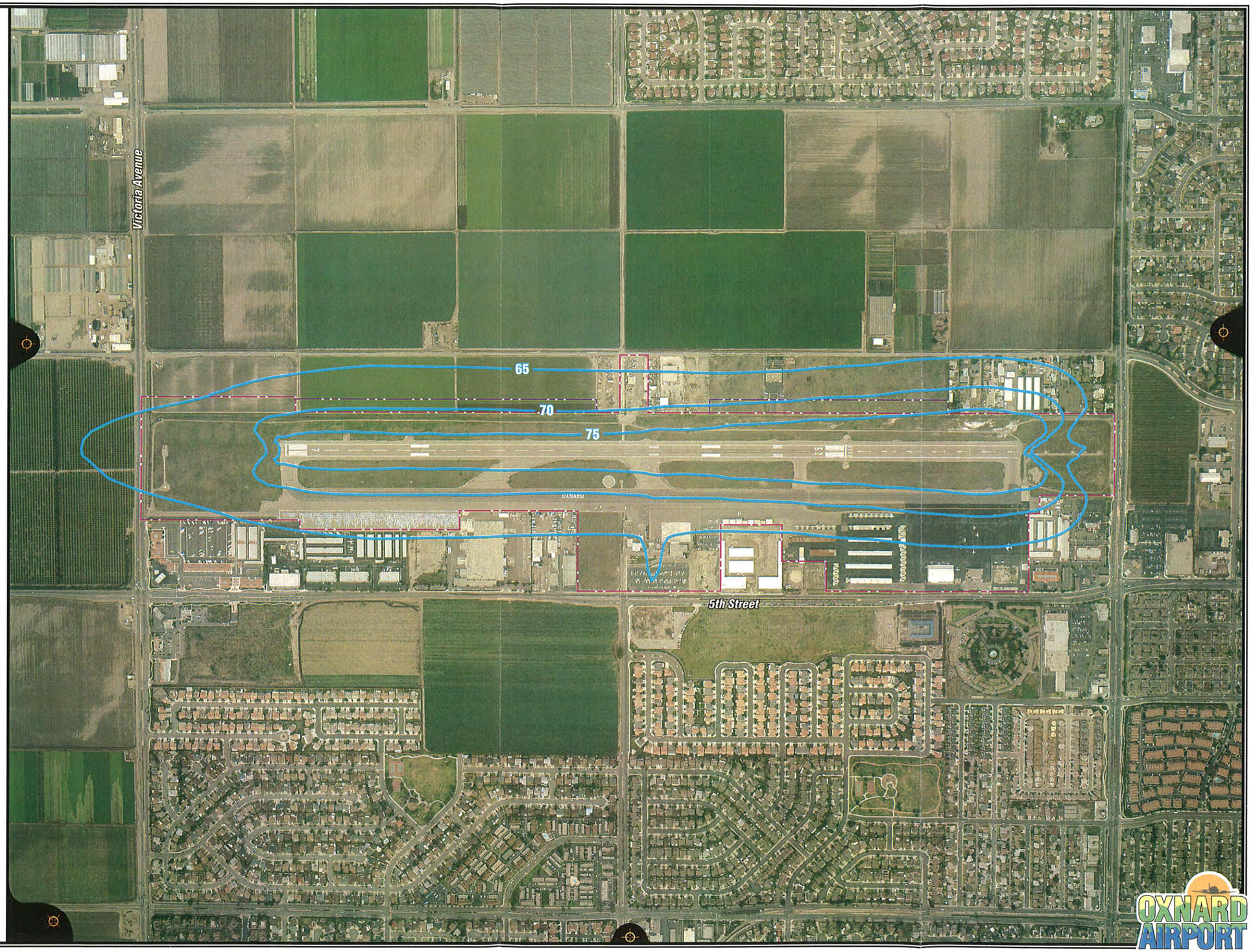
OXNARD AIRPORT

Exhibit D2
2002 NOISE EXPOSURE CONTOURS

02MP01-D3-7/15/04

LEGEND

- Existing Airport Property Line
- Future Airport Property Line
- CNEL Noise Contour



NORTH

0 800 1600

SCALE IN FEET

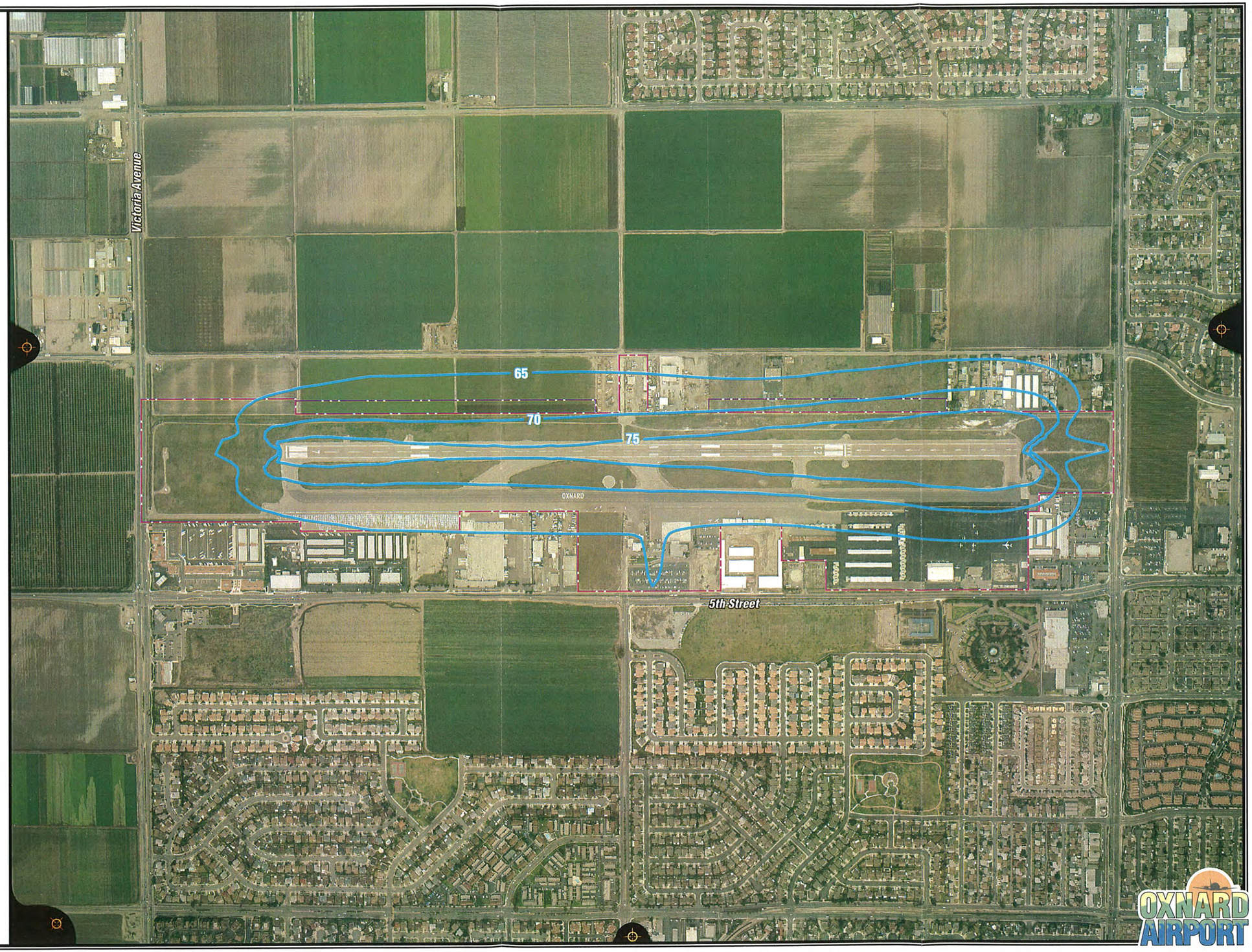
OXNARD AIRPORT

Exhibit D3
2010 NOISE EXPOSURE CONTOURS

02MP01-D4-7/15/04

LEGEND

- Existing Airport Property Line
- Future Airport Property Line
- CNEL Noise Contour



NORTH

0 800 1600

SCALE IN FEET

OXNARD AIRPORT

Exhibit D4
2025 NOISE EXPOSURE CONTOURS

TABLE D3 CNEL Contour Coverage (in acres)			
	65 CNEL	70 CNEL	75 CNEL
2002	265.2	130.9	68.7
2010	235.7	116.3	58.5
2025	200.7	98.6	43.5

The intermediate 65 CNEL noise contour extends beyond the airport property boundary approximately 400 feet to the west. To the north, the noise contour extends off airport property slightly less than 400 feet. The noise contour to the south extends the same distance as in the existing contour. The ultimate noise contours are contained within the airport property boundary to the west and east. To the north and south, the 65 CNEL extend beyond airport property slightly less than they do in the intermediate contours.

As shown on the exhibits, the 65 CNEL noise contour extends beyond the existing airport boundaries into areas of existing residential development northeast of the airport. As mentioned previously, the 65 CNEL threshold is used to identify areas of incompatibility and noise exposure impacts.

FAA's threshold of significance has been determined to be a 1.5 CNEL increase in noise over any noise-sensitive area located in the 65 CNEL. As depicted on **Table D3**, the contours are reduced in size, therefore, indicating a reduction in overall noise. Less-than-significant impacts are anticipated as future noise exposure will not increase 1.5 CNEL over the residential (noise- sensitive) areas.

COMPATIBLE LAND USE

Federal Aviation Regulations (F.A.R.) Part 150 recommends guidelines for planning land use compatibility within various levels of aircraft noise exposure as summarized on **Exhibit D5**. These are guidelines only inasmuch as F.A.R. Part 150 explicitly states that determinations of noise compatibility regulation of land uses are purely local responsibilities.

North of the airport is an existing agricultural tract. This area is likely to file for a Specific Plan and be fully developed within ten years as a mix of residential and commercial uses. This area is known as the Proposed Teal Club Specific Plan. East of the airport is the former site of the Oxnard High School campus. The high school was relocated in 2002 and the city has purchased the property. Currently known as the Former Oxnard High School Site, the city is considering options including residential development. Based on FAA criteria, neither of these areas will be negatively impacted by the proposed safety improvements at the airport. Additionally, the acquisition of the pro-

02MP10-D5-7/15/04

LAND USE	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
PUBLIC USE						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally-determined land uses for those determined to be appropriate by local authorities in response to locally-determined needs and values in achieving noise compatible land uses.

See other side for notes and key to table.

OXNARD AIRPORT

Exhibit D5
LAND USE COMPATIBILITY GUIDELINES

Numerous avigation easements are proposed for areas surrounding the airport. Like the avigation easements currently being acquired, these easements are designed to control development heights. Height limits will remain unchanged from those currently in place.

The proposed improvements and associated land acquisition and avigation easements are not anticipated to divide or disrupt an established community, interfere with orderly planned development, or create a short-term, appreciable change in employment.

Less-than-significant impacts to the surrounding traffic network are anticipated. The proposed construction of a blast pad at the east end of the runway will not impact traffic on Ventura Road. The purpose of the blast pad is to reduce soil erosion. Forecast increases in annual operations and passengers are not expected to cause a noticeable increase in congestion or access time to community facilities, recreation areas, or places of residence or business or other disruption. A significant increase in traffic on nearby U.S. Highway 101 and State Highway 1 is not anticipated as the forecasts demonstrate a minimal amount of growth.

INDUCED SOCIOECONOMIC IMPACTS

These impacts address those secondary impacts to surrounding communities resulting from the proposed improvements, including shifts in patterns of population growth, public service demands, and changes in business and economic activity to the extent influenced by the airport improvements. Significant shifts in patterns of population movement or growth, or public service demands are not anticipated as a result of the proposed improvements.

The surrounding transportation network will experience an increase in use as the surrounding community continues to develop. As plans for residential development are carried through, traffic surrounding the airport will increase. It is not anticipated that traffic resulting from airport use will contribute significantly to the increase of the area transportation network.

AIR QUALITY

The U.S. Environmental Protection Agency (EPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O_3), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Oxide (NO), Particulate matter (PM10), and Lead (Pb). Various levels of review apply within both NEPA and permitting requirements. For example, an air quality analysis is typically required during the preparation of a NEPA document if enplanement levels exceed 3.2 million enplanements or general aviation operations exceed 180,000.

SECTION 4(f) LANDS

The Department of Transportation Act of 1966 states that, "the Secretary of Transportation will not approve any program or projects that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance unless there is not feasible and prudent alternative." The proposed improvements will not require the use of Section 4(f) lands.

HISTORICAL AND CULTURAL RESOURCES

Proposed projects at the airport do not include the disturbance of previously undisturbed land. Therefore, impacts to cultural resources are not anticipated.

For safety reasons, aging hangar facilities may need to be replaced. Some of these buildings meet the age requirement criteria for listing within the National Register of Historic Places. However, other criteria, such as a significance in American history, have not been determined. Further coordination with the State Historic Preservation Office (SHPO) will need to be completed prior to any building replacement to determine the historical significance.

THREATENED OR ENDANGERED SPECIES AND BIOLOGICAL RESOURCES

The U.S. Fish and Wildlife Service (USFWS) database lists 13 threatened or endangered animal species in Ventura County. These species are comprised of birds, amphibians, reptiles, fish, and one mammal. Numerous plants which are known to occur in Ventura County are also listed as threatened or endangered.

No response was received from the California Department of Game and Fish or the USFWS regarding the potential likelihood of these species occurring on airport property or in the vicinity. However, previous correspondence received from the USFWS indicated that the Ventura marsh milkvetch has been located west of the airport, beneath the extended Runway 25 centerline. In previous correspondence, the USFWS did not indicate that this, or any other listed species, occurs on airport property. Further coordination and possibly a biological survey may need to be completed before acquisition or development on previously undeveloped land can occur.

WATERS OF THE U.S. INCLUDING WETLANDS

There are no wetlands or waters of the U.S. located in the project area; therefore, no impacts are anticipated.

including a farmland conversion impact rating, will need to be completed prior to any property acquisition or construction.

The proposed relocation of the Runway 7 departure threshold will not impact agricultural uses to the west. The Runway 7 departure end is located at the east end of the runway. The start of takeoff roll will remain the same. Lighting equipment proposed to be installed in the agricultural area to the west will not be impeded by surrounding crops. Crops such as strawberries and other low profile plants currently planted in this area will not pose a problem for airport lights.

ENERGY SUPPLY AND NATURAL RESOURCES

Energy requirements generally fall into two categories: (1) those which relate to changed demands for stationary facilities; and (2) those which involve the movement of air and ground vehicles. According to FAA Order 5050.4A, an impact arises where a project will have a measurable effect on local energy supplies or would require the use of an unusual material or one in short supply. Increased consumption of fuel by aircraft is examined where ground movement or run-up times increase substantially without offsetting efficiencies in operational procedures, or if the action would add appreciably to access time, or if there would be a substantial change in movement patterns for on-airport service or other vehicles. The proposed alternative will result in a less-than-significant impact to energy supply and natural resources. Impacts are a result of increased operations and upgraded facilities.

LIGHT EMISSIONS

The proposed improvements include the installation of the MASLR on the Runway 7 approach. This installation will slightly increase the amount of light generated by the airport over undeveloped areas.

Demand based hangars will introduce additional lighting to the south side of the landside facility area. This lighting would be similar to what already exists at the airport; therefore, a less-than- significant impact to light emissions are anticipated.

SOLID WASTE

As operations continue to increase at Oxnard Airport, so will the generation of solid waste.

However, these impacts are expected to be less-than significant.

4. The inclusion of all appropriate traffic volumes analysis should include traffic from the project, cumulative traffic generated from all specific approved developments in the area, and traffic growth other than from the project and developments. That is, include: existing + project + other projects + other growth.

5. The discussion of mitigation measures appropriate to alleviate the anticipated traffic impacts should include, but not be limited to, the following:

   - Description of Transportation Infrastructure Improvements
   - Financial Costs, Funding Sources and Financing
   - Sequence and Scheduling Considerations
   - Implementation Responsibilities, Controls, and Monitoring

Any mitigation involving transit, HOV, or Transportation Demand Management must be rigorously justified and its effects conservatively estimated. Improvements involving dedication of land or physical construction may be favorably considered.

6. With respect to the specification of the developer's percent share of the cost, as well as a plan of realistic mitigation measures under the control of the developer, the following ratio should be estimated: additional traffic volume due to project implementation is divided by the total increase in the traffic volume (see Appendix "B" of the Guidelines). That ratio would be the project equitable share responsibility.

   Items 7-13 list environmental/airport environmental land use planning issues:

7. The environmental evaluation will be a part of the Oxnard Airport Master Plan. In addition to this master planning effort, the Federal Aviation Administration and Ventura County will also prepare environmental documents to satisfy the requirements of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), respectively.

8. The Federal Aviation Administration's Advisory Circular (AC) 150/5070-6A, Airport Master Plans, provides national guidance for the preparation of airport master plans, pursuant to the provisions of the Airport and Airway Improvement Act of 1982. In AC 150/5070-6A, Chapter 4, Topics 5 and 7 explain land use and environmental issues that should be discussed in an airport master plan.

9. The land use discussion in AC 150/5070-6A states that "the existence of any governmental programs designed to direct land use patterns in the area under review should be noted." Therefore, we recommend that you cross-reference the airport land use compatibility planning strategies of the Ventura County Airport Land Use Commission (ALUC) in your study. When complete, the Airport Master Plan should be submitted to the Ventura County

If you have any further questions, please feel free to call Rose Casey, Deputy District Director of Planning, at (213) 897-0970.

Sincerely,

DOUGLAS R FAILING
District Director

Ventura County
Air Pollution
Control District

669 County Square Drive
Ventura, California 93003

tel 805/645-1400
fax 805/645-1444
www.vcapcd.org

Michael Villegas
Air Pollution Control Officer

May 24, 2004

Angela Steele
Airport/Environmental Planner
237 N.W. Blue Parkway, Suite 100
Lee's Summit, MO 64063

Subject: Request for Review of Oxnard Airport Master Plan Environmental Evaluation

Dear Ms. Steele:

The Ventura County Air Pollution Control District staff has reviewed your request for comments or concerns regarding potential air quality impacts associated with proposed improvements at the Oxnard Airport. The proposed update to the current Oxnard Airport Master Plan is intended to identify potential future facility demands and provide the airport with the means to address those demands. Oxnard Airport is located on approximately 216 acres of land in the northwestern portion of the City of Oxnard. The airport's terminal building is accessible from West Fifth Street. Patterson road provides a secondary access option.

The following comments are based on the 2003 *Ventura County Air Quality Assessment Guidelines* (2003 Guidelines), which describes what constitutes a significant air quality impact. The 2003 Guidelines is the advisory document for preparing air quality evaluations of environmental documents. A copy of the 2003 Guidelines can be accessed from the downloadable materials section of the APCD website at www.vcapcd.org. We recommend you use the Guidelines in your environmental evaluation of the potential air quality impacts associated with the Oxnard Airport's proposed improvements.

Based on the information provided to the District, the Oxnard Airport Master Plan Update would be expected to have a less than significant impact on regional air quality. The Draft Master Plan update does not anticipate additional growth of the airport above the originally forecasted growth contained in the 1983 Oxnard Airport Master Plan.

Cumulative Regional Air Quality Impacts

Based on data provided by the County Planning Department, the estimated population of the Oxnard Growth Area is 166,260 persons (December 31, 2003). The forecasted Oxnard Growth Area population for 2005 is 167,918 persons. This project is not expected to result in any increase in population. Therefore, this project would not result in population growth above that forecasted in the Ventura County Air Quality Management Plan (AQMP). For that reason, this project is consistent with the AQMP and therefore expected to have a less than significant impact on cumulative regional air quality.

Nuisance Condition

8) Facilities shall be constructed and operated in accordance with the Rules and Regulations of the Ventura County Air Pollution Control District, with emphasis on Rule 51, *Nuisance.*

"A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endangers the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property."

Demolition Condition

9) The applicant shall notify the District prior to issuance of demolition permits for any onsite structures. Demolition and/or renovation activities shall be conducted in compliance with District Rule 62.7, *Asbestos – Demolition and Renovation.*

Rule 62.7 governs activities related to demolition of buildings with asbestos-containing materials. This rule establishes the notification and emission control requirements for demolition activities. Specifically, this rule requires that the owner or operator of a facility shall remove all asbestos-containing material from a facility being demolished. For additional information on asbestos, or to download a copy of Rule 62.7, please visit our website at www.vcapcd.org/asbestos.htm. You can also contact the District's Asbestos Coordinator, Jay Nicholas at (805) 645-1443 or by email at jay@vcapcd.org.

Construction Equipment Permit Requirements

Any combustion equipment onsite, which is rated at 50 horsepower (HP) or greater, must have either an APCD Permit to Operate (PTO), or be registered with the California Air Resources Board's (CARB) Portable Equipment Registration Program (PERP). Examples of such equipment include portable electrical generators, and portable air compressors.

For more information on obtaining an APCD PTO please contact the District's Permitting Engineering Division at (805) 645-1401 or (805) 645-1481. Additional information can also be accessed from the Permits section of the APCD website at www.vcapcd.org. For more information on CARB's PERP program, please visit the CARB website at http://www.arb.ca.gov/perp/perp.htm, or call (916) 324-5869.

Planning and Environmental Services Division
305 West Third Street • Oxnard, CA 93030 • (805) 385-7858 • Fax (805) 385-7417

May 28, 2004

Ms. Angela Steele
Airport/Environmental Planner
Coffman Associates
237 N.W. Blue Parkway, Suite 100
Lee's Summit, MO 64063

Re: *Comments Regarding Environmental Resources and Issues Associated with the Proposed Improvements to the Oxnard Airport.*

Thank you for the opportunity to comment on the proposed improvements to the Oxnard Airport as outlined in your letter of April 26, 2004 to Planning and Environmental Services.

We have several comments and questions:

1. Please provide the approximate number of years associated with the three planning horizons: short, intermediate, and long term. It is our understanding that they are increments of roughly five years. As we are updating our General Plan, we should be able to match your planning horizon operations projections with our planning horizon year of 2025, which is probably your "long term."
2. Immediately north and abutting the airport is an agricultural tract bounded by Teal Club Road, Ventura Road, Patterson Road, and Doris Avenue. This area is likely to file for a Specific Plan and be fully developed within ten years as a mix of residential and commercial uses. This area is within the city's Sphere of Influence and designated for development under our General Plan. Please refer to this area as the "Proposed Teal Club Specific Plan" and document how the airport operations and improvements would impact this area, especially in terms of noise and safety.
3. Immediately east and abutting the airport is the former site of the Oxnard High School campus, bounded by K, H, 2nd and 5th Streets. The high school was relocated in 2002, the city has purchased the property, and we are now considering options including residential development. Please refer to this area as the "Former Oxnard High School Site" and document how the airport operations and improvements would impact this area, especially in terms of noise and safety.
4. How would the proposed relocation of the Runway 7 departure end threshold 250 feet westward impact ongoing agricultural use in that area? Are there agricultural activities that pose a problem for the airport lights and equipment?
5. Would the proposed purchase of 10 acres on the north side of the airport displace any residences or businesses? If so, please document.
6. Would the proposed height limits for approximately 57 acres on the north side of the airport south of Teal Club Road impact any existing buildings? If so, please document. What would be the recommended height limit in this area?

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Guidelines for Energy Project Applications Requiring CEQA Compliance:

Pre-filing and Proponent's Environmental Assessments

November 2019

Version 1.0

Energy Division

Infrastructure Permitting and CEQA Unit

California Public Utilities Commission

Guidelines for Energy Project Applications Requiring CEQA Compliance:

Pre-filing and Proponent's Environmental Assessments

Contents

Foreword

November 12, 2019

To: Applicants Filing Proponent's Environmental Assessments for Energy Infrastructure Projects at the California Public Utilities Commission (CPUC or Commission)

From: Merideth Sterkel (Program Manager, Infrastructure Planning and Permitting) and Mary Jo Borak and Lonn Maier, Supervisors, Infrastructure Permitting and California Environmental Quality Act, Energy Division, CPUC

Subject: Introducing revisions to the Pre-filing Guidelines for Energy Infrastructure Projects and a Unified and Updated Electric and Gas PEA Checklist

We are pleased to release a 2019 revision to the California Environmental Quality Act (CEQA) Proponent's Environmental Assessments (PEA) Checklist. This substantially revised document is now entitled "Guidelines for Energy Project Applications Requiring CEQA Compliance: Pre-filing and Proponent's Environmental Assessments" (Guidelines). Future updates to this document will be made as determined necessary. The CPUC's Rules of Practice and Procedure Sections 2.4 provide that all applications to the CPUC for authority to undertake projects that are not statutorily or categorically exempt from CEQA requirements shall include an Applicant-prepared PEA.

Updates Overview

Prior versions of the Working Draft PEA Checklist were published in 2008 and 2012. For this 2019 update, extensive revisions were made to all sections based on our experience with the prior checklist versions. All electric and natural gas projects are now addressed in a single PEA Checklist, and the following updates were made:

- **CEQA Statute and Guidelines 2019 Updates:** The PEA Checklist is updated pursuant to the 2019 CEQA Statues and Guidelines, including new energy and wildfire resource areas.
- **Pre-filing Consultation Guidelines:** Pre-filing guidelines are now provided since the pre-filing and PEA development processes are intertwined.
- **Unified PEA Checklist for Energy Projects:** All electric and natural gas projects are now addressed in a single PEA Checklist.
- **Additional CEQA Impact Questions:** Questions are included for the following PEA Checklist sections: 5.4, Biological Resources; 5.6, Energy; 5.9, Hazards, Hazardous Materials, and Public Safety; 5.16, Recreation; 5.17, Transportation; and 5.19, Utilities and Service Systems.
- **CPUC Draft Environmental Measures:** Draft measures are provided in PEA Checklist Attachment 4 for Aesthetics, Air Quality, Cultural Resources, Greenhouse Gas Emissions, Utilities and Service Systems and Wildfire.

Purpose of the Guidelines Document

The purpose and objective of the PEA Checklist included within this Guidelines document has not changed, which is to provide project Proponents (Applicants) with detailed guidance about information our CEQA Unit Staff expect in sufficient PEAs. The document details the information Applicants must provide the CPUC to complete environmental reviews that satisfy CEQA requirements. Specifically, the Pre-filing Consultation Guidelines and PEA Checklist, together, are intended to achieve the following objectives:

1. Provide useful guidance to Applicants, CPUC staff, and outside consultants regarding the type and detail of information needed to quickly and efficiently deem an application complete;

2. Ensure PEAs provide reviewers with a detailed project description and associated information sufficient to deem an application complete, avoid lengthy review periods and numerous data requests for the purpose of augmenting a PEA, and avoid unnecessary PEA production costs;
3. Increase the level of consistency between PEAs submitted and provide for more consistent review by CPUC CEQA Unit Staff and outside consultants; and
4. Promote transparency and reduce the potential for conflicts between utility and CPUC Staff about the types, scope, and thoroughness of data expected for data adequacy purposes.

The Guidelines document provides detailed instructions to Applicants for use during the Pre-filing process and PEA development. The document is intended to fully inform Applicants and focus the role of outside consultants, thus, enabling Applicants to submit more complete, useful, and immediately data-adequate PEAs.

Benefits of High Quality and Complete PEAs

CPUC CEQA Unit Staff seek to complete the environmental review process required under CEQA as quickly and efficiently as possible. Table 1 shows the average duration in months of CPUC applications that require CEQA documents. While there are tensions between speed and quality in all project management, the achievement of expeditious environmental reviews can result in lower project costs to ratepayers. Our staff have reviewed the timelines for 108 past CPUC applications that required review pursuant to CEQA and determined that the average length of time from application filing to PEA deemed complete is four months, regardless of the type of CEQA document. The goal for our agency is to deem PEAs complete within 30 days. The faster PEAs are deemed complete, the sooner staff can prepare the CEQA document. With each delay to PEA completeness, the fundamental project purpose and need and baseline circumstances may shift, requiring refreshing of the data. The Guidelines document will improve the initial accuracy of PEAs and reduce the time required to deem PEAs complete. Once an application is formally filed, the Applicant will receive a notification letter from CPUC CEQA Unit Staff when the PEA is deemed complete.

Table 1. Average Duration in Months of CPUC Applications that Require CEQA Documents (1996–2019)

	I: Application Filed to PEA Deemed Complete	II: PEA Deemed Complete to Draft Environmental Document Circulated	III: Draft Environmental Document to Final Released	IV: Final Released to Proposed Decision	V: Proposed Decision to Final Decision (with Certification of CEQA Document)	I-V: Overall Duration (1)
Environmental Impact Report (EIR; n=49)	5	13	7	5	2	**29**
Initial Study/ Mitigated Negative Declaration (IS/MND; n=56)	4	8	3	4	1	**19**
All Document Types (n=108)	4	8	4	5	2	**23**
Range: All Document Types	*1-9*	*5-18*	*2-10*	*1-7*	*1-2*	***12-38***

Note:
(1) The overall duration is not a sum of the average durations for each step. The overall duration was calculated using "n," the number of applications with data available for the date of application filing and final decision date. Not all projects had data available for each step. The data include several instances where the CEQA document was developed in conjunction with a NEPA document, e.g., an EIR/Environmental Impact Statement or IS/MND/Environmental Assessment/Finding of No Significant Impact was prepared instead of an EIR or MND, respectively. The above data is not inclusive of projects that had averages and ranges that are statistically abnormal.

Lessons Learned about the PEA Process

In the past, Applicants have filed PEAs using the checklist to ensure the correct information was provided but have not followed the format and organization of the PEA checklist and sometimes chose not to engage in Pre-filing activities with our staff. To achieve the objectives and benefits listed above, Applicants will file all future PEAs in the same organizational format as the updated checklist and adhere to the Pre-filing Consultation Guidelines in coordination with CPUC CEQA Unit Staff.

The Guidelines document describes the level effort required for the assessments necessary to not only finalize a CEQA document but ensure its legal defensibility. While final design and survey information is preferred, the PEA may incorporate preliminary design and survey data as appropriate and in consultation with CEQA Unit Staff during Pre-filing. We recognize that projects are fact specific, and deviations from the Pre-filing Consultation Guidelines and PEA Checklist are inevitable but providing concise and accurate information as soon as possible is paramount. Any deviations from these Guidelines must include clear justification and should be discussed and submitted during the Pre-filing Consultation process to avoid subsequent delays.

The PEA Checklist is written with the assumption that an Environmental Impact Report will be prepared, however, a Mitigated Negative Declaration or other form of CEQA document (e.g., exemption) may be appropriate. This determination, however, must be made in consultation with CPUC CEQA Unit Staff during Pre-filing and prior to submittal of the Draft PEA.

Future Modifications and Improvements

Like the predecessor PEA checklists, this is a working document that will be modified over time based on experience and changes to the CEQA Statute and Guidelines. To meet the above stated objectives and maintain consistency with CEQA. We expect Applicants, their consultants, CPUC consultants, and the CPUC to engage in a regular and ongoing dialogue about specific improvements to the CEQA process overall, and these Guidelines in particular.

We look forward to working with Applicants during the Pre-filing Consultation process to ensure that the level of effort that goes into preparing PEAs can be effectively and efficiently transferred into the CEQA document prepared by CPUC Staff and consultants. Applicants are invited to debrief with our staff about the efficacy of these Guidelines.

Merideth Sterkel
/s/
Program Manager, Infrastructure Planning and Permitting
California Public Utilities Commission

Mary Jo Borak
/s/
Supervisor, Infrastructure Permitting and CEQA Unit
California Public Utilities Commission

Lonn Maier
/s/
Supervisor, Infrastructure Permitting and CEQA Unit
California Public Utilities Commission

Pre-Filing Consultation Guidelines

The following Pre-filing Consultation Guidelines apply to all PEAs filed with applications to the CPUC and outline a process for Applicants to engage with CPUC CEQA Unit Staff about upcoming projects that will require environmental review pursuant to CEQA. The CPUC is typically the Lead Agency for large projects by investor-owned gas and electric utilities. The CPUC's CEQA Unit Staff are experienced with developing robust CEQA documents for long, linear energy projects. The PEA Checklist, starting in the next section, is based upon that experience.

Pre-filing Consultation Process

During Pre-filing Consultation, Applicants and CPUC Staff meet to discuss the upcoming application. Successful projects will commence Pre-filing Consultation no less than six months prior to application filing at the CPUC. When the application is formally filed at the CPUC, the Application and the PEA are submitted to the CPUC Docket Office.

1. Meetings with CPUC Staff

To initiate Pre-filing Consultation, Applicants will request and attend a meeting with CPUC CEQA Unit Staff at least six months prior to application filing.

a. Applicants can request a Pre-Filing Consultation meeting via email or letter. Initial contact via telephone may occur, but staff request written documentation of Pre-filing Consultation commencement.

b. For the initial meeting, Applicants will provide staff with a summary of the proposed project including maps and basic GIS data at least one week prior to the meeting.

c. Applicants will receive initial feedback on the scope of the proposed project and PEA. Staff will work with Applicants to establish a schedule for subsequent Pre-filing meetings and milestones.

2. Consultant Resources

CPUC CEQA Unit Staff will initiate the consultant contract immediately following the initial Pre-filing Consultation meeting. CPUC's consultant contract resources will be executed prior to Applicant filing of the Draft PEA. The consultant contract is critical to the Pre-filing Consultation process. Applicants are encouraged to request updates about the status of the contract. The CPUC may use its on-call consulting resources contract for these purposes. If CEQA Unit Staff determine that their on-call consulting resources are not appropriate due to the anticipated project scope, staff may initiate a request for proposals process to engage consulting resources, and the resulting contracting process will be completed and consultant contract in place prior to Draft PEA filing.

3. Draft PEA Provided Prior to PEA Filing

A complete Draft PEA will be filed at least three months prior to application filing. CPUC CEQA Unit Staff and the CPUC consultant team will review and provide comments on the Draft PEA to the Applicant early in the three-month period to allow time for Applicant revisions to the PEA.

4. Project Site Visits

One or more site visits will be scheduled with CPUC CEQA Unit Staff and their consultant at the time of Draft PEA filing (or prior). Appropriate federal, state, and local agencies will also be engaged at this time.

5. Consultation with Public Agencies

The Applicant and CPUC CEQA Unit Staff will jointly reach out and conduct consultation meetings with public agencies and other interested parties in the project area. CPUC CEQA Unit Staff may also choose to conduct separate consultation meetings if needed.

If a federal agency will be a co-lead pursuant to the National Environmental Policy Act and coordinating with the CPUC during the environmental review process, the Applicant and CPUC CEQA Unit Staff will ensure that the agency has the opportunity to comment on the Draft PEA and participate jointly with the CPUC throughout the application review process. Applicant and Commission CEQA Unit Staff coordination with the federal agency (if applicable) will likely need to occur more than six months in advance of application filing.

6. Alternatives Development

PEAs will be drafted with the assumption that an Environmental Impact Report (EIR) will be prepared. Applicants will include a reasonable range of alternatives in the PEA (even though a Mitigated Negative Declaration [MND] may ultimately be prepared), including sufficient information about each alternative. In some situations, CPUC CEQA Unit Staff and project Applicants may agree during Pre-filing Consultation that an MND is likely and a reasonable range of alternatives is not required for the PEA. This determination, however, must be made in consultation with CEQA Unit Staff during Pre-filing and is not final. The type of document to be prepared may change based on public scoping results and other findings during the environmental review process.

CEQA Unit Staff will provide feedback on the range of alternatives prior to Draft PEA filing (if possible) based on their review of the Draft PEA. It is critical that Applicants receive feedback from CEQA Unit Staff about the range of alternatives prior to filing the PEA. Applicants will ensure that each alternative is described and evaluated in the PEA with an equal level of detail as the proposed project unless otherwise instructed in writing by CEQA Unit Staff.

7. Format of PEA Submittal

Each PEA submittal will include the completed PEA Checklist tables. Each PEA submittal will be formatted and organized as shown in the Example PEA Table of Contents provided in the PEA Checklist unless otherwise directed by CPUC CEQA Unit Staff in writing prior to application filing. The example PEA Table of Contents is modeled after typical CPUC EIRs.

8. Transmission and Distribution System Information

A key component of CEQA projects analyzed during CPUC environmental reviews is the context of the project within the larger transmission and distribution system. Detailed descriptions of the regional transmission system, including GIS data, to which the proposed project would interconnect are required. The required level of detail about interconnecting systems is project specific and will be specified by CEQA Unit Staff in writing during Pre-filing Consultation. Detailed distribution system information may also be required.

9. Data and Technical Adequacy

Applicants will focus PEA development efforts on providing thorough, up-to-date data and technical reports required for CPUC CEQA Unit Staff to complete the environmental document and alternatives analysis.

The Applicant-drafted PEA Executive Summary, Introduction, Project Description, Description of Alternatives, and other chapters typically found in past CPUC EIRs and Initial Study/MNDs will be *thorough*—emulate the level of detail provided in typical CPUC EIRs. The setting sections provided for

PEA Chapter 5, Environmental Analysis, will also be thorough. Applicants will ensure that the PEA text, graphics, and file formats can be efficiently converted into CPUC's CEQA document with minimal revision, reformatting, and redevelopment by CPUC Staff and consultants.

The impact analyses and determinations provided for Chapter 5, Environmental Analysis, and Chapter 6, Comparison of Alternatives, need not be as thorough as those to be prepared by the CPUC for its CEQA document. These two sections are expected to be revised and redeveloped by CPUC Staff and consultants. Other sections of the CEQA document will only be revised and redeveloped by CPUC Staff and consultants if determined to be necessary after PEA filing.

10. Applicant Proposed Measures

The Pre-filing Consultation process can support the development Applicant Proposed Measures (APMs); measures that Applicants incorporate into the PEA project description to avoid or reduce what otherwise may be considered significant impacts. APMs that use phrases, such as, "as practicable," "as needed," or other conditional language will be superseded by Mitigation Measures if required to avoid or reduce a potentially significant impact. CPUC CEQA Unit Staff and their consultant team may review and provide comments on the Draft PEA APMs during Pre-filing Consultation.

Applicants will carefully consider each CPUC Draft Environmental Measure identified in Chapter 5 of this PEA Checklist. The measures may be applied to the proposed project if appropriate and may be subject to modification by the CPUC during its environmental review.[1]

11. PEA Checklist Deviations

CPUC CEQA Unit Staff understand that the PEA Checklist requires Applicants to develop a significant quantity of information. There are times when it is appropriate to deviate from the PEA Checklist. Deviations to the Pre-Filing Consultation Guidelines or the PEA Checklist contents may be approved by the CPUC's CEQA Unit Staff. Staff approval will be in writing and will occur prior to Applicant filing of the Draft PEA. Note that any deviations approved in writing by staff during the Pre-filing period may be reversed or modified after application and PEA filing and at any time throughout the environmental review period at the discretion of CPUC CEQA Unit Staff.

12. Submittal of Confidential Information

CPUC Staff are available during Pre-filing Consultation to discuss concerns that Applicants may have about confidentiality. However, the CEQA process requires public disclosure about projects, and such disclosure can often appear to conflict with Applicant requests for confidentiality. CPUC CEQA Unit Staff will rely on CPUC adopted confidentiality procedures to resolve confidentiality concerns. Applicants that expect aspects of a PEA filing to be confidential must follow CPUC confidentiality procedures. Applicants may mark information as confidential if allowed pursuant to General Order 66 or latest applicable Commission rule (e.g., see Public Records Act Proceeding Rulemaking (R.14-11-001).

13. Additional CEQA Impact Questions

Additional CEQA Impact Questions that are specific to the types of projects evaluated by the Commission's CEQA Unit are identified in the PEA Checklist to be considered in addition to the checklist items in CEQA Guidelines Appendix G.

The next section of this Guidelines document provides the PEA Checklist for all energy project applications that require CEQA compliance.

[1] At this time, the CPUC environmental measures are in draft format, see PEA Checklist Attachment 4. They may be formally incorporated into Chapter 5 of future versions of the PEA Checklist.

Proponent's Environmental Assessment (PEA) Checklist

The PEA Checklist provides project Applicants (e.g., projects involving electric transmission lines, electric substations or switching stations, natural gas transmission pipelines, and underground natural gas storage facilities) with detailed guidance regarding the level of detail CPUC CEQA Unit Staff expect to deem PEAs complete. Applicants will prepare their PEAs using the same section headers and numbering as provided in the PEA Checklist. Applicants will also provide supporting data that is specific to each item within the PEA Checklist. As noted in the Pre-Filing Consultation Guidelines, the PEA Checklist is written with the assumption that an EIR will be prepared. PEA contents may not need to support the development of an EIR, but this determination can only be made in consultation with CPUC CEQA Unit Staff as described in the Pre-Filing Consultation Guidelines.

Formatting and Basic PEA Data Needs, Including GIS Data

1. Provide **editable and fully functional source files** in electronic format for all PDF files, hardcopies, maps, images, and diagrams. Files will be provided in their original file format as well as the output file format. All Excel and other spreadsheet files or modeling files will include all underlying formulas/modeling details. All modeling files must be fully functional.
2. Details about the types of **GIS data and maps** to be submitted are provided in Attachment 1. GIS data not specified in this checklist may also be requested depending on the Proposed Project and alternatives.
3. The Applicant is responsible for ensuring that all project features, including project components and temporary and permanent work areas, are included within all **survey boundaries** (e.g., biological and cultural resources).
4. Excel spreadsheets with **emissions calculations** will be provided that are complete with all project assumptions, values, and formulas used to prepare emissions calculations in the PEA. Accompanying PDF files with the same information will be provided as Appendix B to the PEA (see List of Appendices below).
5. Applicants will provide in an Excel spreadsheet a comprehensive **mailing list** that includes the names and addresses of all affected landowners and residents, including unit numbers for multi-unit properties for both the proposed project and alternatives.
    a. An affected resident or landowner is defined as one whose place of residence or property is:
        i. Crossed by or abuts any component of the proposed project or an alternative including any permanent or temporary disturbance area (either above or below ground) and any extra work area (e.g., staging or parking area); or
        ii. Located within approximately 1,000 feet[2] of the edge of any construction work area.
    b. Include in the following information for each resident in a spreadsheet, at minimum: parcel APN number, owner name and mailing address, and parcel physical address. If individual occupant names, facility names, or business names are available, also provide these names and addresses in the spreadsheet. A sample mailing list format is provided in Table 2.

[2] Notice to all property owners within 300 feet of a Proposed Project is required at the time of application filing under GO 131-D. Commission notices of CEQA document preparation may be mailed to residents and property owners greater than 300 feet from a Proposed Project to ensure adequate notification (e.g., 1,000 feet) and the extent of notification will be determined on a project specific basis. Appropriate notice expectations will be discussed during Pre-filing (e.g., with respect to visual impact areas and other types of impacts specific to the Proposed Project and its study area).

Table 2. Sample Project Mailing List

Category	Company/ Agency	Name	Mailing Address	Phone Number	Email	APN	Source
State Agency	California Resources Agency	John Doe	1234 California Street City, CA 98765	(333) 456-7899	johndoe@email.com	123-456-789	County Assessor
Individual	n/a	Jane Doe	222 Main Street City, CA 97531	(909) 876-5432	janedoe@email.com	101-202-303	Public meeting on Month, Day 2019

6. **PEA Organization:** This PEA Checklist is organized to include each of the chapters and sections found in typical CPUC EIRs. The following sections will serve as the outline for all Draft PEAs submitted during Pre-filing and all PEAs filed with the CPUC Docket Office. PEAs will include each chapter and section identified (in matching numerical order) unless otherwise directed by CPUC CEQA Unit Staff in writing prior to filing.

Cover

A single sheet with the following information:	Applicant Notes, Comments
Title "Proponent's Environmental Assessment" and filing date	
Proponent Name (the Applicant)	
Name of the proposed project[3]	
Technical subheading summarizing the type of project and its major components, in one sentence or about 40 words, for example: A new 1,120 MVA, 500/115kV substation, 10 miles of new singled-circuit 500kV transmission lines, 25 miles of new and replaced double-circuit 115kV power lines, and upgrades at three existing substations are proposed.	
Location of the proposed project (all counties and municipalities or map figure for the cover that shows the areas crossed)	
Proceeding for which the PEA was prepared and CPUC Docket number (if known) or simply leave a blank where the Docket number would go	
Primary Contact's name, address, telephone number, and email address for both the project Applicant(s) and entities that prepared the PEA	
See example PEA cover in Figure 1.	

[3] If approved by the California Independent System Operator (CAISO), the project name listed will match the name specified in the CAISO approval. If multiple names apply, list all versions.

Figure 1. Example PEA Cover

Proponent's Environmental Assessment for California Utility Company's Evergreen Electric Substation and Transmission Line Project

May 1, 2019 (PEA filing date)

A new 230 kV substation, 10 miles of new single-circuit 230kV transmission lines, and upgrades at two existing substations are proposed.

The Proposed Project would be located primarily in __ County but would also cross __ and __ counties and areas within the City of __.

Application A.19-05-01 to the California Public Utilities Commission

Prepared by California Environmental Consulting
1234 Avenue
City, CA Zip Code
Primary Contact's Name
Position
Phone Number
Email

Prepared for California Utility Company
1234 Avenue
City, CA Zip Code
Primary Contact's Name
Position
Phone Number
Email

Table of Contents

Sections

Order	The format of the PEA will be organized as follows:	Applicant Notes, Comments
--	Cover	
--	Table of Contents, List of Tables, List of Figures, List of Appendices	
1	Executive Summary	
2	Introduction	
3	Proposed Project Description	
4	Description of Alternatives	
5	Environmental Analysis	
5.1	Aesthetics	
5.2	Agriculture and Forestry	
5.3	Air Quality	
5.4	Biological Resources	
5.5	Cultural Resources	
5.6	Energy	
5.7	Geology, Soils, and Paleontological Resources	
5.8	Greenhouse Gas Emissions	
5.9	Hazards, Hazardous Materials, and Public Safety	
5.10	Hydrology and Water Quality	
5.11	Land Use and Planning	
5.12	Mineral Resources	
5.13	Noise	
5.14	Population and Housing	
5.15	Public Services	
5.16	Recreation	
5.17	Transportation	
5.18	Tribal Cultural Resources	
5.19	Utilities and Service Systems	
5.20	Wildfire	
5.21	Mandatory Findings of Significance	
6	Comparison of Alternatives	

7	Cumulative Impacts and Other CEQA Considerations	
8	List of Preparers	
9	References[4]	
--	Appendices	

Required PEA Appendices and Supporting Materials

Order	Title	Applicant Notes, Comments
Appendix A	Detailed Maps and Design Drawings	
Appendix B	Emissions Calculations	
Appendix C	Biological Resources Technical Reports (see Attachment 2)	
Appendix D	Cultural Resources Studies (see Attachment 3)	
Appendix E	Detailed Tribal Consultation Report[5]	
Appendix F	Environmental Data Resources Report, Phase I Environmental Site Assessment, or similar hazardous materials report	
Appendix G	Agency Consultation and Public Outreach Report and Records of Correspondence	
Appendix H	Construction Fire Prevention Plan[6]	

Potentially Required[7] Appendices and Supporting Materials

Order	Title	Applicant Notes, Comments
Appendix I	Noise Technical Studies	
Appendix J	Traffic Studies	
Appendix K	Geotechnical Investigations (may preliminary at time of PEA filing)	
Appendix L	Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan	

4 References will be organized by section but contained in a single chapter called, "References."

5 Include summary and timing of all correspondence to and from any Tribes and the State Historic Preservation Office/Native American Heritage Commission, including Sacred Lands File search results, and full description of any issues identified by Tribes in their interactions with the Applicant.

6 The Construction Fire Prevention Plan will be provided to federal, state, and local fire agencies for review and comment as applicable to where components of the proposed project would be located. CPUC will approve the final Construction Fire Prevention Plan. Record of the request for review and comment and any comments received from these agencies will be provided to CPUC CEQA Unit Staff.

7 Anticipated Appendix and study requirements should be discussed with CPUC CEQA Unit Staff during Pre-filing.

Appendix M	Erosion and Sedimentation Control Best Management Practice Plan / Draft Storm Water Pollution Prevention Plan (may be preliminary at time of PEA filing)	
Appendix N	FAA Notice and Criteria Tool Results	
Appendix O	Revegetation or Site Restoration Plan	
Appendix P	Health and Safety Plan	
Appendix Q	Existing Easements[8]	
Appendix R	Blasting Plan (may be preliminary at time of PEA filing)	
Appendix S	Traffic Control/Management Plan (may be preliminary at time of PEA filing)	
Appendix T	Worker Environmental Awareness Program (may preliminary at time of PEA filing)	
Appendix U	Helicopter Use and Safety Plan (may be preliminary at time of PEA filing)	
Appendix V	Electric and Magnetic Fields Management Plan (may be part of the Application rather than the PEA)	

[8] Easements should be provided military lands, conservation easements, or other lands where the real estate agreement specifies the range of activities that can be conducted

1 Executive Summary

This section will include, but is not limited to, the following:	PEA Section and Page Number[9]	Applicant Notes, Comments
1.1: Proposed Project Summary. Provide a summary of the proposed project and its underlying purpose and basic objectives.		
1.2: Land Ownership and Right-of-Way Requirements. Provide a summary of the existing and proposed land ownership and rights-of-way for the proposed project.		
1.3: Areas of Controversy. Identify areas of anticipated controversy and public concern regarding the project.		
1.4: Summary of Impacts a) Identify all impacts expected by the Applicant to be potentially significant. Identify and discuss Applicant Proposed Measures here and provide a reference to the full listing of Applicant Proposed Measures provided in the table described in Section 3.11 of this PEA Checklist. b) Identify any significant and unavoidable impacts that may occur.		
1.5: Summary of Alternatives. Summarize alternatives that were considered by the Applicant and the process and criteria that were used to select the proposed project.		
1.6: Pre-filing Consultation and Public Outreach Summary. Briefly summarize Pre-filing consultation and public outreach efforts that occurred and identify any significant outcomes that were incorporated into the proposed project.		
1.7: Conclusions. Provide a summary of the major PEA conclusions.		
1.8: Remaining Issues. Describe any major issues that must still be resolved.		

[9] The *PEA Section and Page Number* column and *Applicant Notes, Comments* column are intended to be filled out and provided with PEA submittals. The PEA Checklist is provided in Word to all Applicants to allow column resizing as appropriate to reduce PEA checklist length when completed for submittal. Landscape formatting may also be appropriate for completed PEA Checklist tables.

2 Introduction

2.1 Project Background

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
2.1.1: Purpose and Need a) Explain why the proposed project is needed. b) Describe localities the proposed project would serve and how the project would fit into the local and regional utility system. c) If the proposed project was identified by the California Independent System Operator (CAISO), thoroughly describe the CAISO's consideration of the proposed project and provide the following information: i. Include references to all CAISO Transmission Planning Processes that considered the proposed project. ii. Explain if the proposed project is considered an economic, reliability, or policy-driven project or a combination thereof. iii. Identify whether and how the Participating Transmission Owner recommended the project in response to a CAISO identified need, if applicable. iv. Identify if the CAISO approved the original scope of the project or an alternative and the rationale for their approval either for the original scope or an alternative. v. Identify how and whether the proposed project would exceed, combine, or modify in any way the CAISO identified project need. vi. If the Applicant was selected as part of a competitive bid process, identify the factors that contributed to the selection and CAISO's requirements for in-service date. d) If the project was not considered by the CAISO, explain why.		
(Natural Gas Storage Only) e) Provide storage capacity or storage capacity increase in billion cubic feet. If the project does not increase capacity, make this statement. f) Describe how existing storage facilities will work in conjunction with the proposed project. Describe the purchasing process (injection, etc.) and transportation arrangements this facility will have with its customers.		
2.1.2: Project Objectives a) Identify and describe the basic project objectives.[10] The objectives will include reasons for constructing the project based on its		

[10] Tangential project goals should not be included as basic project objectives, such as, minimizing environmental impacts, using existing ROWs and disturbed land to the maximum extent feasible, ensuring safety during construction and operation, building on property already controlled by the Applicant/existing site control. Goals of this type do not describe the underlying purpose or basic objectives but, rather, are good general practices for all projects.

purpose and need (i.e., address a specific reliability issue). The description of the project objectives will be sufficiently detailed to permit CPUC to independently evaluate the project need and benefits to accurately consider them in light of the potential environmental impacts. The basic project objectives will be used to guide the alternatives screening process, when applicable. b) Explain how implementing the project will achieve the basic project objectives and underlying purpose and need. c) Discuss the reasons why attainment of each basic objective is necessary or desirable.		
2.1.3: Project Applicant(s). Identify the project Applicant(s) and ownership of each component of the proposed project. Describe each Applicant's utility services and their local and regional service territories.		

2.2 Pre-filing Consultation and Public Outreach[11]

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
2.2.1: Pre-filing Consultation and Public Outreach a) Describe all Pre-filing consultation and public outreach that occurred, such as, but not limited to: i. CAISO ii. Public agencies with jurisdiction over project areas or resources that may occur in the project area iii. Native American tribes affiliated with the project area iv. Private landowners and homeowner associations v. Developers for large housing or commercial projects near the project area vi. Other utility owners and operators vii. Federal, state, and local fire management agencies b) Provide meeting dates, attendees, and discussion summaries, including any preliminary concerns and how they were addressed and any project alternatives that were suggested. c) Clearly identify any significant outcomes of consultation that were incorporated into the proposed project. d) Clearly identify any developments that could coincide or conflict with project activities (i.e., developments within or adjacent to a proposed ROW).		
2.2.2: Records of Consultation and Public Outreach. Provide contact information, notification materials, meeting dates and materials, meeting notes, and records of communication organized by entity as an Appendix to the PEA (Appendix G).		

[11] CPUC CEQA Unit Staff request that consultation and public outreach that occurs during the Pre-filing period and throughout environmental review include the assigned CPUC Staff person and CPUC consultant.

2.3 Environmental Review Process

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
2.3.1: Environmental Review Process. Provide a summary of the anticipated environmental review process and schedule.		
2.3.2: CEQA Review a) Explain why CPUC is the appropriate CEQA Lead agency. b) Identify other state agencies and any federal agencies that may have discretionary permitting authority over any aspect of the proposed project. c) Identify all potential involvement by federal, state, and local agencies not expected to have discretionary permitting authority (i.e., ministerial actions). d) Summarize the results of any preliminary outreach with these agencies as well as future plans for outreach.		
2.3.3: NEPA Review (if applicable). If review according to the National Environmental Policy Act (NEPA) is expected, explain the portions of the project that will require the NEPA review process. Discuss which agency is anticipated to be the NEPA Lead agency if discretionary approval by more than one federal agency is required.		
2.3.4: Pre-filing CEQA and NEPA Coordination. Describe the results of Pre-filing coordination with CEQA and NEPA review agencies (refer to CPUC's Pre-Filing Consultation Guidelines). Identify major outcomes of the Pre-filing coordination process and how the information was incorporated into the PEA, including suggestions on the type of environmental documents and joint or separate processes based on discussions with agency staff.		

2.4 Document Organization

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
2.4: PEA Organization. Summarize the contents of the PEA and provide an annotated list of its sections.		

3 Proposed Project Description[12]

3.1 Project Overview

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.1: Project Overview a) Provide a concise summary of the proposed project and components in a few paragraphs. b) Described the geographical location of the proposed project (i.e., county, city, etc.). c) Provide an overview map of the proposed project location.		

3.2 Existing and Proposed System

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.2.1: Existing System a) Identify and describe the existing utility system that would be modified by the proposed project, including connected facilities to provide context. Include detailed information about substations, transmission lines, distribution lines, compressor stations, metering stations, valve stations, nearby renewable generation and energy storage facilities, telecommunications facilities, control systems, SCADA systems, etc. b) Provide information on users and the area served by the existing system features. c) Explain how the proposed project would fit into the existing local and regional systems. d) Provide a schematic diagram of the existing system features. e) Provide detailed maps and associated GIS data for existing facilities that would be modified by the proposed project.		
3.2.2: Proposed Project System a) Describe the whole of the proposed project by component, including all new facilities and any modifications, upgrades, or expansions to existing facilities and any interrelated activities that are part of the whole of the action. b) Clearly identify system features that would be added, modified, removed, disconnected and left in place, etc. c) Identify the expected capacities of the proposed facilities, highlighting any changes from the existing system. If the project would not change existing capacities, make this statement. For electrical projects, provide the anticipated capacity increase in amps or megawatts or in the typical units for the types of facilities proposed. For gas projects, provide the total volume of gas to be		

[12] Applicant review of the Administrative Draft Project Description or sections of the Administrative Draft Project Description prepared for the CEQA document may be requested by CPUC CEQA Unit Staff to ensure technical accuracy.

delivered by the proposed facilities, anticipated system capacity increase (typically in million cubic feet per day), expected customers, delivery points and corresponding volumes, and the anticipated maximum allowable operating pressure(s). d) Describe the initial buildout and eventual full buildout of the proposed project facilities. For example, if an electrical substation or gas compressor station would be installed to accommodate additional demand in the future, then include the designs for both the initial construction based on current demand and the design for all infrastructure that could ultimately be installed within the planned footprint of an electric substation or compressor station. e) Explain whether the electric line or gas pipeline will create a second system tie or loop for reliability. f) Provide information on users and the area served by the proposed system features, highlighting any differences from the existing system. g) Provide a schematic diagram of the proposed system features. h) Provide detailed maps and associated GIS data for proposed facilities that would be installed, modified, or relocated by the proposed project.		
3.2.3: System Reliability. Explain whether the electric line or gas pipeline will create a second system tie or loop for reliability. Clearly explain and show how the proposed project relates to and supports the existing utility systems.		
3.2.4: Planning Area. Describe the system planning area served or to be served by the project. Clearly define the Applicant's term for the planning area (e.g., Electrical Needs Area or Distribution Planning Area).		

3.3 Project Components

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
Required for all Project Types		
3.3.1: Preliminary Design and Engineering a) Provide preliminary design and engineering information for all above-ground and below-ground facilities for the proposed project. The approximately locations, maximum dimensions of facilities, and limits of areas that would be needed to construction and operate the facilities should be clearly defined.[13] b) Provide preliminary design drawings for project features and explain the level of completeness (i.e., percentage). c) Provide detailed project maps (approximately 1:3,000 scale) and associated GIS data of all facility locations and boundaries with attributes and spatial geometry that corresponds to information in the Project Description.		

[13] Refer to Attachment 1 for mapping and GIS data requirements for the project layout and design.

3.3.2: Segments, Components, and Phases a) Define all project segments, components, and phases for the proposed project. b) Provide the length/area of each segment or component, and the timing of each development phase. c) Provide an overview map showing each segment and provide associated GIS data (may be combined with other mapping efforts).		
3.3.3: Existing Facilities a) Identify the types of existing facilities that would be removed or modified by the proposed project (i.e., conductor/cable, poles/towers, substations, switching stations, gas storage facilities, gas pipelines, service buildings, communication systems, etc.). b) Describe the existing facilities by project segment and/or component, and provide information regarding existing dimensions, areas/footprints, quantities, locations, spans, etc. c) Distinguish between above-ground and below-ground facilities and provide both depth and height ranges for each type of facility. For poles/towers, provide the installation method (i.e., foundation type or direct bury), and maximum above-ground heights and below-ground depths. d) Explain what would happen to the existing facilities. Would they be replaced, completely removed, modified, or abandoned? Explain why. e) Identify the names, types, materials, and capacity/volumes ranges (i.e., minimum and maximum) of existing facilities that would be installed or modified by the proposed project. f) Provide diagrams with dimensions representing existing facilities to provide context on how the proposed facilities would be different. g) Briefly describe the surface colors, textures, light reflectivity, and any lighting of existing facilities.		
3.3.4: Proposed Facilities a) Identify the types of proposed facilities to be installed or modified by the proposed project (e.g., conductor/cable, poles/towers, substations, switching stations, gas storage facilities, gas pipelines, service buildings, communication systems). b) Describe the proposed facilities by project segment and/or component, and provide information regarding maximum dimensions, areas/footprints, quantities, locations, spans, etc. c) Distinguish between above-ground and below-ground facilities and provide both depth and height ranges for each type of facility. For poles/towers, provide the installation method (i.e., foundation type or direct bury), and maximum above-ground heights and below-ground depths.		

d) Identify where facilities would be different (e.g., where unique or larger poles would be located, large guy supports or snub poles). e) Provide details about civil engineering requirements (i.e., permanent roads, foundations, pads, drainage systems, detention basins, spill containment, etc.). f) Distinguish between permanent facilities and any temporary facilities (i.e., poles, shoo-fly lines, mobile substations, mobile compressors, transformers, capacitors, switch racks, compressors, valves, driveways, and lighting). g) Identify the names, types, materials, and capacity/volumes ranges (i.e., minimum and maximum) of proposed facilities that would be installed or modified by the proposed project. h) Provide diagrams with dimensions representing existing facilities. i) Briefly describe the surface colors, textures, light reflectivity, and any lighting of proposed facilities.		
3.3.5: Other Potentially Required Facilities a) Identify and describe in detail any other actions or facilities that may be required to complete the project. For example, consider the following questions: i. Could the project require the relocation (temporary or permanent), modification, or replacement of unconnected utilities or other types of infrastructure by the Applicant or any other entity? ii. Could the project require aviation lighting and/or marking? iii. Could the project require additional civil engineering requirements to address site conditions or slope stabilization issues, such as pads and retaining walls, etc.? b) Provide the location of each facility and a description of the facility.		
3.3.6: Future Expansions and Equipment Lifespans a) Provide detailed information about the current and reasonably foreseeable plans for expansion and future phases of development. b) Provide the expected usable life of all facilities. c) Describe all reasonably foreseeable consequences of the proposed project (e.g., future ability to upgrade gas compressor station to match added pipeline capacity).		
Required for Certain Project Types		
3.3.7: Below-ground Conductor/Cable Installations (as Applicable) a) Describe the type of line to be installed (e.g., single circuit cross-linked polyethylene-insulated solid-dielectric, copper-conductor cables). b) Describe the type of casing the cable would be installed in (e.g., concrete-encased duct bank system) and provide the dimensions of the casing.		

c) Describe the types of infrastructure would likely be installed within the duct bank (e.g., transmission, fiber optics, etc.).		
3.3.8: Electric Substations and Switching Stations (as Applicable) a) Provide the number of transformer banks that will be added at initial and full buildout of the substation. Identify the transformer voltage and number of each transformer type. b) Identify any gas insulated switchgear that will be installed within the substation. c) Describe any operation and maintenance facilities, telecommunications equipment, and SCADA equipment that would be installed within the substation.		
3.3.9: Gas Pipelines (as Applicable). For each segment: a) Identify pipe diameter, number and length of exposed sections, classes and types of pipe to be installed, pressure of pipe, and cathodic protection for each linear segment. b) Describe new and existing inspection facilities (e.g., pig launcher sites). c) Describe system cross ties and laterals/taps. d) Identify the spacing between each valve station. e) Describe the compressor station, if needed, for any new or existing pipeline. f) Describe all pipelines and interconnections with existing and proposed facilities: i. Number of interconnections and locations and sizes; ii. All below-ground and above-ground installations; and iii. All remote facility locations for metering, telemetry, control.		
3.3.10: Gas Storage Facilities – Background and Resource Information (as Applicable) a) Provide detailed background information on the natural gas formation contributing to the existing or proposed natural gas facility, including the following: i. Description of overlying stratigraphy, especially caps ii. Description of production, injection, and intervening strata iii. Types of rock iv. Description of types of rocks in formation, including permeability or fractures v. Thickness of strata b) Provide a graphic and/or table showing formation thicknesses. c) Identify and describe any potential gas migration pathways, such as faults, permeable contacts, abandoned wells, underground water or other pipelines. d) Provide a summary and detailed cross-section diagrams of the geologic formations and structures of the oil/gas field or area. e) Provide the first well drilling and production history, abandonment procedures, inspections, etc. f) Describe production zones, including depth, types of formations, and characteristics of field/area.		

g) Describe the existing and proposed storage capacity and limiting factors, such as injection or withdrawal capacities. h) Describe existing simulation studies that were used to predict the reservoir pressure response under gas injection and withdrawal operations, and simulation studies for how the system would change as proposed. Provide the studies as a PEA Appendix. i) Provide the history of the oil/gas field or area.		
3.3.11: Gas Storage Facilities – Well-Head Sites (as Applicable). Describe the location, depth, size and completion information for all existing, abandoned, proposed production and injection, monitoring, and test wells.		
3.3.12: Gas Storage Facilities – Production and Injection (as Applicable) a) Provide the proposed storage capacity of production and injection wells. b) Provide production and injection pressures, depths, and rates. c) Provide production and injection cycles by day, week, and year. d) Describe existing and proposed withdrawal/production wells (i.e., size, depth, formations, etc.). e) Describe existing and proposed cushion gas requirements. f) Describe any cushion gas injection—formation the well is completed in (cushion gas formation), and injection information.		
3.3.13: Gas Storage Facilities – Electrical Energy (as Applicable). Describe all existing and proposed electric lines, telecommunications facilities, and other utilities/facilities (e.g., administrative offices, service buildings, and non-hazardous storage), and chemical storage associated with the proposed project.		
3.3.14: Telecommunication Lines (as Applicable) a) Identify the type of cable that is proposed and length in linear miles by segment. b) Identify any antenna and node facilities that are part of the project. c) For below-ground telecommunication lines, provide the depth of cable and type of conduit. d) For above-ground telecommunication lines, provide: i. Types of poles that will be installed (if new poles are required) ii. Where existing poles will be used iii. Any additional infrastructure (e.g., guy wires) or pole changes required to support the additional cable on existing poles		

3.4 Land Ownership, Rights-of-Way, and Easements

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.4.1: Land Ownership. Describe existing land ownership where each project component would be located. State whether the proposed		

project would be located on property(ies) owned by the Applicant or if additional property would be required.		
3.4.2: Existing Rights-of-Way or Easements a) Identify and describe existing rights-of-way (ROWs) or easements where project components would be located. Provide the approximately lengths and widths in each project area. b) Clearly state if project facilities would be replaced, modified, or relocated within existing ROWs or easements.		
3.4.3: New or Modified Rights-of-Way or Easements a) Describe new permanent or modified ROWs or easements that would be required. Provide the approximately lengths and widths in each project area. b) Describe how any new permanent or modified ROWs or easements would be acquired. c) Provide site plans identifying all properties/parcels and partial properties/parcels that may require acquisition and the anticipated ROWs or easements. Provide associated GIS data. d) Describe any development restrictions within new ROWs or easements, e.g., building clearances and height restrictions, etc. e) Describe any relocation or demolition of commercial or residential property/structures that may be necessary.		
3.4.4: Temporary Rights-of-Way or Easements f) Describe temporary ROWs or easements that would be required to access project areas, including ROWs or easements for temporary construction areas (i.e., staging areas or landing zones). g) Explain where temporary construction areas would be located with existing ROWs or easements for the project or otherwise available to the Applicant without a temporary ROW or easement. h) Describe how any temporary ROWs or easements would be acquired.		

3.5 Construction

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
3.5.1 Construction Access (All Projects)		
3.5.1.1: Existing Access Roads a) Provide the lengths, widths, ownership details (both public and private roads), and surface characteristics (i.e., paved, graveled, bare soil) of existing access roads that would be used during construction. Provide the area of existing roads that would be used (see example in Table 3 below). b) Describe any road modifications or stabilization that would be required prior to construction, including on the adjacent road		

shoulders or slopes. Identify any roads that would be expanded and provide the proposed width increases. c) Describe any procedures to address incidental road damage cause by project activities following construction. d) Provide detailed maps and associated GIS data for all existing access roads.		

Table 3. Access Roads

Type of Road	Description	Area Proposed Project
Existing Dirt Road	Typically double track. May have been graded previously. No other preparation required, although a few sections may need to be re-graded and crushed rock applied in very limited areas for traction.	_____ acres
New Permanent	Would be xx feet wide, bladed. No other preparation required although crushed rock may need to be applied in very limited areas for traction.	_____ acres
Overland Access	No preparation required. Typically grassy areas that are relatively flat. No restoration would be necessary.	_____ acres

3.5.1.2: New Access Roads a) Identify any new access roads that would be developed for project construction purposes, such as where any blading, grading, or gravel placement could occur to provide equipment access outside of a designated workspace.[14] b) Provide lengths, widths, and development methods for new access roads. c) Identify any temporary or permanent gates that would be installed. d) Clearly identify any roads that would be temporary and fully restored following construction. Otherwise it will be assumed the new access road is a permanent feature. e) Provide detailed maps and associated GIS data for all new access roads.		
3.5.1.3: Overland Access Routes a) Identify any overland access routes that would be used during construction, such as where vehicles and equipment would travel over existing vegetation and where blading, grading, or gravel placement would occur. b) Provide lengths and widths for new access roads. c) Provide detailed maps and associated GIS data for all overland access routes.		
3.5.1.4: Watercourse Crossings a) Identify all temporary watercourse crossings that would be required during construction. Provide specific methods and procedures for temporary watercourse crossings.		

[14] Temporary roads that would not require these activities should be considered an overland route.

b) Describe any bridges or culverts that replacement or installation of would be required for construction access. c) Provide details about the location, design and construction methods.		
3.5.1.5: Helicopter Access. If helicopters would be used during construction: a) Describe the types and quantities of helicopters that would be used during construction (e.g., light, medium, heavy, or sky crane), and a description of the activities that each helicopter would be used for. b) Identify areas for helicopter takeoff and landing. c) Describe helicopter refueling procedures and locations. d) Describe flight paths, payloads, and expected hours and durations of helicopter operation. e) Describe any safety procedures or requirements unique to helicopter operations, such as but not limited to obtaining a Congested Area Plan from the Federal Aviation Administration (FAA).		
3.5.2 Staging Areas (All Projects)		
3.5.2.1: Staging Area Locations a) Identify the locations of all staging area(s). Provide a map and GIS data for each.[15] b) Provide the size (in acres) for each staging area and the total staging area requirements for the project.		
3.5.2.2: Staging Area Preparation a) Describe any site preparation required, if known, or generally describe what might be required (i.e., vegetation removal, new access road, installation of rock base, etc.). b) Describe what the staging area would be used for (i.e., material and equipment storage, field office, reporting location for workers, parking area for vehicles and equipment, etc.). c) Describe how the staging area would be secured. Would a fence be installed? If so, describe the type and extent of the fencing. d) Describe how power to the site would be provided if required (i.e., tap into existing distribution, use of diesel generators, etc.). e) Describe any temporary lightning facilities for the site. f) Describe any grading activities and/or slope stabilization issues.		

[15] While not all potential local site staging areas will be known prior to selection of a contractor, it is expected that approximate area and likely locations of staging areas be disclosed. The identification of extra or optional staging areas should be considered to reduce the risk of changes after project approval that could necessitate further CEQA review.

3.5.3 Construction Work Areas (All Projects)		
3.5.3.1: Construction Work Areas a) Describe known work areas that may be required for specific construction activities (e.g., pole assembly, hillside construction)[16] b) Describe the types of activities that would be performed at each work area. Work areas may include but are not necessarily limited to: i. Helicopter landing zones and touchdown areas ii. Vehicle and equipment parking, passing, or turnaround areas iii. Railroad, bridge, or watercourse crossings iv. Temporary work pads for facility installation, modification, or removal v. Excavations and associated equipment work areas vi. Temporary guard structures vii. Pull-and-tension/stringing sites viii. Jack and bore pits, drilling areas and pull-back areas for horizontal directional drills ix. Retaining walls		
3.5.3.2 Work Area Disturbance a) Provide the dimensions of each work area including the maximum area that would be disturbed during construction (e.g., 100 feet by 200 feet) (see example in Table 4 below). b) Provide a table with temporary and permanent disturbance at each work area (in square feet or acres), and the total area of temporary and permanent disturbance for the entire project (in acres).		
3.5.3.3: Temporary Power. Identify how power would be provided at work area (i.e., tap into existing distribution, use of diesel generators, etc.). Provide the disturbance area for any temporary power lines.		
3.5.4 Site Preparation (All Projects)		
3.5.4.1: Surveying and Staking. Describe initial surveying and staking procedures for site preparation and access.		
3.5.4.2: Utilities a) Describe the process for identifying any underground utilities prior to construction (i.e., underground service alerts, etc.). b) Describe the process for relocating any existing overhead or underground utilities that aren't directly connected to the project system. c) Describe the process for installing any temporary power or other utility lines for construction.		

[16] Understanding that each specific work area may not be determined until the final work plan is submitted by the construction contractor, estimate total area likely to be disturbed.

Table 4. Work Areas

	Proposed Project (approximate metrics)
Pole Diameter:	
• Wood	_____ inches
• Self-Supporting Steel	_____inches
Lattice Tower Base Dimension:	
• Self-Supporting Lattice Structure	_____feet
Auger Hole Depth:	
• Wood	_____ to _____ feet
• Self-Supporting Steel	_____ to _____ feet
Permanent Footprint per Pole/Tower:	
• Wood	_____ sq. feet
• Self-Supporting Steel	_____ sq. feet
• Self-Supporting Steel Tower	_____ sq. feet
Number of Poles/Towers:	
• Wood	_____
• Self-Supporting Steel	_____
• Self-Supporting Steel Tower	_____
Average Work Area around Pole/Towers (e.g., for old pole removal and new pole installation):	
• Tangent structure work areas	_____ sq. feet
• Dead End / Angle structure work areas	_____ sq. feet
Total Permanent Footprint for Poles/Towers	Approximately _____ acres

3.5.4.3: Vegetation Clearing a) Describe what types of vegetation clearing may be required (e.g., tree removal, brush removal, flammable fuels removal) and why (e.g., to provide access, etc.). b) Provide calculations of temporary and permanent disturbance of each vegetation community and include all areas of vegetation removal in the GIS database. Distinguish between disturbance that would occur in previously developed areas (i.e., paved, graveled, or otherwise urbanized), and naturally vegetated areas. c) Describe how each type of vegetation removal would be accomplished. d) Describe the types of equipment that would be used for vegetation removal.		
3.5.4.4: Tree Trimming Removal a) For electrical projects, distinguish between tree trimming as required under CPUC General Order 95-D and tree removal. b) Identify the types, locations, approximate numbers, and sizes of trees that may need to be removed or trimmed substantially. c) Identify potentially protected trees that may be removed or substantially trimmed, such as but not limited to riparian trees, oaks trees, Joshua trees, or palm trees.		

d) Describe the types of equipment that would typically be used for tree removal.		
3.5.4.5: Work Area Stabilization. Describe the processes to stabilize temporary work areas and access roads including the materials that would be used (e.g., gravel).		
3.5.4.6: Grading a) Describe any earth moving or substantial grading activities (i.e., grading below a 6-inch depth) that would be required and identify locations where it would occur. b) Provide estimated volumes of grading (in cubic yards) including total cut, total fill, cut that would be reused, cut that would be hauled away, and clean fill that would be hauled to the site.		
3.5.5 Transmission Line Construction (Above Ground)		
3.5.5.1: Poles/Towers a) Describe the process and equipment for removing poles, towers, and associated foundations for the proposed project (where applicable). Describe how they would be disconnected, demolished, and removed from the site. Describe backfilling procedures and where the material would be obtained. b) Describe the process and equipment for installing or otherwise modifying poles and towers for the proposed project. Describe how they would be put into place and connected to the system. Identify any special construction methods (e.g., helicopter installation) at specific locations or specific types of poles/towers. c) Describe how foundations, if any, would be installed. Provide a description of the construction method(s), approximate average depth and diameter of excavation, approximate volume of soil to be excavated, approximate volume of concrete or other backfill required, etc. for foundations. Describe what would be done with soil removed from a hole/foundation site. d) Describe how the poles/towers and associated hardware would be delivered to the site and assembled. e) Describe any pole topping procedures that would occur, identify specific locations and reasons, and describe how each facility would be modified. Describe any special methods that would be required to top poles that may be difficult to access.		
3.5.5.2: Aboveground and Underground Conductor/Cable a) Provide a process-based description of how new conductor/cable would be installed and how old conductor/cable would be removed, if applicable. b) Identify where conductor/cable stringing/installation activities would occur. c) Provide a diagram of the general sequencing and equipment that would be used. d) Describe the conductor/cable splicing process.		

e) Provide the general or average distance between pull-and-tension sites. Describe the approximate dimensions and where pull-and-tension sites would generally be required (as indicated by the designated work areas), such as the approximate distance to pole/tower height ratio, at set distances, or at significant direction changes. Describe the equipment that would be required at these sites. f) For underground conductor/cable installations, describe all specialized construction methods that would be used for installing underground conductor or cable. If vaults are required, provide their dimensions and location/spacing along the alignment. Provide a detailed description for how the vaults would be delivered to the site and installed. g) Describe any safety precautions or areas where special methodology would be required (e.g., crossing roadways, stream crossing).		
3.5.5.3: Telecommunications. Identify the procedures for installation of proposed telecommunication cables and associated infrastructure.		
3.5.5.4: Guard Structures. Identify the types of guard structures that would be used at crossings of utility lines, roads, railroads, highways, etc. Describe the different types of guard structures or methods that may be used (i.e., buried poles and netting, poles secured to a weighted object, bucket trucks, etc.). Describe any pole installation and removal procedures associated with guard structures. Describe guard structure installation and removal process and duration that guard structures would remain in place.		
3.5.5.5: Blasting a) Describe any blasting that may be required to construct the project. b) If blasting may be required, provide a Blasting Plan that identifies the blasting locations; types and amounts of blasting agent to be used at each location; estimated impact radii; and, noise estimates. The Blasting Plan should be provided as an Appendix to the PEA. c) Provide a map identifying the locations where blasting may be required with estimated impact radii. Provide associated GIS data.		
3.5.6 Transmission Line Construction (Below Ground)		
3.5.6.1: Trenching a) Describe the approximate dimensions of the trench (e.g., depth, width). b) Provide the total approximate volume of material to be removed from the trench, the amount to be used as backfill, and any amount to subsequently be removed/disposed of offsite in cubic yards. c) Describe the methods used for making the trench (e.g., saw cutter to cut the pavement, backhoe to remove, etc.). d) Provide off-site disposal location, if known, or describe possible option(s). e) Describe if dewatering would be anticipated and if so, how the trench would be dewatered, the anticipated flows of the water,		

whether there would be treatment, and how the water would be disposed of. f) Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants that could be exposed from trenching operations. g) If a pre-existing hazardous waste were encountered, describe the process of removal and disposal. h) Describe the state of the ground surface after backfilling the trench. i) Describe standard Best Management Practices to be implemented.		
3.5.6.2: Trenchless Techniques (Microtunnel, Jack and Bore, Horizontal Directional Drilling) a) Identify any locations/features for which the Applicant expects to use a trenchless (i.e., microtunneling, jack and bore, horizontal directional drilling) crossing method and which method is planned for each crossing. b) Describe the methodology of the trenchless technique. c) Provide the approximate location and dimensions of the sending and receiving pits. d) Describe the methodology of excavating and shoring the pits. e) Provide the total volume of material to be removed from the pits, the amount to be used as backfill, and the amount subsequently to be removed/disposed of offsite in cubic yards. f) Describe process for safe handling of drilling mud and bore lubricants. g) Describe the process for detecting and avoiding "fracturing-out" during horizontal directional drilling operations. h) Describe the process for avoiding contact between drilling mud/lubricants and stream beds. i) If engineered fill would be used as backfill, indicate the type of engineered backfill and the amount that would be typically used (e.g., the top 2 feet would be filled with thermal-select backfill). j) Describe if dewatering is anticipated and, if so, how the pits would be dewatered, the anticipated flows of the water, whether there would there be treatment, and how the water would be disposed of. k) Describe the process for testing excavated soil or groundwater for the presence of pre-existing environmental contaminants. Describe the process of disposing of any pre-existing hazardous waste that is encountered during excavation. l) Describe any standard BMPs that would be implemented for trenchless construction.		
3.5.7 Substation, Switching Stations, Gas Compressor Stations		
3.5.7.1: Installation or Facility Modification. Describe the process and equipment for removing, installing, or modifying any substations, switching stations, or compressor stations including: a) Transformers/ electric components b) Gas components c) Control and operation buildings d) Driveways		

e) Fences f) Gates g) Communication systems (SCADA) h) Grounding systems		
3.5.7.2: Civil Works. Describe the process and equipment required to construct any slope stabilization, drainage, retention basins, and spill containment required for the facility.		
3.5.8 Gas Pipelines		
3.5.8.1: Gas Pipeline Construction. Describe the process for proposed pipeline construction including site development, trenching and trenchless techniques, pipe installation, and backfilling.		
3.5.8.2: Water Crossings. Describe water feature crossings that will occur during trenching, the method of trenching through stream crossings, and the process for avoiding impacts to the water features required for pipeline construction. Identify all locations where the pipeline will cross water features. Cite to any associated geotechnical or hydrological investigations completed and provide a full copy of each report as an Appendix to the PEA.[17]		
3.5.8.3: Gas Pipeline Other Requirements a) Describe hydrostatic testing process including pressures, timing, source of flushing water, discharge of water. b) Describe energy dissipation basin, and the size and length of segments to be tested. c) Describe pig launching locations and any inline inspection techniques used during or immediately post construction.		
3.5.9 Gas Storage Facilities		
3.5.9.1: Gas Storage Construction a) Describe the process for constructing the gas storage facility including constructing well pads and drilling wells. b) Describe the specific construction equipment that would be used, such as the type of drill rig (i.e., size, diesel, electric, etc.), depth of drilling, well-drilling schedule and equipment.		
3.5.9.2: Drilling Muds and Fluids. Describe the use of any drilling muds, fluids, and other drilling materials. Provided estimated types and quantities.		
3.5.10 Public Safety and Traffic Control (All Projects)		
3.5.10.1: Public Safety a) Describe specific public safety considerations during construction and best management practices to appropriately manage public safety. Clearly state when and where they each safety measure would be applied.		

[17] If a geotechnical study is not available at the time of PEA filing, provide the best information available.

b) Identify procedures for managing work sites in urban areas, covering open excavations securely, installing barriers, installing guard structures, etc. c) Identify specific project areas where public access may be restricted for safety purposes and provide the approximate durations and timing of restricted access at each location.		
3.5.10.2: Traffic Control a) Describe traffic control procedures that would be implemented during construction. b) Identify the locations, process, and timing for closing any sidewalks, lanes, roads, trails, paths, or driveways to manage public access. c) Identify temporary detour routes and locations. d) Provide a preliminary Traffic Control Plan(s) for the project.		
3.5.10.3: Security. Describe any security measures, such as fencing, lighting, alarms, etc. that may be required. State if security personnel will be stationed at project areas and anticipated duration of security.		
3.5.10.4: Livestock. Describe any livestock fencing or guards that may be necessary to prevent livestock from entering project areas. State if the fencing would be electrified and if so, how it would be powered.		
3.5.11 Dust, Erosion, and Runoff Controls (All Projects)		
3.5.11.1: Dust. Describe specific best management practices that would be implemented to manage fugitive dust.		
3.5.11.2: Erosion. Describe specific best management practices that would be implemented to manage erosion.		
3.5.11.3: Runoff. Describe specific best management practices that would be implemented to manage stormwater runoff and sediment.		
3.5.12 Water Use and Dewatering (All Projects)		
3.5.12.1: Water Use. Describe the estimated volumes of water that would be used by construction activity (e.g., dust control, compaction, etc.). State if recycled or reclaimed water would be used and provide estimated volumes. Identify the anticipated sources where the water would be acquired or purchased. Identify if the source of water is groundwater and the quantity of groundwater that could be used.		
3.5.12.2: Dewatering a) Describe dewatering procedures during construction, including pumping, storing, testing, permitted discharging, and disposal requirements that would be followed. b) Describe the types of equipment and workspace considerations to be used to dewater, store, transport, or discharge extracted water.		
3.5.13 Hazardous Materials and Management (All Projects)		
3.5.13.1: Hazardous Materials a) Describe the types, uses, and volumes of all hazardous materials that would be used during construction. b) State if herbicides or pesticides may be used during construction.		

c) If a pre-existing hazardous waste were encountered, describe the process of removal and disposal.		
3.5.13.2: Hazardous Materials Management a) Identify specific best management practices that would be followed for transporting, storing, and handling hazardous materials. b) Identify specific best management practices that would be followed in the event of an incidental leak or spill of hazardous materials. c) Provide a Hazardous Substance Control and Emergency Response Plan / Hazardous Waste and Spill Prevention Plan as an Appendix to the PEA, if appropriate.		
3.5.14 Waste Generation and Management (All Projects)		
3.5.14.1: Solid Waste a) Describe solid waste streams from existing and proposed facilities during construction. b) Identify procedures to be implemented to manage solid waste, including collection, containment, storage, treatment, and disposal. c) Provide estimated total volumes of solid waste by construction activity or project component. d) Describe the recycling potential of solid waste materials and provide estimated volumes of recyclable materials by construction activity or project component. e) Identify the locations of appropriate disposal and recycling facilities where solid wastes would be transported.		
3.5.14.2: Liquid Waste a) Describe liquid waste streams during construction (i.e., sanitary waste, drilling fluids, contaminated water, etc.) b) Describe procedures to be implemented to manage liquid waste, including collection, containment, storage, treatment, and disposal. c) Provide estimated volumes of liquid waste generated by construction activity or project component. d) Identify the locations of appropriate disposal facilities where liquid wastes would be transported.		
3.5.14.3: Hazardous Waste a) Describe potentially hazardous waste streams during construction and procedures to be implemented to manage hazardous wastes, including collection, containment, storage, treatment, and disposal. b) If large volumes of hazardous waste are anticipated, such as from a pre-existing contaminant in the soil that must be collected and disposed of, provide estimated volumes of hazardous waste that would be generated by construction activity or project component. c) Identify the locations of appropriate disposal facilities where hazardous wastes would be transported.		
3.5.15 Fire Prevention and Response (All Projects)		
3.5.15.1: Fire Prevention and Response Procedures. Describe fire prevention and response procedures that would be implemented during		

construction. Provide a Construction Fire Prevention Plan or specific procedures as an Appendix to the PEA.		
3.5.15.2: Fire Breaks. Identify any fire breaks (i.e., vegetation clearance) requirements around specific project activities (i.e., hot work). Ensure that such clearance buffers are included in the limits of the defined work areas, and the vegetation removal in that area is attributed to Fire Prevention and Response (refer to 3.5.4.3: Vegetation Clearing).		

3.6 Construction Workforce, Equipment, Traffic, and Schedule

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
3.6.1: Construction Workforce a) Provide the estimated number of construction crew members. In the absence of project-specific data, provide estimates based on past projects of a similar size and type. b) Describe the crew deployment. Would crews work concurrently (i.e., multiple crews at different sites); would they be phased? How many crews could be working at the same time and where? c) Describe the different types of activities to be undertaken during construction, the number of crew members for each activity (i.e. trenching, grading, etc.), and number and types of equipment expected to be used for the activity. Include a written description of the activity. See example in Table 5.		
3.6.2: Construction Equipment. Provide a tabular list of the types of equipment expected to be used during construction of the proposed project including the horsepower. Define the equipment that would be used by each phase as shown in the example table below (Table 5).		

Table 5. Construction Equipment and Workforce

Work Activity				Activity Production				
Equipment Description	Estimated Horse-power	Probable Fuel Type	Equipment Quantity	Estimated Workforce	Estimated Start Date	Estimated End Date	Duration of Use (Hrs./Day)	Estimated Production
Survey				**4**	**January 2020**	**December 2020**		**358 Miles**
1-Ton Truck, 4x4	300	Diesel	2		January 2020	December 2020	10	1 Mile/Day
Staging Yards				**5**	**DOP**			
1-Ton Truck, 4x4	300	Diesel	1		Duration of Project		4	
R/T Forklift	350	Diesel	1				5	
Boom/Crane Truck	350	Diesel	1				5	
Water Truck	300	Diesel	2				10	
Jet A Fuel Truck	300	Diesel	1				4	
Truck, Semi-Tractor	500	Diesel	1				6	
Road Work				**6**	**January 2020**	**March 2020**		**426 Miles**
1-Ton Truck, 4x4	300	Diesel	2		January 2020	March 2020	5	
Backhoe/Front Loader	350	Diesel	1		January 2020	March 2020	7	
Track Type Dozer	350	Diesel	1		January 2020	March 2020	7	
Motor Grader	350	Diesel	1		January 2020	March 2020	5	
Water Truck	300	Diesel	2		January 2020	March 2020	10	
Drum Type Compactor	250	Diesel	1		January 2020	March 2020	5	
Excavator	300	Diesel	1		January 2020	February 2020	7	
Lowboy Truck/Trailer	500	Diesel	1		January 2020	February 2020	4	

3.6.3: Construction Traffic a) Describe how the construction crews and their equipment would be transported to and from the proposed project site. b) Provide vehicle type, number of vehicles, and estimated hours of operation per day, week, and month for each construction activity and phase. c) Provide estimated vehicle trips and vehicles miles traveled (VMT) for each construction activity and phase. Provide separate values for construction crews commuting, haul trips, and other types of construction traffic.		
3.6.4: Construction Schedule a) Provide the proposed construction schedule (e.g., month and year) for each segment or project component, and for each construction activity and phase. b) Provide and explain the sequencing of construction activities, and if they would or would not occur concurrently. c) Provide the total duration of each construction activity and phase in days or weeks. d) Identify seasonal considerations that may affect the construction schedule, such as weather or anticipated wildlife restrictions, etc. The proposed construction should account for such factors.		
3.6.5: Work Schedule a) Describe the anticipated work schedule, including the days of the week and hours of the day when work would occur. Clearly state if work would occur at night or on weekends and identify when and where this could occur. b) Provide the estimated number of days or weeks that construction activities would occur at each type of work area. For example, construction at a stationary facility or staging area may occur for the entire duration of construction, but construction at individual work areas along a linear project would be limited to a few hours, days or weeks, and only a fraction of the total construction period.		

3.7 Post-Construction

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.7.1: Configuring and Testing. Describe the process and duration for post-construction configuring and testing of facilities. Describe the number of personnel and types of equipment that would be involved.		
3.7.2: Landscaping. Describe any landscaping that would be installed. Provide a conceptual landscape plan that identifies the locations and types of plantings that will be used. Identify whether plantings will include container plants or seeds. Include any water required for landscaping in the description of water use above.		

3.7.3 Demobilization and Site Restoration		
3.7.3.1: Demobilization. Describe the process for demobilization after construction activities, but prior to leaving the work site. For example, describe final processes for removing stationary equipment and materials, etc.		
3.7.3.2: Site Restoration. Describe how cleanup and post-construction restoration would be performed (i.e., personnel, equipment, and methods) on all project ROWs, sites, and extra work areas. Things to consider include, but are not limited to, restoration of the following: a) Restoring natural drainage patterns b) Recontouring disturbed soil c) Removing construction debris d) Vegetation e) Permanent and semi-permanent erosion control measures f) Restoration of all disturbed areas and access roads, including restoration of any public trails that are used as access, as well as any damaged sidewalks, agricultural infrastructure, or landscaping, etc. g) Road repaving and striping, including proposed timing of road restoration for underground construction within public roadways		

3.8 Operation and Maintenance

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.8.1: Regulations and Standards a) Identify and describe all regulations and standards applicable to operation and maintenance of project facilities. b) Provide a copy of any applicable Wildfire Management Plan and describe any special procedures for wildfire management.		
3.8.2: System Controls and Operation Staff a) Describe the systems and methods that the Applicant would use for monitoring and control of project facilities (e.g., on-site control rooms, remote facilities, standard monitoring and protection equipment, pressure sensors, automatic shut-off valves, and site and equipment specific for monitoring and control such as at natural gas well pads). b) If new full-time staff would be required for operation and/or maintenance, provide the number of positions and purpose.		
3.8.3: Inspection Programs a) Describe the existing and proposed inspection programs for each project component, including the type, frequency, and timing of scheduled inspections (i.e., aerial inspection, ground inspection, pipeline inline inspections). b) Describe any enhanced inspections, such as within any High Fire Threat Districts consistent with applicable Wildfire Management Plan requirements.		

c) Describe the inspection processes, such as the methods, number of crew members, and how access would occur (i.e., walk, vehicle, all-terrain vehicle, helicopter, drone, etc.). If new access would be required, describe any restoration that would be provided for the access roads.		
3.8.4: Maintenance Programs a) Describe the existing and proposed maintenance programs for each project component. b) Describe scheduled maintenance or facility replacement after the designated lifespan of the equipment. c) Identify typical parts and materials that require regular maintenance and describe the repair procedures. d) Describe any access road maintenance that would occur. e) Describe maintenance for surface or color treatment. f) Describe cathodic protection maintenance that would occur. g) Describe ongoing landscaping maintenance that would occur.		
3.8.5: Vegetation Management Programs a) Describe vegetation management programs within and surrounding project facilities. Distinguish between any different types of vegetation management. b) Describe any enhanced vegetation management, such as within any High Fire Threat Districts consistent with any applicable Wildfire Management Plan requirements. Identify the areas where enhanced vegetation management would be conducted.		

3.9 Decommissioning

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.9.1: Decommissioning. Provide detailed information about the current and reasonably foreseeable plans for the disposal, recycling, or future abandonment of all project facilities.		

3.10 Anticipated Permits and Approvals

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.10.1: Anticipated Permits and Approvals. Identify all necessary federal, state, regional, and local permits that may be required for the project. For each permit, list the responsible agency and district/office representative with contact information, type of permit or approval, and status of each permit with date filed or planned to file. For example: a) Federal Permits and Approvals i. U.S. Fish and Wildlife Service ii. U.S. Army Corps of Engineers iii. Federal Aviation Administration iv. U.S. Forest Service		

v. U.S. Department of Transportation – Office of Pipeline Safety vi. U.S. Environmental Protection Agency (Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation, and Liability Act) b) State and Regional Permits i. California Department of Fish and Wildlife ii. California Department of Transportation iii. California State Lands Commission iv. California Coastal Commission v. State Historic Preservation Office, Native American Heritage Commission vi. State Water Resources Control Board vii. California Division of Oil, Gas and Geothermal Resources viii. Regional Air Quality Management District ix. Regional Water Quality Control Board (National Pollutant Discharge Elimination System General Industrial Storm Water Discharge Permit) x. Habitat Conservation Plan Authority (if applicable) See also Table 6 of example permitting requirements and processes.		
3.10.2: Rights-of-Way or Easement Applications. Demonstrate that applications for ROWs or other proposed land use have been or soon will be filed with federal, state, or other land-managing agencies that have jurisdiction over land that would be affected by the project (if any). Discuss permitting plans and timeframes and provide the contact information at the federal agency(ies) approached.		

3.11 Applicant Proposed Measures

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.11 Applicant Proposed Measures a) Provide a table with the full text of any Applicant Proposed Measure. Where applicable, provide a copy of Applicant procedures, plans, and standards referenced in the Applicant Proposed Measures. b) Within Chapter 5, describe the basis for selecting a particular Applicant Proposed Measure and how the Applicant Proposed Measure would reduce the impacts of the project.[18] c) Carefully consider each CPUC Draft Environmental Measure identified in Chapter 5 of this PEA Checklist. The CPUC Draft Environmental Measures will be applied to the proposed project where applicable.		

[18] Applicant Proposed Measures that use phrases, such as, "as practicable" or other conditional language are not acceptable and will be superseded by Mitigation Measures if required to avoid or reduce a potentially significant impact.

Table 6. Example Permitting Requirements and Processes

Note: In addition to the CPCN or PTC, the applicant may also be required to secure resource agency permits for the project.

Disclaimer: Below is a general list of permits required for transmission projects. Permit requirements for individual projects may vary slightly depending on project conditions.

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
				Federal		
Army Corps of Engineers	404 Permit	Clean Water Act	Waters of the United States (including wetlands)	Placement of dredge or fill material into waters of the U.S., including wetlands. If project impacts less than 0.5 acres a **nationwide permit (NWP)** is typically issued	**NWP:** prepare a preconstruction notification (PCN) along with the draft Corps's application (Engineer Form 4345). Information in the PCN includes, but is not limited to: results of wetland delineation including areas of waters of the U.S.; temporary and permanent impacts to waters of the U.S. and discussion of avoidance; construction techniques, timeline, and equipment that would be used; special status species that potentially occur in the project area, and discussion of mitigation (if applicable) to replace wetlands	**NWP:** takes approximately nine months from the date of application submittal (depending on level of impacts and level of consultation required by other agencies). Initial review is 30 days after which application is deemed complete or additional information is requested.
				If project would impact more than 0.5 acres a **regional or individual permit** may be required.	**Regional or Individual Permit:** Same requirements as NWP as well as preparation and submittal of 404(b)(1) Alternatives analysis which identifies the Least Environmentally Damaging Practicable Alternative (LEDPA). Public notice also required	**Regional or Individual Permit:** An additional three to six months may be required on top of the nine months expected for an NWP. A 30 day public notice is also required to inform the public about the project before the Corps issues the permit.
USFWS	Section 7 Consultation	Federal Endangered Species Act	Federally Listed Species	Potential impact to a federally listed threatened or endangered species	Biological Assessment (BA) prepared and submitted to Corps. BA contains information on each species and describes potential for "take" of species and/or habitat.	The timeline for processing and receiving a formal **Biological Opinion (BO)** from USFWS can be six months to a year from when the Corps has initiated consultation and depending on the level of impact to listed species. The typical timeline for issuance of a BO is no less than 135 days after acceptance of the BA as complete.
US Department of Agriculture, Forest Service	Special Use Authorization	National Forest Management Act/NEPA	National Forest lands	Use of federal lands managed by the USDA Forest Service for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis.	**Special Use Authorization Application:** prepare a special use application for consideration by the Forest Service. Prior to submitting a proposal, applicant is required to arrange a preapplicaiton meeting at the local Forest Service office. Application typically includes project plan, operating plans, liability insurance, licenses/registrations and other documents. If it is determined that NEPA is required either an EA or EIS would be prepared. The NEPA document may be prepared jointly with the CEQA document.	Revies of Special Use Authorization applications is often dependent upon what level of NEPA analysis is required. An EA is typically 9-12 months, and EIS is generally 18 months. NEPA process may occur concurrently with CEQA process.
US Department of the Interior, Bureau of Land Management	Right-of-Way Grant	Federal Land Policy and Management Act/NEPA	Federal Lands	Use of federal lands managed by the BLM for a transmission line. Typically constitutes a Major Federal Action which in turn triggers NEPA analysis.	**Right-of-Way Application**: Contact the BLM office with management responsibility. Obtain an application form "Application for Transportation and Utility Systems and Facilities on Federal Lands". Arrange a pre-application meeting with a BLM Realty Specialist or appropriate staff member. Submit completed application to the appropriate BLM office. If it is determined that NEPA is required either an EA or EIS would be prepared. The NEPA document may be prepared jointly with the CEQA document.	BLM attempts to review completed applications within 60 days of submittal. Full timing is often dependent upon what level of NEPA analysis is required. An EA is typically 9-12 months, and EIS is generally 18 months. NEPA process may occur concurrently with CEQA process.

Agency	Permit	Regulation	Protected Resource	Trigger	Application Process	Timing
			State (continued)			
State Historic Preservation Officer (SHPO)	Section 106 National Historic Preservation Act (NHPA)	National Historic Preservation Act	Cultural and/or historical resources	Required if there are potential impacts to cultural and/or historical resources that are listed or eligible for listing on the National Register of Historic Places.	Information on cultural and historical resources gathered during the draft CEQA document preparation is included in a 106 Technical Report and submitted to the Corps along with the Area of Potential Effect (APE) map. The information is then evaluated by the Corps' cultural resources evaluator for potential adverse effects within the APE. Depending upon the level of potential adverse effect, the Corps then forwards its finding to SHPO for concurrence or begins the process for a Memorandum of Agreement (MOA). Native American consultation is also mandatory for the 106 process but can begin during preparation of the environmental document. All letters and correspondence for the Native American consultation must be provided to the Corps.Consultation with federally-recongized tribes may require a more extensive consultation.	Once SHPO has received the Corps' determination, it has approximately 60 days to agree or request additional information. However, SHPO has recently become more involved in projects and this timeframe is only an estimate and if a potential adverse effect to cultural or historical resources could occur, the SHPO process can take up to a year or more. Depending on the level of impacts to cultural resources, the Corps may determine no effect and issue the permit before receiving concurrence from SHPO.
California State Lands Commission (CSLC)	Right of Way Lease Agreement	Division 6 of the California Public Resources Code	California Sovereign Lands	May be triggered if the transmission line crosses state lands under the jurisdiction of the CSLC, which includes the beds of 1) more than 120 rivers, streams and sloughs; 2) nearly 40 non-tidal navigable lakes, such as Lake Tahoe and Clear Lake; 3) the tidal navigable bays and lagoons; and 4) the tide and submerged lands adjacent to the entire coast and offshore islands of the State from the mean high tide line to three nautical miles offshore.	Leases or permits may be issued to qualified applicants and the Commission shall have broad discretion in all aspects of leasing including category of lease or permit and which use, method or amount of rental is most appropriate, whether competitive bidding should be used in awarding a lease, what term should apply, how rental should be adjusted during the term, whether bonding and insurance should be required and in what amounts, whether an applicant is qualified based on what it deems to be in the best interest of the State.	Most coordination should be done concurrently with the CEQA process to ensure that any CSLC-required issues are addressed under CEQA. Once a final route/alternative is selected, the lease process may take two to three months for final Commission approval.
			Local / Other			
Air Quality Management District or Air Pollution Control District	Permit to Construct	Federal Clean Air Act	Air Quality	Depends on the air disctrict involved; may not be required for most transmission projects. Some air districts have a trigger level based on disturbed acreage.	Application forms need to be prepared and submiited to the local AQMD or APCD	Typically 30 to 90 days after submittal of a complete application.

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[19] Permitting is project specific. This table is provided for discussion purposes.

3.12 Project Description Graphics, Mapbook, and GIS Requirements

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
3.12.1: Graphics. Provide diagrams of the following as applicable: a) All pole, tower, pipe, vault, conduit, and retaining wall types b) For poles, provide typical drawings with approximate diameter at the base and tip; for towers, estimate the width at base and top. c) A typical detail for any proposed underground duct banks and vaults d) All substation, switchyard, building, and facility layouts e) Trenching, drilling, pole installation, pipe installation, vault installation, roadway construction, facility removal, helicopter uses, conductor installation, traffic control, and other construction activities where a diagram would assist the reader in visualizing the work area and construction approach f) Typical profile views of proposed aboveground facilities and existing facilities to be modified within the existing and proposed ROW (e.g., typical cross-section of existing and proposed facilities by project segment). g) Photos of representative existing and proposed structures		
3.12.2: Mapbook. Provide a detailed mapbook on an aerial imagery basemap at a scale between 1:3000 and 1:6000 (or as appropriate and legible) that show mileposts, roadways, and all project components and work areas including: a) All proposed above-ground and underground structure/facility locations (e.g., poles, conductor, substations, compressor stations, telecommunication lines, vaults, duct bank, lighting, markers, etc.) b) All existing structures/facilities that would be modified or removed c) Identify by milepost where existing ROW will be used and where new ROW or land acquisition will be required. d) All permanent work areas including permanent facility access e) All access roads including, existing, temporary, and new permanent access f) All temporary work areas including staging, material storage, field offices, material laydown, temporary work areas for above ground (e.g., pole installation) and underground facility construction (e.g., trenching and duct banks), helicopter landing zones, pull and tension sites, guard structures, shoo flys etc. g) Areas where special construction methods (e.g., jack and bore, HDD, blasting, retaining walls etc.) may need to be employed		

h) Areas where vegetation removal may occur i) Areas to be heavily graded and where slope stabilization measures would be employed including any retaining walls		
3.12.3: GIS Data. Provide GIS data for all features and ROW shown on the detailed mapbook.		
3.12.4: GIS Requirements. Provide the following information for each pole/tower that would be installed and for each pole/tower that would be removed: a) Unique ID number and type of pole (e.g., wood, steel, etc.) or tower (e.g., self-supporting lattice) both in a table and in the attributes of the GIS data provided b) Identify pole/tower heights and conductor sizes in the attributes of the GIS data provided.		
3.12.5: Natural Gas Facilities GIS Data. For natural gas facilities, provide GIS data for system cross ties and all laterals/taps, valve stations, and new and existing inspection facilities (e.g., pig launcher sites).		

4 Description of Alternatives

All Applicants will assume that alternatives will be required for the environmental analysis and that an EIR will be prepared unless otherwise instructed by CPUC CEQA Unit Staff in writing prior to application filing. See PEA Requirements at the beginning of this checklist document. The consideration and discussion of alternatives will adhere to CEQA Guidelines Section 15126.6. The description of alternatives will be provided in this chapter of the PEA, and the comparison of each alternative to the proposed project is provided in PEA Chapter 6. The amount of detail required for the description of various alternatives to the proposed project and what may be considered a reasonable range of alternatives will be discussed with CPUC during Pre-filing.

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
4.1 Alternatives Considered. Identify alternatives to the proposed project.[20] Include the following: a) All alternatives to the proposed project that were suggested, considered, or studied by the CAISO or by CAISO stakeholders b) Alternatives suggested by the public or agencies during public outreach efforts conducted by the Applicant c) Reduced footprint alternatives, including, e.g., smaller diameter pipelines and space for fewer electric transformers d) Project phasing options (e.g., evaluate the full build out for environmental clearance but consider an initial, smaller buildout that would only be expanded [in phases] if needed) e) Alternative facility and construction activity sites (e.g., substation, compressor station, drilling sites, well-head sites, staging areas) f) Renewable, energy conservation, energy efficiency, demand response, distributed energy resources, and energy storage alternatives g) Alternatives that would avoid or limit the construction of new transmission-voltage facilities or new gas transmission pipelines h) Other technological alternatives (e.g., conductor type) i) Route alternatives and route variations j) Alternative engineering or technological approaches (e.g., alternative types of facilities, or materials, or configurations) k) Assign an identification label and brief, descriptive title to each alternative described in this PEA chapter (e.g., Alternative A: No Project; Alterative B: Reduced Footprint 500/115-kV Substation; Alternative C: Ringo Hills 16-inch Pipeline Alignment; Alternative D1: Lincoln Street Route Variation; etc.). Each alternative will be easily identifiable by reading the brief title. Provide a description of each alternative. The description of each alternative will discuss to what extent it would be potentially feasible,		

[20] Reduced footprint alternatives; siting alternatives; renewable, energy conservation, energy efficiency, demand response, distributed energy resources, and energy storage alternatives; and non-wires alternatives (electric projects only) are typically required. For linear projects, route alternatives and route variations are typically required as well.

meet the project's underlying purpose, meet most of the basic project objectives, and avoid or reduce one or more potentially significant impacts. If the Applicant believes that an alternative is infeasible or the implementation is remote and speculative (CEQA Guidelines Section 15126.6(f)(3), clearly explain why. If significant environmental effects are possible without mitigation, alternatives will be provided in the PEA that are capable of avoiding or reducing any potentially significant environmental effects, even if the alternative(s) substantially impede the attainment of some project objectives or are costlier.[21]		
4.2 No Project Alternative. Include a thorough description of the No Project Alternative. The No Project Alternative needs to describe the range of actions that are reasonably foreseeable if the proposed project is not approved. The No Project Alternative will be described to meet the requirements of CEQA Guidelines Section15126.6(e).		
4.3 Rejected Alternatives. Provide a detailed discussion of all alternatives considered by the Applicant that were not selected by the Applicant for a full description in the PEA and analysis in PEA Chapter 5. The detailed discussion will include the following: a) Description of the alternative and its components b) Map of any alternative sites or routes c) Discussion about the extent to which the alternative would meet the underlying purpose of the project and its basic objectives d) Discussion about the feasibility of implementing the alternative e) Discussion of whether the alternative would reduce or avoid any significant environmental impacts of the proposed project f) Discussion of any new significant impacts that could occur from implementation of the alternative g) Description of why the alternative was rejected h) Any comments from the public or agencies about the alternative during PEA preparation		
For Natural Gas Storage Projects:		
4.4 Natural Gas Storage Alternatives. In addition to the requirements included above, alternatives to be considered for proposed natural gas storage projects include the following, where applicable: a) Alternative reservoir locations considered for gas storage including other field locations and other potential storage areas b) Alternative pipelines, road, and utility siting c) Alternative suction gas requirements, and injection/withdrawal options		

[21] CPUC CEQA Unit Staff will determine whether an alternative could *substantially* reduce one or more potentially significant impacts of the proposed project (CEQA Guidelines Section 15125.5). Applicants are strongly advised to provide more rather than less alternatives for CPUC's consideration or as determined during Pre-filing.

5 Environmental Analysis

Include a description of the environmental setting, regulatory setting, and impact analysis for each resource area. The resource areas addressed will include each environmental factor (resource area) identified in the most recent adopted version of the CEQA Guidelines Appendix G checklist and any additional relevant resource areas and impact questions that are defined in this PEA checklist.

1. Environmental Setting
    a. For each resource area, the PEA will include a detailed description of the natural and built environment in the vicinity of the proposed project area (e.g., topography, land use patterns, biological environment, etc.) as applicable to the resource area. Both regional and local environmental setting information will be provided.
    b. All setting information provided will relate in some way to the impacts of the proposed project discussed in the PEA's impacts analysis, however CPUC's impacts analysis may be more thorough, which may necessitate additional setting information than the Applicant might otherwise provide.
2. Regulatory Setting
    a. Organized by federal, State, regional, and local sections
    b. Describe the policy or regulation and briefly explain why it is applicable to the proposed project.
        i. Identify in the setting all laws, regulations, and policies that would be applicable for CPUC's exclusive jurisdiction over the siting and design of electric and gas facilities. Public utilities under CPUC's jurisdiction are expected to consult with local agencies regarding land use matters. Local laws, regulations, and policies will be considered for the consideration of potential impacts during CPUC's CEQA review (e.g., encroachment, grading, erosion control, scenic corridors, overhead line undergrounding, tree removal, fire protection, permanent and temporary noise limits, zoning requirements, general plan polices, and all local and regional laws, regulations, and policies).
3. Impact Questions
    a. Includes all impact questions in the current version of CEQA Guidelines, Appendix G.
    b. Additional impact questions that are frequently relevant to utility projects are provided in Attachment 4, CPUC Draft Environmental Measures.
4. Impact Analyses
    a. Discussion organized by CEQA Guidelines, Appendix G impact items and any Additional CEQA Impact Questions in the PEA Checklist. Assess all potential environmental impacts and make determinations, such as, No Impact, Less than Significant, Less than Significant with Mitigation, Significant and Unavoidable, or Beneficial Impact with respect to construction, operations, and maintenance activities.
    b. The impact analyses provided in PEA Chapter 5, Environmental Analysis, need not be as thorough as those to be prepared by CPUC for the CEQA environmental document. A preliminary determination will be provided but with only brief justification unless otherwise directed by CPUC Staff in writing during Pre-filing.
5. CPUC Draft Environmental Measures
    a. CPUC Draft Environmental Measures are provided for some of the resource areas in Attachment 4, CPUC Draft Environmental Measures. The measures may be applied to the proposed project as written or modified by the CPUC during its environmental review if the measure would avoid or reduce a potentially significant impact.

b. The CPUC Draft Environmental Measures should be discussed with the CPUC's CEQA Unit Staff during Pre-filing, especially with respect to the development of Applicant Proposed Measures.
c. In general, impact avoidance is preferred to the reduction of potentially significant impacts.

Additional requirements specific to each resource area are identified in the following sections.

5.1 Aesthetics

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.1.1 Environmental Setting		
5.1.1.1: Landscape Setting. Briefly described the regional and local landscape setting.		
5.1.1.2: Scenic Resources. Identify and describe any vistas, scenic highways, national scenic areas, or other scenic resources within and surrounding the project area (approximately 5-mile buffer but may be greater if necessary). Scenic resources may also include but are not limited to historic structures, trees, or other resources that contribute to the scenic values where the project would be located.		
5.1.1.3: Viewshed Analysis a) Conduct a viewshed analysis for the project area (approximately 5-mile buffer but may be greater if necessary). b) Describe the project viewshed, including important visibility characteristics for the project site, such as viewing distance, viewing angle, and intervening topography, vegetation, or structures. c) Provide a supporting map (or maps) showing project area, landscape units, topography (i.e., hillshade), and the results of the viewshed analysis. Provide associated GIS data.		
5.1.1.4: Landscape Units. Identify and describe landscape units (geographic zones) within and surrounding the project area (approximately 5-mile buffer but may be greater if necessary) that categorizes different landscape types and visual characteristics, with consideration to topography, vegetation, and existing land uses. Landscape units should be developed based on the existing landscape characteristics rather than the project's features or segments.		
5.1.1.5: Viewers and Viewer Sensitivity. Identify and described the types of viewers expected within the viewshed and landscape units. Describe visual sensitivity to general visual change based on viewing conditions, use of the area, feedback from the public about the project, and landscape characteristics.		

5.1.1.6: Representative Viewpoints a) Identify representative viewpoints from publicly accessible locations (up to approximately 5-mile buffer but may be greater if appropriate). The number and location of the viewpoints must represent a range of views of the project site from major roads, highways, trails, parks, vistas, landmarks, and other scenic resources near the project site. Multiple viewpoints should be included where the project site would be visible from sensitive scenic resources to provide context on different viewing distances, perspectives, and directions. b) Provide the following information for each viewpoint: i. Number, title, and brief description of the location ii. Types of viewers iii. Viewing direction(s) and distance(s) to the nearest proposed project features iv. Description of the existing visual conditions and visibility of the project site as seen from the viewpoint and shown in the representative photographs c) Provide a supporting map (or maps) showing project features and representative viewpoints with arrows indicating the viewing direction(s). Provide associated GIS data (may be combined with GIS data request below for representative photographs).		
5.1.1.7: Representative Photographs a) Provide high resolution photographs taken from the representative viewpoints in the directions of all proposed project features.[22] Multiple photographs should be provided where project features may be visible in different viewing directions from the same location. b) Provide the following information for each photograph: i. Capture time and date ii. Camera body and lens model iii. Lens focal length and camera height when taken c) Provide GIS data associated with each photograph location that includes coordinates (<1 meter resolution), elevations, and viewing directions, as well as the associated viewpoint.		
5.1.1.8: Visual Resource Management Areas a) Identify any visual resource management areas within and surrounding the project area (approximately 5-mile buffer). b) Describe any project areas within visual resource management areas.		

[22] All representative photographs should be taken using a digital single-lens reflex camera with standard 50-millimeter lens equivalent, which represents an approximately 40-degree horizontal view angle. The precise photograph coordinates and elevations should be collected using a high accuracy GPS unit.

c) Provide a supporting map (or maps) showing project features and visual resource management areas. Provide associated GIS data.		
5.1.2 Regulatory Setting		
5.1.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding aesthetics and visual resource management.		
5.1.3 Impact Questions		
5.1.3.1: Impact Questions. The impact questions include all aesthetic impact questions in the current version of CEQA Guidelines, Appendix G. **5.1.3.2:** Additional CEQA Impact Questions: None.		
5.1.4 Impact Analysis		
5.1.4.1: Visual Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.		
The following information will be included in the PEA or a technical Appendix to support the aesthetic impact analysis:		
5.1.4.2: Analysis of Selected Viewpoints. Identify the methodology and assumptions that were applied in selecting key observation points for visual simulation. It is recommended that viewpoints are selected where viewers may be sensitive to visual change (public views) and in areas that are visually sensitive, or heavily trafficked or visited.[23]		
5.1.4.3: Visual Simulation a) Identify methodology and assumptions for completing the visual simulations. The simulations should include photorealistic 3-D models of project features and any land changes within the KOP view. The visual simulations should depict conditions: i. Immediately following construction, and ii. After vegetation establishment in all areas of temporary impact to illustrate the visual impact from vegetation removal. b) Provide high resolution images for the visual simulations.		
5.1.4.4: Analysis of Visual Change a) Identify the methodology and assumptions for completing the visual change analysis.[24] The methodology should be consistent with applicable visual resource management criteria. b) Provide a description of the visual change for each selected viewpoint. Describe any conditions that would change over time, such as vegetation growth.		

[23] The KOP selection process should be discussed with CPUC during Pre-filing
[24] The visual impact assessment methodology should be discussed with CPUC during Pre-filing

c) Describe the effects of visual change that would result in the entire project area, as indicated by the selected viewpoints that were simulated and analyzed.		
5.1.4.5: Lighting and Marking. Identify all new sources of permanent lighting. Identify any proposed structures or lines that could require FAA notification. Identify any structures or line segments that could require lighting and marking based on flight patterns and FAA or military requirements. Provide supporting documentation in an Appendix (e.g., FAA notice and criteria tool results).		
5.1.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.2 Agriculture and Forestry Resources

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.2.1 Environmental Setting		
5.2.1.1: Agricultural Resources and GIS a) Identify all agricultural resources that occur within the project area including: i. Areas designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance ii. Areas under Williamson Act contracts and provide information on the status of the Williamson Act contract iii. Any areas zoned for agricultural use in local plans iv. Areas subject to active agricultural use b) Provide GIS data for agricultural resources within the proposed project area.		
5.2.1.2: Forestry Resources and GIS a) Identify all forestry resources within the project area including: i. Forest land as defined in Public Resources Code 12220(g)25 ii. Timberland as defined in Public Resource Code section 4526 iii. Timberland zoned Timberland Production as defined in Government Code section 51104(g) b) Provide GIS data for all forestry resources within the proposed project area.		
5.2.2 Regulatory Setting		
5.2.2: Agriculture and Forestry Regulations. Identify all federal, state, and local policies for protection of agricultural and forestry resources that apply to the proposed project.		

[25] Forest land is defined in Public Resources Code as, "land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits."

5.2.3 Impact Questions		
5.2.3.1: Agriculture and Forestry Impact Questions. The impact questions include all agriculture and forestry impact questions in the current version of CEQA Guidelines, Appendix G. **5.2.3.2:** Additional CEQA Impact Questions: None.		
5.2.4 Impact Analyses		
5.2.4.1: Agriculture and Forestry Impacts. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.		
Incorporate the following discussions into the analysis of impacts:		
5.2.4.2: Prime Farmland Soil Impacts. Calculate the acreage of Prime Farmland soils that would be affected by construction and operation and maintenance.		
5.2.4.3. Williamson Act Impacts. Describe the approach to resolve potential conflicts with Williamson Act contract (if applicable)		
5.2.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.3 Air Quality

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.3.1 Environmental Setting		
5.3.1.1: Air Quality Plans Identify and describe all applicable air quality plans and attainment areas. Identify the air basin(s) for the project area. If the project is located in more than one attainment area and/or air basin, provide the extent in each attainment area and air basin.		
5.3.1.2: Air Quality. Describe existing air quality in the project area. a) Identify existing air quality exceedance of National Ambient Air Quality Standards and California Ambient Air Quality Standards in the air basin. b) Provide the number of days that air quality in the area exceeds state and federal air standards for each criteria pollutant that where air quality standards are exceeded. c) Provide air quality data from the nearest representative air monitoring station(s).		
5.3.1.3: Sensitive Receptor Locations. Identify the location and types of each sensitive receptor locations[26] within 1,000 feet of the project area. Provide GIS data for sensitive receptor locations.		

[26] Sensitive Receptor locations may include hospitals, schools, and day care centers, and such other locations as the air district board or California Air Resources Board may determine (California Health and Safety Code § 42705.5(a)(5)).

5.3.2 Regulatory Setting		
5.3.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding aesthetics and visual resource management.		
5.3.2.2: Air Permits. Identify and list all necessary air permits.		
5.3.3 Impact Questions		
5.3.3.1: Impact Questions. The impact questions include all air quality impact questions in the current version of CEQA Guidelines, Appendix G. **5.3.3.2:** Additional CEQA Impact Questions: None.		
5.3.4 Impact Analysis		
5.3.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.		
The following information will be presented in the PEA or a technical Appendix to support the air quality impact analysis:		
5.3.4.2: Air Quality Emissions Modeling. Model project emissions using the most recent version of CalEEMod and/or a current version of other applicable modeling program. Provide all model input and output data sheets in Microsoft Excel format to allow CPUC to evaluate whether project data was entered into the modeling program accurately. The assumptions used in the air quality modeling must be consistent with all PEA information about the project's schedule, workforce, and equipment. The following information will be addressed in the emissions modeling, Air Quality Appendix, and PEA: a) Quantify the expected emissions of criteria pollutants from all project-related sources. Quantify emissions for both construction and operation (e.g., compressor equipment). b) Identify manufacturer's specifications for all proposed new emission sources. For proposed new, additional, or modified compressor units, include the horsepower, type, and energy source. c) Describe any emission control systems that are included in the air quality analysis (e.g., installation of filters, use of EPA Tier II, III, or IV equipment, use of electric engines, etc.). d) When multiple air basins may be affected by the project, model air emissions within each air basin and provide a narrative (supported by calculations) that clearly describes the assumptions around the project activities considered for each air basin. Provide modeled emissions by attainment area or air basin (supported by calculations).		

5.3.4.3: Air Quality Emissions Summary. Provide a table summarizing the air quality emissions for the project and applicable thresholds for each applicable attainment area. Include a summary of uncontrolled emissions (prior to application of any APMs) and controlled emissions (after application of APMs). Clearly identify the assumptions that were applied in the controlled emissions estimates.		
5.3.4.4: Health Risk Assessment. Complete a Health Risk Assessment when air quality emissions have the potential to lead to human health impacts[27]. If health impacts are not anticipated from project emissions, the analysis should clearly describe why emissions would not lead to health impacts.		
5.3.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.4 Biological Resources

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.4.1 Environmental Setting		
5.4.1.1: Biological Resources Technical Report. Provide a Biological Resources Technical Report as an Appendix to the PEA that includes all information specified in Attachment 2.		
The following biological resources information will be presented in the PEA:		
5.4.1.2: Survey Area (Local Setting). Identify and describe the biological resources survey area as documented in the Biological Resources Technical Report. All temporary and permanent project areas must be within the survey area.		
5.4.1.3: Vegetation Communities and Land Cover a) Identify, describe, and quantify vegetation communities and land cover types within the biological resources survey area. b) Clearly identify any sensitive natural vegetation communities that meet the definition of a biological resource under CEQA (i.e., rare, designated, or otherwise protected), such as, but not limited to, riparian habitat. c) Provide a supporting map (or maps) showing project features and vegetation communities and land cover type.		

[27] Refer to Office of Environmental Health Hazard Assessment (OEHHA) most recent guidance for preparation of Health Risk Assessments to determine whether a Health Risk Assessment is required for the project. The need for an HRA should also be discussed with CPUC during Pre-filing.

5.4.1.4: Aquatic Features a) Identify, describe, and quantify aquatic features within the biological resources survey area that may provide potentially suitable aquatic habitat for rare and special-status species. b) Identify and quantify potentially jurisdictional aquatic features and delineated wetlands, according to the Wetland Delineation Report and Biological Resources Technical Report. c) Provide a supporting map (or maps) showing project features and aquatic resources.		
5.4.1.5: Habitat Assessment. Identify rare and special-status species with potential to occur in the project region (approximately a 5-mile buffer but may be larger if necessary). For each species, provide the following information: a) Common and scientific name b) Status and/or rank c) Habitat characteristics (i.e., vegetation communities, elevations, seasonal changes, etc.) d) Blooming characteristics for plants e) Breeding and other dispersal (range) behavior for wildlife f) Potential to occur within the survey area (i.e., Present, High Potential, Moderate Potential, Low Potential, or Not Expected), with justification based on the results of the records search, survey findings, and presence of potentially suitable habitat g) Specific types and locations of potentially suitable habitat that correspond to the vegetation communities and land cover and aquatic features		
5.4.1.6: Critical Habitat a) Identify and describe any critical habitat for rare or special-status species within and surrounding the project area (approximately a 5-mile buffer). b) Provide a supporting map (or maps) showing project features and critical habitat.		
5.4.1.7: Native Wildlife Corridors and Nursery Sites a) Identify and describe regional and local wildlife corridors within and surrounding the project area (approximately a 5-mile buffer), including but not limited to, landscape and aquatic features that connect suitable habitat in regions otherwise fragmented by terrain, changes in vegetation, or human development. b) Identify and describe regional and local native wildlife nursery sites within and surrounding the project area (approximately a 5-mile buffer), as identified through the records search, surveys, and habitat assessment.		

c) Provide a supporting map (or maps) showing project features, native wildlife corridors, and native nursery sites.		
5.4.1.8: Biological Resource Management Areas a) Identify any biological resource management areas (i.e., conservation or mitigation areas, HCP or NCCP boundaries, etc.) within and surrounding the project area (approximately 5-mile buffer). b) Identify and quantify any project areas within biological resource management areas. c) Provide a supporting map (or maps) showing project features and biological resource management areas.		
5.4.2 Regulatory Setting		
5.4.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding biological resources.		
5.4.2.2: Habitat Conservation Plan. Provide a copy of any relevant Habitat Conservation Plan.		
5.4.3 Impact Questions		
5.4.3.1: Impact Questions. The impact questions include all biological resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.4.3.2:** Additional CEQA Impact Question: Would the project create a substantial collision or electrocution risk for birds or bats?		
5.4.4 Impact Analysis		
5.4.4.1: Impact Analysis Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for Biological Resources and any additional impact questions listed above.		
The following information will be included in the impact analysis:		
5.4.4.2: Quantify Habitat Impacts. Provide the area of impact in acres by each habitat type. Quantify temporary and permanent impacts. For all temporary impacts provide the following: a) Description of the restoration and revegetation approach b) Vegetation species that would be planted within the area of temporary disturbance c) Procedures to reduce invasive weed encroachment within areas of temporary disturbance d) Expected timeframe for restoration of the site		
5.4.4.3: Special-Status Species Impacts. Identify anticipated impacts on special-status species. Identify any take permits that are anticipated for the project. If an existing habitat conservation plan (HCP) or natural communities conservation plan (NCCP) would be used for the project, provide current accounting of take coverage included in the HCP/NCCP		

to demonstrate that there is sufficient habitat coverage remaining under the existing permit.		
5.4.4.4: Wetland Impacts. Quantify the area (in acres) of temporary and permanent impacts on wetlands. Include the following details: a) Provide a table identifying all wetlands, by milepost and length, crossed by the project and the total acreage of each wetland type that would be affected by construction. b) Discuss construction and restoration methods proposed for crossing wetlands. c) If wetlands would be filled or permanently lost, describe proposed measures to compensate for permanent wetland losses. d) If forested wetlands would be affected, describe proposed measures to restore forested wetlands following construction.		
5.4.4.5: Avian Impacts. Describe avian obstructions and risk of electrocution from the project. Describe any standards that will be implemented as part of the project to reduce the risk of collision and electrocution.		
5.4.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.5 Cultural Resources[28]

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.5.1 Environmental Setting		
5.5.1.1: Cultural Resource Reports. Provide a cultural resource inventory and evaluation report that addresses the technical requirement provided in Attachment 3.		
5.5.1.2: Cultural Resources Summary. Summarize cultural resource survey and inventory results and survey methods. Do not provide any confidential cultural resource information within the PEA chapter.		
5.5.1.3: Cultural Resource Survey Boundaries. Provide a map with mileposts showing the boundaries of all survey areas in the report. Provide the GIS data for the survey area. Provide confidential GIS data for the resource locations and boundaries separately under confidential cover.		
5.5.2 Regulatory Setting		
5.5.2.1: Regulatory Setting. Identify applicable federal and state regulations for protection of cultural resources.		

[28] For a description and evaluation of cultural resources specific to Tribes, see Section 5.18, Tribal Cultural Resources.

5.5.3 Impact Questions		
5.5.3.1: Impact Questions. The impact questions include all cultural resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.5.3.2:** Additional CEQA Impact Questions: None.		
5.5.4 Impact Analysis		
5.5.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis		
5.5.4.2: Human Remains. Describe the potential for encountering human remains or grave goods during the trenching or any other phase of construction. Describe the procedures that would be used if human remains are encountered.		
5.5.4.3: Resource Avoidance. Describe avoidance procedures that would be implemented to avoid known resources.		
5.5.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.6 Energy

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.6.1 Environmental Setting		
5.6.1.1: Existing Energy Use. Identify energy use of existing infrastructure if the proposed project would replace or upgrade an existing facility.		
5.6.2 Regulatory Setting		
5.6.2.1: Regulatory Setting. Identify applicable federal, state, or local regulations or policies applicable to energy use for the proposed project.		
5.6.3 Impact Questions		
5.6.3.1: Impact Questions: The impact questions include all energy impact questions in the current version of CEQA Guidelines, Appendix G. **5.6.3.2:** Additional CEQA Impact Question: Would the project add capacity for the purpose of serving a non-renewable energy resource?		

5.6.4 Impact Analysis		
5.6.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.6.4.2: Nonrenewable Energy. Identify renewable and non-renewable energy projects that may interconnected to or be supplied by the proposed project.		
5.6.4.3: Fuels and Energy Use a) Provide an estimation of the amount of fuels (gasoline, diesel, helicopter fuel, etc.) that would be used during construction and operation and maintenance of the project. Fuel estimates should be consistent with Air Quality calculations supporting the PEA. b) Provide the following information on energy use: i. Total energy requirements of the project by fuel type and end use ii. Energy conservation equipment and design features iii. Identification of energy supplies that would serve the project		
5.6.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.7 Geology, Soils, and Paleontological Resources

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.7.1 Environmental Setting		
5.7.1.1: Regional and Local Geologic Setting. Briefly describe the regional and local physiography, topography, and geologic setting in the project area.		
5.7.1.2: Seismic Hazards a) Provide the following information on potential seismic hazards in the project area: i. Identify and describe regional and local seismic risk including any active faults within and surrounding the project area (will be a 10-mile buffer unless otherwise instructed in writing by CEQA Unit Staff during Pre-filing) ii. Identify any areas that are prone to seismic-induced landslides iii. Provide the liquefaction potential for the project area b) Provide a supporting map (or maps) showing project features and major faults, areas of landslide risk, and areas at high risk of liquefaction. Provide GIS data for all faults, landslides, and areas of high liquefaction potential.		

5.7.1.3: Geologic Units. Identify and describe the types of geologic units in the project area. Include the following information for each geologic unit: a) Summarize the geologic units within the project area. b) Identify any previous landslides in the area and any areas that are at risk of landslide. c) Identify any unstable geologic units. d) Provide a supporting map (or maps) showing project features and geologic units. Clearly identify any areas with potentially hazardous geologic conditions. Provide associated GIS data.		
5.7.1.4: Soils. Identify and describe the types of soils in the project area. a) Summarize the soils within the project area. b) Clearly identify any soils types that could be unstable (e.g., at risk of lateral spreading, subsidence, liquefaction, or collapse). c) Provide information on erosion susceptibility for each soil type that occurs in the project area. d) Provide a supporting map (or maps) showing project features and soils. Provide associated GIS data.		
5.7.1.5: Paleontological Report. Provide a paleontological report that includes the following: a) Information on any documented fossil collection localities within the project area and a 500-foot buffer. b) A paleontological resource sensitivity analysis based on published geological mapping and the resource sensitivity of each rock type. c) Supporting maps and GIS data.		
5.7.2 Regulatory Setting		
5.7.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding geology, soils, and paleontological resources.		
5.7.3 Impact Questions		
5.7.3.1: Impact Questions. The impact questions include all geology, soils, and paleontological resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.7.3.2:** Additional CEQA Impact Questions: None.		
5.7.4 Impact Analysis		
5.7.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		

5.7.4.2: Geotechnical Requirements. Identify any geotechnical requirements that would be implemented to address effects from unstable geologic units or soils. Describe how the recommendation would be applied (i.e., when and where).		
5.7.4.3: Paleontological Resources. Identify the potential to disturb paleontological resources based on the depth of proposed excavation and paleontological sensitivity of geologic units within the project area.		
5.7.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.8 Greenhouse Gas Emissions

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.8.1 Environmental Setting		
5.8.1.1: GHG Setting. Provide a description of the setting for greenhouse gases (GHGs). The setting should consider any GHG emissions from existing infrastructure that would be upgraded or replaced by the proposed project.		
5.8.2 Regulatory Setting		
5.8.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for greenhouse gases.		
5.8.3 Impact Questions		
5.8.3.1 Impact Questions. The impact questions include all greenhouse gas impact questions in the current version of CEQA Guidelines, Appendix G. **5.8.3.2:** Additional CEQA Impact Questions: None.		
5.8.4 Impact Analysis		
5.8.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.8.4.2: GHG Emissions. Provide a quantitative assessment of GHG emissions for construction and operation and maintenance of the proposed project. Provide model results and all model files. Modeling will be conducted using the latest version of the emissions model at the time of application filing (e.g., most recent version of CalEEMod). GHG emissions will be provided for the following conditions: a) Uncontrolled emissions (before APMs are applied) b) Controlled emissions considering application of APMs i. Based on the modeled GHG emissions, quantify the project's contribution to and analyze the project's effect on		

climate change. Identify and provide justification for the timeframe considered in the analysis. ii. Discuss any programs already in place to reduce GHG emissions on a system-wide level. This includes the Applicant's voluntary compliance with the EPA SF6 reduction program, reductions from energy efficiency, demand response, LTPP, etc. iii. For any significant impacts, identify potential strategies that could be employed by the project to reduce GHGs during construction or operation and maintenance consistent with OPR Advisory on CEQA and Climate Change.		
Natural Gas Storage		
5.8.4.3: Natural Gas Storage Accident Conditions. In addition to the requirements above, identify the potential GHG emissions that could result in the event of a gas leak.		
5.8.4.4: Monitoring and Contingency Plan. Provide a comprehensive monitoring plan that would be implemented during project operation to monitor for gas leaks. The plan should identify a monitoring schedule, description of monitoring activities, and actions to be implemented if gas leaks are observed.		
5.8.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.9 Hazards, Hazardous Materials, and Public Safety[29]

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.9.1 Environmental Setting		
5.9.1.1: Hazardous Materials Report. Provide a Phase I Environmental Site Assessment or similar hazards report for the proposed project area. Describe any known hazardous materials locations within the project area and the status of the site.		
5.9.1.2: Airport Land Use Plan. Identify any airport land use plan(s) within the project area.		
5.9.1.3: Fire Hazard. Identify if the project occurs within federal, state, or local fire responsibility areas and identify the fire hazard severity rating for all project areas, including temporary work areas and access roads.		
5.9.1.4: Metallic Objects. For electrical projects, identify any metallic pipelines or cables within 25 feet of the project.		

[29] For fire risk specific to state responsibility areas or lands classified as very high fire hazard severity zones, see Section 5.20, Wildfire.

5.9.1.5: Pipeline History (for Natural Gas Projects). Provide a narrative describing the history of the pipeline system(s) to which the project would connect, list of previous owner and operators, and detailed summary of the pipeline systems' safety and inspection history.		
5.9.2 Regulatory Setting		
5.9.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for hazards, hazardous materials, and public safety.		
5.9.2.2: Touch Thresholds. Identify applicable standards for protection of workers and the public from shock hazards.		
5.9.3 Impact Questions		
5.9.3.1: Impact Questions. The impact questions include all hazards and hazardous materials impact questions in the current version of CEQA Guidelines, Appendix G. **5.9.3.2:** Additional CEQA Impact Questions: a) Would the project create a significant hazard to air traffic from the installation of new power lines and structures? b) Would the project create a significant hazard to the public or environment through the transport of heavy materials using helicopters? c) Would the project expose people to a significant risk of injury or death involving unexploded ordnance? d) Would the project expose workers or the public to excessive shock hazards?		
5.9.4 Impact Analysis		
5.9.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.9.4.2: Hazardous Materials. Identify the hazardous materials (i.e., chemicals, solvents, lubricants, and fuels) that would be used during construction and operation of the project. Estimate the quantity of each hazardous material that would be stored on site during construction and operation.		
5.9.4.3: Air Traffic Hazards. If the project involves construction of above-ground structures (including structure replacement) within the airport land use plan area, provide a discussion of how the project would or would not conflict with height restrictions identified in the airport land use plan and how the project would comply with any FAA or military requirements for the above ground facilities.		
5.9.4.4: Accident or Upset Conditions. Describe how the project facilities would be designed, constructed, operated, and maintained to		

minimize potential hazard to the public from the failure of project components as a result of accidents or natural catastrophes.		
5.9.4.5: Shock Hazard. For electricity projects, identify infrastructure that may be susceptible to induced current from the proposed project. Describe strategies (e.g., cathodic protection) that the project would employ to reduce shock hazards and avoid electrocution of workers or the public.		
For Natural Gas and Gas Storage:		
5.9.4.6: Health and Safety Plan. Include in the Health and Safety Plan, plans for addressing gas leaks, fires, etc. Identify sensitive receptors, methods of evacuation, and protection measures. The Plan will be provided as an Appendix to the PEA.		
5.9.4.7: Health Risk Assessment. Provide a Health Risk Assessment including risk from potential gas leaks, fires, etc. Identify sensitive receptors that would be affected and potential impacts on them if there is a gas release.[30]		
5.9.4.8: Gas Migration. Describe potential for and effects of gas migration through natural and manmade pathways. a) Provide Applicant Proposed Measures for avoiding gas emissions at the surface from gas migration pathways. b) Provide Applicant Proposed Measures for avoiding emissions of mercaptan and/or other odorizing agents.		
5.9.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.10 Hydrology and Water Quality

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.10.1 Environmental Setting		
5.10.1.1: Waterbodies. Identify by milepost all ephemeral, intermittent, and perennial surface waterbodies crossed by the project. For each, list its water quality classification, if applicable.		
5.10.1.2: Water Quality. Identify any downstream waters that are on the state 303(d) list and identify whether a total maximum daily load (TMDL) has been adopted or the date for adoption of a TMDL. Identify existing sources of impairment for downstream waters. Describe any management plans that are in place for downstream waters.		
5.10.1.3: Groundwater Basin. Identify all known EPA and state groundwater basins and aquifers crossed by the project.		

[30] Refer to the requirements for Health Risk Assessments in Section 5.3.4.4.

5.10.1.4: Groundwater Wells and Springs. Identify the locations of all known public and private groundwater supply wells and springs within 150 feet of the project area.		
5.10.1.5: Groundwater Management. Identify the groundwater management status of any groundwater resources in the project area and any groundwater resources that may be used by the project. Describe if groundwater resources in the basin have been adjudicated. Identify any sustainable groundwater management plan that has been adopted for groundwater resources in the project area or describe the status of groundwater management planning in the area.		
5.10.2 Regulatory Setting		
5.10.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding hydrologic and water quality.		
5.10.3 Impact Questions		
5.10.3.1: Impact Questions. The impact questions include all hydrology and water quality impact questions in the current version of CEQA Guidelines, Appendix G. **5.10.3.2:** Additional CEQA Impact Questions: None.		
5.10.4 Impact Analysis		
5.10.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in the current version of CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.10.4.2: Hydrostatic Testing. Identify all potential sources of hydrostatic test water, quantity of water required, withdrawal methods, treatment of discharge, and any waste products generated.		
5.10.4.3: Water Quality Impacts. Describe impacts to surface water quality, including the potential for accelerated soil erosion, downstream sedimentation, and reduced surface water quality.		
5.10.4.4: Impermeable Surfaces. Describe increased run-off and impacts on groundwater recharge due to construction of impermeable surfaces. Provide the acreage of new impermeable surfaces that will be created as a result of the project.		
5.10.4.5: Waterbody Crossings. Identify by milepost all waterbody crossings. Provide the following information for crossing: a) Identify whether the waterbody has contaminated waters or sediments. b) Describe the waterbody crossing method and any approaches to avoid the waterbody. c) Describe typical additional work area and staging area requirements at waterbody and wetland crossings.		

d) Describe any dewatering or water diversion that will be required during construction near the waterbody. Identify treatment methods for any dewatering. e) Describe any proposed restoration methods for work near or within the waterbody.		
5.10.4.6: Groundwater Impacts. If water would be obtained from groundwater supplies, evaluate the project's consistency with any applicable sustainable groundwater management plan.		
5.10.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.11 Land Use and Planning

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.11.1 Environmental Setting		
5.11.1.1: Land Use. Provide a description of land uses within the area traversed by the project route as designated in the local General Plan (e.g., residential, commercial, agricultural, open space, etc.).		
5.11.1.2: Special Land Uses. Identify by milepost and segment all special land uses within the project area including: a) All land administered by federal, state, or local agencies, or private conservation organizations b) Any designated coastal zone management areas c) Any designated or proposed candidate National or State Wild and Scenic Rivers crossed by the project d) Any national landmarks		
5.11.1.3: Habitat Conservation Plan. Provide a copy of any Habitat Conservation Plan applicable to the project area or proposed project. Also required for Section 5.4, Biological Resources.		
5.11.2 Regulatory Setting		
5.11.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for land use and planning.		
5.11.3 Impact Questions		
5.11.3.1: Impact Questions. The impact questions include all land use questions in the current version of CEQA Guidelines, Appendix G. **5.11.3.2:** Additional CEQA Impact Questions: None.		
5.11.4 Impact Analysis		
5.11.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		

5.11.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.12 Mineral Resources

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.12.1 Environmental Setting		
5.12.1.1: Mineral Resources. Provide information on the following mineral resources within 0.5 mile of the proposed project area: a) Known mineral resources b) Active mining claims c) Active mines d) Resource recovery sites		
5.12.2 Regulatory Setting		
5.12.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for minerals.		
5.12.3 Impact Questions		
5.12.3.1: Impact Questions. The impact questions include all mineral resource impact questions in the current version of CEQA Guidelines, Appendix G. **5.12.3.2:** Additional CEQA Impact Questions: None.		
5.12.4 Impact Analysis		
5.12.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
5.12.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.13 Noise

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.13.1 Environmental Setting		
5.13.1.1: Noise Sensitive Land Uses. Identify all noise sensitive land uses within 1,000 feet of the proposed project. Provide GIS data for sensitive receptors within 1,000 feet of the project.		
5.13.1.2: Noise Setting. Provide the existing noise levels (Lmax, Lmin, Leq, and Ldn sound level and other applicable noise parameters) at noise sensitive areas near the proposed project. All noise measurement data and the methodology for collecting the data will be provided in a noise study as an Appendix to the PEA.		

5.13.2 Regulatory Setting		
5.13.2.1: Regulatory Setting. Identify applicable state, and local laws, policies, and standards for noise.		
5.13.3 Impact Questions		
5.13.3.1 Impact Questions. The impact questions include all noise questions in the current version of CEQA Guidelines, Appendix G. **5.13.3.2:** Additional CEQA Impact Questions: None.		
5.13.4 Impact Analysis		
5.13.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.13.4.2: Noise Levels a) Identify noise levels for each piece of equipment that could be used during construction. b) Provide a table that identifies each phase of construction, the equipment used in each construction phase, and the length of each phase at any single location (see example in Table 7 below). c) Estimate cumulative equipment noise levels for each phase of construction. d) Include phases of operation if noise levels during operation have the potential to frequently exceed pre-project existing conditions. e) Identify manufacturer's specifications for equipment and describe approaches to reduce impacts from noise.		

Table 7. Construction Noise Levels

Equipment Required	Equipment Noise Levels (Leq; 50 feet)	Phase Noise Level (Leq; 50 feet)	Phase Duration at Each Location	Receptor Nearest to Construction Phase	Noise Level at Nearest Receptor (Leq)	Exceeds Noise Standard at Nearest Receptor?	Distance to Not Exceed Standard
Site Preparation/Grading							
Dozer	78 dBA	82 dBA	5 days	Residence on Main Street; 100 feet from Substation Site	76 dBA	Yes	112 feet
Gradall	79 dBA						
Dump Truck	73 dBA						
Construct Tower Foundation							
Auger Rig	77 dBA	82 dBA	11 days	School on Education Avenue; 130 feet from Tower A12	73 dBA	No	N/A
Dump Truck	73 dBA						
Excavator	77 dBA						
Concrete Truck	75 dBA						

For Natural Gas:		
5.13.4.3: Compressor Station Noise. Provide site plans of compressor stations or other noisy, permanent equipment, showing the location of the nearest noise sensitive areas within 1 mile of the proposed ROW. If new compressor station sites are proposed, measure or estimate the existing ambient sound environment based on current land uses and		

activities. For existing compressor stations (operated at full load), include the results of a sound level survey at the site property line and nearby noise-sensitive areas. Include a plot plan that identifies the locations and duration of noise measurements.		
5.13.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.14 Population and Housing

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.14.1 Environmental Setting		
5.14.1.1: Population Estimates. Identify population trends for the areas (county, city, town, census designated place) where the project would take place.		
5.14.1.2: Housing Estimates. Identify housing estimates and projections in areas where the project would take place.		
5.14.1.3: Approved Housing Developments a) Provide the following information for all housing development projects within 1 mile of the proposed project that have been recently approved or may be approved around the PEA and application filing date: i. Project name ii. Location iii. Number of units and estimated population increase iv. Approval date and construction status v. Contact information for developer (provided in the public outreach Appendix) b) Ensure that the project information provided above is consistent with the PEA analysis of cumulative project impacts.		
5.14.2 Regulatory Setting		
5.14.2.1: Regulatory Setting. Identify any applicable federal, state or local laws or regulations that apply to the project.		
5.14.3 Impact Questions		
5.14.3.1: Impact Questions. The impact questions include all population and housing impact questions in the current version of CEQA Guidelines, Appendix G. **5.14.3.2:** Additional CEQA Impact Questions: None.		
5.14.4 Impact Analysis		
5.14.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		

Include the following information in the impact analysis:		
5.14.4.2: Impacts to Housing. Identify if any existing or proposed homes occur within the footprint of any proposed project elements or right-of-way. Describe housing impacts (e.g., demolition and relocation of residents) that may occur as a result of the proposed project.		
5.14.4.3: Workforce Impacts. Describe on-site manpower requirements, including the number of construction personnel who currently reside within the impact area, who would commute daily to the site from outside the impact area or would relocate temporarily within the impact area. Chapter 4 of this document can be referenced as applicable. Identify any permanent employment opportunities that would be create by the project and the workforce conditions in the area that the jobs would be created.		
5.14.4.4: Population Growth Inducing. Provide information on the project's growth inducing impacts, if any. The information will include, but is not necessarily limited to, the following: a) Any economic or population growth in the surrounding environment that will directly or indirectly result from the project b) Any obstacles to population growth that the project would remove c) Any other activities directly or indirectly encouraged or facilitated by the project that would cause population growth leading to a significant effect on the environment, either individually or cumulatively		
5.14.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.15 Public Services

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.15.1 Environmental Setting		
5.15.1.1 Service Providers a) Identify the following service providers that serve the project area and provide a map showing the service facilities that could serve the project: i. Police ii. Fire (identify service providers within local and state responsibility areas) iii. Schools iv. Parks v. Hospitals		

b) Provide the documented performance objectives and data on existing emergency response times for service providers in the area (e.g., police or fire department response times).		
5.15.2 Regulatory Setting		
5.15.2.1 Regulatory Setting. Identify any applicable federal, state or local laws or regulations for public services that apply to the project.		
5.15.3 Impact Questions		
5.15.3.1: Impact Questions. The impact questions include all public services impact questions in the current version of CEQA Guidelines, Appendix G. **5.15.3.2:** Additional CEQA Impact Questions: None.		
5.15.4 Impact Analysis		
5.15.4.1 Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.15.4.2: Emergency Response Times a) Describe whether the project would impede ingress and egress of emergency vehicles during construction and operation. b) Include an analysis of impacts on emergency response times during project construction and operation, including impacts during any temporary road closures. Describe approaches to address impacts on emergency response times.		
5.15.4.3: Displaced Population. If the project would create permanent employment or displace people, evaluate the impact of the new employment or relocated people on governmental facilities and services and describe plans to reduce the impact on public services.		
5.15.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.16 Recreation

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.16.1 Environmental Setting		
5.16.1.1: Recreational Setting a) Describe the regional and local recreation setting in the project area including: i. Any recreational facilities or areas within and surrounding the project area (approximately 0.5-mile buffer) including the recreational uses of each facility or area		

ii. Any available data on use of the recreational facilities including volume of use b) Provide a map (or maps) showing project features and recreational facilities and provide associated GIS data.		
5.16.2 Regulatory Setting		
5.16.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding recreation.		
5.16.3 Impact Questions		
5.16.3.1: Impact Questions. The impact questions include all recreation impact questions in the current version of CEQA Guidelines, Appendix G. **5.16.3.2:** Additional CEQA Impact Questions: a) Would the project reduce or prevent access to a designated recreation facility or area? b) Would the project substantially change the character of a recreational area by reducing the scenic, biological, cultural, geologic, or other important characteristics that contribute to the value of recreational facilities or areas? c) Would the project damage recreational trails or facilities?		
5.16.4 Impact Analysis		
5.16.4.1: Impact Analysis: Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
5.16.4.2: Impact Details. Clearly identify the maximum extent of each impact, and when and where the impacts would or would not occur. Organize the impact assessment by project phase, project component, and/or geographic area, as necessary.		
5.16.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.17 Transportation

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.17.1 Environmental Setting		
5.17.1.1: Circulation System. Briefly describe the regional and local circulation system in the project area, including modes of transportation, types of roadways, and other facilities that contribute to the circulation system.		
5.17.1.2: Existing Roadways and Circulation a) Identify and describe existing roadways that may be used to access the project site and transport materials during		

construction or are otherwise adjacent to or crossed by linear project features. Provide the following information for each road: i. Name of the road ii. Jurisdiction or ownership (i.e., State, County, City, private, etc.) iii. Number of lanes in both directions of travel iv. Existing traffic volume (if publicly available data is unavailable or significantly outdated, then it may be necessary to collect existing traffic counts for road segments where large volumes of construction traffic would be routed or where lane or road closures would occur) v. Closest project feature name and distance b) Provide a supporting map (or maps) showing project features and the existing roadway network identifying each road described above. Provide associated GIS data. The GIS data should include all connected road segments within at least 5 miles of the project.		
5.17.1.3: Transit and Rail Services a) Identify and describe transit and rail service providers in the region. b) Identify any rail or transit lines within 1,000 feet of the project area. c) Identify specific transit stops, and stations within 0.5 mile of the project. Provide the frequency of transit service. d) Provide a supporting map (or maps) showing project features and transit and rail services within 0.5 mile of the project area. Provide associated GIS data.		
5.17.1.4: Bicycle Facilities a) Identify and describe any bicycle plans for the region. b) Identify specific bicycle facilities within 1,000 feet of the project area. c) Provide a supporting map (or maps) showing project features and bicycle facilities. Provide associated GIS data.		
5.17.1.5: Pedestrian Facilities a) Identify and describe important pedestrian facilities near the project area that contribute to the circulation system, such as important walkways. b) Identify specific pedestrian facilities that would be near the project, including on the road segments identified per 5.17.1.2. c) Provide a supporting map (or maps) showing project features and important pedestrian facilities. Provide associated GIS data.		

5.17.1.6: Vehicle Miles Traveled (VMT). Provide the average VMT for the county(s) where the project is located.		
5.17.2 Regulatory Setting		
5.17.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards regarding transportation.		
5.17.3 Impact Questions		
5.17.3.1: Impact Questions. All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G. **5.17.3.2:** Additional CEQA Impact Questions: a) Would the project create potentially hazardous conditions for people walking, bicycling, or driving or for public transit operations? b) Would the project interfere with walking or bicycling accessibility? c) Would the project substantially delay public transit?		
5.17.4 Impact Analysis		
5.17.4.1: Impact Analysis. Provide an impact analysis for each significance criteria identified in Appendix G of the CEQA Guidelines for transportation and any additional impact questions listed above[31].		
Include the following information in the impact analysis:		
5.17.4.2: Vehicle Miles Traveled (VMT) a) Identify whether the project is within 0.5 mile of a major transit stop or a high-quality transit corridor. b) Identify the number of vehicle daily trips that would be generated by the project during construction and operation by light duty (e.g., worker vehicles) and heavy-duty vehicles (e.g., trucks). Provide the frequency of trip generation during operation. c) Quantify VMT generation for both project construction and operation. d) Provide an excel file with the VMT assumptions and model calculations, including all formulas and values. e) Evaluate the project VMT relative to the average VMT for the area in which the project is located.		
5.17.4.3: Traffic Impact Analysis. Provide a traffic impact study. The traffic impact study should be prepared in accordance with guidance from the relevant local jurisdiction or Caltrans, where appropriate.		
5.17.4.4: Hazards. Identify any traffic hazards that could result from construction and operation of the project. Identify any lane closures and traffic management that would be required to construct the project.		

[31] Discuss with CPUC during Pre-filing whether a traffic study is needed.

5.17.4.5: Accessibility. Identify any closures of bicycle lanes, pedestrian walkways, or transit stops during construction or operation of the project.		
5.17.4.6: Transit Delay. Identify any transit lines that could be delayed by construction and operation of the project. Provide the maximum extent of the delay in minutes and the duration of the delay.		
5.17.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.18 Tribal Cultural Resources[32]

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.18.1 Environmental Setting		
5.18.1.1: Outreach to Tribes. Provide a list of all tribes that are on the Native American Heritage Commission (NAHC) list of tribes that are affiliated with the project area. Provide a discussion of outreach to Native American tribes, including tribes notified, responses received from tribes, and information of potential tribal cultural resources provided by tribes. Any information of potential locations of tribal cultural resources should be submitted in an Appendix under clearly marked confidential cover. Provide copies of all correspondence with tribes in an Appendix.		
5.18.1.2: Tribal Cultural Resources. Describe tribal cultural resources (TCRs) that are within the project area. a) Summarize the results of attempts to identify possible TCRs using publicly available documentary resources. The identification of TCRs using documentary sources should include review of archaeological site records and should begin during the preparation of the records search report (see Attachment 3). During the inventory phase, a formal site record would be prepared for any resource identified unless tribes object. b) Summarize attempts to identify TCRs by speaking directly with tribal representatives.		
5.18.1.3: Ethnographic Study. The ethnographic study should document the history of Native American use of the area and oral history of the area.		
5.18.2 Regulatory Setting		
5.18.2.1: Regulatory Setting. Identify any applicable federal, state or local laws or regulations for tribal cultural resources that apply to the project.		

[32] For a description of historical resources and requirements for cultural resources that are not tribal cultural resources, refer to Section 5.5 Cultural Resources.

5.18.3 Impact Questions		
5.18.3.1: Impact Questions. The impact questions include all tribal cultural resources impact questions in the current version of CEQA Guidelines, Appendix G. **5.18.3.2:** Additional CEQA Impact Questions: None.		
5.18.4 Impact Analysis		
5.18.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.18.4.2: Information Provided by Tribes. Include an analysis of any impacts that were identified by the tribes during the Applicant's outreach.		
5.18.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.19 Utilities and Service Systems

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.19.1 Environmental Setting		
5.19.1.1: Utility Providers. Identify existing utility providers and the associated infrastructure that serves the project area.		
5.19.1.2: Utility Lines. Describe existing utility infrastructure (e.g., water, gas, sewer, electrical, stormwater, telecommunications, etc.) that occurs in the project ROW. Provide GIS data and/or as-built engineering drawings to support the description of existing utilities and their locations.		
5.19.1.3: Approved Utility Projects. Identify utility projects that have been approved for construction within the project ROW but that have not yet been constructed.[33]		
5.19.1.4: Water Supplies. Identify water suppliers and the water source (e.g., aqueduct, well, recycled water, etc.). For each potential water supplier, provide data on the existing water capacity, supply, and demand.		
5.19.1.5: Landfills and Recycling. Identify local landfills that can accept construction waste and may service the project. Provide documentation of landfill capacity and estimated closure date. Identify any recycling centers in the area and opportunities for construction and demolition waste recycling.		

[33] Note that this project information should be consistent with the cumulative project description included in Chapter 7.

5.19.2 Regulatory Setting		
5.19.2.1: Regulatory Setting. Identify any applicable federal, state or local laws or regulations for utilities that apply to the project.		
5.19.3 Impact Questions		
5.19.3.1: Impact Questions. All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G. **5.19.3.2:** Additional CEQA Impact Question: Would the project increase the rate of corrosion of adjacent utility lines as a result of alternating current impacts?		
5.19.4 Impact Analysis		
5.19.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.19.4.2: Utility Relocation. Identify any project conflicts with existing utility lines. If the project may require relocation of existing utilities, identify potential relocation areas and analyze the impacts of relocating the utilities. Provide a map showing the relocated utility lines and GIS data for all relocations.		
5.19.4.3: Waste a) Identify the waste generated by construction, operation, and demolition of the project. b) Describe how treated wood poles would be disposed of after removal, if applicable. c) Provide estimates for the total amount of waste materials to be generated by waste type and how much of it would be disposed of, reused, or recycled.		
5.19.4.4: Water Supply a) Estimate the amount of water required for project construction and operation. Provide the potential water supply source(s). b) Evaluate the ability of the water supplier to meet the project demand under a multiple dry year scenario. c) Provide a discussion as to whether the proposed project meets the criteria for consideration as a project subject to Water Supply Assessment Requirements under Water Code Section 10912. d) If determined to be necessary under Water Code Section 10912, submit a Water Supply Assessment to support conclusions that the proposed water source can meet the project's anticipated water demand, even in multiple dry year scenarios. Water Supply Assessments should be approved by		

the water supplier and consider normal, single-dry, and multiple-dry year conditions.		
5.19.4.5: Cathodic Protection. Analyze the potential for existing utilities to experience corrosion due to proximity to the proposed project. Identify cathodic protection measures that could be implemented to reduce corrosion issues and where the measures may be applied.		
5.19.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.20 Wildfire

This section will include, but is not limited to, the following:	**PEA Section and Page Number**	**Applicant Notes, Comments**
5.20.1 Environmental Setting		
5.20.1.1: High Fire Risk Areas and State Responsibility Areas a) Identify areas of high fire risk or State Responsibility Areas (SRAs) within the project area. Provide GIS data for the Wildland Urban Interface (WUI) and Fire Hazard Severity Zones (FHSZ) mapping along the project alignment. Include areas mapped by CPUC as moderate and high fire threat districts as well as areas mapped by CalFire. b) Identify any areas the utility has independently identified as High FHSZ known to occur within the proposed project vicinity.		
5.20.1.2: Fire Occurrence. Identify all recent (within the last 10 years) large fires that have occurred within the project vicinity. For each fire, identify the following: a) Name of the fire b) Location of fire c) Ignition source and location of ignition d) Amount of land burned e) Boundary of fire area in GIS		
5.20.1.3: Fire Risk. Provide the following information for assessment of baseline fire risk in the area: a) Provide fuel modeling using Scott Burgan fuel models, or other model of similar quality. b) Provide values of wind direction and speed, relative humidity, and temperature for representative weather stations along the alignment for the previous 10 years, gathered hourly. c) Digital elevation models for the topography in the project region showing the relationship between terrain and wind patterns, as well as localized topography to show the effects of terrain on wind flow, and on a more local area to show effect of slope on fire spread.		

d) Describe vegetation fuels within the project vicinity and provide data in map format for the project vicinity. USDA Fire Effects Information System or similar data source should be consulted to determine high-risk vegetation types. Provide the mapped vegetation fuels data in GIS format.		
5.20.1.4: Values at Risk. Identify values at risk along the proposed alignment. Values at risk may include: Structures, improvements, rare habitat, other values at risk, (including utility-owned infrastructure) within 1000 feet of the project. Provide some indication as to its vulnerability (wood structures vs. all steel features). Communities and/or populations near the project should be identified with their proximity to the project defined.		
5.20.1.5: Evacuation Routes. Identify all evacuation routes that are adjacent to or within the project area. Identify any roads that lack a secondary point of access or exit (e.g., cul-de-sacs).		
5.20.2 Regulatory Setting		
5.20.2.1: Regulatory Setting. Identify applicable federal, state, and local laws, policies, and standards for wildfire.		
5.20.2.2: CPUC Standards. Identify any CPUC standards that apply to wildfire management of the new facilities.		
5.20.3 Impact Questions		
5.20.3.1: Impact Questions. All impact questions for this resource area in the current version of CEQA Guidelines, Appendix G. **5.20.3.2:** Additional CEQA Impact Questions: None.		
5.20.4 Impact Analysis		
5.20.4.1: Impact Analysis. Provide an impact analysis for each checklist item identified in CEQA Guidelines, Appendix G for this resource area and any additional impact questions listed above.		
Include the following information in the impact analysis:		
5.20.4.2: Fire Behavior Modeling. For any new electrical lines, provide modeling to support the analysis of wildfire risk.		
5.20.4.3: Wildfire Management. Describe approaches that would be implemented during operation and maintenance to manage wildfire risk in the area. Provide a copy of any Wildfire Management Plan.		
5.20.5 CPUC Draft Environmental Measures		
Refer to Attachment 4, CPUC Draft Environmental Measures.		

5.21 Mandatory Findings of Significance[34]

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
5.21.1: Impact Assessment for Mandatory Findings of Significance. Provide an impact analysis for each of the mandatory findings of significance provided in Appendix G of the CEQA Guidelines. The impact analysis can reference relevant information and conclusion from the biological resources, cultural resources, air quality, hazards, and cumulative sections of the PEA, where applicable.		

6 Comparison of Alternatives

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
6.1: Alternatives Comparison a) Compare the ability of each alternative described in Chapter 4 against the proposed project in terms of its ability to avoid or reduce a potentially significant impact. The alternatives addressed in this section will each be: i. Potentially feasible ii. Meet the underlying purpose of the proposed project iii. Meet most of the basic project objectives, and iv. Avoid or reduce one or more potentially significant impacts. b) The relative effect of the various potentially significant impacts may be compared using the following or similar descriptors and an accompanying analysis: i. Short-term versus long-term impacts ii. Localized versus widespread impacts iii. Ability to fully mitigate impacts c) Impacts that the Applicant believes would be less than significant with mitigation may also be included in the analysis, but only if the steps listed above fail to distinguish among the remaining few alternatives.		
6.2: Alternatives Ranking. Provide a detailed table that summarizes the Applicant's comparison results and ranks the alternatives in order of environmental superiority.[35]		

[34] PEAs need only include a Mandatory Findings of Significance section if CPUC CEQA Unit Staff determine that a Mitigated Negative Declaration may be the appropriate type of document to prepare for the project, as determined through Pre-filing consultation. If no such determination has been made, then a Mandatory Findings of Significance section and the requirements below are not required.

[35] If the proposed project does not rank #1 on the list, the Applicant should provide the rationale for selecting the proposed project.

7 Cumulative and Other CEQA Considerations

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
7.1 Cumulative Impacts		
7.1.1: List of Cumulative Projects a) Provide a detailed table listing past, present, and reasonably foreseeable future projects within and surrounding the project area (approximately 2-mile buffer)[36]. The following information should be provided for each project in the table: i. Project name and type ii. Brief description of the project location(s) and associated actions iii. Distance to and name of the nearest project component iv. Project status and anticipated construction schedule v. Source of the project information and date last checked (for each individual project), including links to any public websites where the information was obtained so it can be reviewed and updated (the project information should be current when the PEA is filed) b) Provide a supporting map (or maps) showing project features and cumulative project locations and/or linear features. Provide associated GIS data.		
7.1.2: Geographic Scope. Define the geographic scope of analysis for each resource topic. The geographic scope of analysis for each resource topic should consider the extent to which impacts can be cumulative. For example, the geographic scope for cumulative noise impacts would be more limited in scale than the geographic scope for biological resource impacts because noise attenuates rapidly with distance. Explain why the geographic scope is appropriate for each resource.		
7.1.3: Cumulative Impact Analysis. Provide an analysis of cumulative impacts for each resource topic included in Chapter 5. Evaluate whether the proposed project impacts are cumulatively considerable[37] for any significant cumulative impacts.		
7.2 Growth-Inducing Impacts		
7.2.1: Growth-Inducing Impacts. Provide an evaluation of the following potential growth-inducing impacts:		

[36] Information on cumulative projects may be obtained from federal, state, and local agencies with jurisdiction over planning, transportation, and/or resource management in the area. Other projects the Applicant is involved in or aware of in the area should be included.

[37] "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

a) Would the proposed project foster any economic or population growth, either directly or indirectly, in the surrounding environment? b) Would the proposed project cause any increase in population that could further tax existing community service facilities (i.e., schools, hospitals, fire, police, etc.)? c) Would the proposed project remove any obstacles to population growth? d) Would the proposed project encourage and facilitate other activities that would cause population growth that could significantly affect the environment, either individually or cumulatively?		

8 List of Preparers

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
8.1: List of Preparers. Provide a list of persons, their organizations, and their qualifications for all authors and reviewers of each section of the PEA.		

9 References

This section will include, but is not limited to, the following:	PEA Section and Page Number	Applicant Notes, Comments
9.1: Reference List a) Organize all references cited in the PEA by section within a single chapter called "References." b) Within the References chapter, organize all of the Chapter 5 references under subheadings for each resource area section.		
9.2: Electronic References a) Provide complete electronic copies of all references cited in the PEA that cannot be readily obtained for free on the Internet. This includes any company-specific documentation (e.g., standards, policies, and other documents). b) If the reference can be obtained on the Internet, the Internet address will be provided.		

PEA Checklist Attachments

Attachment 1: GIS Data Requirements

This Attachment includes specific requirements and format of GIS data that is intended to be applicable to all PEAs. The specific GIS data requirements may be updated on a project-specific basis during Pre-filing coordination with CPUC's CEQA Unit Staff.

1. GIS data will be provided in an appropriate format (i.e., point, line, polygon, raster) and scale to adequately verify assumptions in the PEA and supporting materials and determine the level of environmental impacts. At a minimum, all GIS data layers will include the following metadata properties:
    a. The source (e.g., report reference), date, title, and preparer (name or company)
    b. Description of the contents and any limitations of the data
    c. Reference scale and accuracy of the data
    d. Complete attributes that correspond to the detailed mapbook, project description, and figures presented in the PEA and/or supporting application materials, including unique IDs, labels, geometry, and other appropriate project details
2. Where precise boundaries of project features may change (e.g., staging areas and temporary construction work areas), the Applicant will provide GIS data layers with representative boundaries to evaluate potential environmental impacts as a worst-case scenario.
3. Provide GIS data for:
    a. All proposed and alternative project facilities including but not limited to existing and proposed/alternative ROWs; substations and switching stations; pole/tower locations; conduit; vaults, pipelines; valves; compressor stations; metering stations; valve stations, gas wellheads; other project buildings, facilities, and components (both temporary and permanent); telecommunication and distribution lines modifications or upgrades related to the project; marker ball and lighting locations; and mileposts, facility perimeters, and other demarcations or segments as applicable
    b. All proposed areas required for construction and construction planning, including all proposed and alternative disturbance areas (both permanent and temporary); access roads; geotechnical work areas; extra work areas (e.g., staging areas, parking areas, lay-down areas, work areas at and around specific pole/tower sites, pull and tension sites, helicopter landing areas); airport landing areas; underground installation areas (e.g. trenches, vaults, underground work areas); horizontal directional drilling, jack and bore, or tunnel areas; blasting areas; and any areas where special construction methods may need to be employed
    c. Within the PEA checklist there are also specific requirements for environmental resources within Chapter 5. All environmental resource GIS data must meet the minimum mapping standards specified in this Attachment.

Attachment 2: Biological Resource Technical Report Standards

Definitions

The following biological resources will be considered within the scope of the PEA and the Biological Resources Technical Report:

Sensitive Vegetation Communities and Habitats

a) Sensitive vegetation communities/habitats identified in local or regional plans, policies, or regulations, or designated by CDFW38 or USFWS
b) Areas that provide habitat for locally unique biotic species/communities (e.g., oak woodlands, grasslands, and forests)
c) Habitat that contains or supports rare, endangered, or threatened wildlife or plant species as defined by CDFW and USFWS
d) Habitat that supports CDFW Species of Special Concern
e) Areas that provide habitat for rare or endangered species and that meet the definition in CEQA Guidelines Section 15380
f) Existing game and wildlife refuges and reserves
g) Lakes, wetlands, estuaries, lagoons, streams, and rivers
h) Riparian corridors

Special-Status Species

a) Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) (50 CFR § 17.12 [listed plants], 17.11 [listed animals] and various notices in the Federal Register [proposed species])
b) Species that are candidates for possible future listing as threatened or endangered under the federal ESA (61 FR § 40, February 28, 1996)
c) Species listed or proposed for listing by the State of California as threatened or endangered under the California ESA (14 CCR § 670.5)
d) Plants listed as rare or endangered under the California Native Plant Protection Act (California Fish and Game Code, Section 1900 et seq.)
e) Species that meet the definitions of rare and endangered under CEQA. CEQA Guidelines Section 15380 provides that a plant or animal species may be treated as "rare or endangered" even if not on one of the official lists.
f) Plants considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (California Rare Plant Rank 1A, 1B, 2A, and 2B) as well as California Rare Plant Rank 3 and 4 plant species
g) Species designated by CDFW as Fully Protected or as a Species of Special Concern
h) Species protected under the Federal Bald and Golden Eagle Protection Act
i) Birds of Conservation Concern or Watch List species
j) Bats considered by the Western Bat Working Group to be "high" or "medium" priority (Western Bat Working Group 2015)

[38] CDFW's Rarity Ranking follows NatureServe's Heritage Methodology (Faber-Langendoen, et al. 2016) in which communities are given a G (global) and S (state) rank based on their degree of imperilment (as measured by rarity, trends, and threats). Communities with a Rarity Ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable) are considered sensitive by CDFW.

Biological Resource Technical Report Minimum Requirements

Report Contents

The Biological Resource Technical Report will include the following information at a minimum.

a) **Preliminary Agency Consultation.** Describe any pre-survey contact with agencies. Describe any agency approvals that were required for biologists or agency protocols that were applied to the survey effort. Provide copies of correspondence and meeting notes with the names and contact information for agency staff and the dates of consultation as an appendix to the Biological Resources Technical Report.
b) **Records Search.** Provide the results of all database and literature searches for biological resources within and surrounding the project area. Identify all sources reviewed (e.g., CNDDB, CNPS, USFWS, etc.).
c) **Biological Resource Survey Method.** Identify agency survey requirements and protocols applicable to each biological survey that was conducted. Identify the areas where each survey occurred. Identify any limitations for the surveys (e.g., survey timing or climatic conditions) that could affect the survey results.
d) **Vegetation Communities and Land Cover.** Identify all vegetation communities or land cover types (e.g., disturbed or developed) within the biological survey area. The biological survey area should include a 1,000-foot buffer from project facilities to support CPUC's evaluation of indirect effects.
e) **Aquatic Resources.** Identify any wetlands, streams, lakes, reservoirs, estuarine, or other aquatic resources within the biological survey area. Provide a wetland delineation and all data sheets including National Wetlands Inventory maps (or the appropriate state wetland maps, if National Wetlands Inventory maps are not available) that show all proposed facilities and include milepost locations for proposed pipeline routes. Provide a copy of agency verification of the wetland delineation if the delineation has been verified by the U.S. Army Corps of Engineers or CDFW. If the delineation has not been verified, describe the process and timing for obtaining agency verification.
f) **Habitat Assessments.** Evaluate the potential for suitable habitat in the biological survey area for each species identified in the database and literature search.
g) **Native Wildlife Corridors and Nursery Sites.** Identify any wildlife corridors or nursery sites that occur within the biological survey area.
h) **Survey Results.** Describe all survey results and include a copy of any focused (e.g., rare plant, protocol special-status wildlife) biological resources survey reports.

Mapping and GIS Data

Provide detailed maps (at approximately 1:3,000 scale or similar), and all associated GIS data for the Biological Resources Technical Report and any supporting biological survey reports, including:

a) Biological survey area for each survey that was conducted
b) Vegetation communities and land cover types
c) Aquatic resource delineation
d) Special-status plant locations
e) Special-status wildlife locations
f) Avian point count locations
g) Critical habitat
h) California Coastal Commission or Bay Conservation and Development Commission jurisdictional areas

Attachment 3: Cultural Resource Technical Report Standards

Cultural Resource Inventory Report

Provide a cultural resource inventory report that includes archaeological, unique archaeological, and built-environment resources within all areas that could be affected by the proposed project including areas of indirect effect. The inventory report will include the results of both a literature search and pedestrian survey. The contents will address the requirements in *Archaeological Resource Management Reports: Recommended Contents and Guidelines*. The methodology and results of the inventory should be sufficient to provide the reader with an understanding of the nature, character, and composition of newly discovered and previously identified cultural resources so that the required recommendations about the resource(s) CRHR eligibility are clearly understood. No information regarding the location of the cultural resources will be included in these descriptions. The required Department of Parks and Recreation (DPR) 523 forms, including location information and photographs of the resources, are to be included in a removable confidential appendix to the report.[39]

The inventory report will meet the following requirements:

a) The report should clearly discuss the methods used to identify unique archaeological resources (e.g., how the determination was made about the resources' eligibility).
b) The report should identify large resources such as districts and landscapes where resources indicate their presence, even if federal agencies disagree. It is understood that often only a few contributing elements may be in the project area, and that the boundaries of the large resource may need to be revisited as part of future projects. It is acknowledged that boundaries of districts and landscapes can be difficult to define and there is not always good recorded data on these resources.
c) In the case of archaeological resources, the report should discuss whether each one is also a unique archaeological resource and explain why or why not.
d) Descriptions of resources should include spatial relationships to other nearby resources, raw materials sources, and natural features such as water sources and mountains.
e) The evidence that indicates a particular function or age for a resource should be explicitly described with a clear explanation, not simply asserted.

Cultural Resource Evaluation Report

Provide a cultural resource evaluation report. The report contents required by the state of California are outlined in the *Archaeological Resource Management Reports: Recommended Contents and Guidelines*. The evaluation report should also include:

a) Resource descriptions and evaluations together, and not in separate volumes or report sections. This will facilitate understanding of each resource.
b) An evaluation of each potential or eligible California Register of Historical Resources (CRHR) resource within the public archaeology laboratory (PAL) for all seven aspects of integrity[40] using specific examples for each resource. This evaluation needs to be included in the evaluation

[39] Any aspect of the PEA and associated data that Applicants believe to be confidential will be provided in full but may be marked confidential if allowed pursuant to General Order 66 or latest applicable Commission rule (e.g., see Public Records Act Proceeding R.14-11-001).

[40] The seven aspects of integrity are location, design, setting, materials, workmanship, feeling, and association, as defined in "***Types of Historical Resources and Criteria for Listing in the California Register of Historical Resources***" [14 CCR 4852(c)]).

report for all resources that could be affected by the project even if the resources were not previously evaluated. Previous evaluations should be reviewed to address change over time.

c) An evaluation of each potential or eligible CRHR resource within the PAL under all four criteria using specific examples for each resource. This evaluation needs to be included in the evaluation report for all resources that could be affected by the project even if the resources were not previously evaluated. The cultural resources professional should make their own recommendation regarding eligibility, which does not need to agree with previous recommendations for CRHR or NRHP, as long as it is clearly explained.
d) For **prehistoric archaeological resources**, Criteria 1, 2 and 3[41] should be explicitly considered. Research efforts to search for important events and persons related to the resource must be described. This evaluation needs to be included in the evaluation report for all resources that could be affected by the project even if the resources were not previously evaluated. The cultural resources professional should make their own recommendation, which does not need to agree with previous recommendations for CRHR or NRHP eligibility, as long as it is clearly explained.
e) While **potential unique archaeological resources** could be identified in the records search report or inventory report, the justification for each individual resource to be considered a resource under CEQA should be presented in this report.
f) If surface information collected during survey is sufficient to make an eligibility recommendation, this reasoning should be outlined explicitly for each resource. This is particularly the case for resources that are believed to have buried subsurface components.
g) If archaeological testing or additional historical research was required in order to evaluate a resource, the evaluation report will be explicit about why the work was required, the results for each resource, and the subsequent eligibility recommendation.
h) For large projects with multiple similar resources where the eligibility justifications for similar resources are essentially identical, it is acceptable to discuss these resources as a group. However, eligibility justifications for each individual resource is preferred, so if the grouping strategy is used, the criteria used to group resources must be clearly justified.
i) Large resources such as districts and landscapes may be challenging to fully evaluate in the context of a single project. CPUC encourages the identification and evaluation of these resources with the understanding that often only a few contributing elements may be located within the project area, and that the boundaries of the large resource may need to be revisited as part of future projects. It is understood that a full evaluation of the resource may be beyond the scope of one project. Regardless, the potential for the project to affect any resources within a district or landscape must be defined.

[41] Criteria for Designation on the California Register are as follows (defined in http://ohp.parks.ca.gov/?page_id=21238):

- Criterion 1: Associated with events that have made a significant contribution to the broad patterns of local or regional history or the cultural heritage of California or the United States.
- Criterion 2: Associated with the lives of persons important to local, California or national history.
- Criterion 3: Embodies the distinctive characteristics of a type, period, region or method of construction or represents the work of a master or possesses high artistic values.
- Criterion 4: Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California or the nation.

Attachment 4: CPUC Draft Environmental Measures

About this Attachment: The following CPUC Draft Environmental Measures are provided for consideration during PEA development. They should be discussed with the CPUC's CEQA Unit Staff during Pre-filing, especially with respect to the development of Applicant Proposed Measures. The CPUC Draft Environmental Measures may form the basis for mitigation measures in the CEQA document if appropriate to the analysis of potentially significant impacts. These and other CPUC Draft Environmental Measures may be formally incorporated into Chapter 5 of future versions of the PEA Checklist.

5.1 Aesthetics

Aesthetics Impact Reduction During Construction

All project sites will be maintained in a clean and orderly state. Construction staging areas will be sited away from public view where possible. Nighttime lighting will be directed away from residential areas and have shields to prevent light spillover effects. Upon completion of project construction, project staging and temporary work areas will be returned to pre-project conditions, including re-grading of the site and re-vegetation or re-paving of disturbed areas to match pre-existing contours and conditions.

5.3 Air Quality

Dust Control During Construction

The Applicant shall implement measures to control fugitive dust in compliance with all local air district(s) standards. Dust control measures shall include the following at a minimum:

- All exposed surfaces with the potential of dust-generating shall be watered or covered with coarse rock to reduce the potential for airborne dust from leaving the site.
- The simultaneous occurrence of more than two ground disturbing construction phases on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- Cover all haul trucks entering/leaving the site and trim their loads as necessary.
- Use wet power vacuum street sweepers to sweep all paved access road, parking areas, staging areas, and public roads adjacent to project sites on a daily basis (at minimum) during construction. The use of dry power sweeping is prohibited.
- All trucks and equipment, including their tires, shall be washed off prior to leaving project sites.
- Apply gravel or non-toxic soil stabilizers on all unpaved access roads, parking areas, and staging areas at project sites.
- Water and/or cover soil stockpiles daily.
- Vegetative ground cover shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
- All vehicle speeds shall be limited to fifteen (15) miles per hour or less on unpaved areas.
- Implement dust monitoring in compliance with the standards of the local air district.
- Halt construction during any periods when wind speeds are in excess of 50 mph.

5.5 Cultural Resources

Human Remains (Construction and Maintenance)

Avoidance and protection of inadvertent discoveries that contain human remains shall be the preferred protection strategy with complete avoidance of such resources ensured by redesigning the project. If human remains are discovered during construction or maintenance activities, all work shall be diverted from the area of the discovery, and the CPUC shall be informed immediately. The Applicant shall contact the County Coroner to determine whether or not the remains are Native American. If the remains are determined to be Native American, the Coroner will contact the Native American Heritage Commission (NAHC). The NAHC will then identify the person or persons it believes to be the most likely descendant of the deceased Native American, who in turn would make recommendations for the appropriate means of treating the human remains and any associated funerary objects.

If the remains are on federal land, the remains shall be treated in accordance with the Native American Graves Protection and Repatriation Act (NAGPRA). If the remains are not on federal land, the remains shall be treated in accordance with Health and Safety Code Section 7050.5, CEQA Section 15064.5(e), and Public Resources Code Section 5097.98.

5.8 Greenhouse Gas Emissions

Greenhouse Gas Emissions Reduction During Construction

The following measures shall be implemented to minimize greenhouse gas emissions from all construction sites:

- If suitable park-and-ride facilities are available in the project vicinity, construction workers shall be encouraged to carpool to the job site.
- The Applicant shall develop a carpool program to the job site.
- On road and off-road vehicle tire pressures shall be maintained to manufacturer specifications. Tires shall be checked and re-inflated at regular intervals.
- Demolition debris shall be recycled for reuse to the extent feasible.
- The contractor shall use line power instead of diesel generators at all construction sites where line power is available.
- The contractor shall maintain construction equipment per manufacturing specifications.

5.19 Utilities and Service Systems

Notify Utilities with Facilities Above and Below Ground

The Applicant shall notify all utility companies with utilities located within or crossing the project ROW to locate and mark existing underground utilities along the entire length of the project at least 14 days prior to construction. No subsurface work shall be conducted that would conflict with (i.e., directly impact or compromise the integrity of) a buried utility. In the event of a conflict, areas of subsurface excavation or pole installation shall be realigned vertically and/or horizontally, as appropriate, to avoid other utilities and provide adequate operational and safety buffering. In instances where separation between third-party utilities and underground excavations is less than 5 feet, the Applicant shall submit the intended construction methodology to the owner of the third-party utility for review and approval at least 30 days prior to construction. Construction methods shall be adjusted as necessary to assure that the integrity of existing utility lines is not compromised.

5.20 Wildfire

Construction Fire Prevention Plan

A project-specific Construction Fire Prevention Plan for both construction and operation of the project shall be submitted for review prior to initiation of construction. A draft copy of the Plan shall be provided to the CPUC and state and local fire agencies at least 90 days before the start of any construction activities in areas designated as Very High or High Fire Hazard Severity Zones. Plan reviewers shall also include

federal, state, or local agencies with jurisdiction over areas where the project is located. The final Plan shall be approved by the CPUC at least 30 days prior to the initiation of construction activities. The Plan shall be fully implemented throughout the construction period and include the following at a minimum:

- The purpose and applicability of the Plan
- Responsibilities and duties
- Preparedness training and drills
- Procedures for fire reporting, response, and prevention that include:
    - Identification of daily site-specific risk conditions
    - The tools and equipment needed on vehicles and to be on hand at sites
    - Reiteration of fire prevention and safety considerations during tailboard meetings
    - Daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity
- Coordination procedures with federal and local fire officials
- Crew training, including fire safety practices and restrictions
- Method(s) for verifying that all Plan protocols and requirements are being followed

A project Fire Marshal or similar qualified position shall be established to enforce all provisions of the Construction Fire Prevention Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. Construction activities shall be monitored to ensure implementation and effectiveness of the Plan.

Fire Prevention Practices (Construction and Maintenance)

The Applicant shall implement ongoing fire patrols during the fire season as defined each year by local, state, and federal fire agencies. These dates vary from year to year, generally occurring from late spring through dry winter periods. During Red Flag Warning events, as issued daily by the National Weather Service, all construction/maintenance activities shall cease, with an exception for transmission line testing, repairs, unfinished work, or other specific activities which may be allowed if the facility/equipment poses a greater fire risk if left in its current state.

All construction/maintenance crews and inspectors shall be provided with radio and cellular telephone access that is operational in all work areas and access routes to allow for immediate reporting of fires. Communication pathways and equipment shall be tested and confirmed operational each day prior to initiating construction/maintenance activities at each work site. All fires shall be reported to the fire agencies with jurisdiction in the area immediately upon discovery of the ignition.

All construction/maintenance personnel shall be trained in fire-safe actions, initial attack firefighting, and fire reporting. All construction/maintenance personnel shall be trained and equipped to extinguish small fires in order to prevent them from growing into more serious threats. All construction/maintenance personnel shall carry at all times a laminated card and be provided a hard hat sticker that list pertinent telephone numbers for reporting fires and defining immediate steps to take if a fire starts. Information on laminated contact cards and hard hat stickers shall be updated and redistributed to all construction/maintenance personnel and outdated cards and hard hat stickers shall be destroyed prior to the initiation of construction/maintenance activities on the day the information change goes into effect.

Construction/maintenance personnel shall have fire suppression equipment on all construction vehicles. Construction/maintenance personnel shall be required to park vehicles away from dry vegetation. Water tanks and/or water trucks shall be sited or available at active project sites for fire protection during construction. The Applicant shall coordinate with applicable local fire departments prior to construction/maintenance activities to determine the appropriate amounts of fire equipment to be carried on vehicles and, should a fire occur, to coordinate fire suppression activities.

Fire-Threat Maps and Fire-Safety Rulemaking

PUC Fire Safety Rulemaking Background

In October 2007, devastating wildfires driven by strong Santa Ana winds burned hundreds of square miles in Southern California. Several of the worst wildfires were reportedly ignited by overhead utility power lines and aerial communication facilities near power lines. In response to these wildfires, we created Rulemaking (R.) 08-11-005 to consider and adopt regulations to protect the public from potential fire hazards associated with overhead powerline facilities and nearby aerial communication facilities.

In 2009, we issued several decisions in R.08-11-005 that together adopted dozens of new fire-safety regulations. Most of the adopted fire-safety regulations consisted of new or revised rules in General Order (GO) 95. Several adopted fire-safety regulations apply only to areas, referred to as “high fire-threat areas,” where there is a higher risk for power line fires igniting and spreading rapidly. These high fire-threat areas are chosen by several maps that were approved on an interim basis. Each of the interim maps covers a different part of the State and uses its own method for showing high fire-threat areas, showing consistency and potential enforcement issues. To solve these issues, we started to create a single statewide fire-threat map to select areas with a higher risk for destructive power line fires and where stricter fire-safety regulations should apply.

In May 2015, we closed R.08-11-005 and began rulemaking R.15-05-006 to complete the unfinished tasks in R.08-11-005. The general scope of R.15-05-006 was to complete these unfinished tasks:

1. Create and adopt a statewide fire-threat map that outlines the boundaries of a new High Fire-Threat District (HFTD) where the previously adopted regulations will apply,
2. Figure out the need for more fire-safety regulations in the HFTD, and
3. Revise GO 95 to include a definition and maps of the HFTD, as well as any new fire-safety regulations.

The scope and schedule for R.15-05-006 was divided into two parallel tracks. One track focused on the development and adoption of a statewide fire-threat map. The second track focused on the identification, evaluation, and adoption of fire-safety regulations in the HFTD.

On December 21, 2017, we completed the second track of R.15-05-006 by issuing Decision (D.) 17-12-024 which adopted regulations to enhance fire-safety in the HFTD. On January 19, 2018 we adopted, via Safety and Enforcement Division’s (SED) disposition of a Tier 1 Advice Letter, the final CPUC Fire-Threat Map. The adopted CPUC Fire-Threat Map, together with the map of Tier 1 High Hazard Zones (HHZs) in the U.S. Forest Service- California Department of Forestry and Fire Protection’s (CAL FIRE) joint map of tree mortality HHZs, form the HFTD Map where stricter fire-safety regulations apply. Read more information about the
Sept. 19, 2018: SED-CAL FIRE Joint Assessment and Recommendation Report on Fire-Wind Map.

Fire-Threat Maps & the High Fire-Threat District (HFTD)

Map Dissemination

Under the requirements of D.17-01-009, the Safety and Enforcement Division (SED) makes available the following maps that together make up the HFTD, which will direct future utility and communication infrastructure provider fire-safety activities in California. [Please use Internet Explorer or compatible browser to open files.]

1. CPUC Fire-Threat Map - high resolution pdf (8.5"x11")
2. CPUC Fire-Threat Map - high resolution pdf (poster size)

3. CPUC Fire-Threat Map - zip archive of native GIS files
4. USFS-CAL FIRE Joint Map of Tree Mortality HHZs - current version (NOTE: Scroll down to the “Tree Mortality Related High Hazard Zones” section on the CAL FIRE webpage. Click link to download the Tier 1_HighHazardZones which is used as CPUC HFTD Zone 1.)

In addition to the mandated map products required for posting in D.17-01-009 and provided above, supplemental map products are available below:

1. HFTD Map - high resolution pdf (8.5"x11")
2. HFTD Map - high resolution pdf (poster size)
3. HFTD Map - GIS web app viewer

The HFTD Map provides a single map representing all parts of the HFTD from both map sources (i.e. CPUC Fire-Threat Map and Tree Mortality HHZ Map).

Interim Maps

The fire-safety regulations below require a map to define "high fire-threat areas" where these regulations apply. The interim maps adopted in R.08-11-005 consisted of these three fire-threat maps below:

1. A wildland fire-threat map prepared by the California Department of Forestry and Fire Protection’s (CAL FIRE) as part of its Fire Resource and Assessment Program (FRAP). This map is often referred to as the "FRAP Map."
2. A modified FRAP Map developed by San Diego Gas & Electric (SDG&E) for its own service territory. This is sometimes referred to as the "SDG&E fire-threat map."
3. A map developed by communications utilities (see page 262 of D.12-01-032) to identify areas where there is an increased risk for utility-associated wildfires. This map is oftentimes referred to as the "Reax Map."

The Reax Map outlined high fire-threat areas in Northern California where regulations applied. Except for SDG&E’s service territory, the FRAP Map outlined high fire-threat areas in Southern California where the previously identified regulations applied. The SDG&E fire-threat map was used for SDG&E’s service territory.

CPUC Fire-Threat Map

In 2012, we created a statewide map designed specifically to show areas where there is an increased risk for utility associated wildfires. The CPUC Fire-Threat Map, started in R.08-11-005 and continued in R.15-05-006.

We used a multistep process to develop the statewide CPUC Fire-Threat Map. The first step was to develop Fire Map 1 (FM 1), an agnostic map that shows California areas where there is a higher risk for the ignition and rapid spread of powerline fires due to strong winds, abundant dry vegetation, and other environmental conditions. These are the environmental conditions associated with the catastrophic powerline fires that burned 334 square miles of Southern California in October 2007. FM 1 was developed by CAL FIRE and adopted by us in Decision 16-05-036.

FM 1 served as the foundation for the development of the final CPUC Fire-Threat Map. The CPUC Fire-Threat Map describes the boundaries of a new HFTD where utility infrastructure and operations will have stricter fire-safety regulations. The CPUC Fire-Threat Map incorporates the fire hazards associated with past powerline wildfires besides the October 2007 fires in Southern California (e.g., the Butte Fire that burned 71,000 acres in Amador and Calaveras Counties in September 2015) and ranks fire-threat areas based on the risks that utility-associated wildfires pose to people and property.

The main people handling the development of the CPUC Fire-Threat Map was a group of utility mapping experts known as the Peer Development Panel (PDP), with oversight from a team of independent experts known as the Independent Review Team (IRT). The members of the IRT were selected by CAL FIRE and CAL FIRE served as the Chair of the IRT. The development of CPUC Fire-Threat Map includes input from many stakeholders, including investor-owned and publicly owned electric utilities, communications infrastructure providers, public interest groups, and local public safety agencies.

The PDP served a draft statewide CPUC Fire-Threat Map on July 31, 2017, which was later reviewed by the IRT. On October 2 and October 5, 2017, the PDP filed an Initial CPUC Fire-Threat Map that reflected the results of the IRT’s review through September 25, 2017. The final IRT-approved CPUC Fire-Threat Map was filed on November 17, 2017. On November 21, 2017, SED filed on behalf of the IRT a summary report detailing the production of the CPUC Fire-Threat Map (referenced at the time as Fire Map 2). Interested

parties were able to submit alternate maps, written comments on the IRT-approved map and alternate maps (if any), and motions for Evidentiary Hearings. No motions for Evidentiary Hearings or alternate map proposals were received. On January 19, 2018 we adopted, via (SED) disposition of a Tier 1 Advice Letter, the final CPUC Fire-Threat Map.

You can access the GIS web viewer here: https://ia.cpuc.ca.gov/firemap/ and click on the magnifying lens icon in the upper right corner to show the search bar. From there you can enter addresses and zoom in to a fairly fine scale with street level detail.

High Fire-Threat District (HFTD)

In D.17-01-009, as changed by D.17-06-024, we adopted a work plan for the development and adoption of the CPUC Fire-Threat Map, which is one part of the HFTD. Following these decisions, the HFTD is made up of two maps:

1. Tier 1 High Hazard Zones (HHZs) on the ***U.S. Forest Service-CAL FIRE joint map of Tree Mortality HHZs ("Tree Mortality HHZ Map").***
2. Tier 2 and Tier 3 fire-threat areas on the ***CPUC Fire-Threat Map***

The Tree Mortality HHZ Map is an off-the-shelf map. Tier 1 HHZs are zones near communities, roads, and utility lines, and are a direct threat to public safety. Tier 2 fire-threat areas outline areas where there is a higher risk (including likelihood and potential impacts on people and property) from utility related wildfires. Tier 3 fire-threat areas outline areas where there is an extreme risk (including likelihood and potential impacts on people and property) from utility related wildfires.

It should be noted that:

1. Tier 2 and Tier 3 fire-threat areas on the CPUC Fire-Threat Map may overlap Tier 1 HHZs on the Tree Mortality HHZ Map,
2. The Tree Mortality HHZ Map is not owned or maintained by the CPUC, and
3. The Tree Mortality HHZ Map is updated more often (about once a year) than the 10-year update cycle adopted by the above-mentioned decisions for the CPUC Fire-Threat Map.

The fire-safety regulations described below apply only to areas designated as "high fire-threat areas" following the adopted interim maps. The HFTD is intended to represent an area based, in part, upon a mapping product (i.e. CPUC Fire-Threat Map) developed specifically for the purpose of scoping utility regulations.

Fire-Safety Regulations

The fire-safety regulations adopted in R.08-11-005 that relied on the interim maps include:

- **GO 95, Rule 18A**, which requires electric utilities and communication infrastructure providers (CIPs) to place a high priority on the correction of significant fire hazards in high fire-threat areas of Southern California.
- **GO 95, Rules 31.2, 80.1A, and 90.1B**, which set the minimum frequency for inspections of aerial communication facilities located in close proximity to power lines in high fire-threat areas throughout California.
- **GO 95, Rule 35, Table 1, Case 14**, which requires increased radial clearances between bare-line conductors and vegetation in high fire-threat areas of Southern California.
- **GO 95, Appendix E,** which authorizes increased time-of-trim clearances between bare-line conductors and vegetation in high fire-threat areas of Southern California.
- **GO 165, Appendix A, Table 1**, which requires more frequent patrol inspections of overhead powerline facilities in rural, high fire-threat areas of Southern California.
- **GO 166, Standard 1.E.**, which requires each electric utility in Southern California to develop and submit a plan to reduce the risk of fire ignitions by overhead facilities in high fire-threat areas during extreme fire-weather events. Electric utilities in Northern California must also develop and submit a plan if they have overhead facilities in high fire-threat areas that are subject to extreme fire-weather events.

The scope of R.15-05-006 included the identification, evaluation, and adoption of more fire-safety regulations for the HFTD. A series of public workshops was held by a group known as the Fire Safety Technical Panel (FSTP). The panel was chaired by the Safety and Enforcement Division and Southern California Edison Company. On July 10, 2017, the FSTP filed a Workshop Report that had 23 proposed fire-safety regulations and 8 alternatives. Interested parties filed opening comments on July 31, 2017, and reply comments on August 11, 2017. On December 21, 2017, we issued D.17-12-024, adopting new fire-safety regulations in the HFTD.

Who We Are
PHMSA Guidance
Organization
Leadership
PHMSA FAQs
Careers
Working with PHMSA

Contact Us

Office of Pipeline Safety
U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue, SE
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Fax: 202-366-4566
Business Hours: 9:00am-5:00pm ET, M-F

If you are deaf, hard of hearing, or have a speech disability, please dial 7-1-1 to access telecommunications relay services.

General Pipeline FAQs

Basic information about the use of pipelines and their contents.

1. What are the major sources of energy in the United States?
   The biggest source of energy is petroleum, including oil and natural gas. Together, they supply 65 percent of the energy we use. According to the U.S. Energy Information Administration, oil furnishes 40 percent of our energy, natural gas 25 percent, coal 22 percent, nuclear 8 percent, and renewables make up 4 percent.

2. What kinds of produts are transported through energy pipelines?
   Natural gas pipelines transport natural gas. Liquid petroleum (oil) pipelines transport liquid petroleum and some liquefied gases, including carbon dioxide. Liquid petroleum includes crude oil and refined products made from crude oil, such as gasoline, home heating oil, diesel fuel, aviation gasoline, jet fuels, and kerosene. Liquefied ethylene, propane, butane, and some petrochemical feedstocks are also transported through oil pipelines.

3. What is 'crude oil'?
   Crude oil is liquid petroleum that is found underground. Depending on where it is found and the conditions under which it was formed, crude oil can vary widely in density, viscosity, and sulfur content. Crude oil is processed by oil producing companies to make refined products that we can use, such as gasoline, home heating oil, diesel fuel, aviation gasoline, jet fuels, and kerosene.

4. How is oil used?
   A vast number of products that are used in our daily lives are made possible through the use of oil. Oil products fuel our transportation, whether it is by plane, train, car, truck, bus, or motorcycle. Oil is used to heat our homes and provide the energy that powers our factories. Chemicals made from oil are used to make a wide variety of products, ranging from clothing to cosmetics to pharmaceuticals. Modern plastics made from oil are used extensively in producing numerous products that are used daily in all facets of our lives.

5. How is natural gas used?
   Natural gas supplies 25 percent of all the energy Americans consume. It's our second largest source of energy. Only oil provides more energy than natural gas. Natural gas has many different uses. For example, power companies use it to generate electricity, industries use it for heat and as a source of power, and millions of households rely on natural gas for heating and cooking. Liquid propane gas and compressed natural gas, which are produced from natural gas, provide the convenience of natural gas to locations where pipeline distribution is not available.

6. What can you tell me about our nation's pipelines?
   The nation's pipelines are a transportation system. Pipelines enable the safe movement of extraordinary quantities of energy products to industry and consumers, literally fueling our economy and way of life. The arteries of the Nation's energy infrastructure, as well as one of the safest and least costly ways to transport energy products, our oil and gas pipelines provide the resources needed for national defense, heat and cool our homes, generate power for business and fuel an unparalleled transportation system.

The nation's more than 2.6 million miles of pipelines safely deliver trillions of cubic feet of natural gas and hundreds of billions of ton/miles of liquid petroleum products each year. They are essential: the volumes of energy products they move are well beyond the capacity of other forms of transportation. It would take a constant line of tanker trucks, about 750 per day, loading up and moving out every two minutes, 24 hours a day, seven days a week, to move the volume of even a modest pipeline. The railroad-equivalent of this single pipeline would be a train of 225, 28,000 gallon tank cars.

Pipeline systems are the safest means to move these products. The federal government rededicated itself to pipeline safety in 2006 when the PIPES Act was signed. It mandates new methods and makes commitments for new technologies to manage the integrity of the nation's pipelines and raise the bar on pipeline safety.

Pipeline systems consist of a few major components:

- Pipelines that collect products from sources, such as wells on land (gathering lines) or offshore, or from shipping, such as tankers for oil or liquefied natural gas (LNG). These systems move the product to storage, processing (such as treatment for gas or refining of petroleum).
- Transmission pipelines that transport large quantities of hazardous liquids or natural gas over longer distances; transmission lines deliver natural gas to distant power plants, large industrial customers and to municipalities for further distribution; petroleum transmission lines deliver crude oil to distant refineries or refined products to distant markets, such as airports or to depots where fuel oils and gasoline are loaded into trucks for local delivery.
- Distribution lines are a part of natural gas systems, and consist of main lines that move gas to industrial customers, down to the smaller service lines that connect to businesses and homes throughout a municipality.

Along these pipelines are pump stations for liquids and compressor stations for natural gas, storage and distribution facilities and automated control facilities to manage the product movement and maintain safety. Should a pipeline fail, a drop in pressure normally triggers systems that close valves to isolate the failed pipeline.

The federal authority for pipeline safety is PHMSA, the Pipeline and Hazardous Materials Safety Administration of the U.S. Department of Transportation. PHMSA's Office of Pipeline Safety is responsible for regulating the safety of design, construction, testing, operation, maintenance, and emergency response of U.S. oil and natural gas pipeline facilities.

7. How big is our pipeline infrastructure: how many miles of what kinds of pipelines are there in the United States?
   See Pipeline Mileage and Facilities

Review an expansive discussion of pipelines.

Last updated: Tuesday, November 6, 2018

U.S. DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

1200 NEW JERSEY AVENUE, SE

WASHINGTON, DC 20590

202-366-4433

HAZMAT Registration Help Desk: 202-366-4109

Hazardous Materials Information Center: 1-800-467-4922

Safety

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Information Quality

No FEAR Act

Office of Inspector General

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Web Policies and Notices

Web Standards

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of:	)	Docket No. HSA-A 02/03-133
Ventura Former Manufactured Gas Plant Site 1555 N. Olive Street Ventura, California 93001	)	Voluntary Cleanup Agreement
Project Proponent: Southern California Gas Company and Southern California Edison	)	Health and Safety Code Section 25355.5(a)(1)(C)

I. INTRODUCTION

1.1 Parties. The California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) enters into this Voluntary Cleanup Agreement (Agreement) with Southern California Gas Company and Southern California Edison collectively referred to as Proponent (Proponent).

1.2 Site. There are six parcels that are the subject of this Agreement located from N. Olive Street, extending west through the right-of way for Highway 33 and ending at the parcel, which the Ventura County Flood Control District uses for storm water control. These parcels are referred to as the ("Site"). These parcels were owned by the Southern California Gas Company and the Southern California Edison, and were used for a period of time as a manufactured gas plant. The Site consists of approximately 8.5 acres. The Assessor's parcel numbers for the former Ventura Manufactured Gas Plant Site are: all of 068-0-142-030 (Parcel A – Southern California Gas Company), 068-0-142-020 (Parcel B – Offshore Crane and Service Company, also known as TNT Trucking), 068-0-142-230 (Parcel C – Ventura

Seaside Properties), a portion of Right of Way for California Route 33 (Parcel D), a portion of Ventura County Flood Control District (Parcel E), and a portion of 068-0-142-100 (City of Buenaventura – Parcel F). A Site location map is attached as Exhibit A.A Site Plan is attached as Exhibit B.

1.3 Jurisdiction. This Agreement is entered into by DTSC and Proponent pursuant to Health and Safety Code (H&SC) section 25355.5(a)(1)(C). This section authorizes DTSC to enter into an enforceable agreement with Proponent to oversee the characterization and cleanup of a Site.

1.4 Purpose. The purpose of this Agreement is for the Proponent to conduct a site investigation to further characterize the existing soil contamination and, if necessary, to prepare a removal action workplan and implement a removal action under the oversight of DTSC. If appropriate, the Proponent has agreed to implement a deed restriction for the Site. The purpose of this Agreement is also for DTSC to obtain reimbursement from the Proponent for DTSC's oversight costs.

II. BACKGROUND

2.1 Ownership. The Proponent has divided the approximately 8.5-acre Ventura Site into six parcels, A through F, as shown on Exhibit B. The current Site owners are:

Parcel A is presently owned by Southern California Gas Company and is used for natural gas compression and delivery.

Parcel B is presently owned by the Offshore Crane and Service, Inc., known as TNT Trucking (Offshore Crane).

Parcel C is currently owned by Ventura Seaside Properties, Inc. C.D. Lyon Construction, Inc. occupies this parcel.

Parcel D is currently owned by the State of California and consists of a portion of State Highway 33.

Parcel E is currently owned by Ventura County Flood Control District and is used for stormwater management.

Parcel F is owned by the City of Buenaventura, and is a part of Olive Street.

2.2 Substances Found at the Site. A Preliminary Endangerment Assessment (PEA) was completed for Parcel A in 1991, and several site investigations and removal actions have been conducted on or in the vicinity of the Site by the Proponent and others, since 1987. These investigations indicate that the site soil is potentially contaminated with constituents, including total recoverable petroleum hydrocarbon (TRPH), polycyclic aromatic hydrocarbons (PAHs), and some metals possibly related to the operation of the former manufactured gas plant (MGP) at the Site.

2.3 Physical Description. The Site consists of approximately 8.5 acres located at the addresses included in Section 1.2. The Site has a CR-2 (Commercial Regional) zoning designation.

Parcel A encompasses a small section of Olive Street and the area west of Olive Street to Parcel B to the west. The majority of the structures associated with the current natural gas compressor operations are located in the western portion of Parcel A. The Southern California Gas Company structures include a gas compressor building, secondary compressor building, cooling tower, scrubbers, oil storage tanks, and office. Parcel B extends west from Parcel A to the Southern Pacific Railroad right-of-way. Parcel C encompasses the area from

the Southern Pacific Railroad to State Highway 33 to the west. Parcel D is currently owned by the State of California and consists of a portion of State Highway 33. This highway is located west of Parcel C. Parcel E encompasses an area west of State Highway 33 that is used by the Ventura County Flood Control District for stormwater flood control. Parcel F is a small portion of Olive Street, located East of Parcel A. Surrounding land use is primarily commercial and/or residential.

2.4 Site History. A manufactured gas plant (MGP) operated on Parcels A and B from approximately 1905 to 1919. Oil gas manufacturing processes were evidently used at the Site. A compressor station for natural gas has been in operation from 1919 to the present. Prior to MGP operations, an ice factory and an electrics works had been operating on Parcels A and B of the Site since 1890. From 1923 to 1969, the western portion of Parcels A and B was leased to Seaside Oil Company that conducted refining and storage of gasoline, kerosene and lubricating oils and the manufacturing of asphalt. Between 1969 and 1973, the Utility Refining Company operated a refinery on Parcel B. Between 1976 and 1987, Parcel B was leased or owned by Vetco Offshore Inc., for the storage of piping and raw materials, an electroplating shop, a paint shop, and an x-ray facility. Parcel B was sold in 1987 to Offshore Crane for the purpose of manufacture of offshore drilling and production equipment. Parcel C was used for the storage of tanks and the Southern Pacific Railroad right-of-way. Parcel D was sold in 1955 to the State of California for construction of State Highway 33. Parcel E was sold in 1953 to the Ventura County Flood Control District to construct the Ojai Levee for storm-water flood control.

III. AGREEMENT

3.0 **IT IS HEREBY AGREED THAT** DTSC will provide review and oversight of the

response activities conducted by the Proponent in accordance with the Scope of Work contained in Exhibit C. The Proponent shall conduct the activities in the manner specified herein and in accordance with the schedule specified in Exhibit E. All work shall be performed consistent with H&SC section 25300 et seq., as amended; the National Contingency Plan (40 Code of Federal Regulations (CFR) Part 300), as amended; U.S. EPA and DTSC Superfund guidance documents regarding site investigation and remediation.

3.1 Scope of Work and DTSC Oversight. DTSC shall review and provide Proponent with written comments on all Proponent deliverables as described in Exhibit C (Scope of Work) and other documents applicable to the scope of the project. DTSC shall provide oversight of field activities, including sampling and remedial activities, as appropriate. DTSC's completion of activities described above shall constitute DTSC's complete performance under this Agreement.

3.2 Additional Activities. Additional activities may be conducted and DTSC oversight provided by amendment to this Agreement or Exhibits hereto in accordance with Paragraph 3.17. If DTSC expects additional oversight costs to be incurred related to these additional activities, it will provide an estimate of the additional oversight cost to the Proponent.

3.3 Agreement Managers. Ms. Sayareh Amir is designated by DTSC as its Manager for this Agreement. Mr. Masood Hosseini of the Southern California Gas Company is designated by the Proponent as its Manager for this Agreement. Each Party to this Agreement shall provide at least ten (10) days advance written notice to the other of any change in its designated manager.

3.4 Notices and Submittals. All notices, documents and communications required to

be given under this Agreement, unless otherwise specified herein, shall be sent to the respective parties at the following addresses in a manner that produces a record of the sending of the notice, document or communication such as certified mail, overnight delivery service, facsimile transmission, e-mail or courier hand delivery service:

3.4.1 To DTSC:

Ms. Sayareh Amir, Chief
Southern California Cleanup Operations Branch – Glendale Office
Department of Toxic Substances Control
1011 North Grandview Avenue
Glendale, California 91201

3.4.2 To the Proponent:

Mr. Masood Hosseini, Senior Project Manager
Site Assessment and Mitigation, GT16G2
Southern California Gas Company
P.O. Box 513249
Los Angeles, California 90051-1249

3.5 DTSC Review and Approval. If DTSC determines that any report, plan, schedule or other document submitted for approval pursuant to this Agreement fails to comply with this Agreement or fails to protect public health or safety or the environment, DTSC may (a) Return comments to the Proponent with recommended changes; or (b) Modify the document as deemed necessary and approve the document as modified.

3.6 Communications. All DTSC approvals and decisions made regarding submittals and notifications will be communicated to the Proponent in writing by DTSC's Agreement Manager or his/her designee. No informal advice, guidance, or suggestions or comments by DTSC regarding reports, plans, specifications, schedules or any other writings by the Proponent shall be construed to relieve the Proponent of the obligation to obtain such written approvals.

3.7 Endangerment During Implementation. In the event DTSC determines that any activity (whether or not pursued in compliance with this Agreement) may pose an imminent or substantial endangerment to the health and safety of people on the Site or in the surrounding area or to the environment, DTSC may order the Proponent to stop further implementation of this Agreement for such period of time as may be needed to abate the endangerment.

3.8 Payment. The Proponent agrees to pay (1) all costs incurred by DTSC in association with preparation of this Agreement and for review of documents submitted prior to the effective date of the Agreement, and (2) all costs incurred by DTSC in providing oversight pursuant to this Agreement including review of the documents described in Exhibit C and associated documents, and in providing oversight of field activities. An estimate of DTSC's oversight costs is attached as Exhibit D. It is understood by the parties that Exhibit D is an estimate and cannot be relied upon as the final cost figure. DTSC will bill the Proponent quarterly. Proponent agrees to make payment within sixty (60) days of receipt of DTSC's billing. Such billings will reflect any amounts that have been advanced to DTSC by the Proponent.

3.8.1 In anticipation of services to be rendered, Proponent shall make an advance payment of $58,000 to DTSC. Fifty (50) percent of the payment ($29,000) shall be made no later than ten (10) days after this Agreement is fully executed. The remaining fifty (50) percent shall be made no later than 30 days after this Agreement is fully executed. If the Proponent's advance payment does not cover all costs payable to DTSC under this paragraph, Proponent agrees to pay the additional costs within sixty (60) days of receipt of a bill from DTSC.

3.8.2 If any bill is not paid by the Proponent within sixty (60) days after it is sent by DTSC, the Proponent may be deemed to be in material default of this Agreement.

3.8.3 All payments made by the Proponent pursuant to this Agreement shall be by a Southern California Gas Company check made payable to the "Department of Toxic Substances Control", and bearing on its face the project code for the site (CalStars Site Code 300184-11) and the docket number (Docket No. HSA-A 02/03133) of this Agreement. Payments shall be sent directly to:

Department of Toxic Substances Control
Accounting/Cashier
1001 I Street, 21st Floor
P.O. Box 806
Sacramento, California 95812-0806

A photocopy of the check shall be sent concurrently to DTSC's Agreement Manager.

3.8.4 If the advance payment exceeds DTSC's actual oversight costs, DTSC will provide an accounting for expenses and refund the difference within one hundred-twenty (120) days after termination of this Agreement in accordance with Paragraph 3.18. In no other case shall the Proponent be entitled to a refund from DTSC or to assert a claim against DTSC for any amount paid or expended under this Agreement.

3.9 Condition Precedent. It is expressly understood and agreed that DTSC's receipt of the advance payment described in Paragraph 3.8.1. is a condition precedent to DTSC's obligation to provide oversight, review and/or comment on documents.

3.10 Record Retention. DTSC shall retain all cost records associated with the work performed under this Agreement for such time periods as may be required by applicable state law. The Proponent may request to inspect all documents which support DTSC's cost

determination in accordance with the Public Records Act, Government Code section 6250 et seq.

3.11 Project Coordinator. The work performed pursuant to this Agreement shall be under the direction and supervision of a qualified project coordinator, with expertise in hazardous substance site cleanup. The Proponent shall submit: a) the name and address of the project coordinator; and b) in order to demonstrate expertise in hazardous substance site cleanup, the resume of the coordinator. The Proponent shall promptly notify DTSC of any change in the identity of the Project Coordinator. All engineering and geological work shall be conducted in conformance with applicable state law including but not limited to Business and Professions Code sections 6735 and 7835.

3.12 Access. Proponent shall provide and/or make reasonable attempts to obtain access to the Site and offsite areas to which access is necessary to implement this Agreement. Such access shall be provided to DTSC's employees, contractors, and consultants at all reasonable times. Nothing in this paragraph is intended or shall be construed to limit in any way the right of entry or inspection that DTSC or any other agency may otherwise have by operation of any law. DTSC and its authorized representatives shall have the authority to enter and move freely about all property at the Site at all reasonable times for purposes including, but not limited to: inspecting records, operating logs, sampling and analytic data, and contracts relating to this Site; reviewing the progress of the Proponent in carrying out the terms of this Agreement; conducting such tests as DTSC may deem necessary; and verifying the data submitted to DTSC by the Proponent.

3.13 Sampling, Data and Document Availability. When requested by DTSC, the Proponent shall make available to DTSC, and shall provide copies of, all data and information

concerning contamination at the Site, including technical records and contractual documents, sampling and monitoring information and photographs and maps, whether or not such data and information was developed pursuant to this Agreement.

3.14 Notification of Field Activities. The Proponent shall inform DTSC at least seven (7) days in advance of all field activities pursuant to this Agreement and shall allow DTSC and its authorized representatives to take duplicates of any samples collected by the Proponent pursuant to this Agreement.

3.15 Notification of Environmental Condition. The Proponent shall notify DTSC's Agreement Manager immediately upon learning of any condition posing an immediate threat to public health or safety or the environment. Within seven (7) days of the onset of such a condition, the Proponent shall furnish a report to DTSC, signed by the Proponent's Agreement Manager, setting forth the events, which occurred, and the measures taken in the response thereto.

3.16 Preservation of Documentation. The Proponent shall maintain a central repository of the data, reports, and other documents prepared pursuant to this Agreement. All such data, reports and other documents shall be preserved by the Proponent for a minimum of six (6) years after the conclusion of all activities carried out under this Agreement. If DTSC requests that some or all of these documents be preserved for a longer period of time, the Proponent shall either comply with that request, deliver the documents to DTSC, or permit DTSC to copy the documents prior to destruction. The Proponent shall notify DTSC in writing at least ninety (90) days prior to the expiration of the six-year minimum retention period before destroying any documents prepared pursuant to this Agreement. If any litigation, claim, negotiation, audit or other action involving the records has been started before the expiration

of the six-year period, the related records shall be retained until the completion and resolution of all issues arising from or until the end of the six-year period, which ever is later.

3.17 Amendments. This Agreement may be amended or modified solely upon written consent of all parties. Such amendments or modifications may be proposed by any party and shall be effective the third business day following the day the last party signing the amendment or modification sends its notification of signing to the other party. The parties may agree to a different effective date.

3.18 Termination for Convenience. Except as otherwise provided in this Paragraph, each party to this Agreement reserves the right unilaterally to terminate this Agreement for any reason. Termination may be accomplished by giving a thirty (30) day advance written notice of the election to terminate this Agreement to the other Party. In the event that this Agreement is terminated under this Paragraph, the Proponent shall be responsible for DTSC costs through the effective date of termination.

3.19 Exhibits. All exhibits attached to this Agreement are incorporated herein by this reference.

3.20 Time Periods. Unless otherwise specified, time periods begin from the date this Agreement is fully executed, and "days" means calendar days. "Business days" means all calendar days that are not weekends or official State holidays.

3.21 Proponent Liabilities. Nothing in this Agreement shall constitute or be considered a satisfaction or release from liability for any condition or claim arising as a result of Proponent's past, current, or future operations. Nothing in this Agreement is intended or shall be construed to limit the rights of any of the parties with respect to claims arising out of

or relating to the deposit or disposal at any other location of substances removed from the Site.

3.22 Government Liabilities. The State of California (State) shall not be liable for any injuries or damages to persons or property resulting from acts or omissions by the Proponent or by related parties in carrying out activities pursuant to this Agreement, nor shall the State of California be held as a party to any contract entered into by the Proponent or its agents in carrying out the activities pursuant to this Agreement.

3.23 Third Party Actions. In the event that the Proponent is a party to any suit or claim for damages or contribution relating to the Site to which DTSC is not a party, the Proponent shall notify DTSC in writing within ten (10) days after service of the complaint in the third-party action. Proponent shall pay all costs incurred by DTSC relating to such third-party actions, including but not limited to responding to subpoenas.

3.24 Reservation of Rights. DTSC and the Proponent reserve the following rights.

3.24.1 DTSC reserves its right to pursue cost recovery under the Comprehensive Environmental Response, Compensation and Liability act of 1980 (CERCLA), as amended, the California Health and Safety Code section 25360, and any other applicable section of the law.

3.24.2 Nothing in this Agreement is intended or shall be construed to limit or preclude DTSC from taking any action authorized by law or equity to protect public health and safety or the environment and recovering the costs thereof.

3.24.3 Nothing in this Agreement shall constitute or be construed as a waiver of the Proponent's rights, (including any covenant not to sue or release) with respect to any claim,

cause of action, or demand in law or equity that the Proponent may have against any "person", as defined in Section 101(21) of CERCLA, or Health and Safety Code section 25319, that is not a signatory to this Agreement.

3.24.4 By entering into this Agreement, Proponent does not admit to any fact, fault or liability under any statute or regulation.

3.25 Compliance with Applicable Laws. Nothing in this Agreement shall relieve the Proponent from complying with all applicable laws and regulations, and the Proponent shall conform all actions required by this Agreement with all applicable federal, state and local laws and regulations.

3.26 California Law. This Agreement shall be governed, performed and interpreted under the laws of the State of California.

3.27 Severability. If any portion of this Agreement is ultimately determined not to be enforceable, that portion will be severed from the Agreement and the severability shall not affect the enforceability of the remaining terms of the Agreement.

3.28 Parties Bound. This Agreement applies to and is binding, jointly and severally, upon each signatory and its officers, directors, agents, receivers, trustees, heirs, executors, administrators, successors, and assigns, and upon any successor agency of the State of California that may have responsibility for and jurisdiction over the subject matter of this Agreement. No change in the ownership or corporate or business status of any signatory, or of the facility or Site shall alter any signatory's responsibilities under this Agreement.

3.29 Effective Date. The effective date of this Agreement is the date when this

Agreement is fully executed.

3.30 Representative Authority. Each undersigned representative of the parties to this Agreement certifies that she or he is fully authorized to enter into the terms and conditions of this Agreement and to execute and legally bind the parties to this Agreement.

3.31 Counterparts. This Agreement may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one and the same document.

Sayareh Amir Date: 3/28/03

Sayareh Amir, Chief
Southern California Cleanup Operations Branch
Glendale Office
Department of Toxic Substances Control

Date: 3/19/03

Todd Sostek
Site Assessment and Mitigation Manager
Sempra Energy Utilities as Authorized Agent for
Southern California Gas Company
555 West Fifth Street, GT16G2
Los Angeles, California 90013

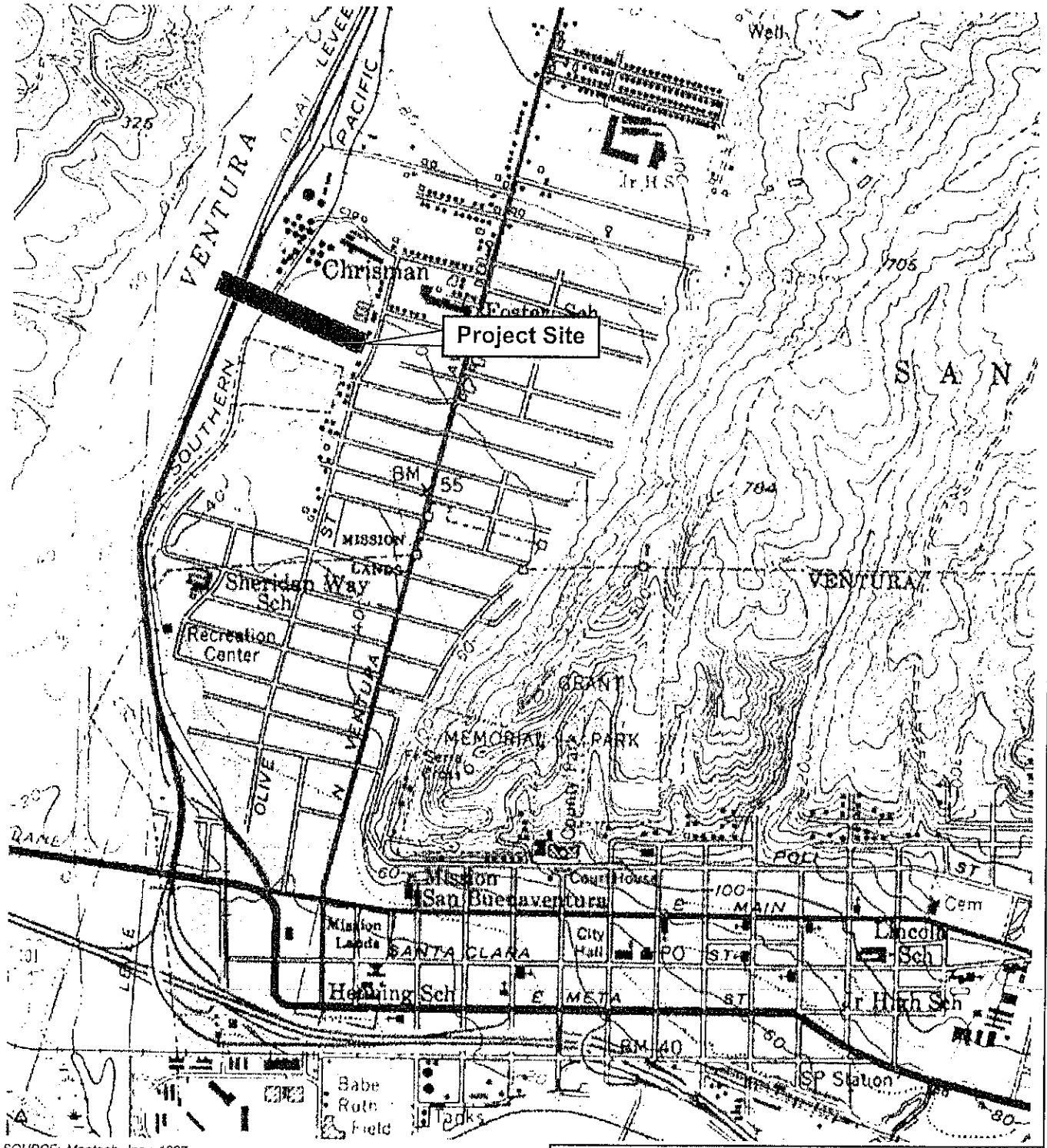
J A Kelly Date: 3/26/03

Jim Kelly
Vice President
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, California 91770

LIST OF EXHIBITS

A - SITE LOCATION MAP
B - SITE PLAN
C - SCOPE OF WORK
D - DTSC COST ESTIMATE
E - SCHEDULE

Exhibit A



SOURCE: Maptech, Inc.; 1997

North

0 1/2 1

Scale in Miles

FIGURE 1-1
SITE LOCATION MAP

The Gas Company

FORMER MANUFACTURED GAS PLANT, VENTURA, CALIFORNIA

DRAWN BY: M.ROMERO	DATE:	8-6-02
REVIEWED BY: N.ALAVI	DATE:	8-6-02
APPROVED BY:	DATE:	
FILE NAME: 12174-02Figure-1.cdr		

Exhibit B

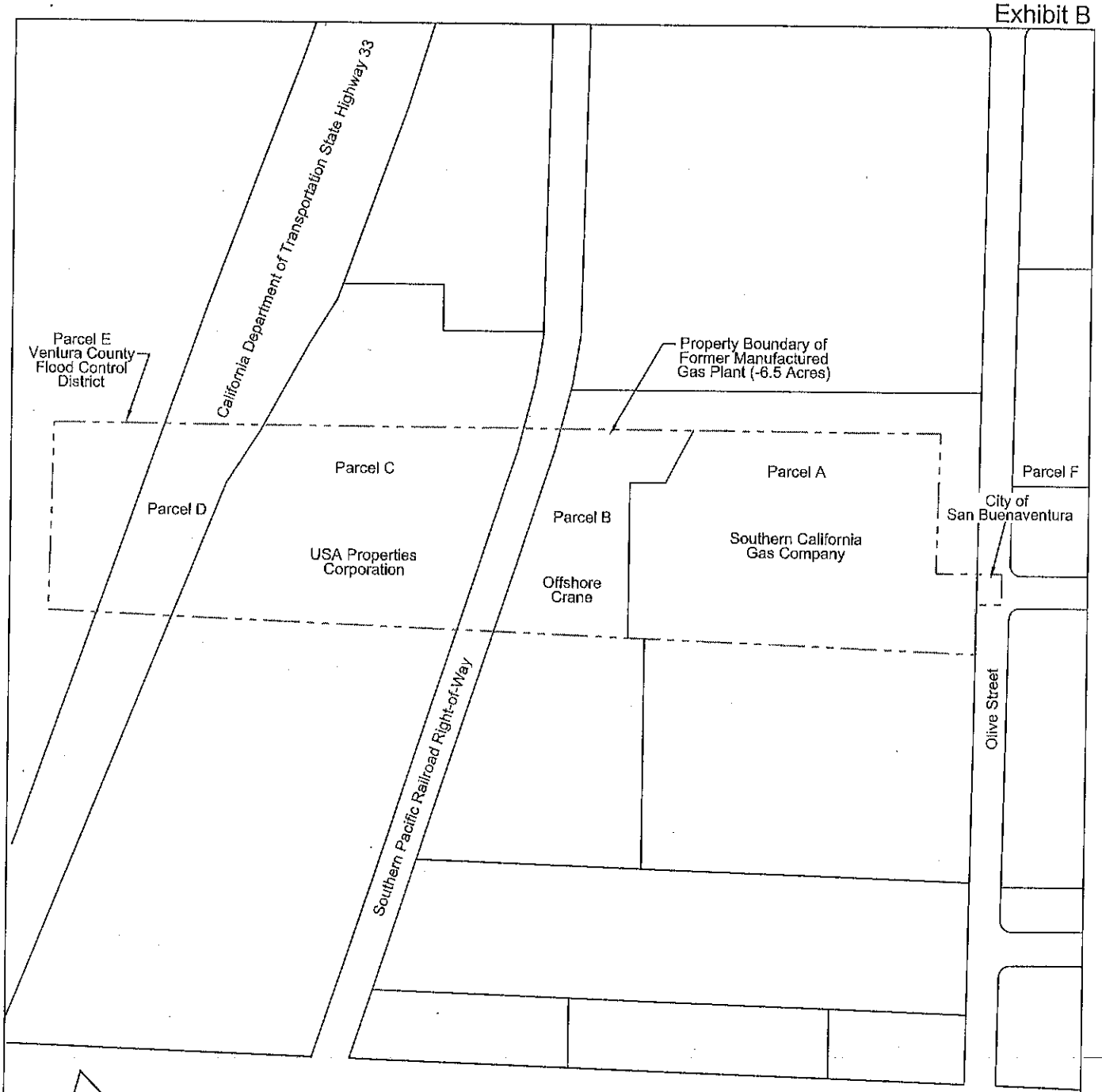


FIGURE 1-2
SITE PLAN

The Gas Company

FORMER MANUFACTURED GAS PLANT, VENTURA, CALIFORNIA

DRAWN BY: M.ROMERO DATE: 8-6-02

REVIEWED BY: N. ALAVI DATE: 8-6-02

APPROVED BY: _____ DATE: _____

FILE NAME: 12174-02Figure2.dwg

Source: Modified after Dames & Moore, 1991

EXHIBIT C
SCOPE OF WORK

The following Tasks will be completed as part of this Agreement:

TASK 1. Submittal of Existing Data

The Proponent will submit to DTSC, in a site investigation workplan, all background information including a summary of sample analysis results collected during any previous site investigations and quarterly groundwater monitoring.

1.2 Site Investigation Workplan

The Proponent shall develop a Site Investigation Workplan that describes the activities proposed to characterize soil and groundwater contamination associated with the Site. The objectives of the Site Investigation are to:

(a) Characterize the extent of hazardous substance contamination at the Site;
(b) Identify existing and potential migration pathways, including the direction; rate and dispersion of contaminant migration;
(c) Identify the potential risks to help determine the need for action at the Site;
(d) Determine levels of chemicals that can remain onsite and still be adequately protective of human health; and

1.3 Workplan Implementation

The Proponent will begin implementation of the approved workplan in accordance with the approved implementation schedule. DTSC may provide oversight of workplan implementation.

1.4 Site Investigation Report

Proponent shall prepare a Site Investigation Report that which summarizes the results of the site investigation, including reduction, presentation and interpretation of all data and information generated and/or compiled during the remedial investigation. The report must contain the following:

(a) Site Background information,
(b) Sources of Contamination
(c) Summary of Investigation, discuss all media investigated (i.e., Soil, Geology, Groundwater, Surface Water, Air and Biota)
(d) Nature and Extent of Contamination

TASK 2. Health-Based Risk Assessment

A scoping meeting shall be held to discuss how the risk assessment will be conducted to determine cleanup goals for this Site. Proponent will then submit a Health-based Risk Assessment (HRA) report. The report will be prepared consistent with U.S. EPA Risk Assessment Guidance for Superfund (EPA/540/1-89/002) and

DTSC Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities. The HRA report must include the following components:

a) Contaminant Identification
b) Exposure Assessment
c) Toxicity Assessment
d) Risk Characterization
e) Environmental Evaluation
f) Soil and Groundwater Remediation Goals

TASK 3. Removal Action Workplan

If DTSC determines a removal action is appropriate, the Proponent will prepare a Removal Action Workplan (RAW) in accordance with Health and Safety Code sections 25323.1 and 25356.1. The Removal Action Workplan will include:

(a) A description of the onsite contamination;
(b) The goals to be achieved by the removal action;
(c) An analysis of the alternative options considered and rejected and the basis for that rejection. This should include a discussion for each alternative which covers its effectiveness, implementability and cost;
(d) Administrative record list; and
(e) A statement that the RAW serves as an equivalent document to the Engineering Evaluation/Cost Analysis document required by the National Contingency Plan.

If the proposed removal action does not meet the requirements of Health and Safety Code section 25356.1(h), the Proponent will prepare a Remedial Action Plan (RAP) in accordance with Health and Safety Code section 25356.1(c) for DTSC review and approval.

TASK 4. California Environmental Quality Act (CEQA)

Based on the results of the draft Initial Study, DTSC will prepare the necessary CEQA documents. If required, the Proponent shall submit the information necessary for DTSC to prepare these documents.

TASK 5. Implementation of Final Removal Action Workplan

Upon DTSC approval of the final Removal Action Workplan (RAW), the Proponent shall implement the removal action, as approved. Within thirty (30) days of completion of field activities, Proponent shall submit an Implementation Report documenting the implementation of the final RAW.

TASK 6 . Changes During Implementation of the Final RAW.

During the implementation of the final RAW, DTSC may specify such additions, modifications and revision to the RAW as deemed necessary to protect human health and

safety or the environment or to implement the RAW.

TASK 7. Public Participation

7.1 Proponent shall conduct appropriate public participation activities given the nature of the community surrounding the Site and the level of community interest. Proponent shall work cooperatively with DTSC to ensure that the affected and interested public and community are involved in DTSC's decision-making process. Any such public participation activities shall be conducted in accordance with Health and Safety Code sections 25358.7, the DTSC Public Participation Policy and Procedures Manual, and with DTSC's review and approval.

7.2 The Proponent shall prepare a community profile to examine the level of the community's knowledge of the Site; the types of community concerns; the proximity of the Site to homes and/or schools, day care facilities, churches, etc.; the current and proposed use of the Site; media interest; and involvement of community groups and elected officials.

7.3 The Proponent shall develop and submit fact sheets to DTSC for review and approval when specifically requested by DTSC. Proponent shall be responsible for printing and distribution of fact sheets upon DTSC approval using the approved community mailing list.

7.4 The Proponent shall publish, in a major local newspaper(s), a public notice announcing the availability of the RAW/RAP for public review and comment. The public comment period shall last a minimum of thirty (30) days.

7.5 Within two (2) weeks of the close of the public comment period, the Proponent shall prepare and submit to DTSC a draft response to the public comments received.

7.6 DTSC may require that the Proponent hold at least one public meeting to inform the public of the proposed activities and to receive public comments on the RAW.

7.7 If appropriate, the Proponent will revise the RAW/RAP on the basis of comments received from the public, and submit the revised RAW/RAP to DTSC for review and approval. The Proponent will also notify the public of any significant changes from the action proposed in the RAW/RAP.

TASK 8. Quality Assurance/Quality Control (QA/QC) Plan

All sampling and analysis conducted by the Proponent under this Agreement shall be performed in accordance with a QA/QC Plan submitted be the Proponent and approved by DTSC. The QA/QC Plan will describe:

(a) The procedures for the collection, identification, preservation and transportation of samples;
(b) The calibration and maintenance of instruments;
(c) The processing, verification, storage and reporting of data, including chain of custody procedures and identification of qualified person(s) conducting the sampling and of a laboratory certified or approved by DTSC pursuant to Health and Safety Code section 25198; and
(d) How the data obtained pursuant to this Agreement will be managed and preserved in accordance with the Preservation of Documentation section of this Agreement.

TASK 9 Health and Safety Plan

The Proponent shall submit a Site Health and Safety Plan in accordance with California Code of Regulations, Title 8, section 5192 and DTSC guidance, which covers all measures, including contingency plans, which covers all measures, including contingency plans, which will be taken during field activities to protect the health and safety of the workers at the Site and the general public from exposure to hazardous waste, substances or materials. The Health and Safety Plan should describe the specific personnel, procedure and equipment to be utilized.

EXHIBIT E

PROJECT SCHEDULE

TASK	TIMELINE
Agreement Execution	March 2003
Proponent to submit advance payment	Within 10 days of Agreement execution
Proponent to submit Investigation Workplan, Health and Safety Plan, QA/QC Plan, and draft Public Participation Plan to DTSC	Within 120 days of Agreement execution
DTSC to review and comment on workplans	Within 30 days of receiving workplans
Proponent to respond to DTSC comments	As required
Proponent to implement approved Investigation Workplan	Within 15 days of DTSC approval
Proponent to submit Investigation Report for review and comment	To be submitted together with RAW
Proponent to prepare and submit draft RAW	Within 180 days of completion of fieldwork
DTSC to review and comment on draft RAW	Within 45 days of receiving draft RAW
Public participation activities.	Concurrently, as determined by project needs
Proponent to finalize RAW and incorporate DTSC and public comments	Within 15 days of close of comment period
DTSC to approve final RAW	Within 15 days of receipt of final RAW
Proponent to implement RAW	As outlined in RAW
Proponent to submit implementation report	As outlined in RAW
Certification and Deed Restriction	As outlined in RAW

Department of Toxic Substances Control

Edwin F. Lowry, Director
1011 N. Grandview Avenue
Glendale, California 91201

Winston H. Hickox
Agency Secretary
California Environmental
Protection Agency

Gray Davis
Governor

MEMORANDUM

TO: Ms. Shannon Similai
Planning and Policy Unit
Site Mitigation Program

Mr. Steve Koyasako
Assistant Chief Counsel
Office of Legal Counsel

Mr. Edward Huang
Southern California Liaison
Cost Recovery Unit

FROM: Ms. Sayareh Amir, Chief
Southern California Cleanup Operations Branch
Glendale Office

DATE: April 10, 2003

SUBJECT: VOLUNTARY CLEANUP AGREEMENT, DOCKET NUMBER HSA-A 02/03-133, FORMER VENTURA MANUFACTURING GAS PLANT, 1555 NORTH OLIVE STREET, VENTURA, CALIFORNIA 93001

Attached is a copy of the fully executed Voluntary Cleanup Agreement (VCA) for the subject site. The data for establishing this new site, as well as the completion date for the VCA has been entered into CalSites (564901101). The CalStars Project Code for the site is 300184-11. Submittal of the required documentation represents completion of the specified activity.

If you have any questions, please contact Tina Diaz at (818) 551-2862.

Attachment

Linda S. Adams
Secretary for
Environmental Protection

Department of Toxic Substances Control

Maureen F. Gorsen, Director
1011 North Grandview Avenue
Glendale, California 91201

Arnold Schwarzenegger
Governor

December 27, 2006

Mr. Masood Hosseini
Senior Project Manager
Site Assessment and Mitigation
Southern California Gas Company
555 West Fifth Street, GT16G2
Los Angeles, California 90013-1011

REMEDIAL INVESTIGATION REPORT FOR THE FORMER VENTURA MANUFACTURED GAS PLANT SITE LOCATED IN VENTURA, CALIFORNIA

Dear Mr. Hosseini:

The Department of Toxic Substances Control (DTSC) has reviewed the subject Remedial Investigation Report (Report) for the Former Ventura Manufactured Gas Plant Site (Site) submitted by Tetra Tech, Inc. The Report documents the investigation activities for the Site.

DTSC hereby approves the Report as it satisfactorily completes the investigation activities for the Site. The results indicate that further action is warranted at the Site. Please submit a draft Removal Action Workplan (RAW) to DTSC for review by February 9, 2006. If you have any questions please contact Mr. Tedd Yargeau, Project Manager, at (818) 551-2864 or me, at (818) 551-2822.

Sincerely,

Sayareh Amir, Chief
Southern California Cleanup Operations Program – Glendale Office

cc: See next page

cc: Mr. Salar Niku, Ph.D., P.E.
Project Manager
Tetra Tech, Inc.
3475 East Foothill Boulevard
Pasadena, California 91107

Mr. James McHarry, R. G.
Task Manager
Tetra Tech, Inc.
3475 East Foothill Boulevard
Pasadena, California 91107

TETRA TECH, INC.
3475 E. Foothill Boulevard
Pasadena, California 91107
Main #: (626) 351-4664
Direct #: (626) 470-2462
E-fax #: (626) 470-2662
Salar.Niku@tetratech.com

October 31, 2006

Dr. Masood Hosseini
Senior Project Manager
Site Assessment and Mitigation
Southern California Gas Company
555 West Fifth Street, GT16G2
Los Angeles, California 90013-1011

Subject: **Former Ventura MGP Site, Ventura, California**
Remedial Investigation Report - Final
SCG Master Agreement 6100000232 and 6160000372.0
Service Release No. 5500000603 and 5660000489

Dear Dr. Hosseini:

Enclosed is one copy of the final Remedial Investigation (RI) Report for the Former Ventura MGP Site, Ventura, California. We have responded to all DTSC comments dated April 4, 2006. The RI report is a 3-volume set: Volume I includes the table of contents and sections 1 through 5; Volume II includes sections 6 and 7, and appendices A through K and the first half of Appendix L (i.e., Parcel A Boring Logs); and Volume III includes the second half of Appendix L and appendices M through AG.

Enclosed are revised pages and sections to be replaced in the RI document dated September 2005. Also, signed signature page is included. By replacing the revised pages, this RI report may be considered the final RI Report.

Per your instructions, I will forward three copies of this final RI report to the Department of Toxic Substances Control (DTSC) to the attention of Mr. Tedd Yargeau, the DTSC Project

Manager, for their final review and approval. I have also included a highlighted version of the text to DTSC showing all changes made to the text to make the review process easier.

I have also included a copy of the revised pages to the attention of Mr. David Asti of Southern California Edison.

If you have any questions or comments regarding this RI Report, please call me at (626) 470-2462.

Respectfully Submitted,
TETRA TECH, INC.

Salar D. Niku, P.E.
Project Manager

cc.: Mr. Tedd Yargeau, DTSC project Manager
Mr. R. David Asti, Environmental Specialist for SC Edison

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September 19, 2005

Mr. David Asti
Southern California Edison
Corporate Environmental Division
2244 Walnut Grove Avenue
General Office One, 3rd Floor, Quad 3a
Rosemead, California 91770

TC 15966-01

Re: Former Ventura MGP Site, Ventura, California
Draft Remedial Investigation Report

Dear Mr. Asti:

Attached for your review is one copy of the Draft Remedial Investigation (RI) Report for the Former Ventura MGP Site, Ventura, California. The RI report is a three volume set: Volume I includes the Table of Contents and Sections 1 through 5; Volume II includes Sections 6, 7, and Appendices A through K and the first half of Appendix L (i.e., Parcel A Boring Logs); and Volume III includes the second half of Appendix L and Appendices M through AF. If feasible, please forward the report back with your comments to Tetra Tech by early next week so that any revisions, if required, can be made and the report delivered to DTSC in the month of September 2005.

If you have any questions or comments regarding this report, please call either of us at (626) 351-4664.

Very truly yours,
TETRA TECH, INC.

Salar D. Niku, P.E.
Project Manager

James T. Mc Harry, R.G.
Senior Geologist / Task Manager

cc.: Mr. Masood Hosseini, Senior Project Manager for SCG

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October 17, 2005

Mr. Masood Hosseini
Senior Project Manager
Site Assessment and Mitigation
Southern California Gas Company
555 West Fifth Street, GT16G2
Los Angeles, California 90013-1011

Subject: **Former Ventura MGP Site, Ventura, California**
Draft Remedial Investigation Report
SCG Master Agreement 6100000232 and 6160000372.0
Service Release No. 5500000603 and 5660000489

Dear Mr. Hosseini:

Enclosed is one copy of the draft final Remedial Investigation (RI) Report for the Former Ventura MGP Site, Ventura, California. The RI report is a three volume set: Volume I includes the Table of Contents and Sections 1 through 5; Volume II includes Sections 6 and 7, and Appendices A through K and the first half of Appendix L (i.e., Parcel A Boring Logs); and Volume III includes the second half of Appendix L and Appendices M through AF.

Per your instructions, I will forward three copies of this final RI report to the Department of Toxic Substances Control (DTSC), to the attention of Mr. Tedd Yargeau, the DTSC Project Manager, for their review and approval. If you have any questions or comments regarding this RI report , please call us at (626) 470-2462.

Respectfully Submitted,
TETRA TECH, INC.

Salar D. Niku, P.E.
Project Manager

James T. Mc Harry, R.G.
Senior Geologist / Task Manager

Cc.: Mr. Tedd Yargeau, DTSC
Mr. R. David Asti, Environmental Specialist *for SC Edison*

DISCLAIMER

This Remedial Investigation Report (Report) is prepared for the sole use and benefit of the Southern California Gas Company and Southern California Edison as Joint Utilities (Client) and for the specific Site known as the Former Ventura Manufactured Gas Plant (Site), located in Ventura, California. **Neither this Report nor any of the information contained therein shall be used or relied upon for any purpose by any person or entity other than the Client and for the Ventura Site.**

This Report was prepared based partially on information supplied to Tetra Tech from outside sources and other information which is in the public domain, and partially on the information Tetra Tech obtained during previous activities at this Site. Documentation for the statements made in the Report is on file at Tetra Tech's Pasadena, California, office. Tetra Tech makes no warranty as to the accuracy of statements made by others which are contained in this Report, nor are any other warranties or guarantees, expressed or implied, included or intended in the Report with respect to information supplied by outside sources or conclusions or recommendations substantially based on information supplied by outside sources. This Report has been prepared in accordance with the current generally accepted practices and standards consistent with the level of care and skill exercised under similar circumstances by other professional consultants or firms performing the same or similar services. Since the facts forming the basis for this Report are subject to professional interpretation, differing conclusions could be reached. Tetra Tech does not assume responsibility for the discovery and elimination of hazards, which could possibly cause accidents, injuries, or damage unless those hazards were apparent, and should have been discovered, as a result of the services Tetra Tech performed for the Client. This Report represents the best professional judgement of Tetra Tech; however, compliance with submitted recommendations or suggestions does not assure elimination of hazards or the fulfillment of the Client's obligations under local, state, or federal laws, or any modifications or changes to such laws.

None of the work performed hereunder shall constitute or be represented as a legal opinion of any kind or nature, but shall be a representation of findings of fact from records examined.

REMEDIAL INVESTIGATION REPORT
for
FORMER VENTURA MGP SITE
VENTURA, CALIFORNIA

Prepared for

The Southern California Gas Company
555 West Fifth Street
Los Angeles, California 90013-1011
and
Southern California Edison
Joint Utilities

Prepared by

Tetra Tech, Inc.
3475 East Foothill Boulevard
Pasadena, California 91107
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Master Agreement No.: 6100000232 and 6160000372.0
Service Release No.: 5500000603 and 5660000489
Tetra Tech Project No.: TC 15966

September 2005
Revised October 2006

REGISTERED PROFESSIONAL ENGINEER
SALAR D. NIKU
NO. 32003
EXP. 12/31/06
CIVIL
STATE OF CALIFORNIA

Prepared by: for James T. McHarry, R.G.
Senior Geologist/ Task Manager
Tetra Tech, Inc.

Salar D. Niku, Ph.D., P.E.
Program Manager
Tetra Tech, Inc.

Submitted by: Masood Hosseini, Senior Project Manager
San Diego Gas & Electric
Authorized Agent for
Southern California Gas Company

10/31/06
Date

It Copy 6 of 7
Copy 1 of 2

DRAFT
REMEDIAL INVESTIGATION REPORT
for
FORMER VENTURA MGP SITE
VENTURA, CALIFORNIA

Prepared for

The Southern California Gas Company
555 West Fifth Street
Los Angeles, California 90013-1011
and
Southern California Edison
Joint Utilities

Prepared by

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(626) 470-2462

Master Agreement No.: 6100000232 and 6160000372.0
Service Release No.: 5500000603 and 5660000489
Tetra Tech Project No.: TC 15966

September 2005

Final version will be signed and stamped

Prepared by: James T. McHarry, R.G.
Senior Geologist/ Task Manager
Tetra Tech, Inc.

Final version will be signed and stamped

Salar D. Niku, Ph.D., P.E.
Program Manager
Tetra Tech, Inc.

Submitted by: Masood Hosseini, Senior Project Manager
San Diego Gas & Electric
Authorized Agent for
Southern California Gas Company

Date

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This Remedial Investigation Report has been prepared by Tetra Tech, Inc. for Southern California Gas Company and Southern California Edison as Joint Utilities.

This investigation has been performed under the direct supervision of the California Department of Toxic Substances Control (DTSC). Mr. Tedd E. Yargeau is the DTSC's Project Manager performing under the direction of Ms. Rita Kamat.

Mr. James McHarry, R.G., conducted the field investigation and is the principal author of the RI Report, Dr. Mark Rigby, and Dr. Kay Johnson, are the principal authors of the Section on Human Health Remedial Goals, all working under the direction of Program Manager Dr. Salar Niku, P.E., of Tetra Tech.

All work was managed under the direction of Mr. Masood Hosseini, Senior Project Manager of Southern California Gas Company, managing the work under the supervision of Dr. Todd Sostek. Messrs. Ron Jenson and Richard Asti reviewed the documents on behalf of Southern California Edison.

This Report presents the findings of the recent and previous investigations at the former Ventura Manufactured Gas Plant (MGP) site herein referred to as "the Site". This Report also presents remedial goals to protect human health and comparison of measured chemical concentrations in soil to these goals. Screening risk analyses for soil gas and groundwater were conducted.

Current Site Conditions

The former Ventura MGP Site is located in the City of Ventura, California, is approximately 9.23 acres in size, and is roughly rectangular in shape. The Site extends westward from near the centerline of Olive Street to the edge of the Ventura River Channel. To ease the management of investigation activities, the former Ventura MGP was divided, based on current Site ownership, into seven smaller units, i.e. Parcels A through G. The parcels, based on current ownership, include:

- Parcel A, presently owned by SCG, is used for natural gas compression and delivery.
- Parcel B, presently owned by the Offshore Crane and Service, Inc. known as T&T Truck and Crane Service.
- Parcel C, currently owned by Ventura Seaside Properties, Inc. The C.D. Lyon Construction, Inc. occupies this parcel.
- Parcel D, currently owned by the State of California, consists of a portion of State Highway 33.
- Parcel E, currently owned by Ventura County Watershed District, is used for storm water management.
- Parcels F and G, currently owned by the City of San Buenaventura.

Past and Post-MGP Operations

Parcels A and B of the Site were used for the MGP operations from 1905 till 1919; a railroad on Parcel G served the MGP. The plant was sold to Southern California Edison (Edison) in 1917 and to South Counties Gas Company (a predecessor of Southern California Gas Company (SCG)) in 1919. Beginning in 1923, a compressor station was installed on Parcel A. From the 1940s to the 1960s, additional buildings and equipment were added to the Compressor Station. In the late 1980s, SCG completed a modernization and upgrade of the Compressor Station.

In 1923, Southern Counties began leasing much of the western portion of the Site to Seaside Oil Company (Seaside Oil). Seaside Oil operated on Parcels B, C, D, and E until 1969, and used Parcel B for refining and asphalt manufacturing, and Parcel C for storage of gasoline, kerosene, and lubricating oils. Seaside Oil purchased Parcels B, C, D, and E in 1953. Parcel E was then sold to the Ventura County Flood Control District to construct the Ojai Levee. Parcel D was sold in 1955 to the State of California for construction of State Highway 33.

In 1969, Parcels B and C were purchased by Utility Refining Company, who operated a petroleum refinery, and storage and distribution center there until 1976. The parcels were sold but still used until 1982 for oil refinery and tank farm operations. In 1982, Vetco purchased Parcel B from the Buenaventura Terminal Corporation and used the property via the existing rail line to ship and receive raw materials and finished products. In 1987, Vetco sold Parcel B to Offshore Crane Company (Offshore Crane) to store and repair offshore drilling and production equipment. T&T Truck and Crane Service Co currently uses Parcel B for the storage of cranes, trucks, and roll-off bins. Parcel C was sold to USA Petrochem Corporation in 1982 and to Ventura Seaside Properties in 2000. Currently C.D. Lyon Construction Inc. occupies Parcel C and uses the parcel for the manufacture and refurbishment of oil field equipment.

Site Investigations

Tetra Tech conducted a remedial investigation at the Site between October 2003 and April 2005. A total of 189 borings and trenches were drilled or excavated, and 45 soil gas points and 24 monitoring wells were installed. A total of 1,249 soil samples were collected and analyzed for PAHs, TPH, and VOCs. Selected soil samples were analyzed for metals, cyanide, physical properties, soil pH, and total organic carbon. Soil gas samples were analyzed for VOCs, methane, and hydrogen sulfide (H_2S). Groundwater samples were collected from 27 monitoring wells (including three existing wells) and were analyzed for PAHs, TPH, VOCs, metals, and cyanide. Selected groundwater samples were also analyzed for general mineral characteristics.

Remedial Goals.

Remedial goals were developed to be protective of onsite industrial and construction workers and offsite residents. Factors considered in determining remedial goals included worker contact with soil, volatilization of chemicals from soils, soil gas, and groundwater to the atmosphere and to indoor air, and potential chemical migration from soil to groundwater. The results of the RI were evaluated by calculating risk-based remedial goals for soil and comparing these goals to reasonable maximum exposure point (RME) concentrations. Remedial goals were developed for soils in Parcels A&F, B&G, and C.

The key remedial goals to protect onsite workers for soil were: 6.1 mg/kg for C-PAHs and 2,815 mg/kg for naphthalene in the top 10 feet. The remedial goal for lead for protection of construction workers (517 mg/kg) was exceeded in soils from 0 to 5 feet on Parcel A only.

Remedial goals to protect groundwater were determined for chemicals detected in soils by depth. Separate goals were determined for three areas because of the different concentrations of TPH, which retards mobilization of the chemicals. These areas are shown on Figure 6-2. The chemicals exceeding the goals for specific depth intervals including benzene, 1,2-DCA, and naphthalene in the deep TPH area on Parcel C (see Table 6-39) and naphthalene in the shallow TPH area extending over part of Parcels B, G, and C (see Table 6-41).

A screening level risk evaluation was conducted to evaluate the potential for soil gas to migrate into indoor air. Comparison of RME concentrations for soil gas within each of the parcel groups,

except Parcel C, showed that none of the remedial goals to be protective of indoor worker vapor inhalation were exceeded. For Parcel C, a detailed evaluation near the existing buildings showed that remedial goals for current workers were not exceeded.

COPCs in groundwater included the PAHs, 14 VOCs related to petroleum hydrocarbons, and 8 metals. Chemicals detected in groundwater were evaluated using screening level risk evaluations. None of the VOCs represented a concern based on the site-wide RME for indoor industrial workers who could be exposed to vapors potentially emitted from groundwater. Although groundwater is not currently used at this Site, a risk evaluation was also conducted using the site-wide RME for potential offsite residents drinking the groundwater. Three compounds were a potential concern, C-PAHs, naphthalene, and benzene. The wells with the highest concentrations of these compounds have free-product, and thus Site groundwater is unlikely to be used as a potable water source.

Nature and Extent of Contamination

Chemicals detected at the Site that exceeded the remedial goals for soil protective of onsite industrial and construction workers were C-PAHs, naphthalene, and lead. Detected chemicals that exceeded the remedial goals for soil protective of groundwater were benzene, 1,2-dichloroethane, and naphthalene.

Parcel A

On Parcel A, most of the elevated C-PAH concentrations (i.e., above 6.1 mg/kg) are within the top 5 feet. One area along the northern part of Parcel A has elevated C-PAHs from 5 to 10 feet. Elevated gasoline, diesel, and heavy oil concentrations were in the top 10-foot of soil at the west-end of the parcel. Elevated concentrations of gasoline and diesel were found at 10 to 30 feet bgs at Boring AB-51. Below 30 feet, elevated gasoline concentrations were found at the west-end of the parcel; elevated diesel concentrations were at AB-51. Elevated lead concentrations (i.e., above 517 mg/kg) were found in the top 5 feet of soil at nine locations. Naphthalene at Well AMW-11 exceeded the depth-specific PRG-based goal protective of groundwater in unsaturated soils below 30 feet.

Parcel B

Elevated C-PAHs were found in the shallow soils (i.e., the top 5 feet). Elevated naphthalene concentrations were found in the top 10-foot of soil at the center and southeast corner areas of the parcel. TPH gasoline and diesel were elevated in the top 6 feet of soil across most of the parcel. The highest TPH gasoline and diesel were found in the center and in the southeast corner of the parcel. Elevated TPH was also found in deeper soils: in the southern part of the parcel from 5 to 20 feet, and over a majority of the parcel at 20 feet and below. At a central location on the parcel (BB-13), naphthalene at the 30 to 35 feet depth interval also exceeded the PRG-based goal protective of groundwater. Free product has been found on the water table in wells BMW-7 and BMW-6, both wells had primarily diesel, while BMW-7also had high TPH gasoline and some heavy hydrocarbons.

Parcel C

In the >2 to 5 feet and >5 to 10 feet depth intervals, elevated C-PAHs were detected across the parcel, including under the C.D. Lyon Building. Along the southern boundary of Parcel C, benzene in soil exceeded the MCL-based goal to protect groundwater in the 20 to 30 feet and 30 to 35 feet depth intervals and the PRG-based goal to protect groundwater in the 10 to 20 feet depth interval. DCA exceeded the remedial goal protective of groundwater based on the PRG and was equal to the MCL-based goal in the 20 to 30 feet depth interval. Naphthalene in soil exceeded the PRG-based goal to protect groundwater in the 30 to 35 feet depth interval.

Elevated TPH gasoline and diesel concentrations were widely detected in the Parcel C unsaturated soils. TPH in the deeper soils, however, were highest in the southern area of the parcel. This area is near the wells with free product (e.g. CMW-5). The highest TPH gasoline and diesel in saturated soil samples were found in a 40-foot sample from the southwest corner (CMW-8). Surrounding borings and wells on Parcel C also had high TPH in the deep samples.

Parcels D, E, F, and G

On Parcel D, the only samples that were collected were from the SCG Gas Pipeline tunnel. C-PAHs were detected in only one sample (1.11 mg/kg) at a depth of 29 feet bgs. Six soil samples were collected from the pipeline tunnel under Parcel E. One of these samples collected from a 1 to 2-foot thick pocket of black viscous material excavated from the pipeline tunnel, at a depth of 19.5 feet bgs, had elevated concentrations of C-PAHs and NC-PAHs. The remaining soil samples from the tunnel were from further east and had either non-detect or low PAHs and TPH concentrations.

Parcel E is part of the flood control levee for the Ventura River. Nine soil samples were collected from the Ventura River channel. C-PAHs were detected in one sample (1.03 mg/kg).

Parcel F is a small area east of Parcel A that is now part of Olive Street. One boring was located in this area. Only low concentrations of C-PAHs were detected in the samples.

One soil sample from Parcel G exceeded the remedial goal for C-PAHs. Elevated TPH gasoline and diesel were present in the shallow soils on the northern half of Parcel G. Elevated concentrations of TPH gasoline and diesel were found in saturated soils at 40 feet bgs. Above ground storage tanks were located up gradient of Parcel G during the 1920's to the 1980's (see Figure 1-15 and 1-16).

Results of Soil Gas Sample Analyses

Soil gas samples were analyzed for VOCs, methane, and hydrogen sulfide. The only exceedance of a parcel-wide goal was for benzene on Parcel C. However, the evaluation of soil gas data near the existing office and paint/blast booth on Parcel C showed that benzene goals for current workers were not exceeded.

Results of Groundwater Analyses

Groundwater samples were collected in July 2004. Free product was observed in four onsite wells (0.04 to 0.27 foot in BMW-7, CMW-2, CMW-4, and CMW-5). In March 2005, the water level had risen by 5.6 to 8 feet and free product was found in five onsite wells (0.1 to 0.5 foot in BMW-6, BMW-7, CMW-2, CMW-9, and GMW-2). The general location of this TPH plume is in the southern part of Parcels C, G, and B (See Figure 5-16).

Three wells on the western portion of Parcel A had detected C-PAHs. The highest concentration (1.15 µg/L) was in well AMW-6. Parcel A wells had low concentrations of naphthalene (0.57 to 0.83 µg/L) greater than the goal for drinking water (0.2 µg/L), but less than the DTSC Action Level (17 µg/L).

The highest concentrations of C-PAHs, benzene, and naphthalene in the wells were associated with free product in the southern areas of Parcels C, G, and B due to past petroleum refining operations and storage of crude oil. The highest C-PAHs (677.1 µg/L) and TPH (7.1 mg/L diesel and 88.3 mg/L gasoline) were detected in Well CMW-2. The highest benzene and naphthalene were in CMW-5. Benzene in well CMW-5 exceeded the goal protective of indoor industrial workers from vapors and the goal protective of hypothetical residents drinking the water. Seven of eight wells on Parcel C exceeded the naphthalene goal to protect hypothetical residents drinking the water. CMW-5 and CMW-2 also exceeded the DTSC Action Level for naphthalene (17 µg/L).

Comparison to Remedial Goals

The chemicals where at least one remedial goal for soil was exceeded include C-PAHs, naphthalene, and lead, as summarized below:

COPCs Exceeding Remedial Goals Protective of Human Receptors by Parcel

	Parcels A&F		Parcels B&G			Parcel C	Parcel C Building
Worker	**B(a)P**	**Lead**	**B(a)P**	**Naph**	**Phen**	**B(a)P**	**B(a)P**
Outdoor Industrial							
0-2 ft	X		X				
Construction							
0-10 ft	X		X			X	X
>2-5 ft	X	X	X	X	X*	X	X

Definitions:

B(a)P	Benzo(a)pyrene-equivalents
Naph	Naphthalene
*Phen	Phenanthrene –risk ratio was equal to 1, not greater than 1.

A further evaluation was conducted to evaluate the potential for chemicals in soil to migrate to groundwater for three separate areas: the non-TPH area, a shallow TPH area on Parcels B, C, and

G, and a deep TPH area on Parcel C (See Figure 6-2 for TPH areas). As summarized below, remedial goals for soil to protect groundwater were exceeded only in the shallow and deep TPH areas based on area-wide RME concentrations.

COPCs Exceeding Remedial Goals Protective of Groundwater by TPH Area

Area	Depth (ft bgs)	Benzene	1,2-Dichloroethane	Naphthalene
TPH C-Deep[1]	10-20	O		
	20-30	X	O	
	30-35	X		O
TPH BGC-Shallow[2]	30-38			O

Definitions:

X	Exceeds remedial goals based on both PRG and MCL (or Notification Level)
O	Exceeds remedial goal based on PRG only
1	See Table 6-39 for depth-specific remedial goals.
2	See Table 6-41 for depth-specific remedial goals.

A screening level risk evaluation was conducted to evaluate the potential for soil gas to migrate into indoor air. Comparison of RME concentrations for soil gas within each of the parcel groups showed that, except for benzene on Parcel C, none of the remedial goals to be protective of indoor worker vapor inhalation were exceeded. On Parcel C, a detailed evaluation performed for the area near the existing buildings showed that there were no impacts to current indoor workers from the elevated benzene in the soil gas on Parcel C.

Conclusions

The results of the evaluation showed that the portion of the Site used for the MGP operations (Parcels A and B) is contaminated with C-PAHs in the top 10 feet of soil. The locations on Parcels A and B with elevated lead and naphthalene were co-located with the high C-PAHs in the top 10 feet of soil. Naphthalene in the groundwater on the western part of Parcel A was low, compared to the other parcels with elevated TPH. Later uses of other parcels of the Site for oil refining operations and storage of petroleum products and crude oil have resulted in contamination of Parcels B, C, and G with extensive TPH gasoline and diesel in both shallow and deep soils. The soils from >20 to 35 feet in the deep TPH area on Parcel C had benzene above the MCL-based goal to protect groundwater. There were exceedances of the DTSC notification level for naphthalene in deep soils in both the shallow and deep TPH areas on Parcels B and C, respectively. This is the part of the Site where free product was found in the groundwater due to the petroleum-related operations, not the MGP operations.

This Remedial Investigation Report (Report) is submitted by Southern California Gas Company (SCG) to comply with a Voluntary Cleanup Agreement (VCA) [Docket No. HAS-A02\03-133] executed between the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC), and SCG and Southern California Edison (SCE) as Joint Utilities, dated April 8, 2003 [DTSC, 2003].

This work is managed SCG on behalf of SCE. Therefore, throughout this report, any mention of SCG shall mean the Joint Utilities of SCG and SCE.

This Report presents the findings of recent and previous investigations of the former Ventura Manufactured Gas Plant (MGP) site, hereinafter referred to as the "Site". This Report also presents remedial goals to protect human health and comparison of measured chemical concentrations in soil to these goals. Screening risk analyses for soil gas have also been conducted.

The Remedial Investigation Workplan [Tetra Tech, 2003] submitted by SCG and approved by DTSC provided the technical approach and procedures to perform a remedial investigation (RI) at the former MGP Site. The scope of work detailed in the RI Workplan was implemented October 1, 2003 through November 2, 2004. Investigation activities conducted at the Site included soil, soil gas, and groundwater sampling.

1.1 SITE LOCATION

The former Ventura MGP Site is approximately 8.5[1] acres in size, and is located near the intersection of Olive Street and McFarlane Drive, in the City of Ventura, California. A topographic site location map is provided on Figure 1-1. The Site boundary covers an area from Olive Street to beyond State Highway 33 to the west. To the north and south, the Site is located in an area containing primarily industrial and commercial facilities including the existing SCG parcel, T&T Truck and Crane Service, ABB Vetco Gray, and Ventura Seaside Oil properties. Maps depicting the surrounding land use are provided as Figures 1-2 (an aerial photo map) and 1-3 (a Tax Assessor's Map). The Site is located in Township 3 North, Range 23 West, Section 33 of the San Bernardino baseline and meridian.

1.2 SITE INVESTIGATION MANAGEMENT

The SCG has divided the Ventura site into seven parcels, A through G, as shown on Figure 1-4, for ease of managing the required investigation activities. SCG determined parcel boundaries[2]

[1] The acreage estimate given here is based on the previous reports that cite the size of the Site as 8.5 acres based on previous boundaries. The actual acreage of the Site based on current Site boundaries is approximately 9.23 acres.

[2] The boundaries do not necessarily correspond exactly to the areas used by the former MGP facilities.

based on past and current ownership as well as physical boundaries and past operations. The current parcel owners are:

- **Parcel A** is presently owned by SCG and is used for natural gas compression and delivery.
- **Parcel B** is presently owned by the Offshore Crane and Service, Inc., known as T&T Truck and Crane Service.
- **Parcel C** is currently owned by Ventura Seaside Properties, Inc. The C.D. Lyon Construction, Inc. occupies this parcel.
- **Parcel D** is currently owned by the State of California, and consists of a portion of State Highway 33.
- **Parcel E** is currently owned by Ventura County Watershed District (VCWD) and is used for storm water management.
- **Parcels F** and **G** are currently owned by the City of San Buenaventura.

1.3 PURPOSE AND SCOPE OF SITE INVESTIGATION

Several site investigations have been conducted at or in the vicinity of the Site by SCG and others in the past. Previous site investigations have identified soil and groundwater contamination. A summary of these investigations is provided in Section 2 of this report and Section 3 of the RI Workplan [Tetra Tech, 2003].

The purpose of this site investigation was to further characterize and identify the nature and extent of remaining wastes and soil contamination (if any) at the Site. In Section 5, results from this investigation were evaluated and discussed separately for each parcel, for both soil and soil gas. This report also discusses the results from recent sampling in combination with available data from previous investigation activities. In this report, these results are compared to remedial goals (Section 6) to determine if further remediation is needed.

Groundwater was also investigated during this site investigation, and new monitoring wells were installed and sampled as part of the groundwater characterization. Any remedial action that may become necessary for groundwater may consider the entire Ventura Site as one operable unit, or may consider specific Site parcels as separate operable units.

1.4 CURRENT LAND USES AND OWNERSHIP

Following the closure of the MGP in 1919 (see section 1.5), most of the property was subsequently redeveloped into commercial, light industrial, oil refinery operations, and transportation land uses. Based on SCG's review of current land use maps and land planning documents, the current and reasonably anticipated future land uses for the Site are expected to remain the same (e.g., commercial, industrial, and transportation). Land uses may include office buildings, warehouse spaces, indoor and outdoor manufacturing areas, exterior storage yards, parking lots, and public transportation right-of-ways (e.g., highway and streets).

There are no current residential properties within the boundary of the Site. The present land uses are shown (for the entire Site and vicinity) in the recent aerial photograph (Figure 1-2). Figure 1-3 presents the Tax Assessor's map prepared for the former Ventura MGP Site and vicinity [Dames and Moore, September 1991]. Site current features such as streets, existing buildings and structures, roads and highway right-of-ways, and boundaries are shown on Figure 1-5.

Parcel A

Parcel A is presently owned by Southern California Gas Company (SCG) and is used for natural gas compression and delivery[3] (Figures 1-4 and 1-5). Parcel A encompasses the north half of SCG Company's current Ventura (Olive Street) Compressor Station. Current SCG structures on Parcel A include: high pressure and low pressure gas compressor structures and cooling towers located in the northeast quadrant of the parcel; an oil storage tank area (above ground tanks) centrally located on the parcel; and an office and maintenance building located in the southeast quadrant of the parcel (Figure 1-5). Parcel A is identified as parcel number 068-0-142-030 by the Ventura County Assessor's Office (Figure 1-4 and Appendix A).

Parcel B

Parcel B is presently owned by the Offshore Crane and Service, Inc. (Offshore Crane) known as T&T Truck and Crane Service (Figures 1-4 and 1-5). This owner owns and operates a fleet of trucks and construction cranes of various sizes and capacities, and manufactures and stores offshore oil drilling and production equipment. Parcel B extends west from Parcel A to Parcel G (former Southern Pacific Railroad). Parcel B is identified with the parcel number 068-0-142-020 by the Ventura County Assessor's Office (Appendix A).

Parcel C

Parcel C is owned by the Ventura Seaside Properties, Inc. C.D. Lyon Construction, Inc. currently occupies this parcel (Figure 1-4). Parcel C encompasses the area from the former Southern Pacific Railroad (Parcel G) and extends west toward State Highway 33 (Figures 1-3, 1-4, and 1-5), and is identified with the parcel number 068-0-142-230 by the Ventura County Assessor's Office (Appendix A).

Parcel D

Parcel D is currently owned by the State of California and consists of a portion of State Highway 33 (Figures 1-4 and 1-5). At this location, Highway 33 trends approximately north-south, and is located west of Parcel C.

Parcel E

Parcel E is currently owned by the Ventura County Watershed District (VCWD) and is used for storm water management. Parcel E encompasses a section of the Ventura River Channel (VRC)

[3] The current SCG property is larger than the limits of the former MGP property. The SCG property includes a parking lot, which was not within the limits of the former MGP operations.

Levee located west of State Highway 33 (Figure 1-5).

Parcel F

Parcel F is owned by the City of San Buenaventura, and is a part of Olive Street (Figures 1-4 and 1-5).

Parcel G

Parcel G is owned by the City of San Buenaventura, and is currently used as an access route for business located in that area, including C.D. Lyon Construction and T&T Truck and Crane Service (Figures 1-4 and 1-5). Formerly Parcel G was the location of a rail spur that ran through the former MGP property.

1.5 OVERVIEW OF HISTORICAL MGP OPERATIONS

A summary of historical MGP operations at the Site was discussed in the Remedial Investigation Workplan [Tetra Tech, 2003]. This information was summarized from the preliminary site operations chronology, entitled Historical Information Records, former Ventura MGP Site, prepared by Carol M. Nolan, dated January 21, 2002 [Carol M. Nolan, 2002], as well as the Preliminary Endangerment Assessment (PEA) report conducted by Dames & Moore in 1991 [Dames & Moore, September 1991]. A summary of the historical Site operations and former Site ownership are presented in Table 1-1 and Appendix B (Ventura MGP Operation Chronology). A review of that discussion is included here.

Prior to the installation of the former MGP, an ice factory and an electrical light works had been operating on Parcels A and B of the Site since 1892 under the name of Ventura Land and Power Company (Appendix U). In 1905, the ice factory and electric light works operations were removed and an oil-gas plant was constructed [Carol M. Nolan, 2002].

In 1905 the former Ventura MGP began its operation by the Ventura Water, Light and Power Company [Carol M. Nolan, 2002]. The boundary of the former MGP during its operation between 1905 and 1919 is shown on Figures 1-6 and 1-7. The area where most of the MGP operations occurred is designated on Figure 1-4 as Parcels A and part of B. Some of the plant area was leased and later sold to Seaside Oil Company (Seaside Oil) for a refinery and storage tank farm.

Sanborn Fire Insurance maps included in Appendix U show the Site in 1906 through 1921 with gasholders, a gas generator room building, purifiers, oil tanks, and a rail spur. The Nordhoff Branch rail spur served the plant from the main line of the former Southern Pacific Railroad, within a right-of-way that runs through the former MGP property. Alterations to the plant can be seen in each of these maps as larger gasholders were added, the generator building was enlarged, and oil tanks and oil lines were constructed [Carol M. Nolan, 2002]. Former MGP site features, including three gas holders, a gas generator, fuel tanks, and purifiers, are shown on Figure 1-6.

Although the details of the gas manufacturing process operations specific to the former Ventura MGP are not available, it is believed that based on other oil-gas MGP operations, that gas was produced at the plant using the oil-gas process [Dames and Moore, 1989]. The oil-gas process was based on gasification of oil by processing oil and steam through a chamber of heated checkerbricks. The hot checkerbricker cracked the oil feedstock producing a mixture of gaseous hydrocarbons, fixed gases, light oils, tar, and lampblack. The predominant residue of the gasification process was lampblack. Both the lampblack and heavy tars commonly contained Polycyclic Aromatic Hydrocarbon (PAH) compounds. Only minor amounts of ammonia, cyanide, tar bases, and tar acids, including phenols and creosols, were produced from the oil-gas process [Dames and Moore, 1989].

Based on historical aerial photographs and Sanborn map, the majority of gasification activities took place in the southwestern portion of Parcel A. Aerial photographs (flight #C-10335, 1946, [Dames and Moore, 1989]) also indicate that the northeast sector of Parcel A was used as a debris disposal or "boneyard" area and was apparently open to public access.

In 1907, the plant was sold to Ventura County Power Company, who operated the MGP until 1917. In 1917, Ventura County Power Company sold the MGP property to Southern California Edison (Edison). According to the deed records, Brown's Directory, and historical California State Railroad Commission (RRC) records, Edison continued to own and operate the MGP until its sale to Southern Counties Gas Company (Southern Counties) in 1919.

Southern Counties began its operation of the plant in February 1919 under a lease agreement with Edison [Dames and Moore, September 1991]. Southern Counties operated the MGP for approximately two months. According to Southern Counties records, local newspaper articles, and RRC records, Southern Counties began servicing the area with natural gas in April 1919. On April 8, 1919, operations of the MGP ceased and 100 percent natural gas service began [Dames and Moore, September 1991].

The final sale between Edison and Southern Counties was completed on June 27, 1919 [Carol M. Nolan, 2002 and Dames and Moore, September 1991]. No further additions or construction for MGP operations were completed after Southern Counties obtained the Site from Edison in 1919. Southern Counties held the MGP in a stand-by mode until 1920 when it was removed from service [Southern Counties, 1919, 1920 Annual Reports; Brown's Directory]. Southern Counties retirement orders reveal that much of the equipment and structures used in MGP operations were no longer in use and were subsequently removed. A summary of the equipment and structures removed from the Site includes:

Equipment Inventory	Date Removed	Disposition (if Known)	Order No.
10,000 cf wooden gas holder; Thompson oil-gas generator; wash boxes; scrubbers, boilers; wood-purifier boxes; oil pumps; compressor house.	September 1920	Removed for junk	#658

20,000 cf wooden gas holder	June 1922	Sold - removed	#1358
(2) 175 bbI 8xl9 ft Oil tanks	April 1923	Sold - Seaside Oil	#2085
50,000 cf Steel gas holder	April 1923	Sold - removed	#2096
Cooling tower	April 1923	Sold - Seaside Oil	#2082
Removed excess piping	June 1923	Scrap	#2226
50,000 cf single-lift gas holder	April 1928	Sold - Seaside Oil	#9234

Beginning in 1923, Southern Counties began installing a wide variety of compressor station equipment to upgrade the Site in Parcel A. According to Southern Counties construction work orders, the additions included water cooling towers, extensions to a few existing buildings, oil tanks, new fuel lines, a pump house and pumps, a storehouse, gas engines, a blacksmith shop, a firehouse, a concrete wash rack, and a repair garage.

Also in 1923, Southern Counties began leasing the western portion of its property, Parcels B, C, D, and E, to the Seaside Oil Company (Figure 1-10). Southern Counties installed 600 feet of 6-inch diameter oil line and 600 feet of 2-inch diameter gasoline line, operated by Seaside Oil, to its facility. The property (currently Parcel A) not leased to Seaside Oil by Southern Counties continued to be used for the Compressor Station.

In 1940s, additional construction and removal of buildings was completed at the Compressor Station (Figure 1-8). The additions included new scrubbers, boiler house extensions, oil and drip tanks, cooling towers, dehydration towers, and gas engines. Retirement and removals included older cooling towers, a water well, gas engines, a firehouse, condensers, and several operator residences.

In 1950s and 1960s, Southern Counties undertook additional renovation and upgrade projects at the Compressor Station that included demolition of many of the buildings and structures added since the 1920s. The renovation and construction included new cooling towers, compressor buildings, engines, pumps, and offices. In the late 1980s, the Southern California Gas Company (successor to Southern Counties) completed a modernization and upgrade of the Compressor Station as part of an overall upgrade of its transmission system (Figure 1-5).

In 1953, Seaside Oil purchased the leased property west of Parcel A [Dames & Moore, September 1991]. Seaside Oil continued operations started on the former Ventura MGP property until 1969. Seaside Oil apparently limited its operation to the refining and the manufacturing of asphalt on Parcel B (Appendix U), and storage of gasoline, kerosene, and lubricating oils on Parcel C. Historic aerial photos from the late 1920s through the 1960s show over 40 aboveground storage tanks and open impoundments west and southwest of the Southern Counties Compressor Station (Figures 1-15 and 1-16, and Appendix U). Aerial photographs for the years 1946 and 1948 show approximately 45 aboveground tanks and three open impoundments west and southwest of the Compressor Station [Dames and Moore, September

1991].

In an aerial photo from 1945, two large above ground storage tanks can be seen on Parcel D (Figure 1-15). There is no indication that these tanks belonged to SCG. In 1955, Parcel D was granted by Seaside Oil to the State of California for construction of State Highway 33 [Dames & Moore, September 1991].

There is no indication in any of the known records that MGP or any other operations ever occurred on Parcel E. Parcel E was sold by Seaside Oil in 1953 to the Ventura County Flood Control District to construct the Ojai Levee for storm water flood control [Dames & Moore, September 1991].

In 1969, Utility Refining Company purchased property on the Site (i.e., Parcels B and C) that included a portion of the former MGP, and operated a petroleum refinery, storage, and distribution center until 1976 (Figure 1-11) [Carol M. Nolan, 2002]. Aerial photographs indicate Utility Refining may have used many of the same storage tanks and waste ponds in use by Seaside Oil. In addition, several smaller above-ground storage tanks were located immediately along the western SCG property boundary [Dames & Moore, September 1991].

In 1969, Buenaventura Terminal Corporation purchased Parcels B and C and owned them until 1982. During that time, Buenaventura Terminal Corporation leased their portion of the Site to two separate entities, Parcel C to USA Petrochem and Parcel B to Vetco Offshore, Inc. (Vetco). USA Petrochem and Vetco were mainly involved with oil refinery and tank farm operations.

In 1981, Vetco purchased Parcel B from the Buenaventura Terminal Corporation (Figure 1-12). According to interviews conducted by SCG and consulting staff members, Vetco employees stated that they used the property to ship and receive raw materials and finished products using the existing rail line [Carol M. Nolan, 2002]. Vetco has owned and operated on several adjoining parcels since the early part of the 1900s.

In 1987, Vetco sold Parcel B to Offshore Crane Company (Offshore Crane). Offshore Crane has used Parcel B to store offshore drilling and production equipment, and currently owns the parcel as T&T Truck and Crane Service Co. (Figure 1-13).

In 1982, USA Petrochem Corporation purchased Parcel C from Buenaventura Terminal Corporation. In 1983, USA Petrochem Corporation sold its property to USA Properties Corporation. In 1997, the Parcel was sold to Onshore Properties. In 2000, Parcel C was sold to Ventura Seaside Properties (Figure 1-14). Currently C.D. Lyon Construction Inc. occupies Parcel C.

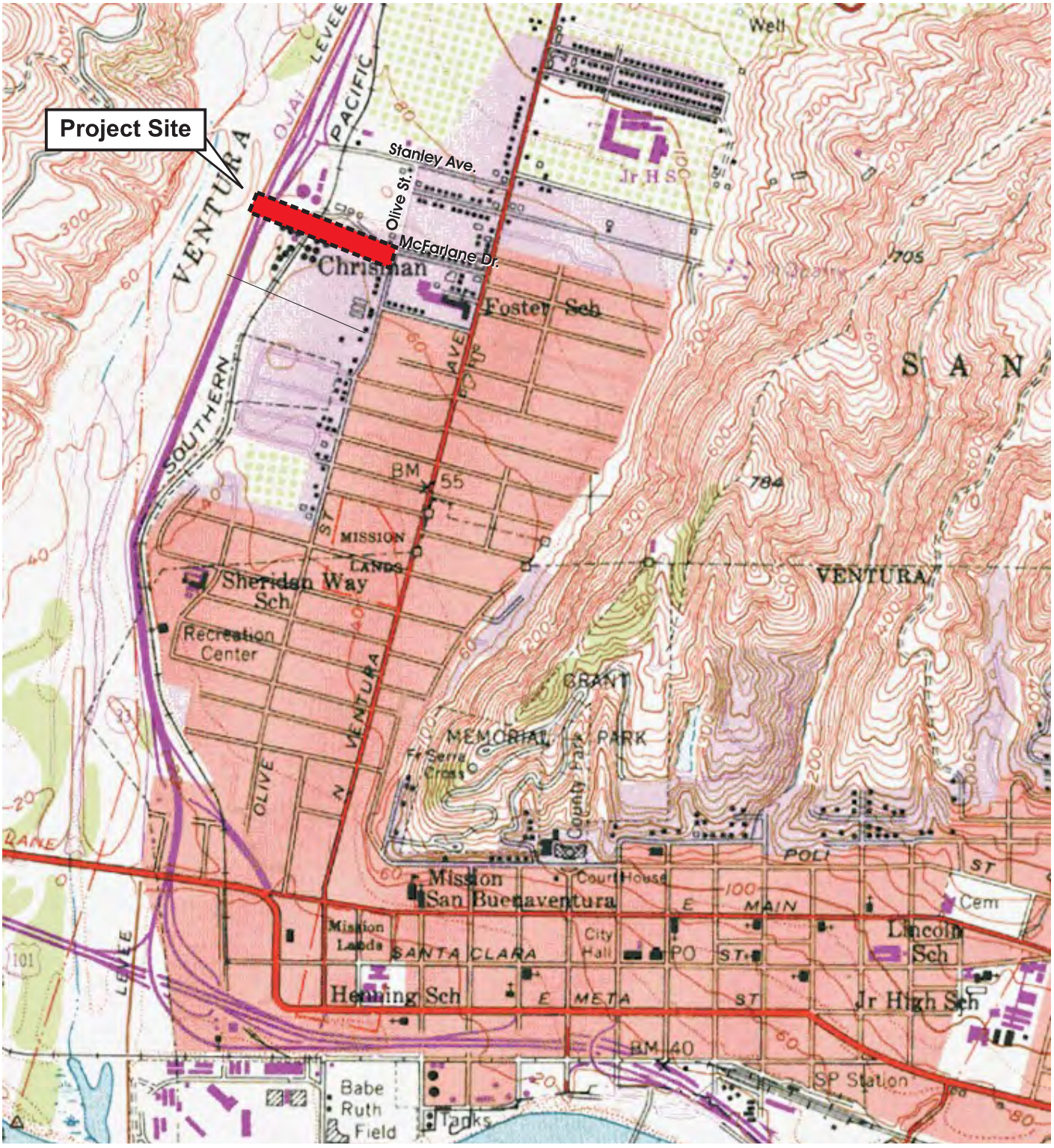
Former MGP structures overlaid by current Site structures are shown on Figure 1-7. Former MGP and Southern Counties Compressor Station structures overlaid by current Site structures are shown on Figure 1-9. Summary of historical Site ownership are illustrated on Figures 1-6 and 1-10 through 1-14.

TABLE 1-1

SUMMARY OF HISTORICAL SITE OPERATIONS AND FORMER SITE OWNERSHIP

DATE	ACTIVITY
1892	Ventura Land and Power operates an ice factory and electric light works (operations on Parcels A&B)
March 1896	Tract purchased by Ventura Land and Power.
May 1901 - January 1907	Site operated by Ventura Water, Light and Power (name changed from Ventura Land and Power) as electric light and gas works (operations on Parcels A&B)
1905	Manufactured gas operations began (operations on Parcels A&B)
January 1907	Site purchased by Ventura County Power Company.
November 1917	Site purchased and operated by Southern California Edison.
1919	Manufactured gas operations ceased.
June 1919 - present	Portion of the Site (Parcel A) operated as a compressor station by Southern Counties Gas Company. (Later merged with Southern California Gas Company).
September 1920 - April 1928	Removed former MGP structures/equipment.
1923	Began installation of compressor station equipment.
1923 - 1953	Parcels located at west (B,C,D,E andG) of present SoCalGas property (Parcel A) boundary leased to Seaside Oil Company by Southern Counties Gas Company.
June 1953	Seaside Oil purchased formerly leased property west of site.
September 1953	Seaside Oil sold portion of the west Parcels (Parcel E) to Ventura County Flood Contro District.
August 1955	Seaside Oil grants State of California the State Highway 33 portion of the Former MGP site (Parcel D)
January 1969	Seaside sold Parcels B&C to Utility Refining Company.
September 1976	BuenaVentura Terminal Corporation (later merged with U.S.A. Petrochem) purchased parcels from Title Insurance and Trust Co. following foreclosure against Utility Refining Co. Leased Parcel B to Vetco Offshore. Leased Parcel C to USA Petroleum.
July 1981	Portion of former MGP site sold to Vetco Offshore Inc. (Parcel B).
1982	USA Petroleum bought Parcel C. Parcel C sold to USA Petrochem Corporation.
February 1983	Parcel C sold to U.S.A. Properties Corporation.
1987	Vetco sold Parcel B to Offshore Crane Company.
1997	Onshore Properties purchased Parcel C.
2000-Present	Ventura Seaside Properties and C.D. Lyon Construction - Parcel C. Offshore Crane and T&T Truck and Crane Service - Parcel B.

**Source: Modified after Dames & Moore, 1991.*



SOURCE: Maptech, Inc.; 1997

North

0 1/2 1

Scale in Miles

Southern California Gas Company
Former Ventura MGP Site

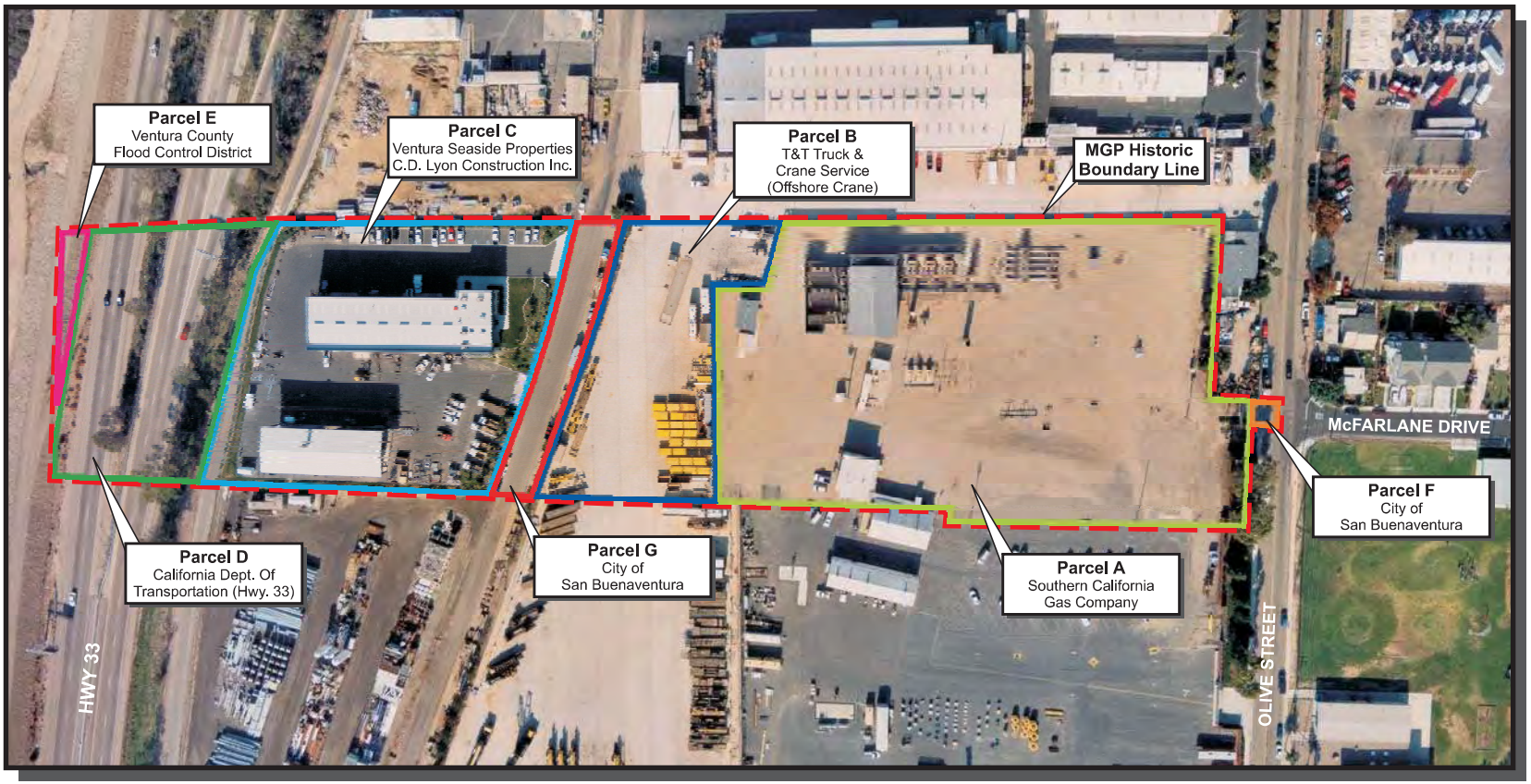
Site Location Map

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-1.cdr
Date: 12/30/04

FIGURE 1-1

ttcpasddv2394\C:\SalarsProjects\12174 (Ventura)\Updated Corel_CAD Figures\Figure_1-1s.cdr



Legend

- MGP Historic Boundary Line
- Parcel A
- Parcel B
- Parcel C
- Parcel D
- Parcel E
- Parcel F
- Parcel G

N

0 100 200 400

Approx. Scale: 1" = 200'

Note:
Aerial photo was taken on December 6 2002
Source:
Modified after record data boundary map prepared by Tetra Tech ISG, Jan 2003

Southern California Gas Company
Former Ventura MGP Site

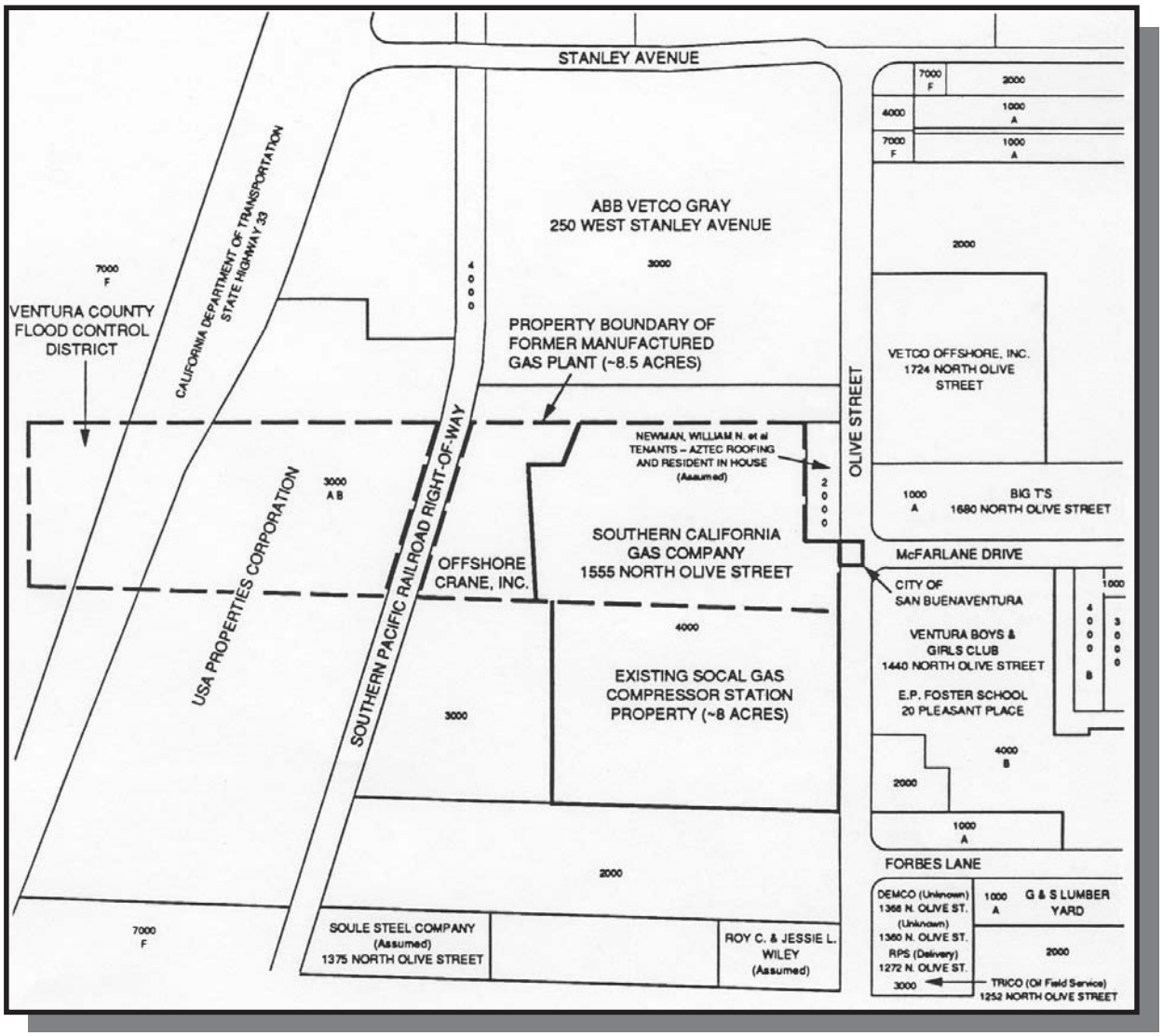
AERIAL PHOTO MAP & PARCEL BOUNDARIES

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-2.cdr
Date: 12/30/04

FIGURE 1-2

ttcpasddv2394\C:\SalarsProjects\12174 (Ventura)\Updated Corel_CAD Figures\Figure_1-2.cdr



GENERAL LAND USE

- 1000 Residential
  - A: Residential
- 2000 Commercial
- 3000 Industrial
- 4000 Public Facilities
  - B: Schools / Day-Care
  - C: Religious
  - G: Waterways
  - H: Water Storage / Transfer
- 7000 Vacant Land
  - F: Vacant Land
  - AB: Abandoned
  - P: Parking

0 130 260

Approximate Scale in Feet

N

Southern California Gas Company
Former Ventura MGP Site

TAX ASSESSOR'S MAP

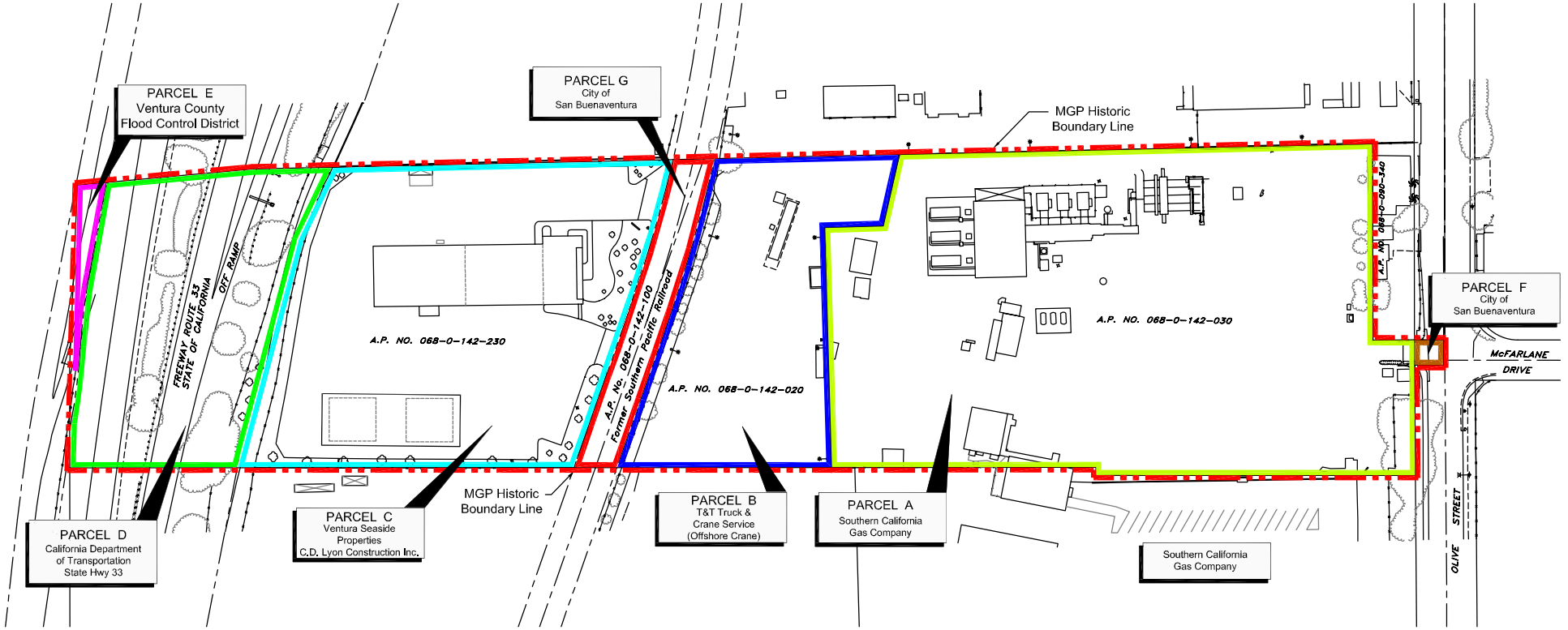
Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-3.cdr
Date: 1/13/05

FIGURE 1-3

Source:
Dames & Moore, 1991

ttcpasddv2394\C:\SalarsProjects\12174 (Ventura)\Updated Corel_CAD Figures\Figure_1-3.cdr



Explanation

- Parcel G - City of San Buenaventura
- Parcel F - City of San Buenaventura
- Parcel E - Ventura County Flood Control District
- Parcel D - California Department of Transportation
- Parcel C - Ventura Seaside Properties
- Parcel B - Offshore Crane
- Parcel A - Southern California Gas Company

LEDGEND

- MGP Historic Boundary Line
- Indicate current / existing structure
- Landscaping / Trees
- MGP — Manufactured Gas Plant

NORTH

100 0 50 100 200

Scale: 1" = 100'

Source:
1. Modified after record data boundary map prepared by Tetra Tech ISG, Jan. 2003

Southern California Gas Company
Former Ventura MGP Site

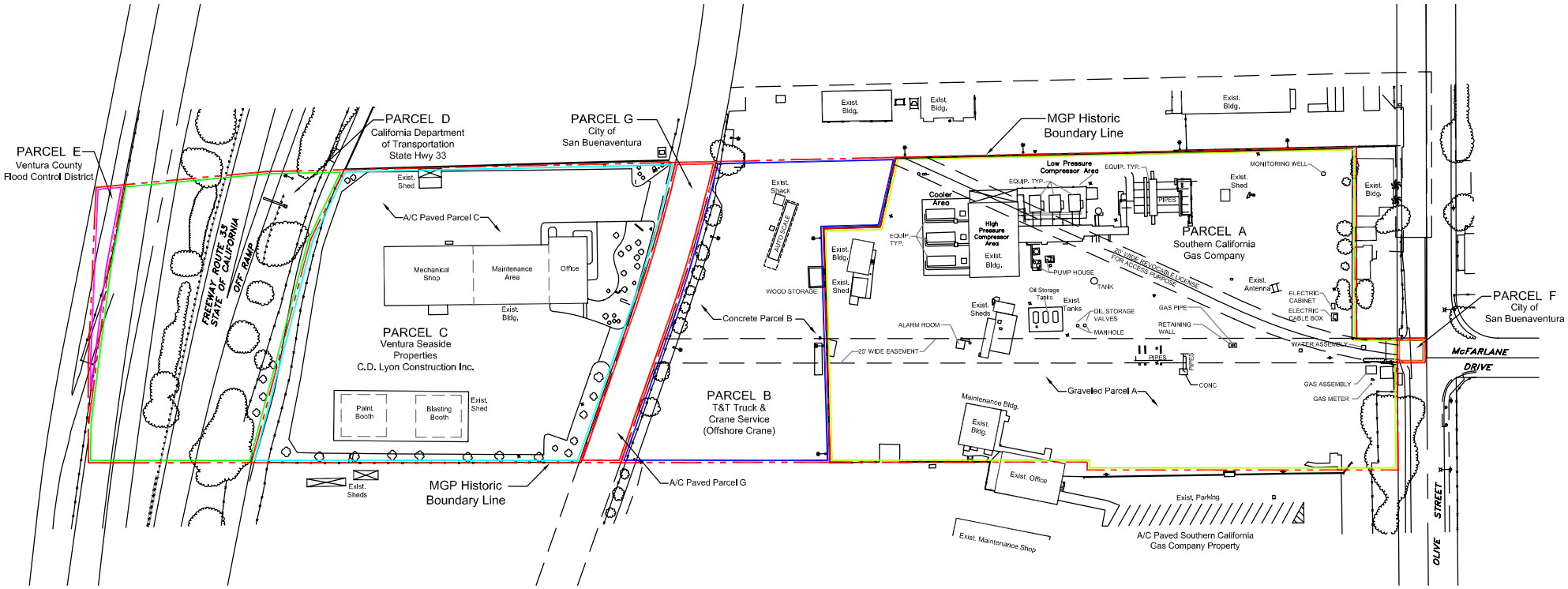
SITE PLAN AND PARCEL BOUNDARIES

Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_1-4
DATE: 1/13/05

FIGURE 1-4

ttcpasdfs\2394-C:\SitesProjects\12174(Ventura)\Updated Corel_CAD Figures_1-4.dwg



LEGEND

A/C	Asphalt Concrete
bgs	Below ground surface
MGP	Manufactured Gas Plant
	MGP Historic Boundary Line
	Indicates current or existing structure
	Landscaping / Trees

PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel E — Ventura County Flood Control District
- Parcel D — California Department of Transportation
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

NORTH

GRAPHIC SCALE
0 50 100 200
1 inch = 100 ft.

Source:
1. Modified after record data boundary map (Tetra Tech ISG, Jan. 2003). See Plate 1 for details.

Southern California Gas Company
Former Ventura MGP Site

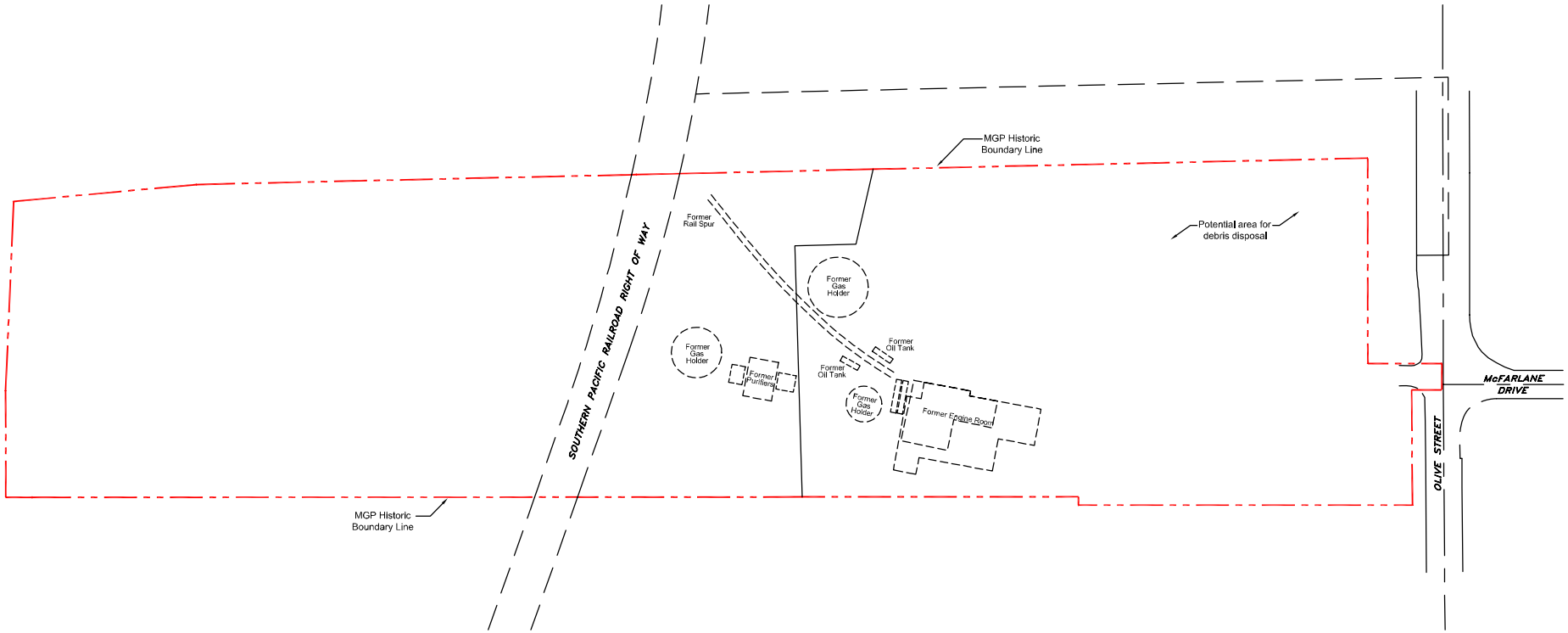
SITE PLAN WITH CURRENT STRUCTURES

Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_1-5
DATE: 8/3/05

FIGURE 1-5

ttcpasadv2504/C:\SalarsProjects\12174\Ventura\[Updated Corel CAD Figures_1-5.dwg



LEGEND

MGP Manufactured Gas Plant

MGP Historic Boundary Line

Indicate approximate limit of former structure

NORTH

GRAPHIC SCALE

0 50 100 200

1 inch = 100 ft.

Source:
1. Site Characterization Report (Dames & Moore, 1989) and available San Buenaventura Fire Insurance map 1910 - 1921

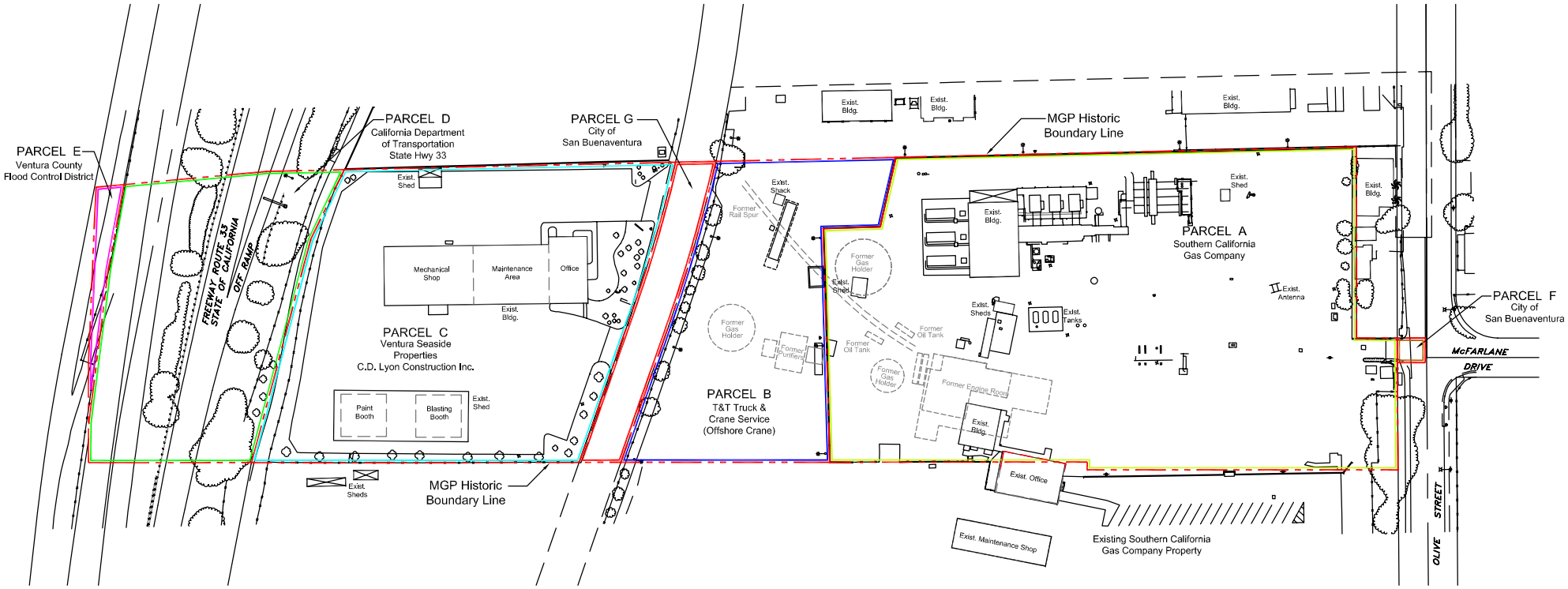
Southern California Gas Company
Former Ventura MGP Site
SITE PLAN WITH FORMER MGP STRUCTURES
"TOWNE GAS" PROPERTY & FORMER FACILITIES
1905-1919

Tetra Tech, Inc.

PREPARED BY: M.A.R.
FILE: Figure_1-6
DATE: 4/26/05

FIGURE 1-6

J:\2396_PROJECTS\15966 (VENTURA)\15966-01 (REMEDIAL INVESTIGATION REPORT)\15966-01FIGURE_1-6.DWG



LEGEND

MGP Manufactured Gas Plant
USTS Underground Storage Tanks
MGP Historic Boundary Line
Indicates current or existing structure
Indicate approximate limit of former MGP structure
Landscaping / Trees

PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel E — Ventura County Flood Control District
- Parcel D — California Department of Transportation
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

NORTH

GRAPHIC SCALE
0 50 100 200
1 inch = 100 ft.

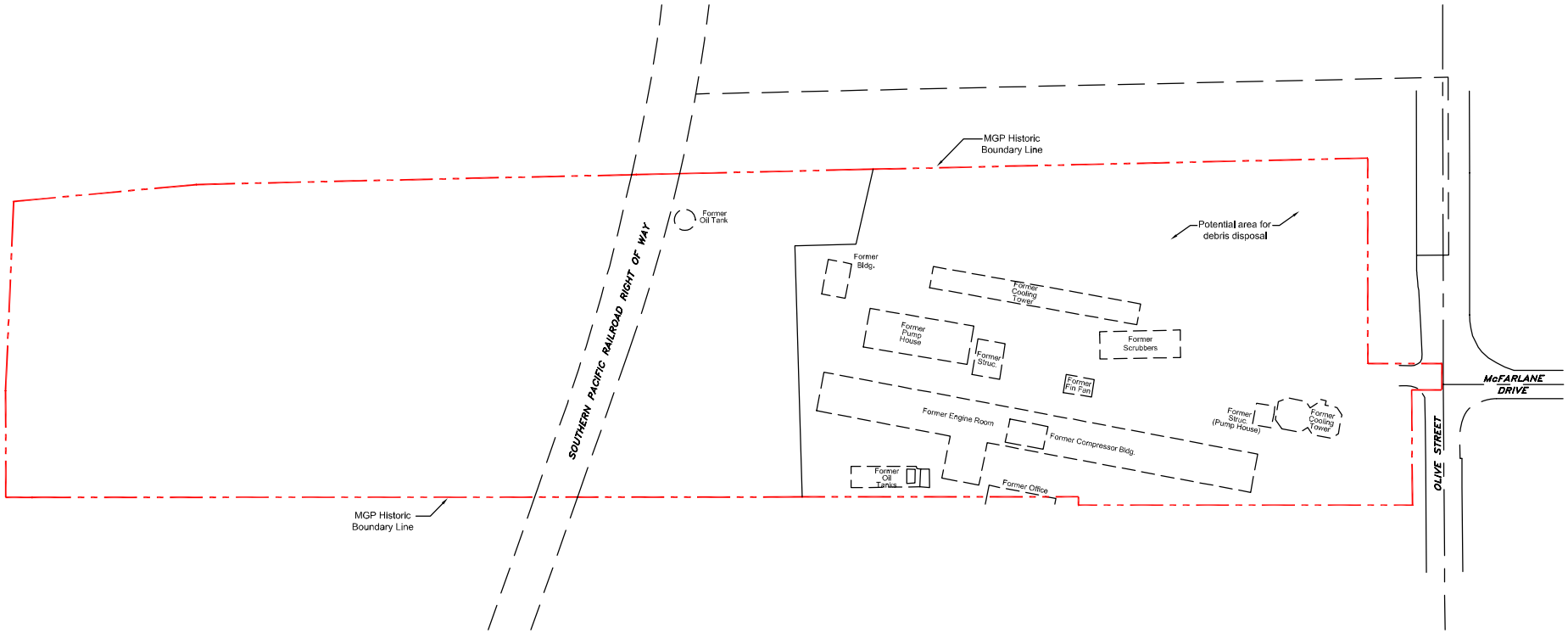
Source:
1. Site Characterization Report (Dames & Moore, 1989) and available San Buenaventura Fire Insurance map 1910 - 1921

Southern California Gas Company
Former Ventura MGP Site
SITE PLAN WITH CURRENT AND FORMER MGP STRUCTURES

Tetra Tech, Inc.

PREPARED BY: M.A.R.
FILE: Figure_1-7
DATE: 4/26/05

FIGURE 1-7



LEGEND

MGP Manufactured Gas Plant

MGP Historic Boundary Line

Indicate approximate limit of former structure

NORTH

GRAPHIC SCALE

0 50 100 200

1 inch = 100 ft.

Source:
1. Site Characterization Report (Dames & Moore, 1989) and available San Buenaventura Fire Insurance map 1910 - 1921

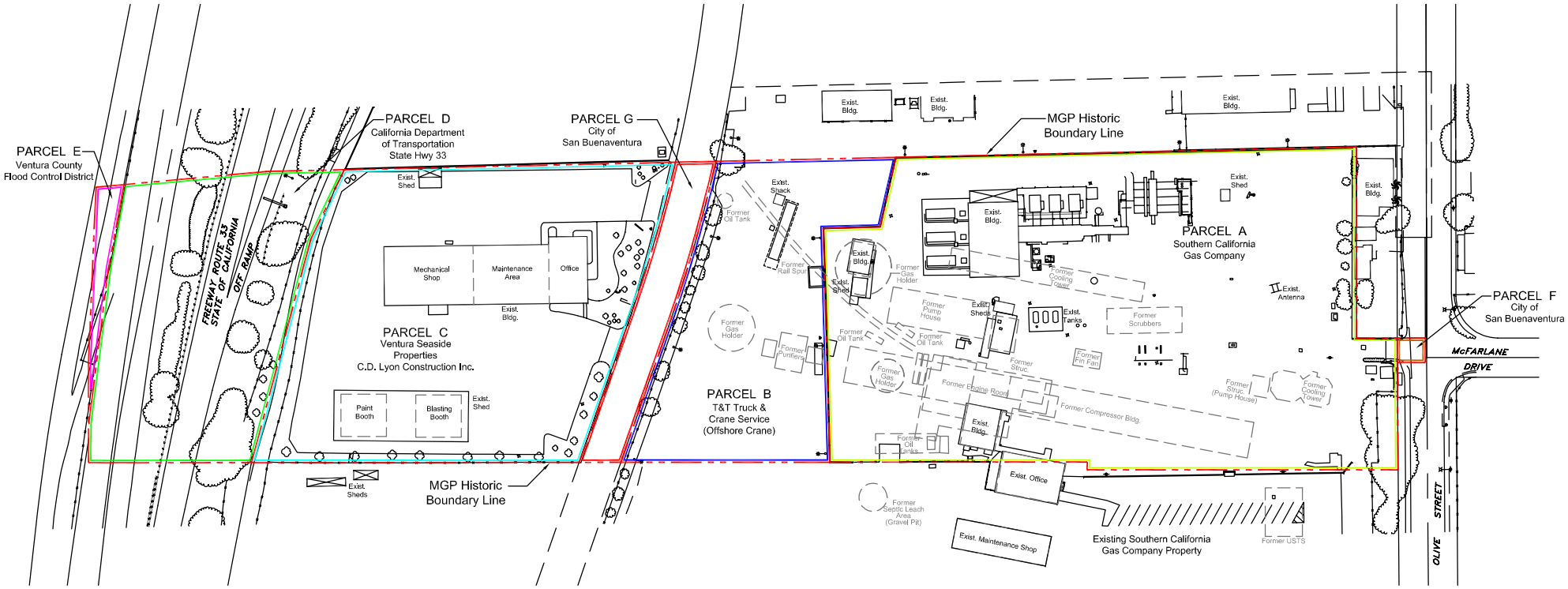
Southern California Gas Company
Former Ventura MGP Site
SITE PLAN WITH FORMER SOUTHERN COUNTIES COMPRESSOR STATION STRUCTURES 1940's

Tetra Tech, Inc.

PREPARED BY: M.A.R.
FILE: Figure_1-8
DATE: 4/26/05

FIGURE 1-8

J:\2396_PROJECTS\15966 (VENTURA)\15966-01 (REMEDIAL INVESTIGATION REPORT)\15966-01FIGURE_1-8.DWG



LEGEND

MGP Manufactured Gas Plant
USTS Underground Storage Tanks
MGP Historic Boundary Line
Indicates current or existing structure
Indicate approximate limit of former structure
Landscaping / Trees

PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel E — Ventura County Flood Control District
- Parcel D — California Department of Transportation
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

NORTH

GRAPHIC SCALE
0 50 100 200
1 inch = 100 ft.

Source:
1. Site Characterization Report (Dames & Moore, 1989) and available San Buenaventura Fire Insurance map 1910 - 1921

Southern California Gas Company
Former Ventura MGP Site

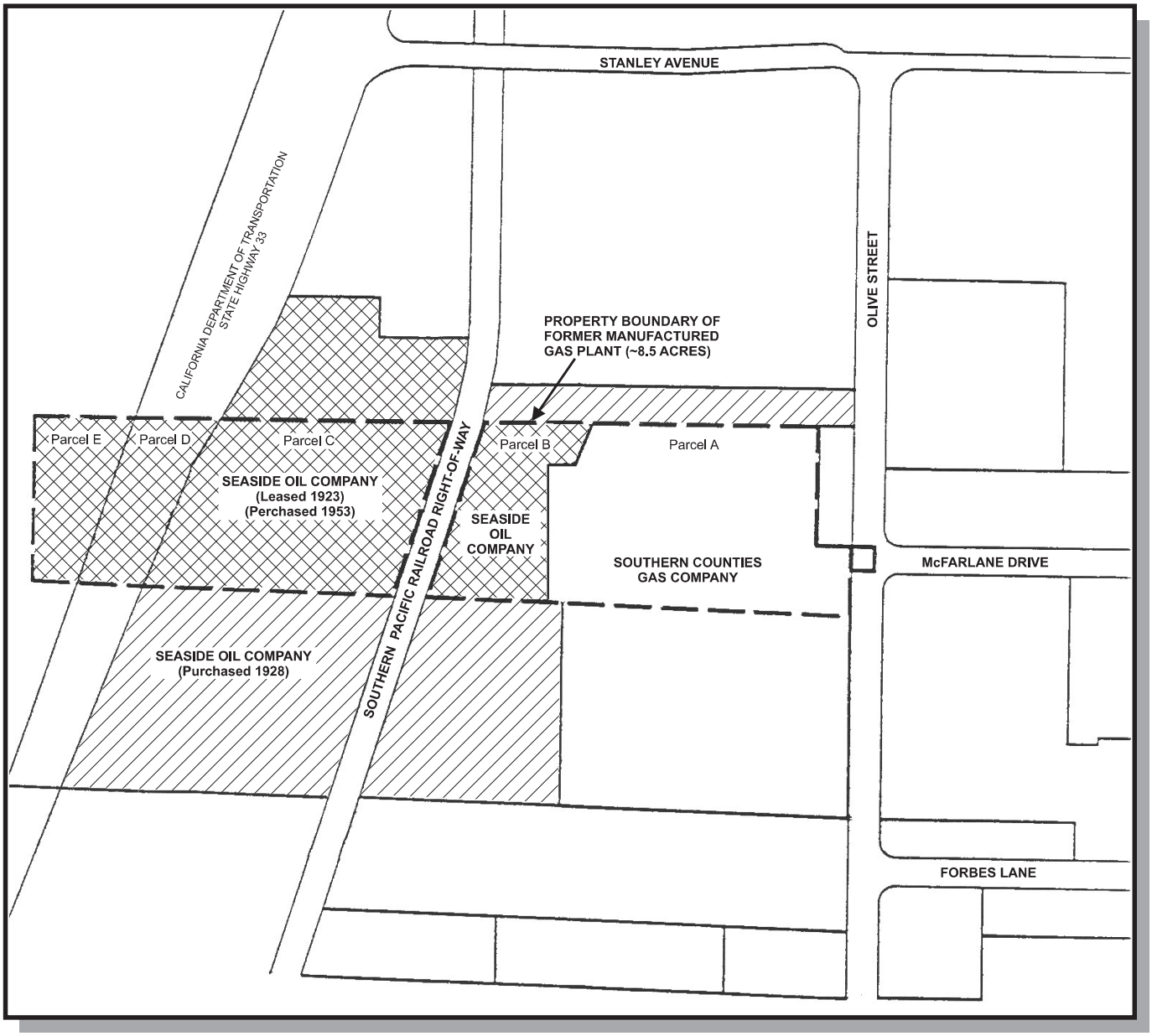
SITE PLAN WITH CURRENT, FORMER MGP, AND SOUTH COUNTIES COMPRESSOR STATION STRUCTURES

Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_1-9
DATE: 4/26/05

FIGURE 1-9

J:\2396_PROJECTS\15966 (VENTURA)\15966-01 (REMEDIAL INVESTIGATION REPORT)\15966-01FIGURE_1-9.DWG



N

0 130 260

Approx. Scale in Feet

Sorce: Modified after
Dames & Moore, 1991

Southern California Gas Company
Former Ventura MGP Site

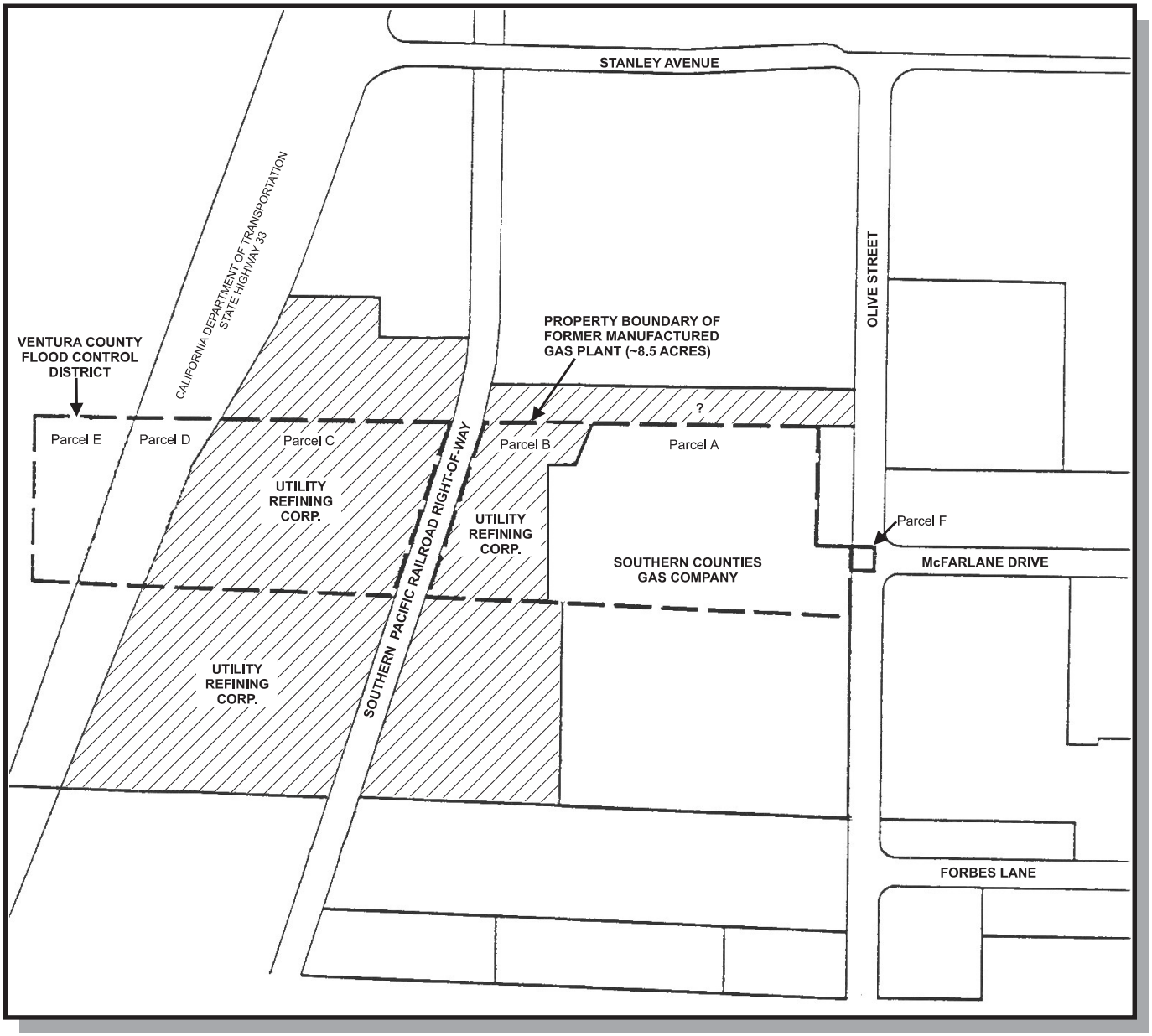
PROPERTY OWNERSHIP
1923 - 1969

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-10.cdr
Date: 4/26/05

FIGURE 1-10

J:/2396_PROJECTS/15966 (VENTURA)/15966-01 (REMEDIAL INVESTIGATION REPORT)/15966-01FIGURE_1-10.CDR



0 130 260

Approx. Scale in Feet

N

Sorce: Modified after
Dames & Moore, 1991

Southern California Gas Company
Former Ventura MGP Site

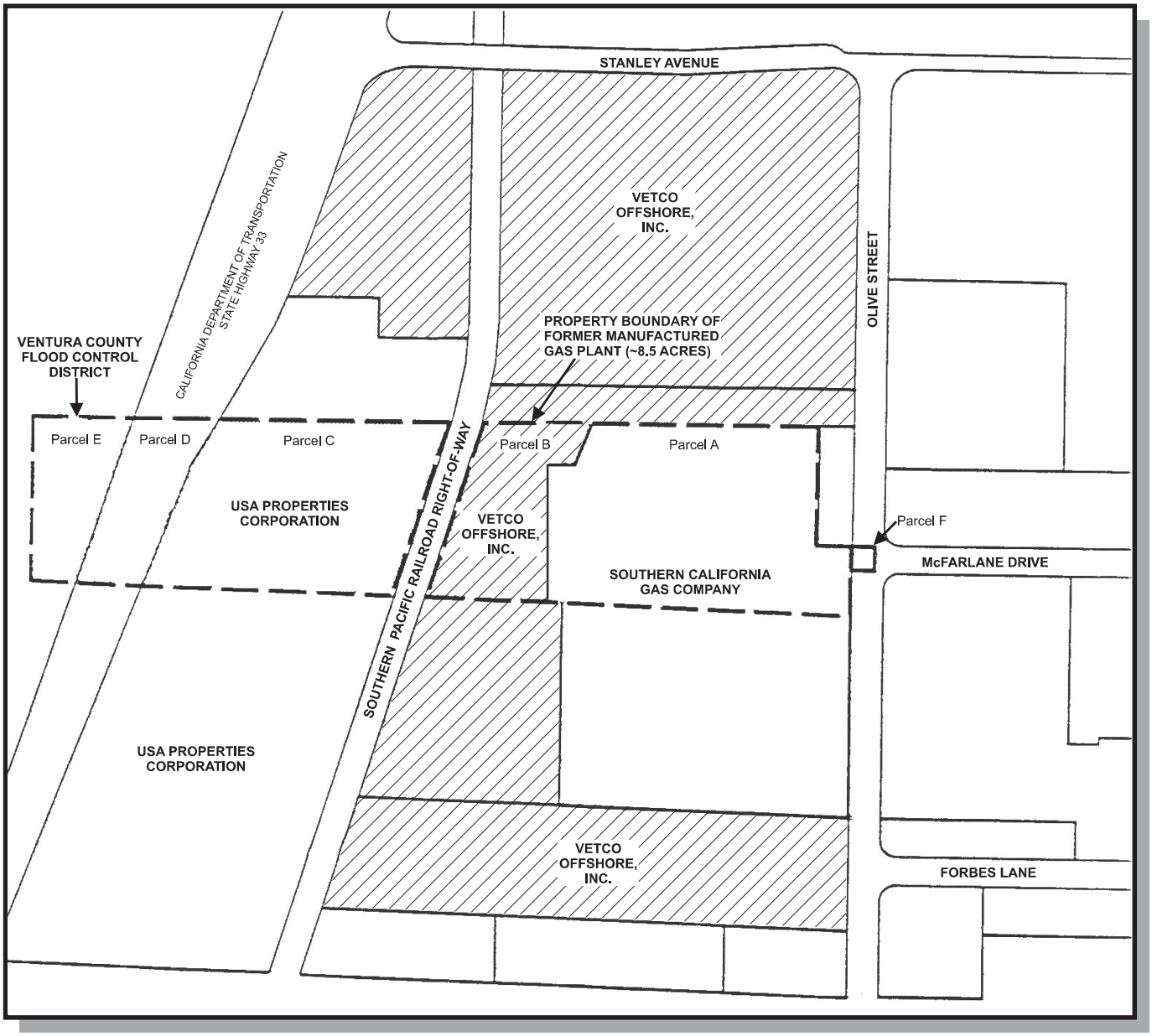
PROPERTY OWNERSHIP
1969 - 1976

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-11.cdr
Date: 4/26/05

FIGURE 1-11

J:/2396_PROJECTS/15966 (VENTURA)/15966-01 (REMEDIAL INVESTIGATION REPORT)/15966-01FIGURE_1-11.CDR



N

0 130 260

Approx. Scale in Feet

Sorce: Modified after Dames & Moore, 1991

Southern California Gas Company
Former Ventura MGP Site

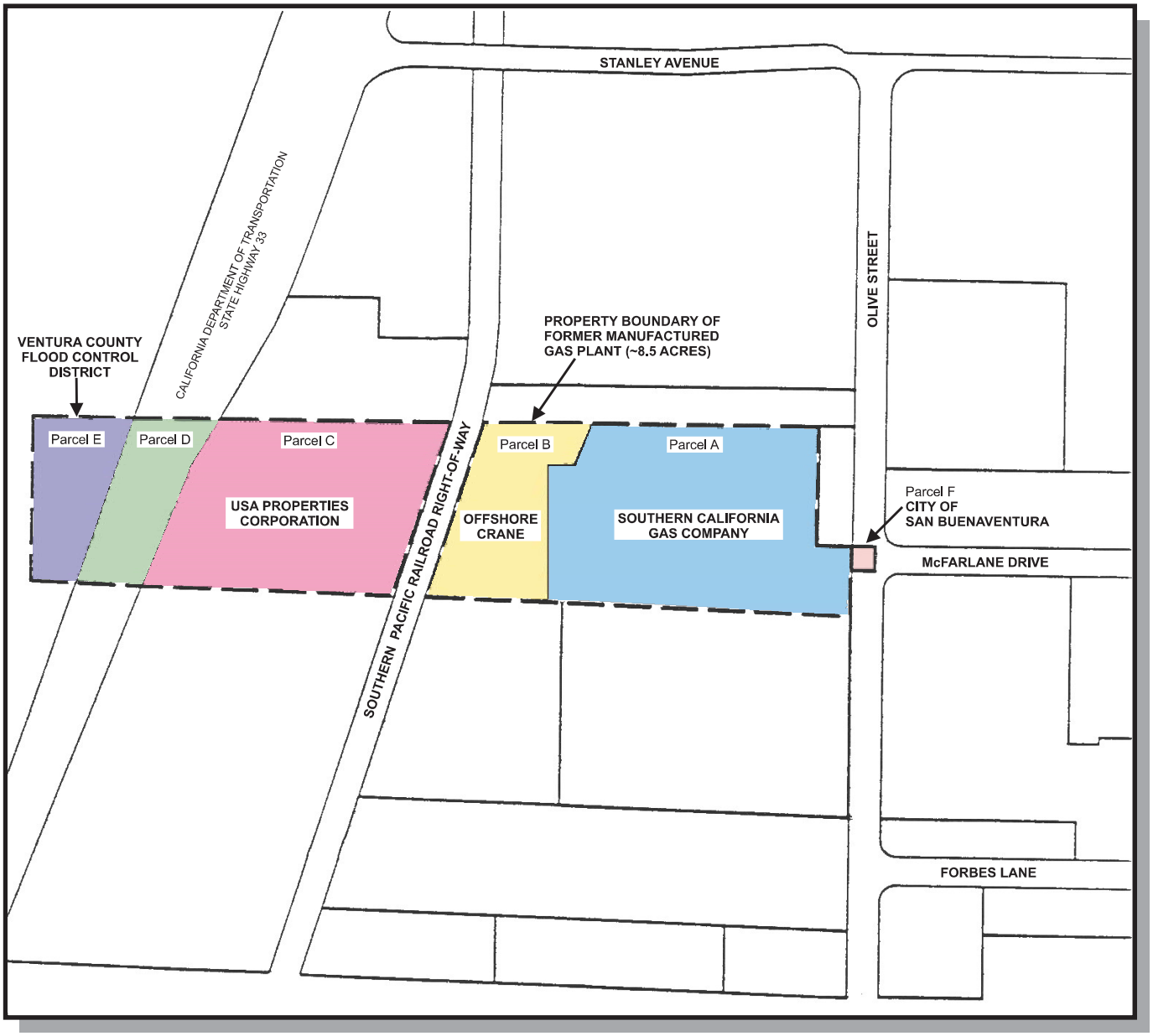
PROPERTY OWNERSHIP 1981-1987

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-12.cdr
Date: 4/26/05

FIGURE 1-12

J:/2396_PROJECTS/15966 (VENTURA)/15966-01 (REMEDIAL INVESTIGATION REPORT)/15966-01FIGURE_1-12.CDR



0 130 260

Approx. Scale in Feet

N

Sorce: Modified after
Dames & Moore, 1991

Southern California Gas Company
Former Ventura MGP Site

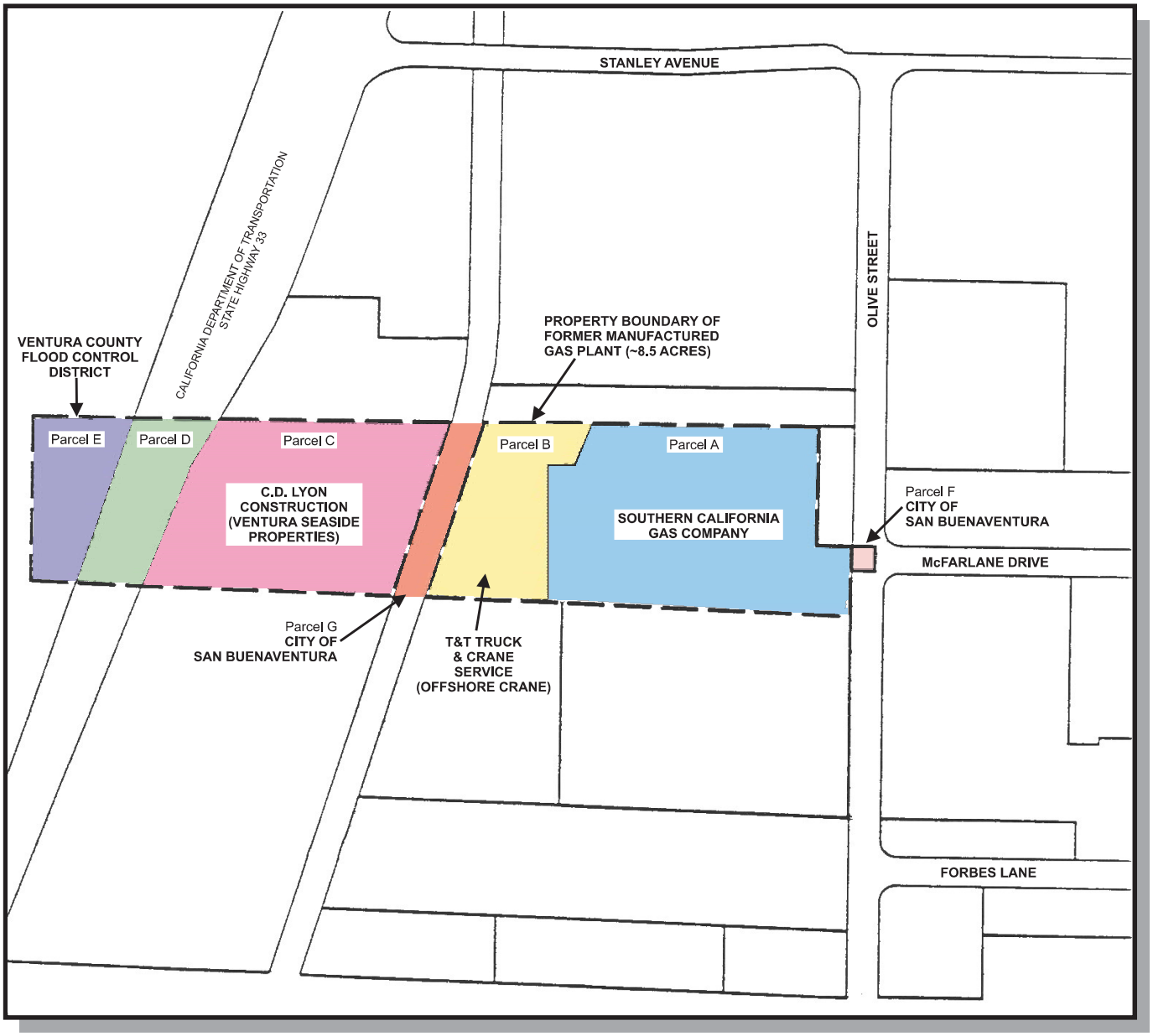
PROPERTY OWNERSHIP
1988 - 1997

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-13.cdr
Date: 4/26/05

FIGURE 1-13

J:/2396_PROJECTS/15966 (VENTURA)/15966-01 (REMEDIAL INVESTIGATION REPORT)/15966-01FIGURE_1-13.CDR



0 130 260

Approx. Scale in Feet

N

Sorce: Modified after
Dames & Moore, 1991

Southern California Gas Company
Former Ventura MGP Site

CURRENT PROPERTY OWNERSHIP

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_1-13.cdr
Date: 1/17/05

FIGURE 1-14

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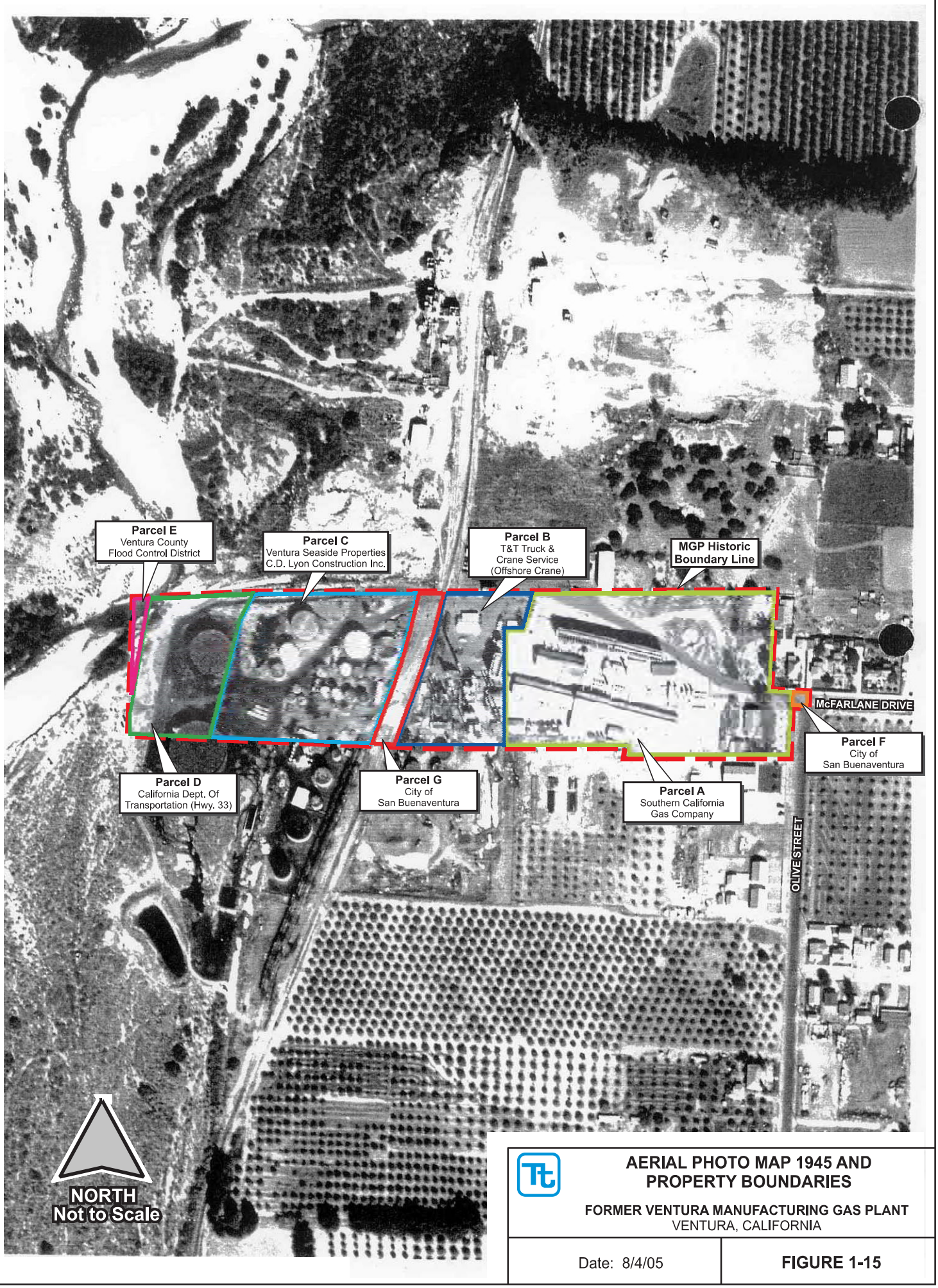


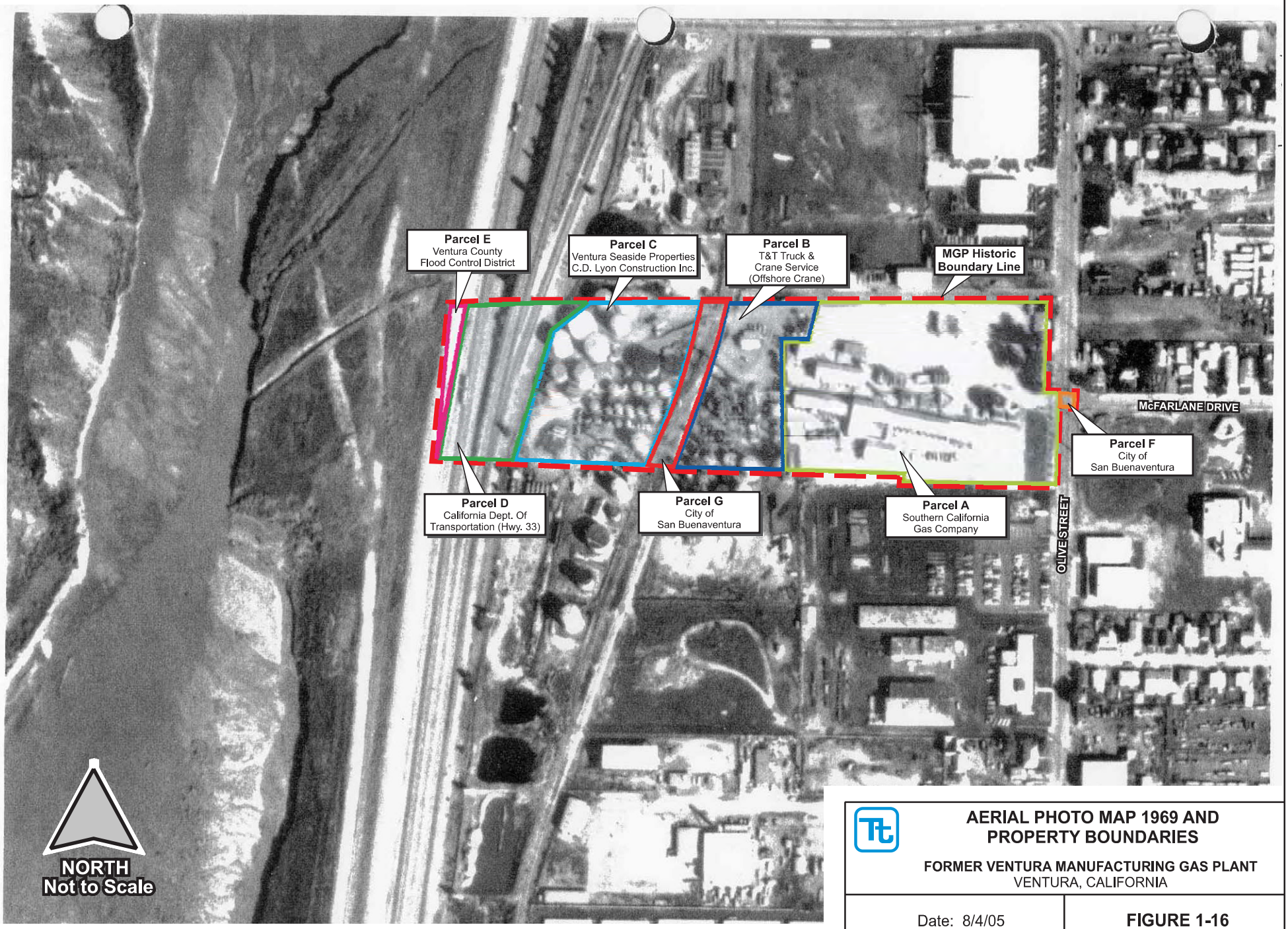
AERIAL PHOTO MAP 1945 AND PROPERTY BOUNDARIES

FORMER VENTURA MANUFACTURING GAS PLANT
VENTURA, CALIFORNIA

Date: 8/4/05

FIGURE 1-15

J:/2396_/Projects/15966-01 (Ventura)/15966-01 (Remedial Investigation Report)/15966-01Figure_1-15.cdr



AERIAL PHOTO MAP 1969 AND PROPERTY BOUNDARIES

FORMER VENTURA MANUFACTURING GAS PLANT
VENTURA, CALIFORNIA

Date: 8/4/05

FIGURE 1-16

J:/2396_/Projects/15966-01 (Ventura)/15966-01 (Remedial Investigation Report)/15966-01Figure_1-16.cdr

This section describes general information pertinent to the previous site investigations and ongoing groundwater monitoring program. This information was generated from previous reports compiled by other consultants including the Dames & Moore site investigation activity reports from 1987 through 1991, West Coast Environmental from 1992, and the SCG records from 1993 through 2003 (Table 2-1).

Summaries of the previous investigations that have been conducted in Parcels A, B, and C are included in this section. Prior to 2003 (the time of this investigation), no known site investigations had been performed on Parcels D, E, F, and G.

2.1 PARCEL A

2.1.1 Summary of Historical MGP Operations on Parcel A

Most of the MGP operations have occurred on Parcel A (Figures 1-6 and 1-7). Parcel A is presently owned by SCG and is used for natural gas compression and delivery. The oil-based MGP commenced operation on Parcel A in 1905. The available Sanborn maps show the past placement of gasholders, a gas generator building, a tail race, purifiers, oil tanks, and a rail spur [Tetra Tech, 2003]. Alterations to the plant can be seen in each successive Sanborn map as larger gasholders were added, the generator building was enlarged, and oil tanks and oil lines were constructed. The northeast portion of Parcel A was used for debris disposal and storage of surplus, used, and broken equipment and supplies. The summary of Parcel A Ownership and Operations is as follows [West Coast Environmental, 1992].

Dates	Property Owner	Operations
1892-1905	Ventura Land & Power Co.	Ice Factory and Electric Light Works
1901-1907	Ventura Water, Light & Power	Electric Light and Gas Works
1905	Ventura Water, Light & Power	Manufactured Gas Operations Start-up
1907	Ventura County Power Company	(same as above)
1917	Southern California Edison	(same as above)
1919	Southern California Edison	Manufactured Gas Operations Cease
1919-present	Southern Counties Gas Company (later merged with SCG in 1981)	Natural Gas Compressor Station

2.1.2 Summary of the Previous Site Investigations on Parcel A

A review of the previous investigation reports indicates that a total of 76 test pits, three background samples, and four groundwater monitoring wells were installed on Parcel A and in the vicinity. All 76 test pits and two groundwater monitoring wells (DMW-1 and DMW-4) were completed in Parcel A. The other two monitoring wells (DMW-2 and MW-3) were installed offsite to the south of Parcel A and former MGP boundary line. The test pits, soil samples

(including 3 background soil samples), and monitoring well locations are illustrated on Figure 2-1, and they are as follows:

Test Pits, Soil Borings, and Soil Samples

TP-1 to TP-15	Initial compressor modification investigation (January 7 & 9, 1987)
TP-16 to TP-18	Supplemental compressor modification investigation (June 19, 1987)
P-1-1 to P-1-30	Statistical sampling, Partition 1 (October 6-17, 1988)
P-2-1 to P-2-12	Statistical sampling, Partition 2 (October 6-17, 1988)
P-3-1 to P-3-3	Statistical sampling, Partition 3 (October 6-17, 1988)
A-1 to A-13	Authoritative sampling (October 6-17, 1988)
S-1 to S-3	Background soil samples (July 1991)

Groundwater Monitoring Well Installation

DMW-1	Installed November 1988, upgradient of the former MGP and compressor station, in the northeast corner of the Site.
DMW-2	Installed November 1988, downgradient of the former MGP, including test pits P-1-3 and P-1-4, in the southwest portion of the Site.
MW-3	Installed 1987, near the former underground gasoline tank, located offsite in the southeast of the former MGP Site.
DMW-4	Installed July 1991, adjacent to suspected offsite petroleum hydrocarbon soil contamination, in the northwest corner of the Site.

In addition, an 8,000-gallon gasoline tank and a 550-gallon diesel tank were removed from an area offsite of southeast corner of former MGP boundary in December of 1986. Approximate location of the former underground storage tanks (USTs) are shown on Figure 2-1. Soil samples were collected from the tank excavation area and one monitoring well (MW-3) was installed by McClelland Engineers, Inc. [McClelland Engineers, 1987].

In 1993, a long term groundwater monitoring program for four existing groundwater monitoring wells was established, and semi-annual groundwater monitoring was implemented by SCG. Prior to this Remedial Investigation, the last groundwater monitoring and sampling was conducted on March 25, 2005. Summary of the previous tank removal activity, site characterization and groundwater monitoring program conducted on- and-offsite of Parcel A are described below.

2.1.3 Tank Removal Activities by McClelland 1986 to 1987

Tank removal and confirmation sampling was conducted by McClelland Engineers in December 1986 in the underground storage tank area located offsite of the MGP historic boundary line immediately southeast of Parcel A (Figure 2-1). The two removed underground storage tanks included one 8,000-gallon fiberglass gasoline tank and one 550-gallon fiberglass diesel tank [McClelland Engineers, January 1987]. The tank area was excavated to a depth of 26 feet below the ground surface (bgs), and soil samples were collected from sandy soil and clay at the total depth. The sandy soil sample contained a concentration of total petroleum hydrocarbon, gasoline

range (TPH-G) of 2,890 milligram per kilogram (mg/kg), and the clay sample contained a concentration of 30 mg/kg TPH-G. These soil samples were not analyzed for BTEX. The excavation was subsequently backfilled [McClelland Engineers, January 1987]. Monitoring well MW-3 was installed to the south-southwest of the former tank pit on the SCG property (Figure 2-1). No TPH-G or BTEX were detected in the groundwater sample collected from MW-3 in 1987 and it was decided no further remediation was necessary [McClelland Engineers, May 1987; West Coast Environmental, 1992].

2.1.4 Environmental and Geotechnical Investigations by Dames & Moore, 1987 to 1989

Limited soil sampling was conducted by Dames & Moore as part of two geotechnical investigations in 1986-87 [Dames & Moore, 1989]. In February 1987, Dames & Moore submitted a report on the "Environmental and Geotechnical Investigation, Proposed Compressor Station Modernization Project, Olive Street Station" for SCG [Dames & Moore, 1987a]. In July 1987, a supplemental subsurface investigation report was submitted for a second proposed location [Dames & Moore, 1987b]. These investigations focused on the potential locations for the compressor station modernization project within the area of the former MGP. Fifteen test pits (TP-1 to TP-15; as shown on Figure 2-1) were installed during the first phase of investigation to a maximum depth of 10 feet bgs and three (TP-16 to TP-18; as shown on Figure 2-1) in the supplemental investigation to a total depth of five feet bgs.

More extensive site characterization was conducted in 1988 [Dames & Moore, 1989]. A total of 48 test pits (P-1-1 through P-1-30, P-2-1 through P-2-12, P-3-1 through P-3-3, and A-1 trough A-13; as shown on Figure 2-1) and two groundwater monitoring wells (DMW-1 and DMW-2; as shown on Figure 2-1) were installed. The pits were excavated to an average size of 8 feet long and 5 feet deep using a 60-foot grid system. They were excavated to the depth of native flood-plain deposits. Deeper pits were required in the western portion of Parcel A. Soil sampling activities were conducted October 6-17, 1988. Well installation and groundwater sampling activities were conducted in November 16-29, 1988.

Selected soil samples were analyzed for polycyclic aromatic hydrocarbons (PAHs, EPA Method 8270), volatile organic hydrocarbons (VOCs, EPA Method 8240), polychlorinated biphenyls (PCBs, EPA Method 8080), metals, cyanide, total organic carbon (TOC), asbestos, and total petroleum hydrocarbons (TPH). No analyses of PAHs using Method 8310 were performed; this method typically has lower detection limits for PAHs than Method 8270.

Groundwater samples were analyzed for semi-volatile organic compounds including PAHs, TPHs, benzene, toluene, ethylbenzene, and total xylenes (BTEX), metals, cyanide, and PCBs [Dames & Moore, 1989; 1991a].

2.1.5 Additional Soil and Groundwater Investigation Activities: 1991 to 1992

Dames & Moore conducted limited field activities during preparation of a Preliminary Endangerment Assessment (PEA) in 1991. These activities consisted of an installation of one additional groundwater monitoring well (DMW-4) and water sampling of all existing wells

located at onsite and offsite wells of Parcel A.
In 1992, in response to request of the Los Angeles Regional Water Quality Control Board (LARWQCB), additional site characterization and groundwater investigation at the former Ventura MGP Site and vicinity was conducted by West Coast Environmental [West Coast Environmental, 1992]. The purpose of this additional investigation was to provide a summary of findings related to contaminated soil and groundwater issues in the area of the former MGP Site.

2.1.6 Groundwater Monitoring Program: 1993 to 2003

Since 1993, a long term groundwater monitoring program for four existing groundwater monitoring wells was established and semi-annual groundwater monitoring was implemented by SCG at the former MGP Site and vicinity (see Section 2.1.9).

2.1.7 Soil Sampling Analytical Results

PAHs

Polycyclic aromatic hydrocarbons (PAHs)[1] are common constituents of lampblack and tars from the gas manufacturing processes. Soil samples selected by Dames and Moore [Dames & Moore, 1989] for analysis were analyzed by EPA method 8270. The compounds that were detected in soils are listed in Tables 2-2 through 2-10. The PAH results that were reported from EPA Method 8270 were the same as those detected by EPA Method 8310.

Total PAH concentrations reported by Dames and Moore in their 1989 Site Characterization Report, including both carcinogenic as well as non-carcinogenic, ranged from less than 0.05 mg/kg to 4,900 mg/kg in a trench pit sample collected at 5 feet bgs from TP-15 (Figure2-2). TP-15 was centrally located on Parcel A, approximately 80 feet east of existing above ground storage tanks. Other concentrations of total PAHs reported in the 1989 Site Characterization Report included: 143.6 mg/kg in a 0.5 foot sample collected from P-1-5 located in the western portion of Parcel A; 3,349 mg/kg in the 2 foot sample collected from TP-12 centrally located on Parcel A; and 624.8 mg/kg in a sample collected at 3.4 feet bgs from test pit P-2-8, located in the northeast quadrant of Parcel A. These and other elevated concentrations of PAHs were plotted on Figure 2-2. Figure 2-2 illustrates the distribution and extent of total PAHs greater than 1 mg/kg in shallow subsurface soil (1 to 6 feet bgs) beneath Parcel A.

In Appendix AE, a table is included that shows the values of the PAH concentrations reported in the Dames and Moore 1989 Site Characterization Report converted into benzo(a)pyrene [B(a)P] equivalent concentrations for C-PAHs. These concentrations are plotted by depth as follows: 0 to

[1] A total of 16 compounds in the PAH group were listed by EPA Method 8310. Seven PAH compounds have been identified as probable human carcinogens. Nine additional PAH compounds have been identified as non-carcinogenic, but potentially toxic. Carcinogenic PAHs (C-PAHs) include: benzo (a) anthracene, benzo (a) pyrene, benzo (b) fluoranthene, benzo (k) fluoranthene, chrysene, dibenzo (a, h) anthracene, indeno (1,2,3-cd) pyrene. Non-carcinogenic PAH (NC-PAHs) include: acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, pyrene, phenanthrene.

2 feet bgs on Figure 2-2a; >2 feet to 5 feet bgs on Figure 2-2b; >5 feet to 10 feet bgs on Figure 2-2c; and >10 feet to 20 feet bgs on Figure 2-2d. Figures 2-2a through 2-2d have been plotted to show concentrations of C-PAHs as B(a)P equivalent values to make comparison of past detections with current ones possible.

TPH and VOCs

A high concentration of TPH (67,000 mg/kg) was found in sample (P-1-6) at 2 feet bgs on the western side of Parcel A (Figure 2-3). In this area higher concentrations of TPH were observed at depths exceeding 14 feet bgs (P-1-3) [Dames and Moore, March 1989]. The petroleum hydrocarbon contamination found in test pits P-1-3 and P-1-4 appeared to originate from off-site to the west of Parcel A [West Coast Environmental, 1992]. Results of analysis by EPA Methods 418.1 and 8240 of samples collected from test pit P-1-3 indicated that the soil contamination: 1) consisted of petroleum hydrocarbons of diesel range and higher; and 2) maybe a mixture of refined products or crude oil [West Coast Environmental, 1992]. Historical aerial photographs confirm the former presence of refinery operations and aboveground tanks west of this area (Appendix U).

Relatively high TPH concentrations were also detected in the northeastern area of the property (P-2-9). Benzene was only detected in one soil sample (P-1-6) located in the western side of the property.

Low concentrations of toluene (less than 1,200 µg/kg) was detected in several samples associated with lampblack residues [Dames & Moore, 1991b]. Distribution and extent of the TPH in shallow subsurface soil is presented on Figure 2-3.

Initial analysis by Dames and Moore of total purgeable petroleum hydrocarbons by EPA method 8240 (equivalent to method 8015) indicated the hydrocarbons fall in the range of diesel #2 [Dames and Moore, September 1991]. However, later analysis by West Coast Environmental indicated that the petroleum hydrocarbon contamination was either a mixture of refined products or crude oil [West Coast Environmental, 1992].

Metals, Cyanide, and Other Compounds

Of 31 soil samples (collected from 23 test pits) analyzed for metals, two samples collected from test pits A-4 and P-1-26 (below 4 feet) in the eastern portion of Parcel A (Figure 2-3) had lead concentrations that exceed the CCR Title 22, Article 11 TTLC (TTLC=1000 mg/kg) criteria for designation of these materials as hazardous. Ten additional samples submitted for metals analysis contained concentrations of lead, cadmium, and zinc exceeding 10 times the STLC for lead, cadmium, and zinc [Dames & Moore, 1991b].

Cyanide was detected in samples collected from a number of locations (Figure 2-3). Concentrations of cyanide were typically less than 0.5 mg/kg, with a maximum concentration of 330 mg/kg in the western portion of Parcel A (P-1-6).

Other priority pollutants including PCBs, asbestos, chromium VI, and other semi-volatile were not detected in soils [Dames & Moore, 1991b].

Distribution and extent of the cyanide and lead in shallow subsurface soil are presented on Figure 2-3.

2.1.8 Background Soil Sampling Results

In June 1991, background soil samples S-1, S-2, and S-3 were collected from three offsite locations (Figure 2-1). The samples were collected from near surface native soils within the Ventura River Channel [Dames & Moore, 1991b]. The three samples were analyzed for: 1) Petroleum hydrocarbons by EPA Method 8015 (modified); 2) VOCs by EPA Method 8240; 3) Semi-volatile organic compounds (including PAHs) by EPA Method 8270; 4) Priority pollutant metals (Title 22 CCR Metals) by ICP / AA; and 5) total cyanide by EPA Method 9010 [Dames & Moore, 1991b]. Laboratory data indicated that no detectable concentrations of TPH and VOCs, including semi-volatile organic compounds, were found in the three background soil samples. The analytical results for these 3 soil samples are summarized in Appendix C. The complete laboratory analytical reports for the background samples will be included in the Background Sample Report for the former Ventura MGP Site.

2.1.9 Groundwater Conditions and Analytical Results

Groundwater sampling and monitoring of the existing wells have been conducted at the Site since November 1988. Chemical contaminants such as PAHs, TPH, and VOCs were detected in the groundwater monitoring well samples. The following summarizes the results from the chemical testing and well monitoring data generated from previous site characterizations and groundwater monitoring reports, including the Site Characterization Summary Report by the West Coast Environmental in 1992, and different groundwater monitoring data reports compiled by SCG from 1993 through 2003.

2.1.9.1 Groundwater Conditions and Analytical Results, November 1988 through May 1992

Review of the groundwater monitoring well measurements from November 1988 to May 1992 indicates that the groundwater gradient beneath the Site was relatively flat at approximately 0.002 to 0.0003 ft/ft [West Coast Environmental, 1992]. During this time period, the average groundwater elevation on Parcel A ranged from approximately 23.7 feet to 28.8 feet above sea level, or approximately 36.5 feet to 41.6 feet bgs, with the higher elevations occurring in July 1991 and May 1992. General groundwater flow direction was south-southeast [West Coast Environmental, 1992]. The groundwater elevation contours and flow direction constructed for the July 1991 monitoring event are shown on Figure 2-4 [Dames & Moore, 1991b]. Summaries of monitoring and laboratory results for each well are as follows.

Monitoring Well (DMW-1)

Monitoring well DMW-1 was installed (November 1988) as an upgradient well and is located in

the northeast corner of the Parcel A (Figure 2-1). Until February 1992, groundwater monitoring results for this well did not detect hydrocarbons. In February and May 1992, toluene, ethylbenzene, and xylene were detected at 0.002 to 0.006 milligram per liter (mg/L). This may be due to interferences in the sampling/analytical process (concentrations detected were primarily within two times the detection limit) or it may reflect actual changes in groundwater conditions [West Coast Environmental, 1992].

Monitoring Well (DMW-2)

Monitoring well DMW-2 was located offsite of former Ventura MGP historic boundary line, below the southwest corner of Parcel A, near the maintenance shop (Figure 2-1). The history of monitoring results for this well is as follows:

Free Product

A free product layer, approximately 0.6 foot thick, was observed in well DMW-2 during initial sampling in November 1988. In subsequent sampling activities conducted at the site, only a slight hydrocarbon sheen was observed in the well [Dames and Moore, September 1991]. Dames & Moore suggested that the initial free product layer observed in DMW-2 may have been a result of accumulation of product due to entrapment [Dames & Moore, 1989].

Additional site characterization at the former Ventura MGP Site and vicinity was conducted by West Coast Environmental [West Coast Environmental, 1992]. The main focus was the 6-inch to 8-inch layer of free-phase hydrocarbon product previously observed in groundwater monitoring well DMW-2, as well as in monitoring wells located on other nearby properties.

West Coast Environmental research indicated that several potential sources of contamination existed in the surrounding area. The properties to the west were occupied by an oil refinery and tank farm, which began operations in 1923. The refinery went out of business in 1976, but the storage tank farm continued operation under different ownership until approximately 1984. Apparently, little assessment and remediation had been conducted on the refinery and tank farm parcels, despite documented evidence of subsurface contamination and the use of unlined disposal sumps on the property.

Based on this specific site characterization, West Coast Environmental concluded that the free product, as well as the petroleum hydrocarbon contamination found in the soil and groundwater at the west-end of Parcel A, appeared to originate off-site and were not related to the previous MGP operations [West Coast Environmental, 1992]. In a letter dated April 30, 1998, the Los Angeles Regional Water Quality Control Board (LARWQCB) stated that the free product layer observed in DMW-2 was determined to be crude oil related to former refinery and tank farm operations which occupied the properties to the west of Parcel A from 1910 to the 1980's (Appendix V).

In addition, the soil contamination in test pits P-1-3 and P-1-4 of the Gas Company site (Parcel A) appeared to originate from the adjacent property to the west, currently owned by Offshore Crane (Figure 2-3). The low level groundwater contamination in DMW-2 and DMW-4 appeared to be

due to the soil contamination to the west or to a further up gradient source, to the north-northwest [West Coast Environmental, 1992].

Results of Speciation Analysis

In December 1988, a free product sample from DMW-2 was submitted to Global Geochemistry and Central Coast Analytical Laboratory for identification and speciation analysis. In addition, West Coast Environmental also reviewed the data. Results from their analysis are included as follows:

- Up to 0.6 foot of immiscible hydrocarbon product identified as predominantly diesel fuel was observed in well DMW-2. Detailed analysis of the product indicates that it had undergone biodegradation. The estimated age of this product was 5-10 years. Superimposed on the diesel fuel signature was the signature of un-weathered gasoline inferred to be less than 1 to 2 years old. A possible source of the product was tanks associated with former oil refining activities on the property west of the Site. This is supported by hydrocarbon contamination observed in soil along the westernmost property boundary which appeared to originate from the adjacent property [Dames & Moore, March 1989].

- Both the free product and petroleum hydrocarbon contamination found in the soil and groundwater at the western edge of the site (*Parcel A*) appear to be originating from an off-site source. Analytical data indicate that the contamination found is inconsistent with Gas Company operations and former Towne Gas operations [West Coast Environmental, August 1992].

- Speciation analysis of the product by Global Geochemistry indicates that the product had two major fractions, a gasoline and a diesel or kerosene fraction. The gasoline fraction was apparently fresh, less than 1 to 2 years in age, because it has not been significantly biodegraded. The diesel fraction, on the other hand, had apparently undergone degradation indicating that it had been on the water table for a longer period of time than the gasoline – possibly several years [Dames & Moore, March 1989].

- Central Coast Analytical Laboratory has identified the fuel to be principally diesel #2 with a component of Stoddard solvent and gasoline. This is consistent with the fuel fingerprint of soil samples collected in test pits along the western SCG property boundary [Dames and Moore, September 1991].

- West Coast Environmental in their August 1992 for the SCG reported the following: The data for the gasoline fraction show negligible concentrations of n-pentane and isopentane, both of which are major components of gasoline. The data also show high concentrations of 3-methylheptane and n-octane, both of which are minor components of gasoline. Thus, if this is a gasoline fraction, it is more likely to be weathered gasoline than fresh. The polycyclic aromatic content which was measured is relatively high and appears to be indicative of petroleum hydrocarbons rather than Towne Gas residues. This could be a

crude oil or a mixture of weathered gasoline and diesel [West Coast Environmental, August 1992].

- The free product observed in monitoring well DMW-2 on the Gas Company site, and in monitoring wells on the Atlas Wireline and the Lowe sites, does not appear to be due to the Gas Company or previous Towne Gas operations. The presence of free product occurred at separate times on the three sites, and was not observed in subsequent sampling. Analyses of samples from the Gas Company and Lowe sites indicate that the free product was either a crude oil or a mixture of refined products as opposed to gasoline or diesel, only [West Coast Environmental, August 1992].

Groundwater Analytical Results (Well DMW-2)

Petroleum hydrocarbons had been detected in groundwater samples from Well DMW-2 ranging from 1,100 mg/L in November 1988 to an average of 1 to 15 mg/L since then.

PAH's were detected in the November 1988 sample at a total concentration of 0.32 mg/L, but had not been detected since. Very low concentrations of other compounds, including chlorinated and oxygenated hydrocarbons had been detected at various times [West Coast Environmental, 1992].

The presence of petroleum related contaminants in Well DMW-2 indicated that groundwater contamination in this area is most likely due to a non-MGP source, such as previous refinery operations on the adjacent property to the west [West Coast Environmental, 1992]. The intermittent occurrence of a free product slug indicated that groundwater in this area may also have been impacted by other up gradient off-site sources [West Coast Environmental, 1992]. However, a review of the laboratory data from February 2003 indicated that detectable concentrations of TPH and benzene significantly declined from 1993 through 2003 (Figure 2-5). In addition, free-product was not measurable in any well, including DMW-2, during sampling events between 1993 through February 2003 [SCG, 2003].

Monitoring Well (MW-3)

Monitoring Well MW-3 was installed at the southwest corner of a former underground gasoline tank location southeast of the former MGP Site (Figure 2-1). Historical results for this well are as follows:

- Initial sampling of this well in 1987 did not detect any TPH-G or BTEX.
- Sampling results for November 1988, and March 1991 through February 1992, show low levels of gasoline (0.140-2.5 µg/L) and BTXE (0.008-0.338 µg/L) [West Coast Environmental, 1992].

- Analytical results of analysis of samples collected from this well in May 1992 showed a significant decrease in contaminants. Gasoline, benzene, toluene, and ethylbenzene were all

not detected and xylene was detected at 0.003 µg/L as compared with a high of 0.338 µg/L the previous quarter [West Coast Environmental, 1992].

The contamination found in well MW-3 appeared to be due to soil contamination resulting from leakage from a former underground gasoline tank in this area. Continued monitoring was recommended to determine whether remediation was necessary since later results showed a decrease in contaminant concentrations [West Coast Environmental, 1992].

Monitoring Well (DMW-4)

Monitoring Well DMW-4 was installed in June 1991 upgradient of P-1-3 in the northwest corner of the property (Figure 2-1). Summary of the groundwater laboratory analytical results in this well are as follows:

- Petroleum hydrocarbons found in samples from this well were similar to those in DMW-2, in that the laboratory reports noted that the results did not match standard patterns [West Coast Environmental, 1992]. Petroleum hydrocarbons in the gasoline and diesel range were detected at concentrations of 0.105 - 6.9 µg/L, with the highest concentration occurring in the May 1992 monitoring period.

- Although some low levels of toluene and xylenes were detected in intermittent sampling episodes, benzene and ethylbenzene were not detected.

- Similar to DMW-2, a variety of other contaminants were detected in the May 1992 sampling period.

Since this well is located to capture groundwater from upgradient of MGP Site, the source of this contamination would appear to be off-site. Based on the similarity in contaminants found, the source of this contamination appears to be similar to, or the same as, that of DMW-2 [West Coast Environmental, 1992].

2.1.9.2 Groundwater Monitoring Program: 1993 to 2003

Since 1993, the semi-annual groundwater monitoring programs have been conducted by SCG for four existing monitoring wells [two onsite (DMW-1 and DMW-4) and two offsite (MW-3 and DMW-2]. Groundwater monitoring reports have been prepared to present the results obtained during these sampling events. Groundwater level measurements were taken and are summarized in Section 4 of this report. Groundwater samples were submitted for analysis for VOCs including BTEX, SVOCs including PAHs, full carbon chain range TPH, and cyanide.

Historical groundwater sample analytical results for PAHs, VOCs, TPH, including BTEX, and cyanide are presented in Tables 2-11 through 2-13. Figure 2-5 presents the historical distribution of TRPH, TPH, VOCs including BTEX, PAHs, and cyanide in groundwater monitoring wells.

A review of laboratory data from February 2003 indicates that PAHs were not detected in

monitoring wells DMW-1, DMW-2 and MW-3 (Table 2-11). The groundwater sample collected from upgradient monitoring well DMW-4 (Table 2-11 and Figure 2-5) contains some detectable concentration of PAHs as shown in Table 2-11 and on Figure 2-5. Laboratory data also indicates that TPH and BTEX were not detected in DMW-1 and MW-3. However, detectable concentrations of the TPH-D (641 µg/L), and a trace of benzene (1.04 µg/L) and total xylenes (1.24 µg/L), were found in monitoring well DMW-2. The groundwater sample collected from upgradient monitoring well DMW-4 (Table 2-11 and Figure 2-5) contained some detectable concentrations of TPH-G (935 µg/L), TPH-D (3,720 µg/L), and a trace of total xylenes (1.97 µg/L).

Cyanide was not detected in any of groundwater samples collected during the last 10 years of groundwater sampling activities at the Site. The detection limit was 20 ug/L.

Free-product was not measurable in any of the wells during sampling events conducted between 1993 through February 2003 [SCG, 2003].

2.1.10 Limited subsurface soil sampling and analytical results [Tetra Tech, May 2003]

In May 2003, based on SCG's request and authorization, Tetra Tech hand augered 6 shallow test borings up to 2.5 feet bgs on the north central portion of Parcel A (Figure 2-1). A total of 10 soil samples were collected and analyzed for PAHs by EPA Method 8310 and TPH (Modified 8015). Selected soil samples were also analyzed for VOCs (EPA Method 8260B) and Metals (EPA Method 6010/7000 CAM). The analytical data indicated that the carcinogenic PAHs were detected in the soil from surface to depth of 2 feet bgs. The maximum detectable concentration of C-PAHs (29.6 mg/kg) was found in sample GC-1 at 6 inches bgs (Figure 2-1). Complete chemical testing results, including details on boring locations and boring logs for these samples, are included in Appendix D.

2.1.11 Documentation from the Regional Water Quality Control Boards Case File

In a letter dated January 27, 1997, the Underground Storage Tank Section of the RWQCB indicated that they required no further action at the site related to the release from the underground storage tanks that were removed by McClelland Engineers in December 1986 (Figure 2-1). In a subsequent letter dated April 30, 1998, the RWQCB stated that:

> "Only minor soil contamination was associated with *the two* USTs *removed from the site in 1986*, and *that* the site was closed by the UST section of the RWQCB on July 22, 1997. The Site was then transferred to the *RWQCB's* SLIC (*Spills, Leaks, Investigations, and Cleanups*) program for evaluation of non-UST related ground water contamination, *and that the RWQCB has* no further requirements with respect to the SLIC program."

A copy of the documentation referred to above from RWQCB case file is included in Appendix V.

2.2 PARCEL B

2.2.1 Summary of the Historical MGP Operations on Parcel B

The MGP operations appear to have been conducted exclusively in Parcels A and B; however, the area where most of the MGP operations occurred, is designated as Parcel A. Parcel B was leased in 1923 and later sold in 1953 to Seaside Oil Company.

Based on the Sanborn maps, aerial photographs and SCG file correspondence, and lease documents, it appears that during the time of its lease, Seaside Oil Company used Parcel B as an oil refinery facility. Based on file information, Seaside Oil Refinery was originally built to produce gasoline, diesel, kerosene, fuel oil and other crude fractions. Later, however, it became primarily a heavy distillate and asphalt manufacture plant [Dames & Moore, 1991b, and West Coast Environmental, 1992].

Despite the obvious concerns over large-scale hazardous materials storage and the documentation of on-site disposal sumps, there are no files with most of the regulatory agencies [West Coast Environmental, 1992]. The only information found on the Seaside Refinery site is the DTSC's CalSites Facility Profile Report, and minor correspondence found in the City's building and safety files. The DTSC lists this Site as SSR (Site Screening Required), due to the lack of available information on this Site. Building & Safety file material indicated the installation of a seepage pit, and the construction of a change room hooked to an existing septic system [West Coast Environmental, 1992].

In 1981, Vetco Offshore purchased Parcel B that it had leased from Buenaventura Terminal Corporation. According to interviews conducted by SCG and consulting staff members, Vetco employees stated that they used the property to ship and receive raw materials and finished products using the existing rail line. Vetco employees also stated that they dismantled some of the refinery equipment and piping after they purchased the site in 1982 to make room for their additional operations. Vetco owns and has operated on several adjoining parcels since the early part of the 1900's [SCG, 2002].

In 1987, Vetco Offshore sold its interest in Parcel B to the Offshore Crane Company. It appears Offshore Crane Company utilized the Parcel to store and repair offshore drilling and production equipment. Associated operations included machining, steam-cleaning, electroplating, painting, sand-blasting, and welding of equipment. Repair operations were discontinued in 1990, and the existing buildings were subsequently used as offices and storage. Offshore Crane Company is now known as Offshore Crane & Service Company [Dames & Moore, 1991]. A summary of Parcel B Ownership and Operations are as follows [West Coast Environmental, 1992].

Dates	Property Owner	Operations
1892-1905	Ventura Land & Power Co.	Ice Factory and Electric Light Works
1901-1907	Ventura Water, Light & Power	Electric Light and Gas Works
1905	Ventura Water, Light & Power	Manufactured Gas Operations Start-up
1907	Ventura County Power Company	(same as above)
1917	Southern California Edison	(same as above)
1919	Southern California Edison	Manufactured Gas Operations Cease
1919-1923	Southern Counties Gas Company	Natural Gas Compressor Station
1923-1953	Southern Counties Gas Company	Leased to Seaside Oil Refinery
1953-1969	Seaside Oil Refinery	Oil Refining Operations (leased until 1953)
1969-1973	Utility Refining Company	Oil Refining Operations
1973-1976	Title and Trust Company	Foreclosed upon by Title and Trust Co. (Property inactive from 1973 to 1976)
1976-1981	Buenaventura Terminal Corp.	Crude Oil and Fuel Oil Storage (Leased portion to Vetco for pipe and equipment storage)
1981-1987	Vetco Offshore Inc.	Pipe and Equipment Storage Yard
1987-Present	Offshore Crane Inc.	Pipe and Equipment Storage Yard

Parcel B is presently owned by the Offshore Crane and Service, Inc., known as T&T Trucking (Offshore Crane).

2.2.2 Summary of Previous Investigations on Parcel B

In 1981, Buena Engineers, Inc. installed 11 test borings up to 12 feet bgs on the Vetco property (Figure 2-6), however, only three of the test borings were located in Parcel B (Figures 2-1 and 2-6). Soils exposed by drilling were found to be comprised of sandy silt and silty sand, gravel and cobbles. Petroleum waste was observed in some samples [Buena Engineers, Inc., 1981]. Three samples were analyzed for maximum density-optimum moisture, direct shear, hydrometer analysis, consolidation and expansion [Buena Engineers, Inc., 1981]. The collected samples were also analyzed for chlorinated hydrocarbons and metals. No samples in Parcel B were in the list for analytical testing [Buena Engineers, Inc., 1981]. Therefore no past physical and/or chemical characteristics of subsurface soil and/or groundwater are available in Parcel B.

2.3 PARCEL C

2.3.1 Summary of the Historical MGP Operations on Parcel C

No MGP operations are known to have occurred on Parcel C. However, post-MGP activities may have resulted in contamination of soils and/or groundwater. Parcel C was leased in 1923, and later sold in 1953, to Seaside Oil Company. Beginning in 1923, Seaside Oil used the property to refine gasoline, kerosene, and lubricating oils, and to manufacture asphalt. An aerial photo taken in 1929 indicates 15 storage tanks were already in place on the Seaside Oil site (Appendix U). In the 1945 photograph, approximately 30 storage tanks and three or more surface impoundments were located on the tank farm site. The sumps are not well defined, with some areas having the appearance of natural depressions filled with liquid from uncontrolled runoff. The 1945 photo indicates heavy oil staining and standing pools of what appears to be oil or oily

wastewater in the sumps and around the tank farm [West Coast Environmental, August 1992].

In 1969, Seaside Oil Company sold Parcel C to the Utility Refining Company. The 1969 aerial photograph taken at the end of Seaside's tenure, shows approximately 40 tanks associated with the refinery operations, with 28 on Parcel C, 7 south of Parcel C, and 13 south of Parcel B. The three large impoundment sumps to the south of Parcel C appear to be more well defined, and appear to be full of dark liquid [West Coast Environmental, August 1992].

From 1969 to 1973 Utility Refining Company continued to use the Parcel as a tank farm associated with its refining operations. In 1973, the Title Insurance and Trust Company began foreclosure proceedings against Utility Refining Company, and in 1976 through the foreclosure sold the Parcel to the Buenaventura Terminal Corporation. The Buenaventura Terminal Corporation owned the site from 1976 until 1982 and during that time leased the Parcel to USA Petrochem Corporation.

In 1982, USA Petrochem Corporation purchased Parcel C from Buenaventura Terminal Corporation. In 1983, USA Petrochem Corporation sold its property to USA Properties Corporation. In late 1984, early 1985, the tank farm located on Parcel C was taken out of service [West Coast Environmental, August 1992]. In 1997, the Parcel was sold to OnShore Properties. In 2000, the Parcel was sold to Ventura Seaside Properties [Carol M. Nolan, 2002]. Summary of Parcel C Ownership and Operations are as follows [modified after West Coast Environmental, August 1992].

Dates	Property Owner	Operations
1892-1905	Ventura Land & Power Co.	Ice Factory and Electric Light Works
1901-1907	Ventura Water, Light & Power	Electric Light and Gas Works
1905	Ventura Water, Light & Power	Manufactured Gas Operations Start-up
1907	Ventura County Power Company	(same as above)
1917	Southern California Edison	(same as above)
1919	Southern California Edison	Manufactured Gas Operations Cease
1919-1923	Southern Counties Gas Company	Natural Gas Compressor Station
1923-1953	So. Counties Gas Co. (SoCalGas)	Leased to Seaside Oil Refinery
1953-1969	Seaside Oil Refinery	Oil Refinery Tank Farm
1969-1973	Utility Refining Company	Oil Refinery Tank Farm
1973-1976	Title and Trust Company	Foreclosed upon by Title and Trust Co. (Property inactive from 1973 to 1976)
1976-1982	Buenaventura Terminal Corp.	Crude Oil and Fuel Oil Storage (Leased to USA Petrochem)
1982-1983	USA Petrochem	Crude Oil and Fuel Oil Storage
1983-1997	USA Properties Corp.	Crude Oil and Fuel Oil Storage
1984/1985	USA Properties Corp.	Tank Farm taken out of service
1997-2000	Onshore Properties	Purchased Parcel C
2000-present	Ventura Seaside Properties	Purchased Parcel C

Parcel C is currently owned by Ventura Seaside Properties, Inc. C.D. Lyon Construction, Inc. occupies this parcel.

2.3.2 Summary of Previous Investigations on Parcel C

Correspondence between the California Regional Water Quality Control Board (RWQCB) and USA Petrochem in 1981 indicates the existence of at least three large unlined sumps containing water and free-floating product left over from operations conducted under Seaside Oil Company [West Coast Environmental, 1992]. According to the correspondence, USA Petrochem Corporation apparently drained the sumps, removed associated contaminated soil, and backfilled the sumps in 1981. The area of the sumps on Parcel C is not known. Apparently, no soil samples were collected and no other environmental site assessment is available for this activity.

In February 1997, a preliminary Phase II site investigation was conducted by the Applied Environmental Technologies Inc. (AET) at the request of American Commercial Bank. AET installed 10 test pits up to 10 feet bgs on the USA Properties Corp /Onshore Properties (AET, 1997). However, only four of the ten test pits were located in Parcel C (Figures 2-1 and 2-6). Soil samples collected from three of the four test pits on Parcel C contained concentration of Total Recoverable Petroleum Hydrocarbons (TRPH). The soil sample collected from test pit 5 (T-5) located at the west of the two former above ground storage tanks on the eastern portion of the Parcel C contained highest TRPH concentration (13,700 mg/kg) [AET, 1997]. The vertical and lateral extent of the soils impacted by TRPH was not defined at this Parcel [AET, 1997]. The results of the sample analysis are included on Table 2-15.

In February 1999, a preliminary geotechnical investigation was conducted by Alpine Geotechnical. A total of three test pits (TP-1 through TP-3, Figure 2-1) were excavated to depth of between 8 and 11 feet bgs. Earth materials encountered included fill and alluvium [Alpine Geotechnical, 1999]. Fill was observed in excavations TP-1 through TP-3 to a maximum observed depth of 7 feet in TP-1. The fill observed consisted of gravelly sand, clayey sand and gravel with tar/oil, trash and cobbles [Alpine Geotechnical, 1999]. Since a site environmental assessment was not included in the original scope of work, no information in regards to the nature and extent of the contaminant(s) was reported.

During a file search at the Los Angeles RWQCB, correspondence was found from the RWQCB regarding the tank farm formerly located on Parcel C (Appendix W). In a memo dated July 17, 1992, the RWQCB noted the possibility that refinery operations formerly conducted at the parcel may have contributed to site and regional groundwater contamination. In a second memo from the RWQCB dated January 23, 1997, it was noted that a complete investigation of the Site was required. The RWQCB's former SLIC no. for the site (no. 354) was included on the memo.

2.4 PARCEL D

No MGP operations are known to have occurred on Parcel D. Parcel D was leased in 1923, and later sold in 1953 to Seaside Oil Company. A 1945 aerial photograph of the Site indicates that two large storage tanks were formally located in the area of the Site identified as Parcel D (Appendix U).

In 1955, Seaside Oil Company sold Parcel D to the State of California. The State of California constructed and has operated State Highway 33 from 1955 to the present [Carol M. Nolan,

2002].

Prior to this Remedial Investigation, no known investigations had been performed on Parcel D.

2.5 PARCELS E, F, AND G

No MGP operations are known to have occurred on Parcels E, F, and G. Parcel E is currently owned by Ventura County Watershed District. Parcels F and G are currently owned by the City of San Buenaventura. Parcel G was formerly the location of a rail spur that ran off of the main route of the Southern Pacific Railroad and through the MGP property, and serviced the plant.

Prior to 2003, no known investigations had been performed on Parcels E, F and G.

2.6 HISTORICAL FINDINGS FOR OFF-SITE PROPERTIES IN THE SITE VICINITY

Based on file information, the following historical findings are reported for off-site properties:

- According to a County of Ventura, Air Pollution Control District form, Offshore Crane emplaced one 12,000-gallon diesel tank, one 10,000-gallon gasoline tank, and one 500-gallon waste oil tank. In addition, at least two tanks, according to agency records, were removed from the Offshore Crane site. Chemical testing performed at the time of the tank removals indicated that the soil was contaminated with detectable concentrations of fuel hydrocarbons and lead [Dames and Moore, September 1991]. However, the former location of the tanks on the Offshore Crane site is not known.

- A large number of sites with known or suspected contamination problems (41 CalSites, 27 Leaking Underground Fuel Tank (LUFT) sites, additional local sites) are located within one mile of the Ventura MGP Site. In their August 1992 Summary Report, West Coast Environmental documents several sites located upgradient of the former Ventura MGP Site that were used for disposal of oily wastes to unlined sumps, seepage pits, leach fields, and similar devices [West Coast Environmental, August 1992]. Operators of the Ventura Avenue Oil Field located just one mile to the north, have historically disposed of oil field waste to extremely large unlined sumps. The largest of these sumps (Shell's Wilfrey or "Old Dent" Sump) is located approximately 4,000 feet upgradient of the Ventura MGP Site and occupied over 40 acres [West Coast Environmental, August 1992].

- West Coast Environmental stated in their August 1992 report that based on current and historical operations in the area, possible sources of the free product contamination observed in monitoring well DMW-2, located at the western edge of Parcel A, include:

- The former Seaside Oil refinery property currently owned by Offshore Crane – The characteristics of the free product is consistent with previous refinery operations and hydrocarbon contamination has been noted on this property.

- The former tank farm property currently owned by USA Petroleum – Subsurface contamination from the large storage tanks and sumps previously in use at this site could be a source of the free product. Presently, two of the sumps have been completely emptied, and they are drying out. The oil that had migrated to the adjacent property out of the sumps has been cleaned up, and this area has been refilled to diminish any possibility in the future of getting any oil onto that property or potentially into the river or ocean.

- Upgradient oil field operations such as the Shell Wilfrey Sump or the Humacid sump – Although these sumps are located approximately 2/3 of a mile upgradient of the subject site, the extremely large volume of wastes previously contained in the sumps could have resulted in substantial subsurface contamination.

- **Shell Oil – Wilfrey Sump:** Of primary concern is the Shell Wilfrey Sump (or "Old Dent" sump) due its close proximity to the Towne Gas site and its sheer size. This sump was 2,000 feet long and 1,000 feet wide (nearly 46 acres) and is located approximately 2/3 mile upgradient of the Ventura MGP Site. The Dent sump reportedly operated for several decades, and was allowed to dry out in recent years. This sump was used for the disposal of a variety of oil field wastes (drilling muds, tank bottoms, slop oils, etc.). Two additional large sumps are located on Shell's property, and have reportedly been taken out of service in recent years. According to a 1972 RWQCB inspection report, Shell Sump #2 contained up to 200,000 barrels of oil at that time. [West Coast Environmental, in their August 1992].

- **Humacid Sump:** Humacid operated an oil field waste sump for an undetermined period since 1955. The sump is located approximately 2/3 mile north of the Towne Gas site. A DTSC file document dated November 14, 1985, indicates that the Humacid sump accepted Seaside Refinery waste and other potentially hazardous waste although it was permitted only for non-hazardous drilling muds. This same document indicates that over 100,000 barrels of oil-related waste was disposed within a one month period (July, 1955). [West Coast Environmental, in their August 1992].

- There has been minimal, if any, assessment of upgradient disposal sumps associated with oil production and service company activity. The large scale use of unlined sumps, particularly the Shell Wilfrey Sump, creates the potential for hydrocarbon contaminants to have impacted the region. The lack of sewer access over the past several decades for most of the industrial properties located throughout the area has resulted in the large-scale disposal of industrial wastes to soil via seepage pits and septic leachfields [West Coast Environmental, in their August 1992].

2.7 SUMMARY OF PAST INVESTIGATION RESULTS AND DATA GAPS

Based on the available data generated from the previous site operations and investigations, the area where most of the MGP operations occurred was designated as Parcels A and B.

A number of the site characterizations (Table 2-1) and groundwater investigations have been conducted on Parcel A. Additional sampling and analysis, however, was required to fill data gaps on Parcel A, and help the design of a final remedy for this Parcel.

Most of the previous investigations conducted at the Site were performed more than 10 years ago. As a result, the analytical data from the older investigations were obtained under conditions that may have changed due to processes such as degradation, migration, etc., and, therefore, may no longer be valid today. Furthermore, some of the data were obtained using analytical methods, such as EPA Method 8240, that are no longer current by today's standards.

Prior to the RI activities conducted at the Site in 2003, no specific environmental assessment in regards to former MGP operations had been performed in parcels B, C, D, E, F, and G. For these portions of the former MGP, extensive site characterization was required to delineate the lateral and vertical extent of contamination that may have existed due to former MGP operation. It appears, however, that post-MGP activities by others [Seaside Oil/Utility Refining Tank Farm, Vetco Offshore, Offshore Crane (Parcel B), Seaside Oil/Utility Refining Tank Farm and USA Petrochem (Parcel C), Caltrans (Parcel D), Ventura County Flood Control District (Parcel E) and City of Buenaventura (Parcels F and G)] may have contributed to contamination in some portions of the former MGP after they were sold by SCG. Therefore, the technical approach and procedures that were included in the RI workplan were such that clarification may be achieved regarding the contamination at these parcels, which may not be related to former MGP operations.

Based on the results of the previous site investigation reports including the regulatory agency file material, the following statements were made by Dames & Moore, in 1991 and West Coast Environmental, in 1992:

- Activities associated with former production of manufactured gas have caused releases to the soil of PAHs, petroleum hydrocarbons, and cyanide on the Parcel A portion of the MGP Site.

- Metals such as arsenic, copper, lead, and zinc were found in concentrations above levels in background soil samples. The origin of these metals is not known.

- Higher concentrations of refined petroleum hydrocarbons were found on the western portion of Parcel A and appeared to be due to releases from the previous petroleum refining or storage operations which occurred offsite of Parcel A.

- Compounds that had been detected in soil and groundwater at the Site [Dames & Moore, 1991b] are listed in Tables 2-2 through 2-10 (for soil), and Table 2-14 (for groundwater).

Chemicals that have been detected frequently on the Site included PAHs, metals, TPH, BTEX, and other VOCs related to petroleum hydrocarbons.

- The origin of PAHs, petroleum hydrocarbons, and VOCs of significance in groundwater is unknown and may be related to multiple sources [Dames & Moore, 1991b]. The low level groundwater contamination in DMW-2 and DMW-4 appears to be due to the soil contamination to the west or to a further upgradient source to the north-northwest [West Coast Environmental, 1992].

- The presence of TPH similar to light crude oil, diesel, or kerosene in groundwater below nearby sites appears to indicate a regional contamination. The Ventura River Valley has historically been recognized as a significant oil and gas production, and refining area. A number of producing oil and gas wells are located within two miles upgradient of the Site (see Figure 2-7) [West Coast Environmental, 1992].

- It had not been determined whether a release has occurred on the other portions of the Site. It is suspected that the Offshore Crane property (Parcel B) may have residues from the former MGP operations since high concentrations were detected directly adjacent to the eastern boundary of the property [Dames & Moore, 1991b].

With the exception of the limited soil testing in Parcels B and C, no other investigations had been conducted at the Site. In 1991, Dames and Moore recommended that:

> "Further investigations be undertaken in accordance with the California Site Mitigation Decision Tree Manual to address soil and groundwater contamination on all portions of the former MGP Site that are not adequately characterized. All entities that are potentially responsible for remediation of any contamination at the Site should participate in future investigations, under agency direction, so the Site and any health and environmental threats posed by it can be remediated in a comprehensive and effective manner."

Further assessment was also recommended by West Coast Environmental in 1992 to determine the source or sources of contamination and the extent of contamination.

Additional assessment proposed by West Coast Environmental in 1992 included the following:

- Soil sampling west of test pits P-1-3 and P-1-4 (Figure 2-1), to determine the source, aerial extent, and depth of the petroleum hydrocarbon contamination found in these locations.

- Installation of groundwater monitoring wells upgradient of the Offshore Crane site, to determine whether other offsite sources are involved in groundwater contamination.

- Further evaluations of existing analytical results to better identify potential sources. In particular, the free product results (if any) should be compared to Ventura crude and the presence of chlorinated hydrocarbons in DMW-2 and DMW-4 should be investigated.

- Monitoring well MW-3 should continue to be monitored to determine whether remediation for gasoline contamination is needed in this area. Monitoring should be performed quarterly through June 1993, and if contaminants remain below action levels, semi-annually through June 1994 [West Coast Environmental, 1992].

Since 1993, the semi-annual groundwater monitoring program was conducted by SCG for four existing monitoring wells at the Site. Groundwater monitoring reports were prepared to present the results obtained during these sampling events [SCG, 1993-2003].

The August 2003 Remedial Investigation Workplan prepared by Tetra Tech for SCG presented the technical approach, sampling rational, and analysis protocols for performing the supplementary site characterization and groundwater investigation to fill data gaps in Parcel A, and the preliminary site characterization of other portions of the manufactured gas plant site. The data generated from the RI can be used to evaluate the possible need for remedial action at the former Ventura MGP Site.

Table 2-1 A Summary of Previous Samples Collected from Parcels A, B, and C, and Test Methods Performed*

Sample Set No.	Consultant	Sampling Date	Analytical Laboratory	Sample/Trench Names	Laboratory Analysis Performed							
					PAH	Purgables	TPH/TRPH	TPHg	TPHd	Metals	Cyanides	Additional
	Previous Soils Investigations											
1	Buena Engineers, Inc.	5/81		B5 through B7								Some metals, H2S, SO4, hydrocarbons, resistivity
2	Dames&Moore	1/87	California Analytical Lab	TP-12(DM-4,DM-5), TP-13(DM-7), TP-15(DM-10) [from TP-1 through TP-15]	X by 8310							pH, Ca, Mg, Na, HCO3, Cl, SO4, resistivity
3	Dames&Moore	6/87	Enseco	TP-16(TP-1), TP-17(TP-2), TP-18(TP-3)	X by 8310							
4	Dames&Moore	10/88	Central Coast Analytical Services, San Luis	P-1-1 through P-1-30, P-2-1 through P-2-12, P-3-1 through P-3-3, A-1 through A-13	X by 8270	X by 8240	X (418.1) 8015 by 8240			X 6010/7000	X by 335.2	SVOCs by 8270, Pesticides&PCBs by 8270, PCBs by 8080, TOC by 410.1&415.1, Asbestos by 600/M4-020(Kellco Services Inc., Fremont, CA)
5	Dames&Moore	9/91	Curtis&Tompkins, Los Angeles	S1 through S3		X by 8240		X by 8015	X by 8015	X 6010/7000	X by 9010	SVOCs by 8270
6	Applied Environmental Technologies Inc.	2/97	American Scientific Laboratories, LLC, Los Angeles	T-3 through T-6 (from T-1 through T-10)			X by 418.1					Halogenated solvents by 8010, PCBs by 8080
7	Apline Geotechnical	2/99	Not Applicable	TP1 through TP3								
8	Tetra Tech	5/03	AETL	GC-1:GC-6	X 8310-BaP Eq	X by 8260		X by 8015	X by 8015	X 6010/7000		

Notes:
*) This information was generated from previous reports compiled by other consultants, including the Dames & Moore site investigation activity reports from 1987 through 1991, West C Environmental from 1992, the SCG records from 1993 through 2003, and other sources.

Table 2-2
Polycyclic Aromatics Analyzed by EPA Method 625/8270
in Soil Samples 4 Feet or Less Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acenaphtalene	73	8	0.380-1.300
Acenaphthene	73	2	0.110-1.200
Anthracene	73	10	0.200-4.000
Benzo(a)anthracene	73	15	0.390-15.000
Benzo(b)fluoranthene	73	18	0.080-63.000
Benzo(k)fluoranthene	73	16	0.070-66.000
Benzo(a)pyrene	73	17	0.140-170.000
Benzo(ghi)pyrene	73	7	3.100-61.000
Chrysene	73	15	0.100-15.000
Dibenzo(a,h)anthracene	73	1	2.500
Fluoranthene	73	40	0.060-19.000
indeno(1,2,3-cd)pyrene	73	7	0.500-36.000
Fluorene	73	5	0.090-17.000
Naphthalene	73	9	0.100-3.300
Phenanthrene	73	29	0.100-16.000
Pyrene	73	38	0.100-53.000

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-3
Polycyclic Aromatics Analyzed by EPA Method 625/8270
in Soil Samples 4 to 8 Feet Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acenaphtalene	13	5	0.200-2.000
Acenaphthene	13	1	0.400
Anthracene	13	3	0.130-1.200
Benzo(a)anthracene	13	5	0.560-36.000
Benzo(b)fluoranthene	13	6	0.400-80.000
Benzo(k)fluoranthene	13	6	0/400-50.000
Benzo(a)pyrene	13	5	0.400-45.000
Benzo(ghi)pyrene	13	2	1.700-56.000
Chrysene	13	5	0.200-31.000
Dibenzo(a,h)anthracene	13	1	4.400
Fluoranthene	13	9	0.210-64.000
indeno(1,2,3-cd)pyrene	13	2	1.000-44.000
Fluorene	13	0	
Naphthalene	13	2	1.100-1.700
Phenanthrene	13	4	0.500-6.100
Pyrene	13	9	0.200-84.000

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-4
Polycyclic Aromatics Analyzed by EPA Method 625/8270
in Soil Samples 8 Feet or Greater Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acenaphtalene	2	0	
Acenaphthene	2	0	
Anthracene	2	0	
Benzo(a)anthracene	2	0	
Benzo(b)fluoranthene	2	0	
Benzo(k)fluoranthene	2	0	
Benzo(a)pyrene	2	0	
Benzo(ghi)pyrene	2	0	
Chrysene	2	0	
Dibenzo(a,h)anthracene	2	0	
Fluoranthene	2	2	0.100-0.700
indeno(1,2,3-cd)pyrene	2	0	
Fluorene	2	0	
Naphthalene	2	0	
Phenanthrene	2	0	
Pyrene	2	2	0.300-3.100

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-5
Metals in Soil Samples
4 Feet or Less Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected	Range
Antimony	28	28	0.3-0.7
Arsenic	28	28	1.1-21
Beryllium	28	28	ND <0.5
Cadmium	28	28	0.9-6.0
Total Chromium	28	28	6.2-340
Chromium VI	3	3	ND <0.1 - 0.5
Copper	28	28	11-12,000
Lead	28	28	9-2,400
Mercury	28	28	0.004-1.7
Nickel	28	28	11-50
Selenium	28	28	ND <0.3 - 0.7
Silver	28	28	ND <0.5 - 1.2
Thallium	28	28	ND <5 - 12
Zinc	28	28	4.5-3,300

**Source: Dames & Moore, 1991*

Note:

ND = Implies non-detectable at limits shown.

Table 2-6
Metals in Soil Samples
4 to 8 Feet Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected	Range
Antimony	3	3	0.4-0.8
Arsenic	3	3	0.8-6.2
Beryllium	3	3	ND <0.5
Cadmium	3	3	1.3-1.9
Total Chromium	3	3	7.8-48
Chromium VI	0		
Copper	3	3	11-21
Lead	3	3	12-26
Mercury	3	3	0.004-0.050
Nickel	3	3	19-86
Selenium	3	3	ND <0.3
Silver	3	3	0.6-1.3
Thallium	3	3	ND <5 - 7
Zinc	3	3	30-65

**Source: Dames & Moore, 1991*

Note:

ND = Implies non-detectable at limits shown.

Table 2-7
Semivolatile Organic Compounds Detected in Soil
4 Feet or Less Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acenaphtalene	5	2	0.100-4.00
Acenaphthene	5	0	
Anthracene	5	1	0.400
Benzidine	5	0	
Benzo(a)anthracene	5	3	1.400-8.400
Benzo(b)fluoranthene	5	2	3.100-13.000
Benzo(k)fluoranthene	5	2	2.500-11.000
Benzo(a)pyrene	5	2	4.100-17.000
Benzo(ghi)pyrene	5	2	9.700-34.000
Bis(2-chloroethoxy)methane	5	0	
Bis(2-chloroisopropyl)ether	5	0	
Bis(2-ethylhexyl)phthalate	5	0	
4-Bromophenylphenylether	5	0	
Butylbenzylphthalate	5	0	
2-Chloronaphthalene	5	0	
4-Chlorophenylphenylether	5	0	
Chrysene	5	3	0.300-4.400
Dibenzo(a,h)anthracene	5	0	
Dibutylphthalat	5	0	
1,2-Dichlorobenzene	5	0	
1,3-Dichlorobenzene	5	0	
1,4-Dichlorobenzene	5	0	
3,3-Dichlorobenzidine	5	0	
Diethylphthalate	5	0	
Dimethylphthalate	5	0	
2,4-Dinitrotoluene	5	0	
2,6-Dinitrotoluene	5	0	
Di-n-octylphthalate	5	0	
1,2-Diphenylhydrazine	5	0	
Fluoranthene	5	5	0.100-20.000
Fluorene	5	0	
Hexachlorobenzene	5	0	
Hexachlorobutadiene	5	0	
Hexachlorocyclopentadiene	5	0	
Hexachloroethene	5	0	
Indeno(1,2,3-cd)pyrene	5	2	4.800-20.000

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-7
Semivolatile Organic Compounds Detected in Soil
4 Feet or Less Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Isophorone	5	0	
Naphthalene	5	0	
Nitrobenzene	5	0	
N-Nitrosodimethylamine	5	0	
N-Nitrosodiphenylamine	5	0	
N-Nitroso di-n-propylamine	5	0	
Phenanthrene	5	1	4.400
Pyrene	5	5	0.200-27.000
Trichlorobenzene	5	0	

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-8
Semivolatile Organic Compounds Detected in Soil
4 to 8 Feet Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acenaphtalene	2	1	2.000
Acenaphthene	2	1	0.360
Anthracene	2	1	0.440
Benzidine	2	0	
Benzo(a)anthracene	2	1	1.700
Benzo(b)fluoranthene	2	1	99.000
Benzo(k)fluoranthene	2	0	
Benzo(a)pyrene	2	1	130.000
Benzo(ghi)pyrene	2	0	
Bis(2-chloroethoxy)methane	2	0	
Bis(2-chloroisopropyl)ether	2	0	
Bis(2-ethylhexyl)phthalate	2	0	
4-Bromophenylphenylether	2	0	
Butylbenzylphthalate	2	0	
2-Chloronaphthalene	2	0	
4-Chlorophenylphenylether	2	0	
Chrysene	2	1	18.000
Dibenzo(a,h)anthracene	2	0	
Dibutylphthalat	2	0	
1,2-Dichlorobenzene	2	0	
1,3-Dichlorobenzene	2	0	
1,4-Dichlorobenzene	2	0	
3,3-Dichlorobenzidine	2	0	
Diethylphthalate	2	0	
Dimethylphthalate	2	0	
2,4-Dinitrotoluene	2	0	
2,6-Dinitrotoluene	2	0	
Di-n-octylphthalate	2	0	
1,2-Diphenylhydrazine	2	0	
Fluoranthene	2	1	40.000
Fluorene	2	0	
Hexachlorobenzene	2	0	
Hexachlorobutadiene	2	0	
Hexachlorocyclopentadiene	2	0	
Hexachloroethene	2	0	
Indeno(1,2,3-cd)pyrene	2	0	

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-8
Semivolatile Organic Compounds Detected in Soil
4 to 8 Feet Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Isophorone	2	0	
Naphthalene	2	1	1.700
Nitrobenzene	2	0	
N-Nitrosodimethylamine	2	0	
N-Nitrosodiphenylamine	2	0	
N-Nitroso di-n-propylamine	2	0	
Phenanthrene	2	1	1.700
Pyrene	2	1	64.000
Trichlorobenzene	2	0	

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-9
Semivolatile Organic Compounds Detected in Soil
8 Feet or Greater Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acenaphtalene	1	1	0.670
Acenaphthene	1	1	0.520
Anthracene	1	1	4.100
Benzidine	1	0	
Benzo(a)anthracene	1	1	7.200
Benzo(b)fluoranthene	1	1	6.500
Benzo(k)fluoranthene	1	1	6.000
Benzo(a)pyrene	1	1	19.000
Benzo(ghi)pyrene	1	0	
Bis(2-chloroethoxy)methane	1	0	
Bis(2-chloroisopropyl)ether	1	0	
Bis(2-ethylhexyl)phthalate	1	0	
4-Bromophenylphenylether	1	0	
Butylbenzylphthalate	1	0	
2-Chloronaphthalene	1	0	
4-Chlorophenylphenylether	1	0	
Chrysene	1	1	3.500
Dibenzo(a,h)anthracene	1	0	
Dibutylphthalat	1	0	
1,2-Dichlorobenzene	1	0	
1,3-Dichlorobenzene	1	0	
1,4-Dichlorobenzene	1	0	
3,3-Dichlorobenzidine	1	0	
Diethylphthalate	1	0	
Dimethylphthalate	1	0	
2,4-Dinitrotoluene	1	0	
2,6-Dinitrotoluene	1	0	
Di-n-octylphthalate	1	0	
1,2-Diphenylhydrazine	1	0	
Fluoranthene	1	1	41.000
Fluorene	1	1	0.860
Hexachlorobenzene	1	0	
Hexachlorobutadiene	1	0	
Hexachlorocyclopentadiene	1	0	
Hexachloroethene	1	0	
Indeno(1,2,3-cd)pyrene	1	0	

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-9
Semivolatile Organic Compounds Detected in Soil
8 Feet or Greater Below Ground Surface

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Isophorone	1	0	
Naphthalene	1	1	7.500
Nitrobenzene	1	0	
N-Nitrosodimethylamine	1	0	
N-Nitrosodiphenylamine	1	0	
N-Nitroso di-n-propylamine	1	0	
Phenanthrene	1	1	41.000
Pyrene	1	1	56.000
Trichlorobenzene	1	0	

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

Table 2-10
Volatile Organic Compounds
in Soil Samples (All Depths)

Chemical	Concentration in Soil (mg/kg)		
	Number of Samples	Number Detected[a]	Range[b]
Acetone	13	6	0.070-0.400
Benzene	13	1	0.070
Carbon Disulfide	13	1	0.040
Ethylbenzene	13	1	0.090
Styrene	13	2	0.011-0.330
Toluene	13	13	0.018-1.200
Trichlorotrifluoroethane	13	1	0.020
Xylenes	13	3	0.008-0.310

**Source: Dames & Moore, 1991*

Notes:

[a] = Number of samples in which the chemical was detected.

[b] = Range of detected values.

TABLE 2-11
Summary of Historical Analytical Data for PAHs in
Groundwater Monitoring Wells
Former Ventura MGP Site
Ventura, California

WELL ID	DATE	PAHs (µg/L)
DMW-1	9/20/1993	ND
	12/17/1993	ND
	3/18/1994	ND
	8/17/1994	ND
	4/10/1995	ND
	10/12/1995	ND
	4/9/1996	ND
	10/21/1996	ND
	4/29/1997	ND
	10/14/1997	ND
	4/14/1998	ND
	8/3/1998	ND
	1/26/1999	ND
	8/2/1999	ND
	2/10/2000	ND
	8/31/2000	ND
	3/1/2001	ND
	8/17/2001	ND
	2/11/2002	ND
	8/19/2002	ND
	2/24/2003	ND
DMW-2	9/20/1993	ND
	12/17/1993	ND
	3/18/1994	ND
	6/13/1994	Fluoranthene = 6.0 Phenanthrene = 5.0 Pyrene = 9.0
	4/10/1995	ND
	10/12/1995	ND
	4/9/1996	ND
	10/21/1996	ND
	4/29/1997	ND
	10/14/1997	ND
	4/14/1998	ND
	8/3/1998	ND
	1/26/1999	ND
	8/2/1999	ND
	2/10/2000	ND
	8/31/2000	ND
	3/1/2001	ND
	8/17/2001	ND
	2/11/2002	ND
	8/19/2002	ND
	2/24/2003	ND
MW-3	9/20/1993	ND
	12/17/1993	ND
	3/18/1994	ND
	8/17/1994	ND
	4/10/1995	ND
	10/12/1995	ND
	4/9/1996	ND
	10/21/1996	ND
	4/29/1997	ND
	10/14/1997	ND
	4/14/1998	ND
	8/3/1998	ND
	1/26/1999	ND
	8/2/1999	ND
	2/10/2000	ND
	8/31/2000	ND
	3/1/2001	ND
	8/17/2001	ND
	2/11/2002	ND
	8/19/2002	ND

TABLE 2-11
Summary of Historical Analytical Data for PAHs in
Groundwater Monitoring Wells
Former Ventura MGP Site
Ventura, California

WELL ID	DATE	PAHs (µg/L)
DMW-4	2/24/2003	ND
	9/20/1993	ND
	12/17/1993	ND
	3/18/1994	ND
	8/17/1994	ND
	1/19/1995	Fluorene = 5.2
	4/10/1995	Fluorene = 5.8 Naphthalene = 20 Phenanthrene = 5.5
	1/18/1996	Fluorene = 7.0 Phenanthrene = 8.0
	7/22/1996	ND
	4/29/1997	ND
	10/14/1997	ND
	4/14/1998	ND
	8/3/1998	ND
	1/26/1999	Chrysene = 1.8 Fluorene = 32.1 Phenanthrene = 1.5
	8/2/1999	Acenaphthene = 1.1 Fluorene = 1.0 Phenanthrene = 1.1
	2/10/2000	Benzo(a)Anthracene = 3.8 Chrysene = 1.2 Fluorene = = 8.1
	8/31/2000	Acenaphthene = 4.3 Phenanthrene = 1.4
	3/1/2001	Fluorene = 10.7
	3/17/2001	Acenaphthene = 3.6
	2/11/2002	Acenaphthene = 2.18 Fluorene = 20 Naphthalene = 1.36 Phenanthrene = 1.21
	8/19/2002	Benzo(a)Anthracene = 1.0 Benzo(a)Pyrene = 1.25 Benzo(k)Fluoranthene = 1.88 Naphthalene = 1.0 Phenanthrene = 1.21
	2/24/2003	Acenaphthene = 1.72 Acenaphthylene = 1.27 Chrysene = 1.21 Fluorene = 2.34 Naphthalene = 1.75 Phenanthrene = 1.0

NOTE:

Source = Groundwater analytical data,
Southern California Gas Company, 2003.
PAH = Polycyclic Aromatic Hydrocarbons.
µg/L = Microgram per liter

TABLE 2-12
Summary of Historical Analytical Data for VOCs in
Groundwater Monitoring Wells
Former Ventura MGP Site
Ventura California

WELL ID	DATE	VOLATILE ORGANIC COMPOUND (μg/L)
DMW-1	9/20/1993	ND
	3/18/1994	ND
	4/10/1995	ND
	4/9/1996	ND
	4/29/1997	ND
	4/14/1998	ND
DMW-2	9/20/1993	Cis-1,2-Dichloroethene = 8.6 Trans-1,2-Dichloroethene = 4.9 Vinyl Chloride = 43
	3/18/1994	Vinyl Chloride = 17.2
	7/13/1995	Carbon Disulfide = 0.7 Vinyl Chloride = 4.1
	4/9/1996	2-Butanone = 16.1 2-Hexanone = 12.2 Acetone = 2.6 Bromodichloromethane = 3.3 Vinyl Chloride = 3.6
	4/29/1997	Vinyl Chloride = 5.8
	4/14/1998	Vinyl Chloride = 1.0
MW-3	9/20/1993	ND
	3/18/1994	ND
	4/10/1995	ND
	7/22/1996	Styrene = 1.1
	4/29/1997	ND
	4/14/1998	ND
DMW-4	9/20/1993	ND
	3/18/1994	ND
	10/12/1995	1,2-Dichloroethane = 10
	4/9/1996	2-Butanone = 33.4 2-Hexanone = 14.5 Acetone = 2.2 Bromodichloromethane = 3.4
	4/29/1997	ND
	8/3/1998	4-Methyl-2-Pentanone = 2.7

NOTE:
Source = Groundwater analytical data, Southern California Gas Company, 2003
VOC = Volatile Organic Compound.
μg/L = Microgram per liter.
ND = Not detected at or above laboratory detection limit.

TABLE 2-13
Summary of Historical Analytical Data for TPH, BTEX, and CYANIDE in
Groundwater Monitoring Wells
Former Ventura MGP Site
Ventura California

WELL ID	DATE	TPH (µg/L)		BTEX (µg/L)				Cyanide (µg/L)
		TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl benzene	Total Xylene	
DMW-1	9/20/1993	<100	<1000	<1.0	<1.0	<1.0	<3.0	<20
	6/13/1994	NA	NA	<1.0	<1.0	<1.0	<2.0	<50
	10/12/1995	<500	<1000	<1.0	<1.0	<1.0	<2.0	<20
	1/18/1996	<500	<1000	<0.5	<0.5	<0.5	<1.0	<20
	7/21/1997	<500	<500	<0.5	<0.5	<0.5	NA	<20
	8/3/1998	<500	<500	<0.5	<0.5	<0.5	NA	<20
	1/26/1999	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	2/10/2000	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	3/1/2001	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	8/19/2002	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	2/24/2003	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
DMW-2	9/20/1993	868	<1000	116	1.9	<1.0	<3.0	<20
	6/13/1994	NA	NA	4.9	<1.0	<1.0	<2.0	<50
	10/12/1995	11800	25800	111	<10	<10	<20	<20
	1/18/1996	1200	2000	36.4	0.7	<0.5	<1.0	<20
	7/21/1997	913	<500	30.0	<0.5	<0.5	NA	<20
	8/3/1998	<500	<500	11.3	<0.5	<0.5	NA	<20
	1/26/1999	<500	<500	15.0	<0.3	<0.3	3.1	<20
	2/10/2000	<500	<500	2.1	<0.3	<0.3	1.0	<20
	3/1/2001	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	8/19/2002	<500	613	1.07	<0.3	<0.3	0.91	<20
	2/24/2003	<500	641	1.04	<0.3	<0.3	1.24	<20
MW-3	12/17/1993	794	<1000	30.9	21.4	106	175	<20
	6/13/1994	NA	NA	51	6.8	136	220	<50
	1/19/1995	<200	<1000	2.3	<1.0	20.9	30.4	<50
	1/18/1996	<500	<1000	12.5	1.3	76	67	<20
	4/29/1997	<500	<1000	11.0	<1.0	6	NA	<20
	8/3/1998	<500	<500	<0.5	<0.5	<0.5	NA	<20
	1/26/1999	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	2/10/2000	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	3/1/2001	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	8/19/2002	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
	2/24/2003	<500	<500	<0.3	<0.3	<0.3	<0.6	<20
DMW-4	12/17/1993	1440	4100	1.3	1	3.4	3.9	<20
	8/17/1994	800	6000	<1.0	<1.0	<1.0	<2.0	<20
	10/12/1995	4100	31300	<10	<10	<10	<20	<20
	1/18/1996	900	47000	4.3	<0.5	<0.5	<1.0	<20
	1/27/1997	2900	7000	<1.0	<1.0	<1.0	NA	<20
	1/20/1998	1790	14500	<0.5	<0.5	<0.5	NA	<20
	1/26/1999	1300	1040	7.2	2.1	<0.3	9.2	<20
	8/31/2000	593	600	1.2	<0.3	<0.3	1.8	<20
	3/1/2001	<500	1000	1.2	<0.3	<0.3	3.1	<20
	2/11/2002	1550	3120	<0.3	<0.3	<0.3	2.68	<20
	2/24/2003	935	3720	<0.3	<0.3	<0.3	1.97	<20

NOTE:
Source = Groundwater analytical data, Southern California Gas Company, 2003.
TPH = Total Petroleum Hydrocarbons.
µg/L = Microgram per liter.

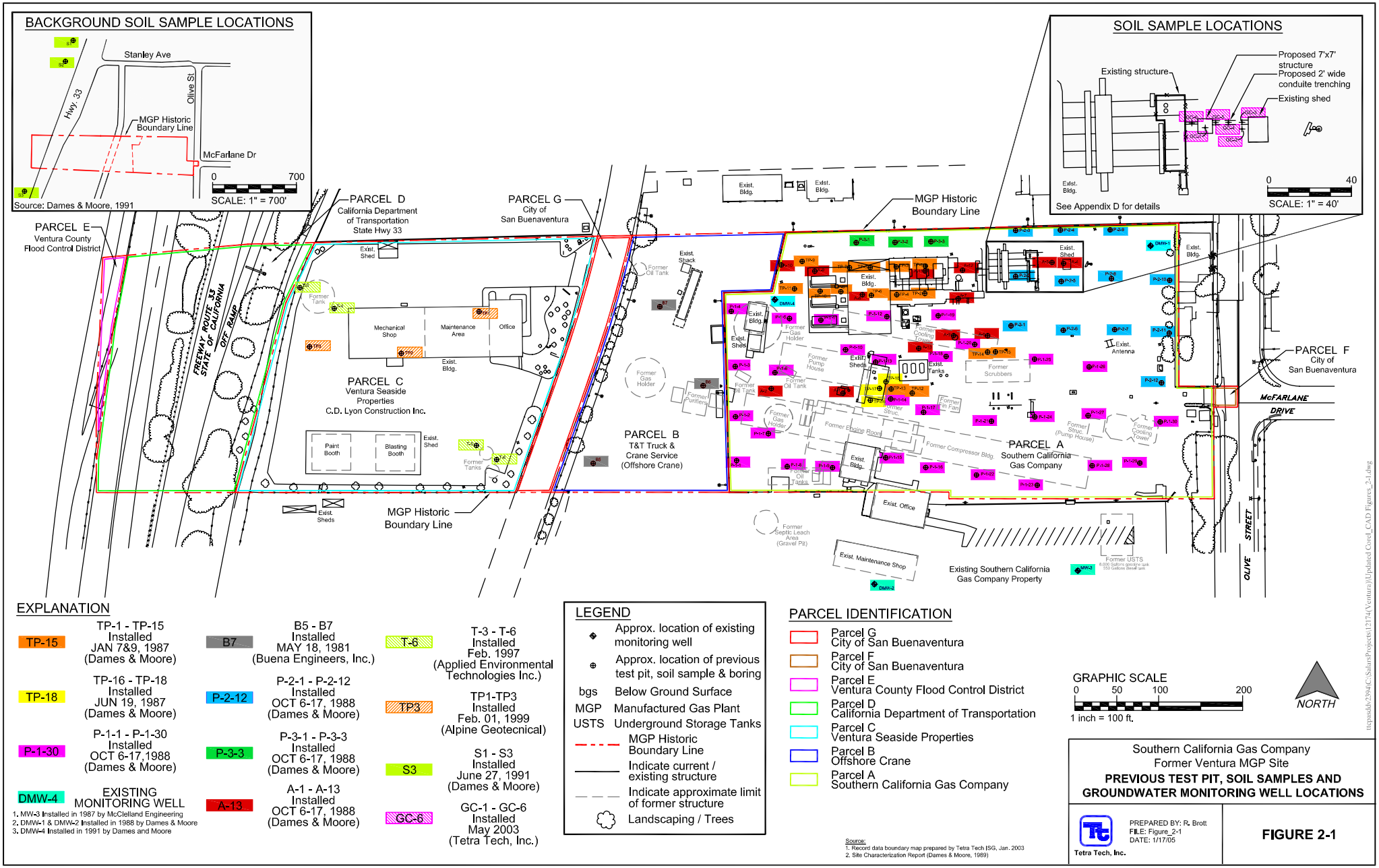
Table 2-14
Compound Detected in Groundwater at Former Ventura Site

PAHs	VOCs	TPH	OTHERS
Acenaphthene	Cis-1,2-Dichloroethene	TPH Gasoline	TRPH
Acenaphthylene	Trans-1,2-Dichloroethene	TPH Diesel	
Benzo(a)anthracene	1,2-Dichloroethane		
Benzo(a)pyrene	Vinyl Chloride		
Benzo(k)fluoranthene	Carbon Disulfide		
Chrysene	2-Butanone		
Fluorene	2-Hexanone		
Naphthalene	Acetone		
Phenanthrene	Bromodichloromethane		
	Styrene		
	4-Methyl-2-Pentanone		
	Benzene		
	Ethylbenzene		
	Toluene		
	Total Xylene		

TABLE 2-15
Summary of TRPH Soil Analytical Data for Parcel C
Former Ventura MGP Site
Ventura California

Sample ID	DATE SAMPLED	Detection Limit (mg/kg)	TRPH (mg/kg)
T-3-3'	2/6/1997	2000	4,200
T-4-8'	2/6/1997	20	98
T-5-8'	2/6/1997	800	13,700
T-6-6'	2/6/1997	10	ND

NOTE:
Source = AET, June 1997.
TRPH = Total Recoverable Petroleum Hydrocarbons.
mg/kg = milligram per kilogram.
ND = Not detected at or above detection limits.



EXPLANATION

TP-15	TP-1 - TP-15 Installed JAN 7&9, 1987 (Dames & Moore)
TP-18	TP-16 - TP-18 Installed JUN 19, 1987 (Dames & Moore)
P-1-30	P-1-1 - P-1-30 Installed OCT 6-17,1988 (Dames & Moore)
DMW-4	EXISTING MONITORING WELL
B7	B5 - B7 Installed MAY 18, 1981 (Buena Engineers, Inc.)
P-2-12	P-2-1 - P-2-12 Installed OCT 6-17, 1988 (Dames & Moore)
P-3-3	P-3-1 - P-3-3 Installed OCT 6-17, 1988 (Dames & Moore)
A-13	A-1 - A-13 Installed OCT 6-17, 1988 (Dames & Moore)
T-6	T-3 - T-6 Installed Feb. 1997 (Applied Environmental Technologies Inc.)
TP3	TP1-TP3 Installed Feb. 01, 1999 (Alpine Geotecnical)
S3	S1 - S3 Installed June 27, 1991 (Dames & Moore)
GC-6	GC-1 - GC-6 Installed May 2003 (Tetra Tech, Inc.)

1. MW-3 Installed in 1987 by McClelland Engineering
2. DMW-1 & DMW-2 Installed in 1988 by Dames & Moore
3. DMW-4 Installed in 1991 by Dames and Moore

LEGEND

- Approx. location of existing monitoring well
- Approx. location of previous test pit, soil sample & boring
- bgs — Below Ground Surface
- MGP — Manufactured Gas Plant
- USTS — Underground Storage Tanks
- MGP Historic Boundary Line
- Indicate current / existing structure
- Indicate approximate limit of former structure
- Landscaping / Trees

PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel E — Ventura County Flood Control District
- Parcel D — California Department of Transportation
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

GRAPHIC SCALE
0 50 100 200
1 inch = 100 ft.

NORTH

Source:
1. Record data boundary map prepared by Tetra Tech ISG, Jan. 2003
2. Site Characterization Report (Dames & Moore, 1989)

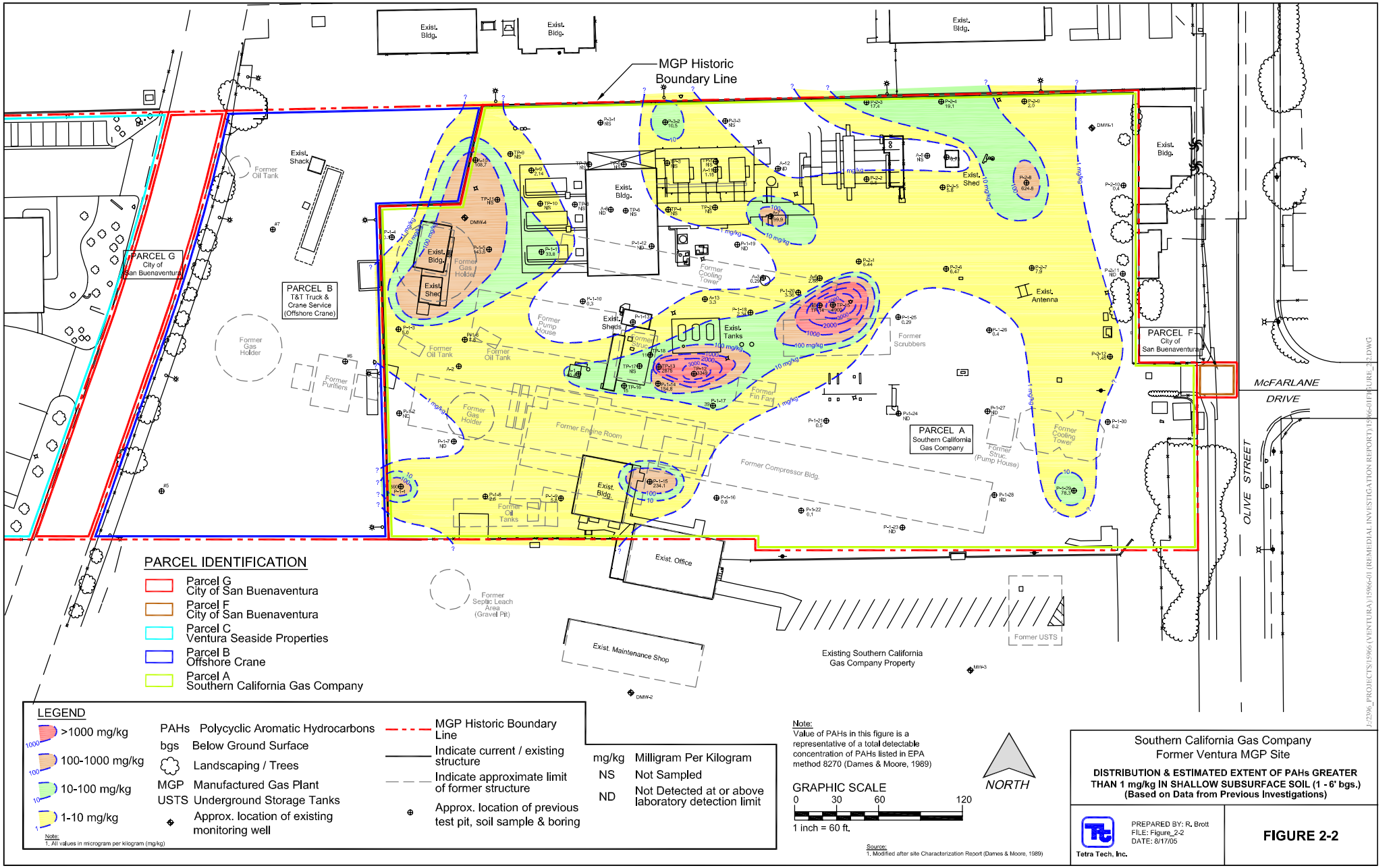
Southern California Gas Company
Former Ventura MGP Site
PREVIOUS TEST PIT, SOIL SAMPLES AND GROUNDWATER MONITORING WELL LOCATIONS

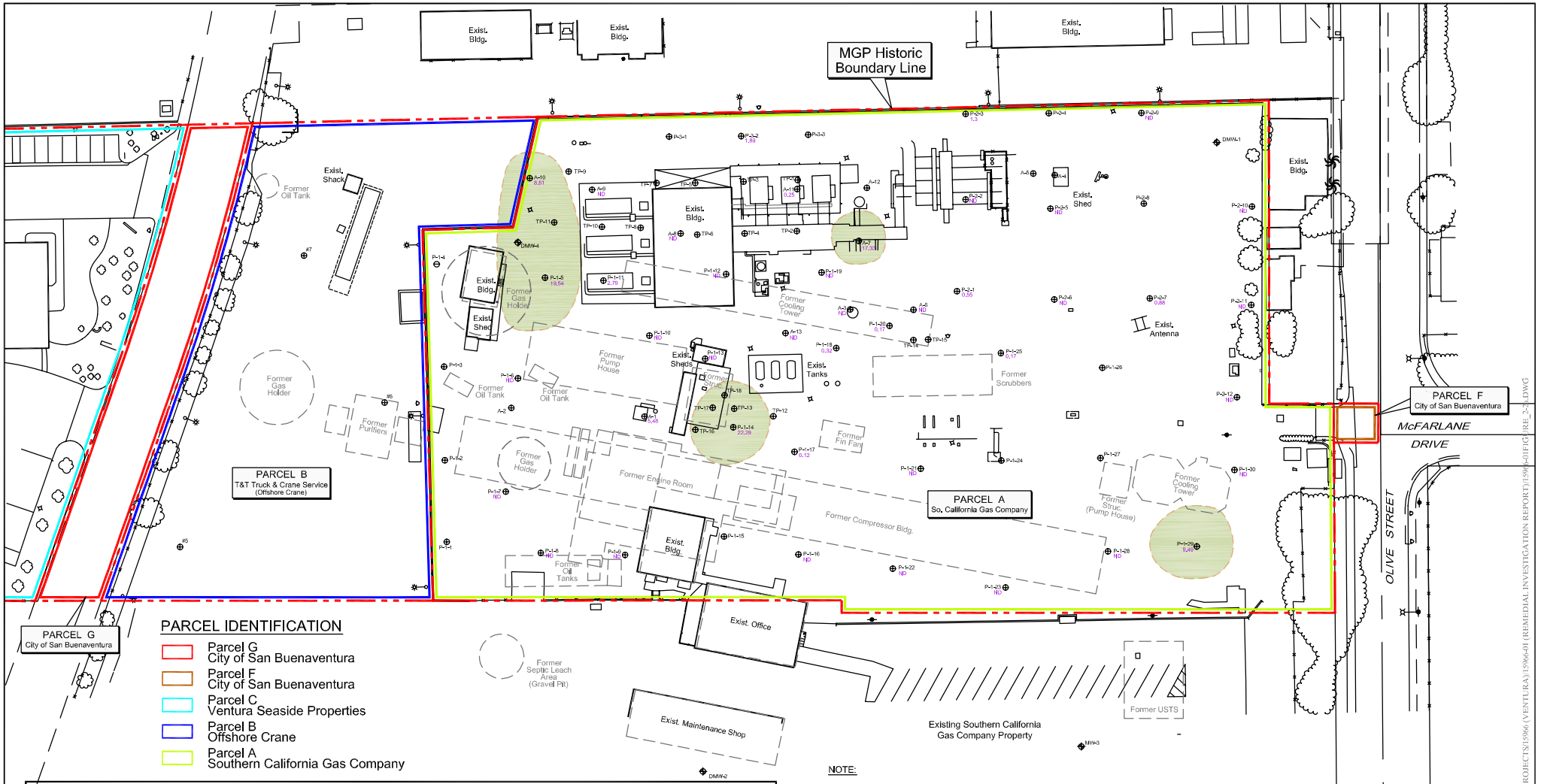
Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_2-1
DATE: 1/17/05

FIGURE 2-1

ttcpsaldb2594\C:\SaltusProjects\12174\Ventura\!Updated Corel_CAD Figures_2-1.dwg


MGP Historic Boundary Line
PARCEL G
City of San Buenaventura
PARCEL B
T&T Truck & Crane Service (Offshore Crane)
PARCEL A
Southern California Gas Company
PARCEL F
City of San Buenaventura
Exist. Bldg.
Exist. Shack
Exist. Shed
Exist. Sheds
Exist. Tanks
Exist. Antenna
Exist. Office
Exist. Maintenance Shop
Former Oil Tank
Former Gas Holder
Former Gas Holder
Former Purifiers
Former Pump House
Former Oil Tank
Former Oil Tanks
Former Septic Leach Area (Gravel Pit)
Former Engine Room
Former Compressor Bldg.
Former Cooling Tower
Former Fin Fan
Former Scrubbers
Former Struc. (Pump House)
Former USTS
Existing Southern California Gas Company Property
McFARLANE DRIVE
OLIVE STREET
PARCEL IDENTIFICATION
Parcel G
City of San Buenaventura
Parcel F
City of San Buenaventura
Parcel C
Ventura Seaside Properties
Parcel B
Offshore Crane
Parcel A
Southern California Gas Company
LEGEND
>1000 mg/kg
100-1000 mg/kg
10-100 mg/kg
1-10 mg/kg
Note:
1. All values in microgram per kilogram (mg/kg)
PAHs Polycyclic Aromatic Hydrocarbons
bgs Below Ground Surface
Landscaping / Trees
MGP Manufactured Gas Plant
USTS Underground Storage Tanks
Approx. location of existing monitoring well
MGP Historic Boundary Line
Indicate current / existing structure
Indicate approximate limit of former structure
Approx. location of previous test pit, soil sample & boring
mg/kg Milligram Per Kilogram
NS Not Sampled
ND Not Detected at or above laboratory detection limit
Note:
Value of PAHs in this figure is a representative of a total detectable concentration of PAHs listed in EPA method 8270 (Dames & Moore, 1989)
GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.
NORTH
Source:
1. Modified after site Characterization Report (Dames & Moore, 1989)
Southern California Gas Company
Former Ventura MGP Site
DISTRIBUTION & ESTIMATED EXTENT OF PAHs GREATER THAN 1 mg/kg IN SHALLOW SUBSURFACE SOIL (1 - 6' bgs.)
(Based on Data from Previous Investigations)
Tetra Tech, Inc.
PREPARED BY: R. Brott
FILE: Figure_2-2
DATE: 8/17/05
FIGURE 2-2



PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

LEGEND

C-PAHs	Carcinogenic Polycyclic Aromatic Carbons
bgs	Below Ground Surface
	Landscaping / Trees
MGP	Manufactured Gas Plant
USTS	Underground Storage Tanks
	MGP Historic Boundary Line
	Indicate current / existing structure
	Indicate approximate limit of former structure
⊕	Approx. location of previous test pit, soil sample & boring
mg/kg	Milligram Per Kilogram
NS	Not Sampled
ND	Not Detected at or above laboratory detection limit
	Remedial Goal for C-PAH at >6.1 mg/kg (Section 6)
◆	Approx. location of existing monitoring well

Note:
1. All values in microgram per kilogram (mg/kg)

NOTE:

1) Modified after site Characterization Report (Dames & Moore, 1989)
2) In Section 6 of this report the remedial goal calculated for C-PAH B(a)P Equivalent Values in the 0 to 10 feet depth interval is 6.1 mg/kg

GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.

NORTH

Southern California Gas Company
Former Ventura MGP Site

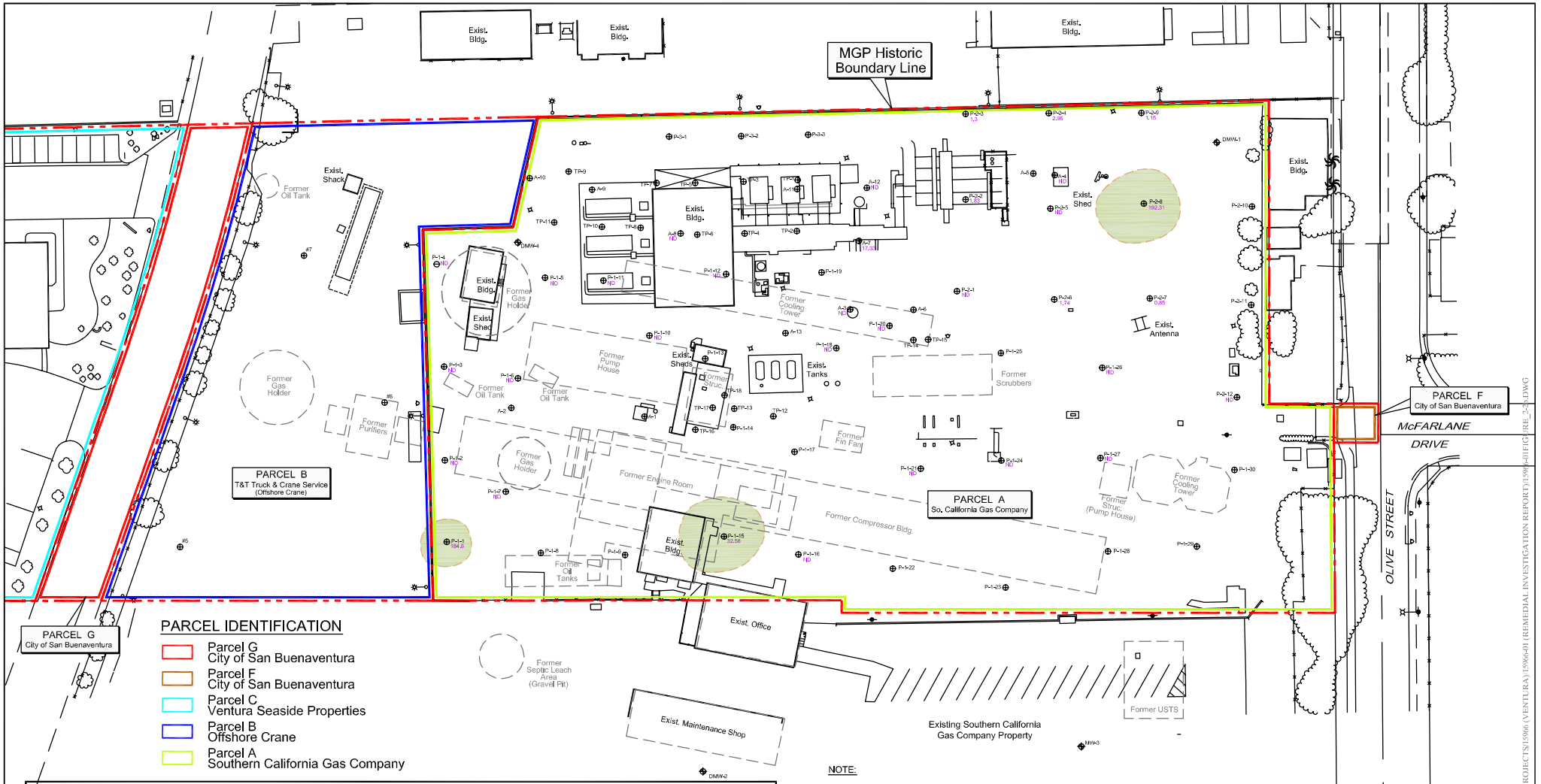
DISTRIBUTION & ESTIMATED EXTENT OF C-PAHs GREATER THAN 6.1 mg/kg IN SHALLOW SUBSURFACE SOIL (0 - 2' bgs.)

Tetra Tech, Inc.

PREPARED BY: M.A.R.
FILE: Figure_2-2a.dwg
DATE: 1/17/05

FIGURE 2-2a

J:\23%_PROJECTS\15966 (VENTURA)\15966-01 (REMEDIAL INVESTIGATION REPORT)\15966-01FIG\FIGURE_2-2a.DWG



PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

LEGEND

C-PAHs	Carcinogenic Polycyclic Aromatic Carbons
bgs	Below Ground Surface
	Landscaping / Trees
MGP	Manufactured Gas Plant
USTS	Underground Storage Tanks
	MGP Historic Boundary Line
	Indicate current / existing structure
	Indicate approximate limit of former structure
	Approx. location of previous test pit, soil sample & boring
mg/kg	Milligram Per Kilogram
NS	Not Sampled
ND	Not Detected at or above laboratory detection limit
	Remedial Goal for C-PAH at >6.1 mg/kg (Section 6)
	Approx. location of existing monitoring well

Note:
1. All values in microgram per kilogram (mg/kg)

NOTE:

1) Modified after site Characterization Report (Dames & Moore, 1989)
2) In Section 6 of this report the remedial goal calculated for C-PAH B(a)P Equivalent Values in the 0 to 10 feet depth interval is 6.1 mg/kg

NORTH

GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.

Southern California Gas Company
Former Ventura MGP Site

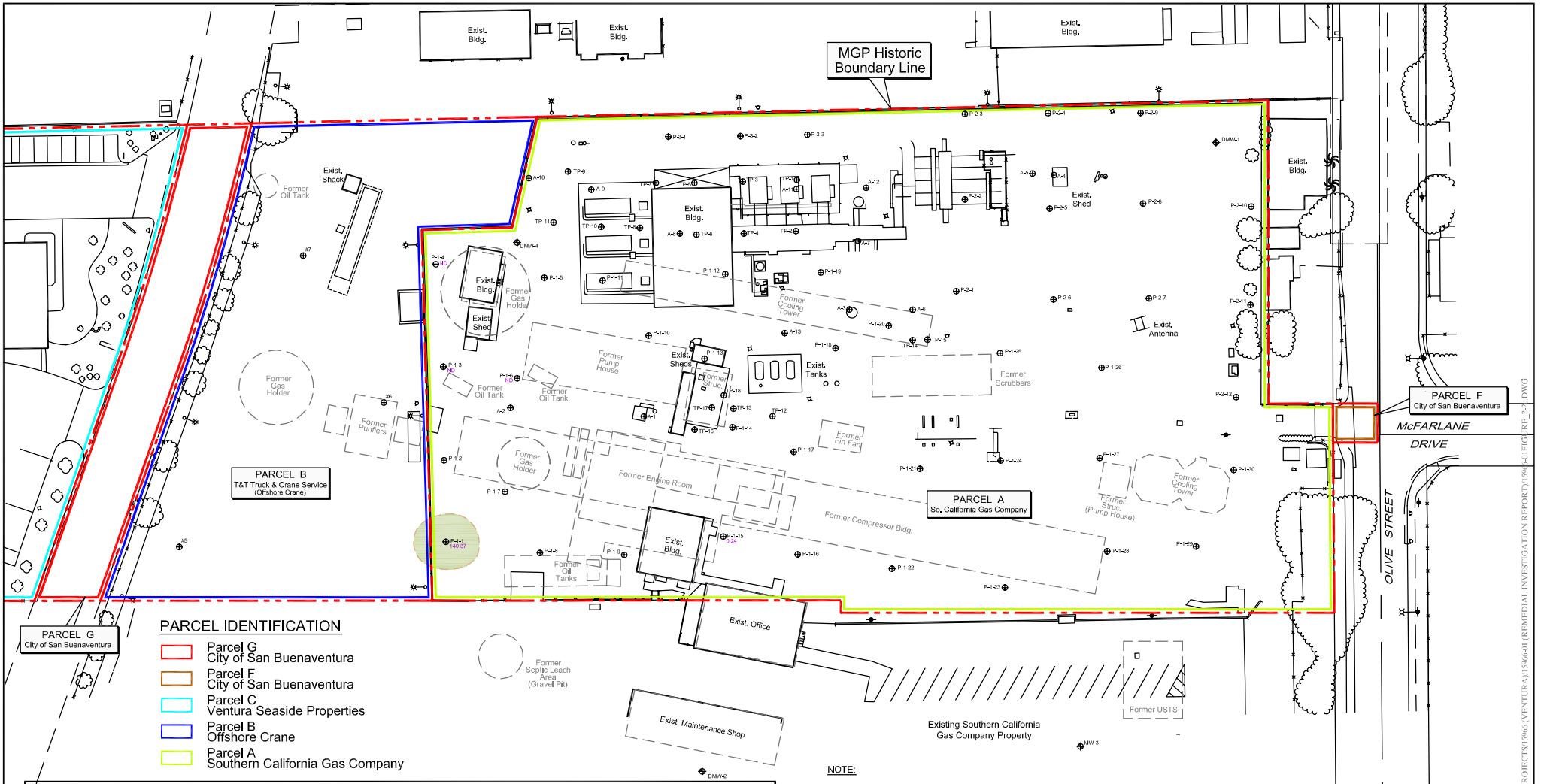
DISTRIBUTION & ESTIMATED EXTENT OF C-PAHs GREATER THAN 6.1 mg/kg IN SHALLOW SUBSURFACE SOIL (>2 - 5' bgs.)

Tetra Tech, Inc.

PREPARED BY: M.A.R.
FILE: Figure_2-2b.dwg
DATE: 1/17/05

FIGURE 2-2b

J:\23%_PROJECTS\15966 (VENTURA)\15966-01 (REMEDIAL INVESTIGATION REPORT)\15966-01FIG\FIGURE_2-2b.DWG


MGP Historic Boundary Line
PARCEL B
T&T Truck & Crane Service
(Offshore Crane)
PARCEL A
So. California Gas Company
PARCEL G
City of San Buenaventura
PARCEL F
City of San Buenaventura
McFARLANE DRIVE
OLIVE STREET
Exist. Office
Exist. Maintenance Shop
Former Engine Room
Former Compressor Bldg.
Former Gas Holder
Former Oil Tank
Former Oil Tanks
Former Pump House
Former Purifiers
Former Cooling Tower
Former Scrubbers
Former Fin Fan
Former Struc. (Pump House)
Former Septic Leach Area (Gravel Pit)
Former USTS
Exist. Tanks
Exist. Sheds
Exist. Shed
Exist. Shack
Exist. Antenna
Existing Southern California Gas Company Property
PARCEL IDENTIFICATION
Parcel G
City of San Buenaventura
Parcel F
City of San Buenaventura
Parcel C
Ventura Seaside Properties
Parcel B
Offshore Crane
Parcel A
Southern California Gas Company
LEGEND
C-PAHs Carcinogenic Polycyclic Aromatic Carbons
bgs Below Ground Surface
Landscaping / Trees
MGP Manufactured Gas Plant
USTS Underground Storage Tanks
MGP Historic Boundary Line
Indicate current / existing structure
Indicate approximate limit of former structure
Approx. location of previous test pit, soil sample & boring
mg/kg Milligram Per Kilogram
NS Not Sampled
ND Not Detected at or above laboratory detection limit
Remedial Goal for C-PAH at >6.1 mg/kg (Section 6)
Approx. location of existing monitoring well
Note:
1. All values in microgram per kilogram (mg/kg)
NOTE:
1) Modified after site Characterization Report (Dames & Moore, 1989)
2) In Section 6 of this report the remedial goal calculated for C-PAH B(a)P Equivalent Values in the 0 to 10 feet depth interval is 6.1 mg/kg
NORTH
GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.
Southern California Gas Company
Former Ventura MGP Site
DISTRIBUTION & ESTIMATED EXTENT OF C-PAHs GREATER THAN 6.1 mg/kg IN SHALLOW SUBSURFACE SOIL (>5 - 10' bgs.)
Tetra Tech, Inc.
PREPARED BY: M.A.R.
FILE: Figure_2-2c.dwg
DATE: 1/17/05
FIGURE 2-2c

PARCEL IDENTIFICATION

- Parcel G — City of San Buenaventura
- Parcel F — City of San Buenaventura
- Parcel C — Ventura Seaside Properties
- Parcel B — Offshore Crane
- Parcel A — Southern California Gas Company

LEGEND

- C-PAHs — Carcinogenic Polycyclic Aromatic Carbons
- bgs — Below Ground Surface
- Landscaping / Trees
- MGP — Manufactured Gas Plant
- USTS — Underground Storage Tanks
- MGP Historic Boundary Line
- Indicate current / existing structure
- Indicate approximate limit of former structure
- Approx. location of previous test pit, soil sample & boring
- mg/kg — Milligram Per Kilogram
- NS — Not Sampled
- ND — Not Detected at or above laboratory detection limit
- Remedial Goal for C-PAH at >6.1 mg/kg (Section 6)
- Approx. location of existing monitoring well

Note:
1. All values in microgram per kilogram (mg/kg)

NOTE:

1) Modified after site Characterization Report (Dames & Moore, 1989)
2) In Section 6 of this report the remedial goal calculated for C-PAH B(a)P Equivalent Values in the 0 to 10 feet depth interval is 6.1 mg/kg

NORTH

GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.

Southern California Gas Company
Former Ventura MGP Site

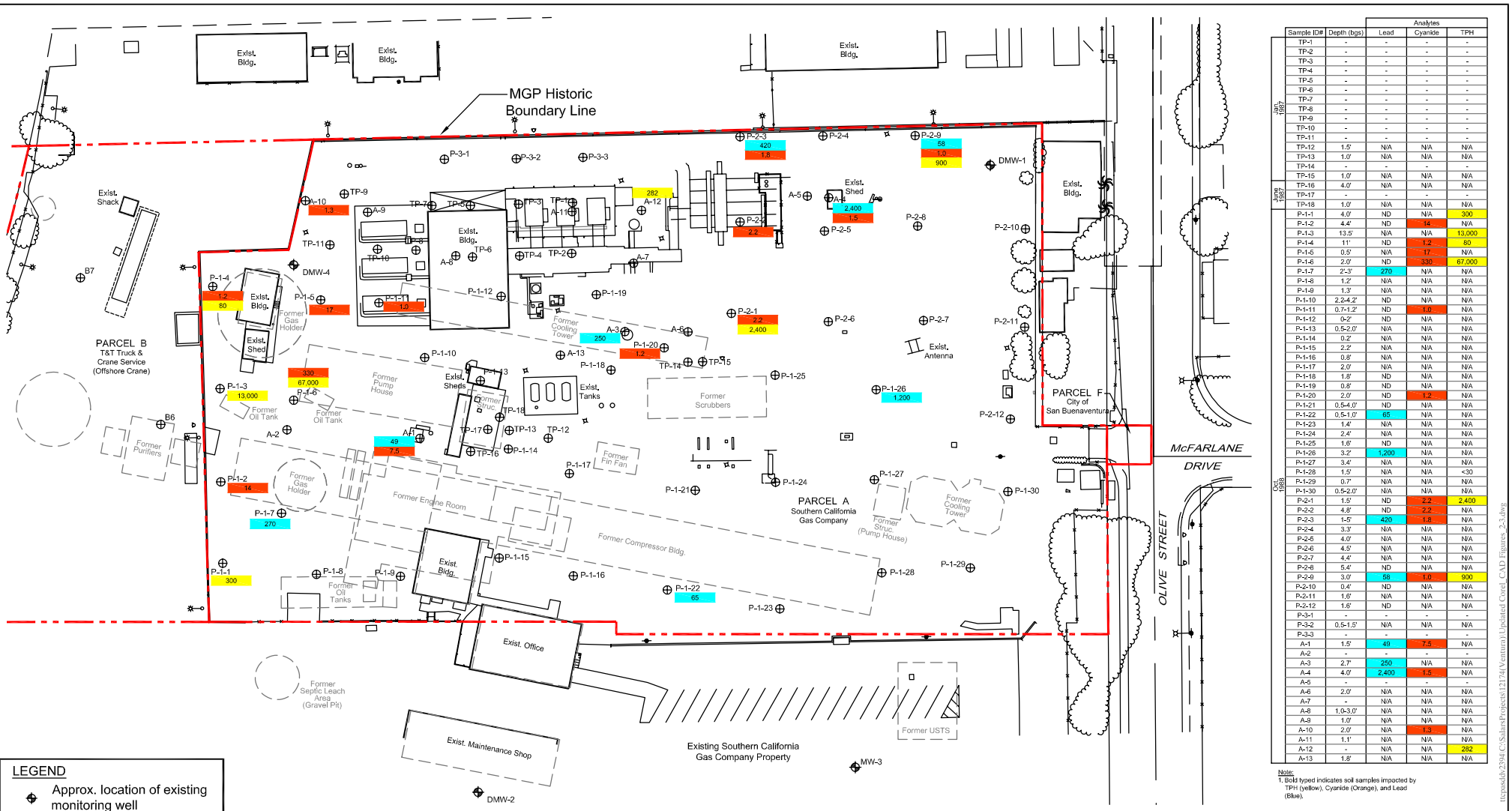
DISTRIBUTION & ESTIMATED EXTENT OF C-PAHs GREATER THAN 6.1 mg/kg IN SHALLOW SUBSURFACE SOIL (>10 - 20' bgs.)

Tetra Tech, Inc.

PREPARED BY: M.A.R.
FILE: Figure_2-2d.dwg
DATE: 1/17/05

FIGURE 2-2d

J:\Env_PROJECTS\15966 (VENTURA)\15966-01 (REMEDIAL INVESTIGATION REPORT)\15966-01FIG\FIGURE_2-2d.DWG



Sample ID#	Depth (bgs)	Analytes: Lead	Cyanide	TPH
TP-1	-	-	-	-
TP-2	-	-	-	-
TP-3	-	-	-	-
TP-4	-	-	-	-
TP-5	-	-	-	-
TP-6	-	-	-	-
TP-7	-	-	-	-
TP-8	-	-	-	-
TP-9	-	-	-	-
TP-10	-	-	-	-
TP-11	-	-	-	-
TP-12	1.5'	N/A	N/A	N/A
TP-13	1.0'	N/A	N/A	N/A
TP-14	-	-	-	-
TP-15	1.0'	N/A	N/A	N/A
TP-16	4.0'	N/A	N/A	N/A
TP-17	-	-	-	-
TP-18	1.0'	N/A	N/A	N/A
P-1-1	4.0'	ND	N/A	300
P-1-2	4.4'	ND	14	N/A
P-1-3	13.5'	N/A	N/A	13,000
P-1-4	11'	ND	1.2	80
P-1-5	0.5'	N/A	17	N/A
P-1-6	2.0'	ND	330	67,000
P-1-7	2'-3'	270	N/A	N/A
P-1-8	1.2'	N/A	N/A	N/A
P-1-9	1.3'	N/A	N/A	N/A
P-1-10	2.2-4.2'	ND	N/A	N/A
P-1-11	0.7-1.2'	ND	1.0	N/A
P-1-12	0-2'	ND	N/A	N/A
P-1-13	0.5-2.0'	N/A	N/A	N/A
P-1-14	0.2'	N/A	N/A	N/A
P-1-15	2.2'	N/A	N/A	N/A
P-1-16	0.8'	N/A	N/A	N/A
P-1-17	2.0'	N/A	N/A	N/A
P-1-18	1.8'	ND	N/A	N/A
P-1-19	0.8'	ND	N/A	N/A
P-1-20	2.0'	ND	1.2	N/A
P-1-21	0.5-4.0'	ND	N/A	N/A
P-1-22	0.5-1.0'	65	N/A	N/A
P-1-23	1.4'	N/A	N/A	N/A
P-1-24	2.4'	N/A	N/A	N/A
P-1-25	1.6'	ND	N/A	N/A
P-1-26	3.2'	1,200	N/A	N/A
P-1-27	3.4'	N/A	N/A	N/A
P-1-28	1.5'	N/A	N/A	<30
P-1-29	0.7'	N/A	N/A	N/A
P-1-30	0.5-2.0'	N/A	N/A	N/A
P-2-1	1.5'	ND	2.2	2,400
P-2-2	4.8'	ND	2.2	N/A
P-2-3	1-5'	420	1.8	N/A
P-2-4	3.3'	N/A	N/A	N/A
P-2-5	4.0'	N/A	N/A	N/A
P-2-6	4.5'	N/A	N/A	N/A
P-2-7	4.4'	N/A	N/A	N/A
P-2-8	5.4'	ND	N/A	N/A
P-2-9	3.0'	58	1.0	900
P-2-10	0.4'	ND	N/A	N/A
P-2-11	1.6'	N/A	N/A	N/A
P-2-12	1.6'	ND	N/A	N/A
P-3-1	-	-	-	-
P-3-2	0.5-1.5'	N/A	N/A	N/A
P-3-3	-	-	-	-
A-1	1.5'	49	7.5	N/A
A-2	-	-	-	-
A-3	2.7'	250	N/A	N/A
A-4	4.0'	2,400	1.5	N/A
A-5	-	-	-	-
A-6	2.0'	N/A	N/A	N/A
A-7	-	N/A	N/A	N/A
A-8	1.0-3.0'	N/A	N/A	N/A
A-9	1.0'	N/A	N/A	N/A
A-10	2.0'	N/A	1.3	N/A
A-11	1.1'	N/A	N/A	N/A
A-12	-	N/A	N/A	282
A-13	1.8'	N/A	N/A	N/A

Note:
1. Bold typed indicates soil samples impacted by TPH (yellow), Cyanide (Orange), and Lead (Blue).

LEGEND

- Approx. location of existing monitoring well
- Approx. location of previous test pit, soil sample & boring (see figure 3-1 for details)
- bgs Below Ground Surface
- MGP Manufactured Gas Plant
- USTS Underground Storage Tanks
- Landscaping / Trees
- MGP Historic Boundary Line
- Indicate current / existing structure
- Indicate approximate limit of former structure
- mg/kg Milligram Per Kilogram
- NS Not Sampled
- ND Not Detected at or above laboratory detection limit
- TPH Total Petroleum Hydrocarbon

GRAPHIC SCALE
0 30 60 120
1 inch = 60 ft.

NORTH

Note:
1. All values in microgram per kilogram (mg/kg)

Source:
1. Site Characterization Report (Dames & Moore, 1989)

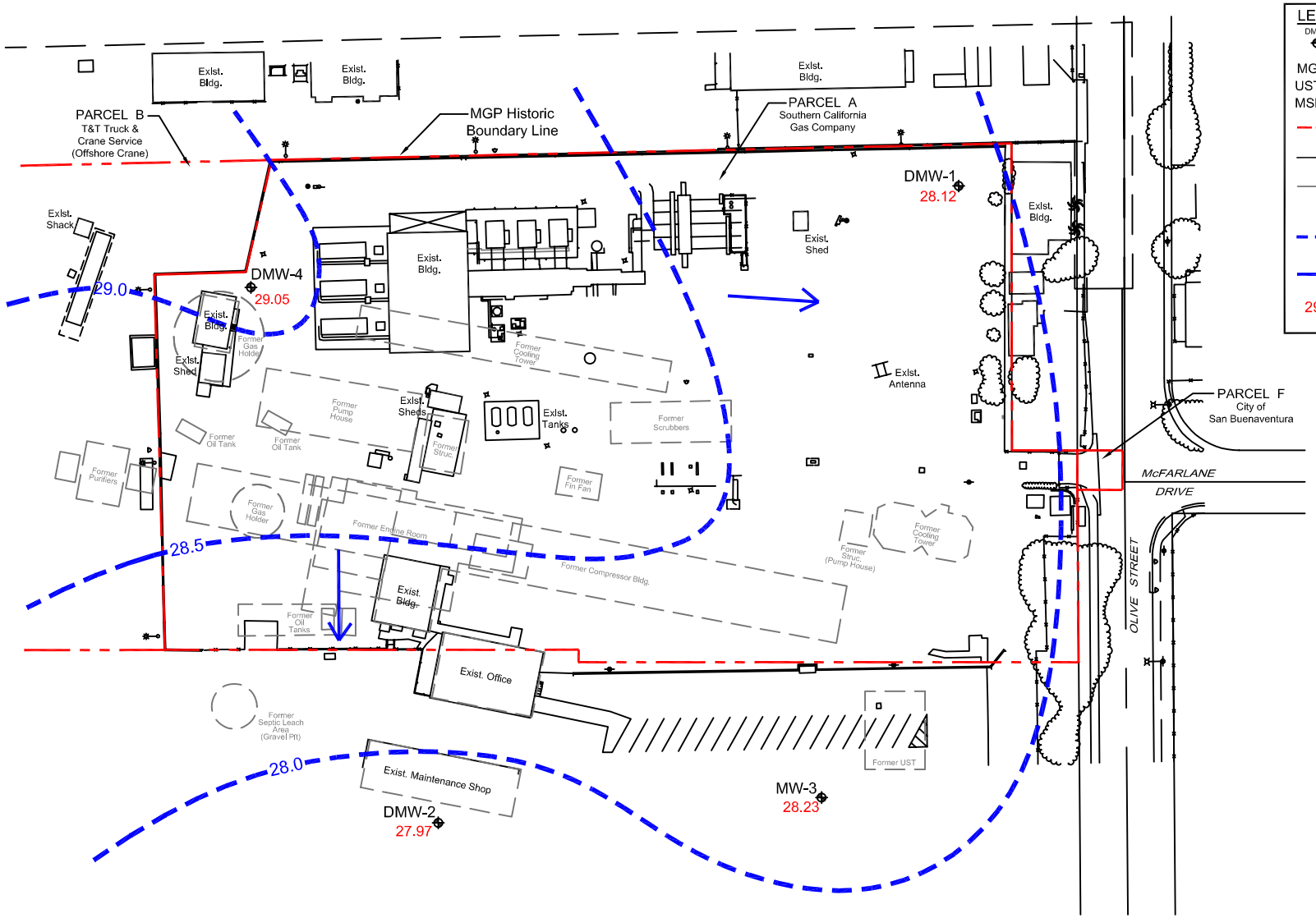
Southern California Gas Company
Former Ventura MGP Site
DISTRIBUTION AND EXTENT OF TPH, CYANIDE, AND LEAD IN SHALLOW SUBSURFACE SOIL (0.5 - 5.0' BGS.)
JANUARY 1987 - OCTOBER 1988

Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_2-3
DATE: 1/17/05

FIGURE 2-3

ttcpaeda\2394\C\SitesProjects\12174\Ventura\Updated Corel_CAD Figures_2-3.dwg



LEGEND

- DMW-4 — Approx. location of existing monitoring well
- MGP — Manufactured Gas Plant
- USTS — Underground Storage Tanks
- MSL — Main Sea Level
- MGP Historic Boundary Line
- Indicate current / existing structure
- Indicate approximate limit of former structure
- Landscaping / Trees
- Estimated groundwater elevation contours
- Estimated groundwater flow direction
- 29.05 — Estimated groundwater elevation (MSL)

NORTH

0 50 100 200

(IN FEET)
1 inch = 100 ft.

Note:
Water level measurment data collected by Southern California Gas Company on February 2003

Southern California Gas Company
Former Ventura MGP Site

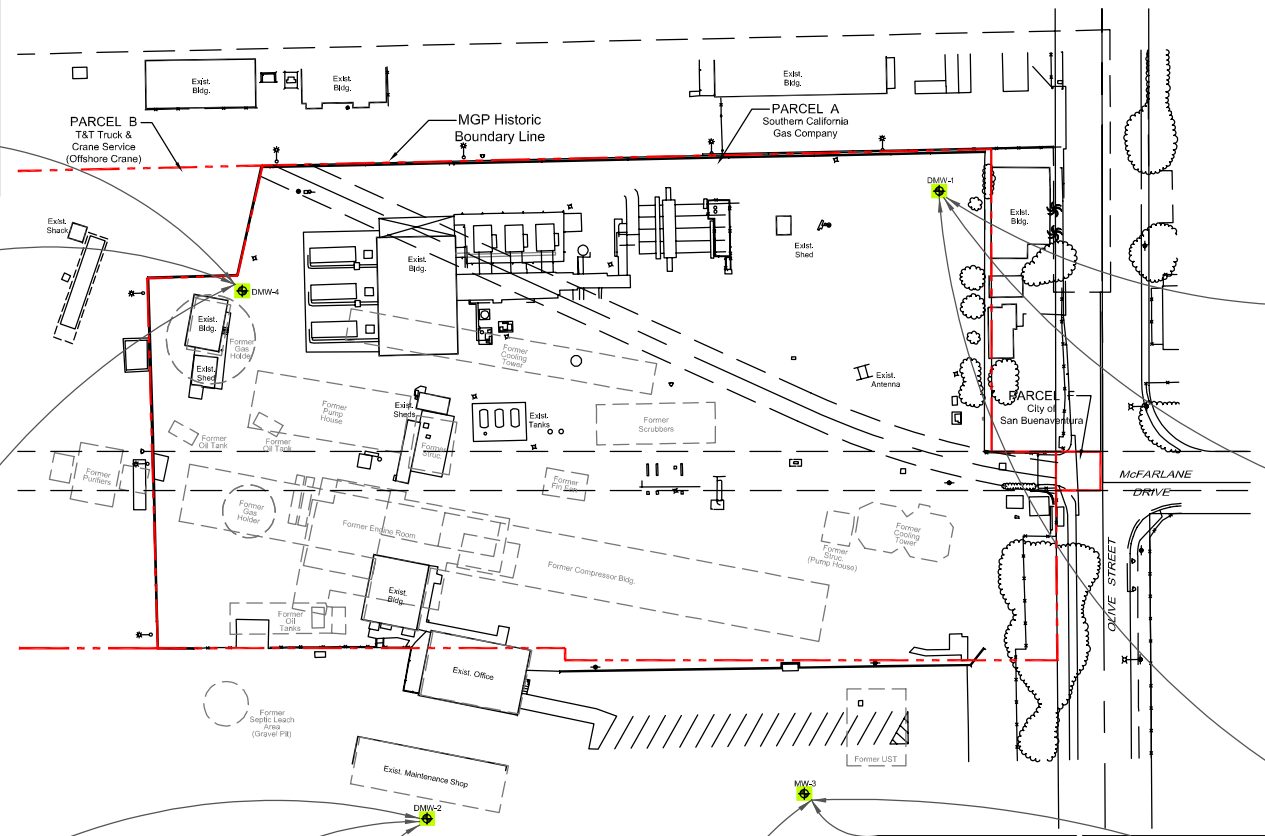
GROUNDWATER ELEVATION CONTOURS AND FLOW DIRECTION (FEBRUARY - 2003) PARCEL A

Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_2-4
DATE: 1/17/05

FIGURE 2-4

ttcpasddv2394\C:\SalarsProjects\12174(Ventura)\Updated Corel_CAD Figures_2-4.dwg



LEGEND

- DMW-4 — Approx. location of existing monitoring well
- MGP — Manufactured Gas Plant
- USTS — Underground Storage Tanks
- MGP Historic Boundary Line
- Indicate current / existing structure
- Indicate approximate limit of former structure
- Landscaping / Trees

DMW-4

DATE	TPH (µg/L)		TRPH (µg/L)	BTEX (µg/L)				Cyanide (µg/L)
	TPH Gasoline	TPH Diesel		Benzene	Toluene	Ethyl Benzene	Total Xylene	
12/17/1993	1440	4100	NA	1.3	1	3.4	3.9	<20
8/17/1994	800	6000	NA	<1.0	<1.0	<1.0	<2.0	<20
10/12/1995	4100	31300	NA	<10	<10	<10	<20	<20
1/18/1996	900	47000	NA	4.3	<0.5	<0.5	<1.0	<20
1/27/1997	2900	7000	NA	<1.0	<1.0	<1.0	NA	<20
1/20/1998	1790	14500	NA	<0.5	<0.5	<0.5	NA	<20
1/26/1999	1300	1040	NA	7.2	2.1	<0.3	9.2	<20
8/31/2000	593	600	NA	1.2	<0.3	<0.3	1.8	<20
3/1/2001	<500	1000	NA	1.2	<0.3	<0.3	3.1	<20
2/11/2002	1550	3120	NA	<0.3	<0.3	<0.3	2.68	<20
2/24/2003	935	3720	NA	<0.3	<0.3	<0.3	1.97	<20

DMW-4

DATE	PAHs (µg/L)
9/20/1993	ND
12/17/1993	ND
3/18/1994	ND
8/17/1994	ND
1/19/1995	Fluorene = 5.2
4/10/1995	Fluorene = 5.8 Naphthalene = 20 Phenanthrene = 5.5
1/18/1996	Fluorene = 7.0 Phenanthrene = 8.0
7/22/1996	ND
4/29/1997	ND
10/14/1997	ND
4/14/1998	ND
8/3/1998	ND
1/26/1999	Chrysene = 1.8 Fluorene = 32.1 Phenanthrene = 1.5
8/2/1999	Acenaphthene = 1.1 Fluorene = 1.0 Phenanthrene = 1.1
2/10/2000	Benzo(a)Anthracene = 3.8 Chrysene = 1.2 Fluorene = 8.1
8/31/2000	Acenaphthene = 4.3 Phenanthrene = 1.4
3/1/2001	Fluorene = 10.7
3/17/2001	Acenaphthene = 3.6
2/11/2002	Acenaphthene = 2.18 Fluorene = 20 Naphthalene = 1.36 Phenanthrene = 1.21
8/19/2002	Benzo(a)Anthracene = 1.0 Benzo(a)Pyrene = 1.25 Benzo(k)Fluoranthene = 1.88 Naphthalene = 1.0 Phenanthrene = 1.21
2/24/2003	Acenaphthene = 1.72 Acenaphthylene = 1.27 Chrysene = 1.21 Fluorene = 2.34 Naphthalene = 1.75 Phenanthrene = 1.0

DMW-4

DATE	VOLATILE ORGANIC COMPOUND (µg/L)
9/20/1993	ND
3/18/1994	ND
10/12/1995	1,2-Dichloroethane = 10
4/9/1996	2-Butanone = 33.4 2-Hexanone = 14.5 Acetone = 2.2 Bromodichloromethane = 3.4
4/29/1997	ND
8/3/1998	4-Methyl-2-Pentanone = 2.7

DMW-1

DATE	TPH (µg/L)		TRPH (µg/L)	BTEX (µg/L)				Cyanide (µg/L)
	TPH Gasoline	TPH Diesel		Benzene	Toluene	Ethyl Benzene	Total Xylene	
9/20/1993	<100	<1000	NA	<1.0	<1.0	<1.0	<3.0	<20
6/13/1994	NA	NA	400	<1.0	<1.0	<1.0	<2.0	<50
10/12/1995	<500	<1000	NA	<1.0	<1.0	<1.0	<2.0	<20
1/18/1996	<500	<1000	NA	<0.5	<0.5	<0.5	<1.0	<20
7/21/1997	<500	<500	NA	<0.5	<0.5	<0.5	NA	<20
8/3/1998	<500	<500	NA	<0.5	<0.5	<0.5	NA	<20
1/26/1999	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
2/10/2000	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
3/1/2001	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
8/19/2002	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
2/24/2003	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20

DMW-1

DATE	PAHs (µg/L)
9/20/1993	ND
12/17/1993	ND
3/18/1994	ND
8/17/1994	ND
4/10/1995	ND
10/12/1995	ND
4/9/1996	ND
10/21/1996	ND
4/29/1997	ND
10/14/1997	ND
4/14/1998	ND
8/3/1998	ND
1/26/1999	ND
8/2/1999	ND
2/10/2000	ND
8/31/2000	ND
3/1/2001	ND
8/17/2001	ND
2/11/2002	ND
8/19/2002	ND
2/24/2003	ND

DMW-1

DATE	VOLATILE ORGANIC COMPOUND (µg/L)
9/20/1993	ND
3/18/1994	ND
4/10/1995	ND
4/9/1996	ND
4/29/1997	ND
4/14/1998	ND

DMW-2

DATE	VOLATILE ORGANIC COMPOUND (µg/L)
9/20/1993	Cis-1,2-Dichloroethene = 8.6 Trans-1,2-Dichloroethene = 4.9 Vinyl Chloride = 43
3/18/1994	Vinyl Chloride = 17.2
7/13/1995	Carbon Disulfide = 0.7 Vinyl Chloride = 4.1
4/9/1996	2-Butanone = 16.1 2-Hexanone = 12.2 Acetone = 2.6 Bromodichloromethane = 3.3 Vinyl Chloride = 3.6
4/29/1997	Vinyl Chloride = 5.8
4/14/1998	Vinyl Chloride = 1.0

DMW-2

DATE	TPH (µg/L)		TRPH (µg/L)	BTEX (µg/L)				Cyanide (µg/L)
	TPH Gasoline	TPH Diesel		Benzene	Toluene	Ethyl Benzene	Total Xylene	
9/20/1993	868	<1000	NA	116	1.9	<1.0	<3.0	<20
6/13/1994	NA	NA	58000	4.9	<1.0	<1.0	<2.0	<50
10/12/1995	11800	25800	NA	111	<10	<10	<20	<20
1/18/1996	1200	2000	NA	36.4	0.7	<0.5	<1.0	<20
7/21/1997	913	<500	NA	30.0	<0.5	<0.5	NA	<20
8/3/1998	<500	<500	NA	11.3	<0.5	<0.5	NA	<20
1/26/1999	<500	<500	NA	15.0	<0.3	<0.3	3.1	<20
2/10/2000	<500	<500	NA	2.1	<0.3	<0.3	1.0	<20
3/1/2001	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
8/19/2002	<500	613	NA	1.07	<0.3	<0.3	0.91	<20
2/24/2003	<500	641	NA	1.04	<0.3	<0.3	1.24	<20

DMW-2

DATE	PAHs (µg/L)
9/20/1993	ND
12/17/1993	ND
3/18/1994	ND
6/13/1994	Fluoranthene = 6.0 Phenanthrene = 5.0 Pyrene = 9.0
4/10/1995	ND
10/12/1995	ND
4/9/1996	ND
10/21/1996	ND
4/29/1997	ND
10/14/1997	ND
4/14/1998	ND
8/3/1998	ND
1/26/1999	ND
8/2/1999	ND
2/10/2000	ND
8/31/2000	ND
3/1/2001	ND
8/17/2001	ND
2/11/2002	ND
8/19/2002	ND
2/24/2003	ND

DMW-3

DATE	TPH (µg/L)		TRPH (µg/L)	BTEX (µg/L)				Cyanide (µg/L)
	TPH Gasoline	TPH Diesel		Benzene	Toluene	Ethyl Benzene	Total Xylene	
12/17/1993	794	<1000	NA	30.9	21.4	106	175	<20
6/13/1994	NA	NA	400	51	6.8	136	220	<50
1/19/1995	<200	<1000	NA	2.3	<1.0	20.9	30.4	<50
1/18/1996	<500	<1000	NA	12.5	1.3	76	67	<20
4/29/1997	<500	<1000	NA	11.0	<1.0	6	NA	<20
8/3/1998	<500	<500	NA	<0.5	<0.5	<0.5	NA	<20
1/26/1999	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
2/10/2000	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
8/19/2002	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20
2/24/2003	<500	<500	NA	<0.3	<0.3	<0.3	<0.6	<20

DMW-3

DATE	PAHs (µg/L)
9/20/1993	ND
12/17/1993	ND
3/18/1994	ND
8/17/1994	ND
4/10/1995	ND
10/12/1995	ND
4/9/1996	ND
10/21/1996	ND
4/29/1997	ND
10/14/1997	ND
4/14/1998	ND
8/3/1998	ND
1/26/1999	ND
8/2/1999	ND
2/10/2000	ND
8/31/2000	ND
3/1/2001	ND
8/17/2001	ND
2/11/2002	ND
8/19/2002	ND
2/24/2003	ND

DMW-3

DATE	VOLATILE ORGANIC COMPOUND (µg/L)
9/20/1993	ND
3/18/1994	ND
4/10/1995	ND
7/22/1996	Styrene = 1.1
4/29/1997	ND
4/14/1998	ND

Notes:
All values in microgram per liter (µg/L) and/or part per billion (ppb).
NA = Not Analyzed
ND = Not detected at and/or above laboratory detection limit
PAH = Polycyclic Aromatic Hydrocarbon
TRPH = Total Recovery Petroleum Hydrocarbon
TPH = Total Petroleum Hydrocarbon

Source:
Groundwater Monitoring and laboratory data reports (The Gas Company October-1997 - February-2003)

GRAPHIC SCALE
0 40 80 160
1 inch = 80 ft.

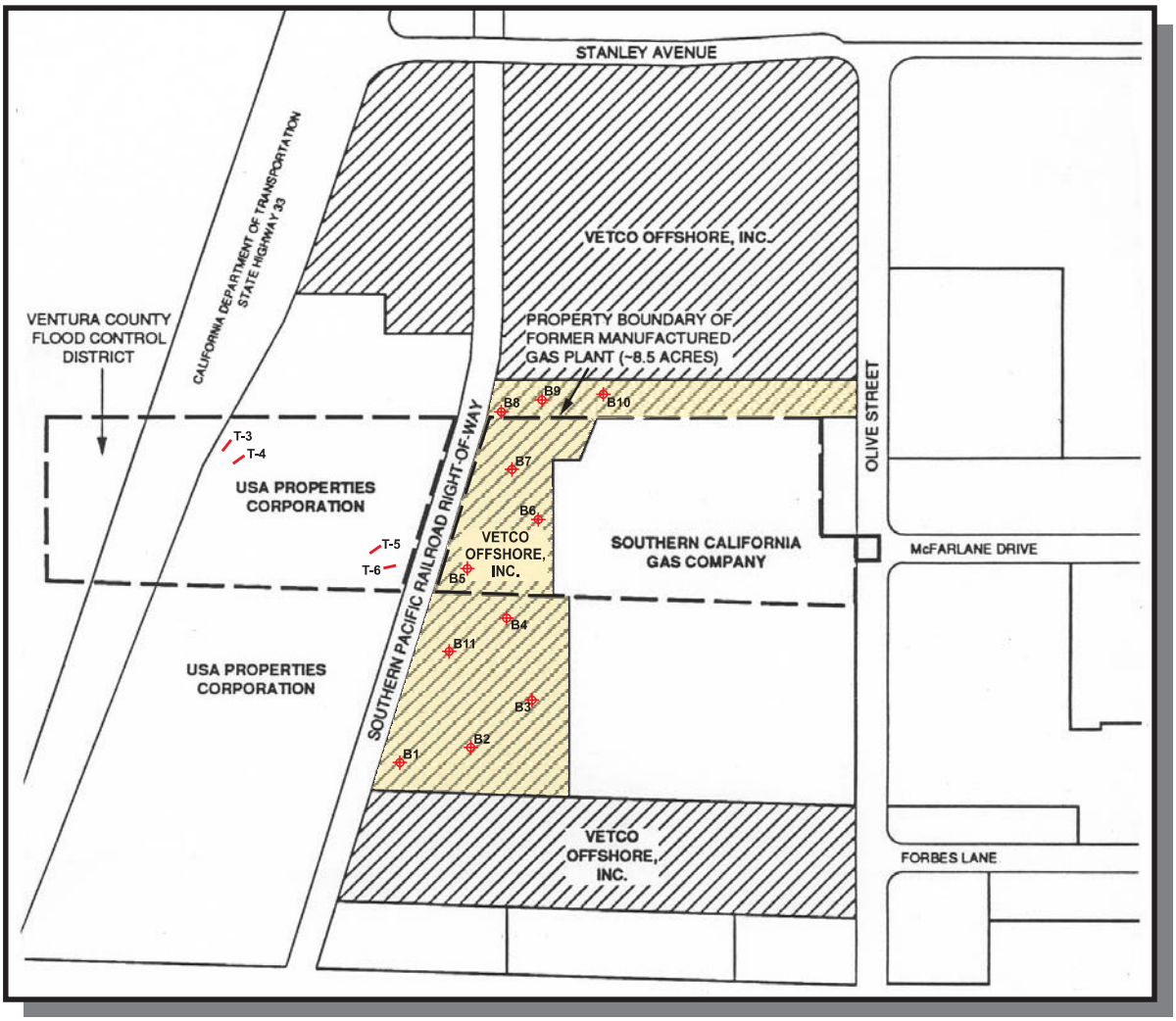
Southern California Gas Company
Former Ventura MGP Site

HISTORICAL DISTRIBUTION OF TRPH, TPH, VOCs, PAHs, & CYANIDE IN GROUNDWATER MONITORING WELLS

Tetra Tech, Inc.

PREPARED BY: R. Brott
FILE: Figure_2-5
DATE: 1/17/05

FIGURE 2-5



Legend

- B11 — Test Boring Location
- T-6 — Approx. Test Pit Location
- MGP Historic Boundary Line
- Vetco Offshore Property

N

Southern California Gas Company
Former Ventura MGP Site

APPROXIMATE LOCATIONS OF TEST BORINGS ON VETCO OFFSHORE PROPERTY

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_2-6.cdr
Date: 1/17/05

FIGURE 2-6

Source: Modified after Buena Engineers, Inc., 1981and Dames & Moore, 1991 and Applied Environmental Technologies, Inc., 1997

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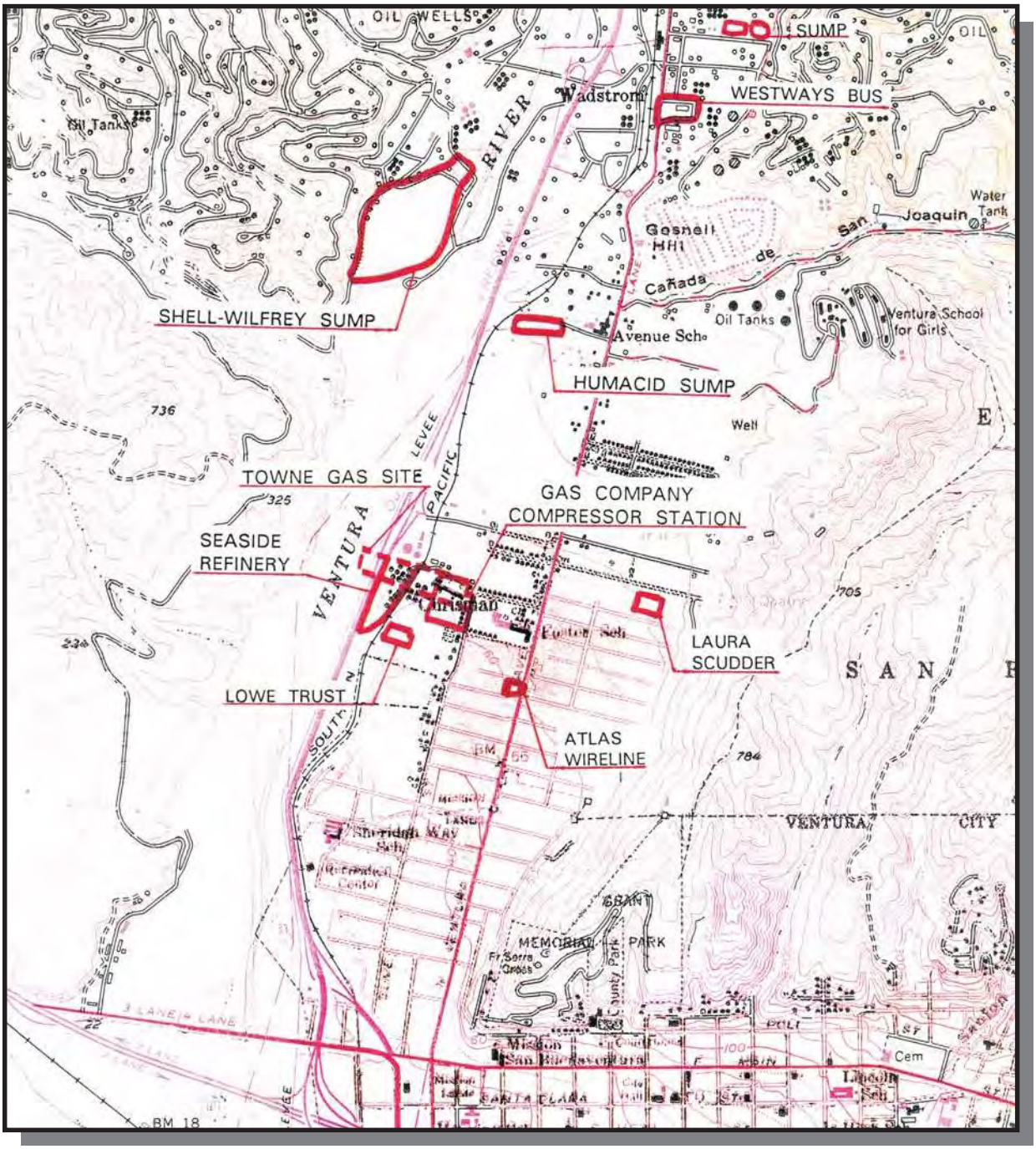


N

0 1/2 1 Mile

Source:
West Coast Environmental, 1992

Southern California Gas Company
Former Ventura MGP Site

THE OIL GAS COMPANY AND SITE VICINITY

Tetra Tech, Inc.

Prepared by: R. Brott
File: Figure_2-7.cdr
Date: 1/17/05

FIGURE 2-7

ttcpasddv2394\C:\SalarsProjects\12174 (Ventura)\Updated Corel_CAD Figures\Figure_2-7.cdr

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF EXEMPTION

To: Office of Planning and Research
State Clearinghouse
https://ceqasubmit.opr.ca.gov/

Site Mitigation and Restoration Program
9211 Oakdale Ave.
Chatsworth, CA 91311

From: Department of Toxic Substances Control

Project Title: Removal Action Workplan, Property South of Parcel A, Former Ventura Manufactured Gas Plant

Project Location: 1555 N. Olive Street, Ventura California

County: Ventura

Project Applicant: Southern California Gas Company (SoCalGas)

Approval Action Under Consideration by DTSC: Removal Action Workplan

Statutory Authority: California Health and Safety Code, Chapter 6.8

Project Description: The proposed scope of work outlined in the Removal Action Workplan (RAW) includes excavation of soils impacted with the chemicals of concern (COCs) in the southern portion of the Site, including polycyclic aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), arsenic and lead. The excavated areas will be backfilled with clean soil and a Land Use Covenant (LUC) will restrict use of the property and prohibit residential use.

The Site is approximately 8.5-acres and is owned and operated by SoCalGas as a natural gas compressor station. The subject of this RAW is the southern 4.3-acre portion of the Site that is hereinafter referred to as the "Subject Property." The Subject Property is currently in use as a storage and maintenance yard and is occupied by two small buildings used as an office and a warehouse. The northern portion of the Site is currently occupied by a natural gas compressor building, gas metering equipment, aboveground gas piping, and associated features.

To the north, south, and west of the Site are primarily industrial and commercial facilities. The Ventura River and vacant hillsides lie further west of the property. Residential/commercial properties and the E.P. Foster Elementary School are located to the east of the Site.

SoCalGas will modernize the compressor station at the Site and these modernization activities will include: a new compressor building, a new office building, a new warehouse, a new communications shelter, a new motor control center room, and associated appurtenances. The existing office building and warehouse are scheduled for demolition prior to soil remediation on the Subject Property.

Background: The former Ventura Manufactured Gas Plant (MGP) was located, in part, on the northern portion of the Site (as noted in the RAW as "Parcel A"). The Ventura MGP operated between 1905 and 1919 and used crude oil in the gas production process. Most of the MGP operations occurred on Parcel A. The MGP was taken out of service in 1920 and much of the equipment and structures were removed. Since 1923, Parcel A has been occupied by a natural gas compressor station. During the 1940s, various buildings and structures were added to the Site, and thereafter the compressor station and the Site were expanded to the south to also include the Subject Property.

Previous Site Investigations: Various environmental investigations and removal actions have been conducted within the Site. Environmental investigations and subsequent removal actions related to Parcel A were mainly related to prior MGP operations. Environmental investigations and subsequent removal actions particular to the Subject Property were associated with prior use of underground storage tanks (USTs) that stored fuel for fleet vehicles.

Between October 2003 and November 2004, a comprehensive soil, soil vapor, and groundwater investigation was conducted on land occupied by the former MGP (including Parcel A) to assess potential residual impacts from former MGP operations. Based the results of the investigation, there were two primary sources of contamination beneath the former MGP.

1) Shallow impacted soil within the upper 10 feet as a result of past MGP operations on Parcel A as well as former oil refinery operations on other properties west of Parcel A; and

2) Deeper impacted soil, below 10 feet below ground surface (bgs) and extending downward to groundwater at a depth of about 35 to 40 feet, under properties west of Parcel A resulting mainly from former oil refinery and petroleum bulk storage tank farm operations on those properties.

Parcel A was remediated, along with other properties to the west, between October 2009 and April 2011 in accordance with DTSC-approved RAWs. Parcel A was generally excavated to depths ranging from 5 to 12 feet bgs, and to as much as 32 feet bgs in the western portion of the parcel. The majority of the contaminated soil that was excavated (83,075 cubic yards) was classified as non-hazardous waste and transported to the Soil Safe of California facility in Adelanto, California, for treatment by thermal desorption. A smaller volume of lead-contaminated soil (6,067 cubic yards) was removed and disposed offsite as California-hazardous waste (non-RCRA) at Clean Harbors' Buttonwillow Landfill.

As part of groundwater investigations at and around the former MGP, 28 groundwater monitoring wells were installed, including two (DMW-2 and MW-3) within the Subject Property. Eight other groundwater monitoring wells (UST MW-1 through UST MW-8) were also installed within the Subject Property as part of UST-related groundwater investigations. Based on improved water quality following removal actions, all groundwater monitoring wells were destroyed in 2017 under a DTSC-approved workplan.

In February and March 2020, a Supplemental Remedial Investigation (SRI) was completed within the Subject Property in accordance with a DTSC-approved workplan. The investigation revealed the presence of residual MGP wastes that extend southward into the Subject Property. In addition, concentrations of some volatile organic compounds (VOCs) in soil vapor samples exceeded screening levels. The VOCs in soil vapor were mainly attributed to residual groundwater impact, primarily originating from upgradient sources.

Project Activities: The scope of work addressed in the RAW on the Subject Property includes:

- Excavation of approximately 1,700 cubic yards (2,500 tons) of shallow soil impacted with carcinogenic PAHs, TPH, arsenic, and lead;
- Offsite transport of excavated soil for treatment and/or disposal (approximately 106 truck trips);
- Backfill of the excavated areas using clean fill material (approximately 106 truck trips);
- Implementation of the Operations and Maintenance Plan to address vapor intrusion risks within the proposed compressor building; and;
- Implementation of a LUC to preclude residential development or other sensitive uses.

Soil will be excavated from an area located along the north-northwestern boundary of the Subject Property. This will require demolition of the existing office and warehouse buildings. The depth of the excavation is estimated at 3.5 feet bgs, but the actual depth will be determined during the removal action based on field observation and the results of confirmation sample analyses. If needed, the excavated soil may be stockpiled temporarily within the construction area for profiling purposes, in accordance with the requirements of Ventura County Air Pollution Control District (VCAPCD). Stockpiled soils will generally be disposed of off-site by the end of each day. In cases when this is not possible, temporary stockpiles will be managed with appropriate Best Management Practices (BMPs).

The excavated area would be backfilled using clean fill material to three (3) inches below the surrounding grade. Imported clean fill material would be sampled and approved according to DTSC and SoCalGas requirements. Following completion of placement and compaction of the fill material, the uppermost three inches of excavated area would be backfilled with ¾" gravel that would serve as an erosion control measure.

All necessary permits for soil removal activities, transportation, and related activities will be obtained. Copies of the permits will be kept onsite during working hours and will be made available for inspection. The anticipated permits to be secured and regulations to be adhered to during soil removal may include, but are not limited to the following:

- Excavation and grading permit,
- Cal//OSHA construction safety permits,
- Waste transportation route permit (if necessary),
- VCAPCD permits (if necessary).

The procedures proposed for removal activities will comply with federal, State, and local rules and regulations. During all field activities, compliance with VCAPCD Rules related to fugitive dust control, nuisance, and emission of volatile organic compounds (if any) will be required.

Traffic controls will be used for the safe and efficient implementation of the remedial action, while minimizing impacts to normal traffic. Traffic controls will be required during waste transportation activities.

The excavated soil impacted with PAHs, TPH, and arsenic will be transported to Soil Safe of California, a thermal recycling facility located in Adelanto, California. The soil impacted with lead will be transported to an approved facility determined by SoCalGas. Water generated as a result of decontaminating the sampling tools or equipment will be placed inside 55-gallon, Department of Transportation (DOT)-approved drums.

Following shallow soil remediation, residual soil vapor concentrations are expected to remain in soil, requiring a LUC to prevent the potential use of the Subject Property for future residential uses as well as other sensitive uses. In addition, the LUC will require SoCalGas to evaluate any proposed building locations for potential risks associated with vapor intrusion and take appropriate precautions for the protection of human health and safety of any future building occupants.

Specific enforceable environmental safeguards and monitoring procedures will be complied with. In the event biological, cultural or historical resources are discovered in the course of project activities, work will be suspended while a qualified biologist, cultural or historical specialist makes an assessment of the area and arrangements are made to protect or preserve any resources that are discovered. If human remains are discovered, no further disturbance will occur in the location where the remains are found, and the County Coroner will be notified pursuant to the Health and Safety Code, Chapter 2, Section 7050.5.

Name of Public Agency Approving Project: Department of Toxic Substances Control

Name of Person or Agency Carrying Out Project: Southern California Gas Company

Exempt Status: Common Sense Exemption [14 CCR, Sec. 15061(b)(3)]

Reasons Why Project is Exempt: DTSC has determined with certainty that there is no possibility that the activities in question may have a significant effect on the environment because the project would not result in "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

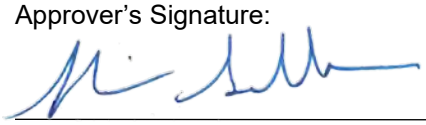
The administrative record for this project is available to the public by appointment at the following location:

Department of Toxic Substances Control
Site Mitigation and Restoration Program
9211 Oakdale Ave,
Chatsworth, CA 91311

Additional project information is available on EnviroStor: www.envirostor.dtsc.ca.gov/public/

Contact Person	Contact Title	Phone Number
Chand Sultana	Environmental Scientist	(818) 717-6552

Approver's Signature:



Date:
03/02/2021
~~Click or tap to enter a date.~~

Approver's Name	Approver's Title	Approver's Phone Number
Haissam Salloum	Branch Chief	(818) 717-6538

TO BE COMPLETED BY OPR ONLY

Date Received for Filing and Posting at OPR:

Eco & Associates, Inc. ▪ 1855 W. Katella Ave. ▪ Suite 340 ▪ Orange ▪ CA ▪ 92867 ▪ phone (714) 289-0995 ▪ fax (714) 289-0965

February 11, 2013

Ms. Diane Wahl
County of Ventura
Resource Management Agency
LUFT Program
800 South Victoria Avenue
Ventura, California 93009-1730

SUBJECT: **SUBMITTAL OF FINAL 4TH QUARTERLY REMEDIAL PROGRESS AND GROUNDWATER MONITORING REPORT**
SOUTHERN CALIFORNIA GAS COMPANY, VENTURA MAINTENANCE YARD
1555 NORTH OLIVE STREET, VENTURA CALIFORNIA
COMPLIANCE FILE NO. C1-9637

Dear Ms. Wahl:

Please find enclosed for your records one copy of the Final 4th Quarterly Remedial Progress and Groundwater Report, Ventura Maintenance Yard, Southern California Gas Company, Ventura, California.

We enjoyed the opportunity to work with the County of Ventura on this project. Should you have any questions, please do not hesitate to call us at (714) 289-0995.

Sincerely,
Eco & Associates, Inc.

Mohammad Estiri, PhD
Project Director

cc: Dr. Masood Hosseini, Southern California Gas Company (1 copy)

Enclosure

4TH QUARTERLY REMEDIAL PROGRESS AND GROUNDWATER MONITORING REPORT

•FINAL•

February 11, 2013

Ventura Maintenance Yard
1555 North Olive Street
Ventura, California

Compliance File No. C1-9637

Prepared for:
Southern California Gas Company
555 W. Fifth Street
Los Angeles, California 90013
Phone: (213) 244-3292
Fax: (213) 244-8020

Prepared by:
Eco & Associates, Inc.
1855 W. Katella Avenue, Suite 340
Orange, California 92867
Phone: (714) 289-0995
Fax: (714) 289-0965

4TH QUARTERLY REMEDIAL PROGRESS AND GROUNDWATER MONITORING REPORT

•FINAL•

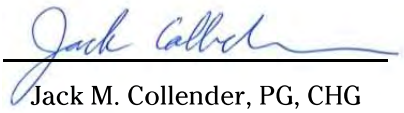
Ventura Maintenance Yard
1555 North Olive Street
Ventura, California

Prepared for:

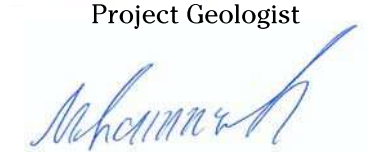
Southern California Gas Company
555 W. Fifth Street
Los Angeles, California 90013

Prepared by:

Eco & Associates, Inc.
1855 W. Katella Avenue, Ste. 340
Orange, California 92867



Jack M. Collender, PG, CHG
Project Geologist



Mohammad Estiri, Ph.D.
Project Director

February 11, 2013

Project No. Eco 05-201.1

TABLE OF CONTENTS

ABBREVIATIONS, ACRONYMS, & SYMBOLS

µg/L	micrograms per liter
AETL	American Environmental Testing Laboratories, Inc.
ASTM	American Society for Testing and Materials
bgs	below ground surface
Eco	Eco & Associates, Inc.
EHD	Environmental Health Division
EPA	United States Environmental Protection Agency
ISCOX	*in situ* chemical oxidation
J	analyte was detected; however, analyte concentration is an estimated value between the method detection limit and the practical quantitation limit.
lb	pound
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
msl	mean sea level
MTBE	methyl tertiary butyl ether
ORC	oxygen release compound
RWQCB	Regional Water Quality Control Board
SCG	Southern California Gas Company
Tait	Tait Environmental Management, Inc
TBA	tertiary butyl alcohol
TDS	total dissolved solids
TPH	total petroleum hydrocarbons
TPHd	TPH as diesel
TPHg	TPH as gas
UST	underground storage tank
VOC	volatile organic compound
WDR	Waste Disposal Requirement

EXECUTIVE SUMMARY

The purpose of this report is to provide an update for the *in situ* chemical oxidation (ISCOX) and groundwater monitoring activities conducted at the Southern California Gas Company's (SCG) Maintenance Yard located at 1555 North Olive Street, in the City of Ventura, California (hereafter, "Site"; see Figure 1). The purpose of the report is to provide analysis of the groundwater data to evaluate the progress of ISCOX for remediating fuel-impacted groundwater underlying the Site. Groundwater beneath the Site was impacted by fuel-related compounds previously released by two former underground storage tanks (USTs). The County of Ventura, Resource Management Agency, Environmental Health Division (EHD) is providing regulatory oversight for groundwater monitoring and cleanup at the Site.

The Site is currently in use as a storage yard for gas transmission pipelines and related equipment, gas pumping and transmission, and general pipe-related maintenance. A 6,000-gallon gasoline UST and 500-gallon diesel UST were formerly located within the west-central portion of this facility. The USTs were removed from the Site in December 2004. Due to the presence of fuel-impacted groundwater encountered beneath the USTs, eight groundwater monitoring wells were installed in the immediate vicinity of the tanks. Monitoring of these groundwater wells is currently being conducted on a semi-annual basis. Relative elevated fuel contaminant concentrations have been reported in the immediate vicinity and downgradient of the wells since monitoring was initiated in 2005.

Following the completion of the Site characterization and directive from the EHD, a site remediation feasibility study was initiated by installing one injection well (UST IW-1) at the Site on January 20, 2011. This well was placed approximately 8 feet north of groundwater monitoring well UST MW-1 within the excavation formerly created during the removal of USTs and fuel-impacted soil. It was screened between 33 and 43 feet below ground surface (bgs) with the top of the screen placed close to the groundwater table. Groundwater monitoring well Nos. UST IW-1 and UST MW-1 through UST MW-4 were used as monitoring and sampling points for pre and post injection event.

In 2011, a total of four injection events were performed and a total of 2,040 pounds (lbs) of Part B RegenOx® (510 lbs per event) and a total of 6,600 lbs of Part A RegenOx® (1,650 lbs per event) were injected. Following the fourth injection of Part A and B RegenOx®, 180 lbs of the Regenesis product ORC® was injected into UST IW-1.

A total of three injection events were performed in 2012. A total of 1,530 pounds (lbs) of Part B RegenOx® (510 lbs per event), and a total of 4,950 lbs of Part A RegenOx® (1,650 lbs per event) were injected into the well nos. MW-5, MW-6 and MW-1. Following these injections, all the monitoring wells were sampled on November 12, 2012. The results of this sampling have been used for examining the effectiveness of the injections. The collected groundwater samples were each analyzed for volatile organic compounds (VOCs) and total petroleum hydrocarbons (TPH, Method 8015 modified for gasoline [TPHg] and diesel [TPHd]). In addition, all the wells were also analyzed for acetone and ethanol (United States Environmental Protection Agency [EPA] Test Method 8260B), formaldehydes (American Society for Testing and Materials [ASTM] (D-19) P216), general chemistry (EPA Test Methods 160.1 and 300.0) and metals (EPA Test Methods 6010B/7199).

Based on a review of the available data, a clear trend has not been established that indicates significant reduction in concentrations within the collected and analyzed groundwater

samples. Continuing semi-annual groundwater monitoring will provide additional data to evaluate the remediation effectiveness. Following the completion of the additional sampling events, further evaluation will be provided.

4TH QUARTERLY REMEDIAL PROGRESS AND GROUNDWATER MONITORING REPORT

•FINAL•

Ventura Maintenance Yard
1555 North Olive Street
Ventura, California

1.0 INTRODUCTION

Eco & Associates, Inc. (Eco) is pleased to provide this Remediation Progress and Groundwater Monitoring Report for the Southern California Gas Company's (SCG) Maintenance Yard located at 1555 North Olive Street, in the City of Ventura, California (hereafter, "Site"; see Figure 1). The purpose of this report is to provide a summary of the remediation progress and groundwater sampling results and to provide update of the effectiveness of an *in situ* chemical oxidation (ISCOX) pilot test conducted for remediating impacted groundwater underlying the Site during third and fourth quarter of year 2012. The Site was impacted with fuel-related compounds that had been released by two former underground fuel storage tanks (USTs). Regulatory oversight for groundwater monitoring and cleanup at the Site is provided by the County of Ventura, Resource Management Agency, Environmental Health Division (EHD).

On May 10, 2010, EHD approved the ISCOX Pilot Test Workplan (Eco 2010). On January 20, 2011, Eco installed injection well UST IW-1 at the location shown on Figure 2. The well was installed approximately 8 feet north of well UST MW-1 and located within the excavation area of the former USTs.

On March 4, 2011, Eco completed the fourth ISCOX injection event and one oxygen releasing compound (ORC) injection as described in the ISCOX Pilot Test Workplan (Eco 2010). Following the completion of the injections and sampling of the on-Site wells, the first progress report was prepared and submitted to the EHD in April 2011 for their review and information.

In August and September, 2012, Eco completed three more ISCOX injection events as described in the ISCOX Pilot Test Workplan (Eco 2010). The groundwater monitoring wells were also sampled prior to injection on August 7, 2012.

This report presents the results of additional groundwater sampling and the effectiveness of the ISCOX injections completed in August and September 2012.

2.0 SITE DESCRIPTION AND BACKGROUND

The Site is owned and operated by SCG. The facility formerly serviced and maintained fleet vehicles that provided natural gas services for the City of Ventura. Former gasoline and diesel USTs at this facility were used to refuel the maintenance vehicles. This facility is currently used primarily as an equipment storage yard.

2.1 FUEL SYSTEM REPAIR AND REMOVAL

A 6,000-gallon gasoline UST and a 500-gallon diesel UST were formerly located at the Site. Tait Environmental Management, Inc. (Tait) was contracted by SCG in January 2001 to re-pipe both of the USTs. During re-piping, Tait exposed the top of the USTs, product piping, and dispenser. Three soil samples collected beneath the piping and dispenser were analyzed for gasoline, diesel, and volatile organic compounds (VOCs). The analytical results indicated that the soil beneath the dispenser had been impacted with gasoline. Based on the results of this analysis, approximately 55 tons of gasoline-impacted soil were excavated from beneath the dispenser and transported offsite for treatment.

Following the removal of the impacted soil, confirmation soil samples were collected from the bottom and the walls of the excavation and analyzed for gasoline and VOCs. Methyl tertiary butyl ether (MTBE) was detected in all of the collected soil samples. The reported MTBE concentrations ranged between 0.006 and 0.49 milligrams per kilogram (mg/kg).

The fuel USTs were removed on December 8, 2004 and were noted to be in good condition with no evidence of releases. Following the UST removal, a total of nine soil samples (confirmation and stockpile) were collected by Tait for chemical analysis. The collected soil samples were submitted to an on-Site mobile laboratory for chemical analysis for gasoline, diesel, VOCs, and total lead. Gasoline was detected in two of the nine collected soil samples, with a maximum reported concentration of 59 mg/kg. Diesel was reported at a concentration of 32 mg/kg. MTBE was detected at concentrations of 0.032 mg/kg, 0.028 mg/kg, and 0.058 mg/kg in soil samples collected from the stockpiles. No other compounds were reported within the analyzed soil samples.

2.2 UST SOIL INVESTIGATION

On September 7, 2005, Eco conducted a soil investigation at the Site to further assess the possible presence of impacted soil within and beneath the former fueling area. This investigation included the drilling and sampling of four borings within the gasoline UST excavation, the former product line area, and the former dispenser area. Each boring was drilled using an air percussion drill rig. Soil samples were collected at approximately five-foot intervals to the total depth of the boring. Due to the presence of boulders, five-foot sampling intervals were not always possible. Soil samples were collected between the boulders (matrix materials). The total depth of the boring within the former UST area was approximately 25 feet. The remaining three borings, placed within the former dispenser and product line areas, were drilled and sampled to depths between 10 and 18 feet.

A total of 13 soil samples (including one duplicate) were collected and analyzed for gasoline, VOCs (including fuel oxygenates), and lead. Soil samples collected immediately adjacent to the former fuel tank were reported with detectable gasoline and VOCs. Gasoline was reported at a maximum concentration of 956 mg/kg in soil samples collected and analyzed from the former UST area. The majority of the analyzed soil samples were reported to have gasoline concentrations below or close to the reported detection limit and only two analyzed

soil samples were reported with gasoline concentrations exceeding 100 mg/kg. These two soil samples were collected between 16 and 25 feet below ground surface (bgs). Detected VOC concentrations were also reported for several soil samples. The vertical extent of impacted soil was not determined at the time of this investigation. Due to the depth of impacted soil (greater than 25 feet) and anticipated depth to groundwater (30 to 40 feet), it was considered possible that the underlying groundwater was also impacted.

Following receipt of the soil analytical results, the soil investigation findings were discussed with Ms. Gina Teresa of the Ventura County EHD. It was acknowledged that the source of Site contamination had been removed and that only relatively low petroleum hydrocarbon concentrations remained in the soil underlying the Site. Ms. Teresa agreed that based on current information, no further soil remediation was required at the Site. It was recommended, however, that groundwater beneath the former tank location be assessed.

2.3 GROUNDWATER

2.3.1 GROUNDWATER INVESTIGATION

On December 8, 2005, the groundwater monitoring well currently referred to as UST MW-1 was installed. The well boring was drilled to a depth of 48 feet utilizing an air rotary drill rig. Groundwater was encountered within this boring at approximately 36.5 feet bgs.

Groundwater sampling took place immediately following the successful completion of well development. The collected groundwater samples were analyzed for total petroleum hydrocarbons (TPH), VOCs (including fuel oxygenates), and lead. Based on data collected during the groundwater investigation, the former UST system was considered to have contributed low levels of groundwater contamination. Trace concentrations of gasoline (approximately 5.15 milligrams per liter [mg/L]) and diesel (0.431J [1] mg/L) were reported in the water sample collected on December 16, 2005. Thirteen VOCs were also detected in the collected water sample. The highest reported VOC concentrations detected were tertiary butyl alcohol (TBA) and MTBE. These compounds were reported at concentrations of 160 and 768 micrograms per liter (µg/L), respectively.

Based on a review of contaminant concentrations in UST MW-1 and other near-vicinity wells, the EHD recommended further assessment of groundwater within the UST area. Eco then installed, developed, and sampled three additional monitoring wells (UST MW-2, UST MW-3, and UST MW-4) within the source area.

In March 2008, as requested by the EHD, Eco installed two additional monitoring wells (UST MW-5 and UST MW-6) downgradient of UST MW-3 to include in the groundwater monitoring program and better define the Site contaminant plume.

In September 2009, as requested by the EHD, Eco installed two additional downgradient groundwater monitoring wells (UST MW-7 and UST MW-8). Groundwater samples collected from these monitoring wells were reported with no detectable diesel, gasoline, or gasoline-related VOCs. Therefore, Eco concluded that the extent of groundwater impacts associated with the former UST system had been adequately assessed.

The results of Site investigations conducted by Eco along with the analytical results of soil samples collected by Tait during the UST removal (Tait 2005) indicated that the groundwater

[1] J = analyte was detected; however, analyte concentration is an estimated value between the method detection limit and the practical quantitation limit.

contaminants at the Site were the result of a fuel release at the northern end of the former 6,000-gallon gasoline UST.

It was also Eco's interpretation that the residual hydrocarbons entrained in the sediments (at and just below the groundwater surface) are likely restricted to a relatively limited area. Eco's interpretation is based on a lack of separate phase liquid hydrocarbons, the relatively low concentrations of fuel-related compounds observed in UST MW-1, and the results of a subsurface investigation performed by Eco (Eco 2006).

2.3.2 GROUNDWATER REMEDIATION ACTIVITIES

Following the completion of the Site characterization and directive from the EHD, a site remediation feasibility study workplan was prepared and submitted to EHD and the Regional Water Quality Control Board (RWQCB) for approval. The fieldwork was initiated following the approval of the workplan and securing permit from the RWQCB.

During the initial phase of the fieldwork, one injection well (UST IW-1) was installed on January 20, 2011 at the Site. This well was placed approximately 8 feet north of groundwater monitoring well UST MW-1 and within the excavation formerly created during the removal of USTs and fuel-impacted soil. It was screened between 33 and 43 feet bgs, with the top of the screen placed close to the groundwater table.

A total of four injection events were performed between January 26, 2011 and March 4, 2011. A total of 2,040 pounds (lbs) of Part B RegenOx® (510 lbs per event) were injected, and a total of 6,600 lbs of Part A RegenOx® (1,650 lbs per event) were injected. Following the fourth injection of Part A and B RegenOx®, 180 lbs of the Regenesis product ORC® was injected into UST MW-1.

In 2012, three more injection events were performed between August 8, 2012 and September 6, 2012. A total of 1,530 lbs of Part B RegenOx® (510 lbs per event) and a total of 4,950 lbs of Part A RegenOx® (1,650 lbs per event) were injected. Based on the authorization letter obtained from RWQCB, UST MW-5 and MW-6 were initially selected as the injection points. However, due to safety and practical concerns associated with high pressure and slow progress being made at well UST-MW-6, injection into this well was ceased and the remaining product was injected into UST-MW-1.

The nine existing groundwater wells (UST MW-1 through UST MW-8 and IW-1) were sampled prior to injection activities in order to obtain pre-injection contaminant levels in groundwater. Groundwater sampling was also conducted on November 20, 2012, in order to review contaminant concentrations after injection. The collected groundwater samples were each analyzed for VOCs and TPH (modified for gasoline and diesel). In addition, all the wells were also analyzed for acetone, ethanol, formaldehydes, general chemistry, and metals.

3.0 GEOLOGY AND HYDROGEOLOGY

The Site is approximately 63 feet above mean sea level (msl). The subsurface is characterized by an alluvial depositional environment. These deposits are comprised of mixtures and layers of silty fine to coarse sand to cobbles and boulders. The alluvial deposits have been identified to have occurred as part of normal flood plain and crosscutting river channel conditions.

Silty sand is generally present from the surface to approximately 15 feet bgs. Coarse sands occur from 15 to 25 feet bgs. Cobbles and occasional boulders are present from 15 to 50 feet bgs.

During June 2012 to December 2012, Eco performed semi-annual groundwater monitoring and remedial progress events. In the last sampling event (November 20, 2012) groundwater was measured at depths between 33.78 and 39.36 feet bgs. The groundwater gradient measured beneath the Site generally sloped toward the northwest at approximately 0.0123 feet per foot (see Figure 2).

3.1 GROUNDWATER SAMPLING

All groundwater monitoring wells were sampled on August 8, 2012 (pre-injection) and November 20, 2012 (post-injection) in order to evaluate the progress of groundwater remediation. A bladder pump was used during purging and sampling utilizing methodologies similar to that used during past sampling events (low flow method).

Groundwater samples collected from each monitoring well were sent to American Environmental Testing Laboratories, Inc. (AETL) for analysis. The collected water samples were analyzed using the United States Environmental Protection Agency (EPA) Test Method 8260B (VOCs, including oxygenates) and Test Method 8015m (TPH, modified for gasoline and diesel). In addition, for the purpose of compliance with Waste Discharge Requirements (WDRs) associated with injection activities, all the wells were also analyzed for acetone, ethanol, formaldehydes, general chemistry, and metals. The results of this analysis are summarized on Tables 2 & 3. The laboratory report for this analysis is presented in Appendix B. The estimated lateral extent of the on-Site gasoline and MTBE plume is shown on Figure 3 and 4.

4.0 REMEDIAL RESULTS

Table 2 summarizes analytical results for the key analytes (TPH and VOCs) measured during this round and the pilot test period. The following sections discuss the changes in concentrations of specific chemicals of concern before and after the chemical oxidation injections.

Graphs of analyte concentration versus time in all injection and monitoring wells UST IW-1, and UST MW-1 through UST MW-8 are presented on Figure 5.

4.1 TPH IN THE GASOLINE AND DIESEL RANGE

On August 07, 2012, prior to injection activities, groundwater samples were collected from all monitoring wells. These results provide a baseline against which to compare the effects of remedial activities. In the November 20, 2012 sampling event, the concentrations of TPH in the gasoline range (TPHg) have decreased by 234, 179 µg/L, 218 µg/L, and 83 µg/L in well UST MW-1, UST MW-2, UST MW-3, and UST MW-6, respectively; whereas, the concentration of TPHg in the wells UST MW-4, MW-5, and IW-1 increased by 51 µg/L, 68 µg/L, and 652 µg/L, respectively (see Figure 5).

Although, the concentrations of TPH in the diesel range (TPHd) have decreased in most monitoring wells, the results show the concentration in the well Nos. UST MW-5, and MW-6 have significantly increased.

4.2 TERTIARY BUTYL ALCOHOL (TBA)

The results of the November 20, 2012 ground water sampling show a relative decrease in concentrations of TBA in all analyzed samples except MW-3 after injection. The concentrations of TBA in monitoring well UST MW-3 increased by 320 µg/L, but the remaining wells, except MW-8 which remained non-detect, have decreased significantly. In UST IW-1, the TBA concentration decreased from 531µg/L, prior to the injection event in August 2012, to 258 µg/L two months after the injection event.

4.3 METHYL TERTIARY BUTYL ETHER (MTBE)

The results of the November 20, 2012 groundwater sampling show a relative decrease in concentrations of MTBE in all analyzed samples except MW-6 and IW-1, in comparison to the previous ground water sampling conducted on August 7, 2012. The concentrations of MTBE in monitoring well UST MW-6 increased from 57.4 µg/L in August to 399 µg/L in November groundwater monitoring. In UST IW-1, the concentration increased from 224 µg/L prior to the injection event, to 379 µg/L two months after injection event. See Figure 5 for a graph of MTBE concentrations over time.

4.4 ADDITIONAL ANALYSES

Additional analyses for the purpose of compliance with WDRs associated with injection activities were also performed for all samples collected in November 2012. Samples were analyzed for acetone, ethanol, formaldehydes, general chemistry, and metals. Sulfate and total dissolved solids (TDS) were the only analytes that have increased significantly after injection event in wells MW-1, MW-5, and MW-6. The results of this analysis are summarized on Tables 3. The laboratory report for this analysis is presented in Appendix B.

5.0 CONCLUSIONS

During this period three injection events were conducted. Groundwater monitoring well MW-5 and MW-6 have been used as the point of injection in this period. Samples from all monitoring wells MW-1 through MW-8, and IW-1 have been collected for TPH and VOCs. Additional laboratory analysis was requested for all wells. Based on a review of the available data, a clear trend has not been established that indicates significant reduction in concentrations within the collected and analyzed groundwater samples. Continuing semi-annual groundwater monitoring will provide additional data to evaluate the remediation effectiveness. Following the completion of the additional sampling events, further evaluation will be provided

6.0 REFERENCES

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Tait Environmental Management, Inc., 2005. *Underground Storage Tank Closure Report – Southern California Gas Company – Sempra Energy Utilities, Ventura Maintenance Yard – 1555 Olive Street – Ventura, California*, dated January 12, 2005.

TABLES

TABLE 1: Summary of Groundwater Depths and Elevations
1555 N. Olive Street, Ventura, California 93001

Well No.	Casing Elevation (feet amsl)	Date	Depth to Groundwater (feet btc)	Groundwater Elevation (feet amsl)
UST MW-1	64.93	08/28/06	38.71	26.22
		11/20/06	36.06	28.87
		02/12/07	36.07	28.86
		05/24/07	36.18	28.75
		08/24/07	36.69	28.24
		11/08/07	37.20	27.73
		03/20/08	34.74	30.19
		06/24/08	35.64	29.29
		09/16/08	36.35	28.58
		12/09/08	36.65	28.28
		02/24/09	35.75	29.18
		05/14/09	36.39	28.54
		07/23/09	36.78	28.15
		02/19/10	35.33	29.60
		09/01/10	37.15	27.78
		01/20/11	35.13	29.80
		08/23/11	35.95	28.98
		12/15/11	37.10	27.83
		02/22/12	37.60	27.33
		08/07/12	37.88	27.05
		11/20/12	38.60	26.33
UST MW-2	64.98	05/24/07	36.28	28.70
		08/24/07	36.75	28.23
		11/08/07	37.28	27.70
		03/19/08	34.84	30.14
		06/24/08	35.73	29.25
		09/16/08	36.45	28.53
		12/09/08	36.75	28.23
		02/24/09	35.84	29.14
		05/14/09	36.49	28.49
		07/23/09	36.88	28.10
		02/19/10	35.43	29.55
		09/01/10	37.23	27.75
		01/20/11	35.22	29.76
		08/23/11	35.86	29.12
		12/15/11	37.09	27.89
		02/22/12	37.54	27.44
		08/07/12	37.80	27.18
		11/20/12	38.74	26.24
UST MW-3	63.84	05/24/07	35.07	28.77
		08/24/07	35.62	28.22
		11/08/07	36.13	27.71
		03/20/08	33.63	30.21
		06/24/08	34.48	29.36
		09/16/08	35.25	28.59
		12/09/08	35.36	28.48
		02/24/09	34.68	29.16
		05/14/09	35.30	28.54
		07/23/09	35.68	28.16
		02/19/10	34.22	29.62
		09/01/10	36.06	27.78
		01/20/11	34.03	29.81
		08/23/11	34.75	29.09
		12/15/11	35.90	27.94
		02/22/12	36.34	27.50
		08/07/12	36.65	27.19
		11/20/12	37.60	26.24

TABLE 1: Summary of Groundwater Depths and Elevations
1555 N. Olive Street, Ventura, California 93001

Well No.	Casing Elevation (feet amsl)	Date	Depth to Groundwater (feet btc)	Groundwater Elevation (feet amsl)
UST MW-4	65.68	05/24/07	36.84	28.84
		08/24/07	37.41	28.27
		11/08/07	37.92	27.76
		03/19/08	35.36	30.32
		06/24/08	36.25	29.43
		09/16/08	37.01	28.67
		12/09/08	37.33	28.35
		02/24/09	36.42	29.26
		05/14/09	37.06	28.62
		07/23/09	37.46	28.22
		02/19/10	35.93	29.75
		09/01/10	37.84	27.84
		01/20/11	35.76	29.92
		08/23/11	36.45	29.23
		12/15/11	37.68	28.00
		02/22/12	38.13	27.55
		08/07/12	38.50	27.18
		11/20/12	39.36	26.32
UST MW-5	62.79	03/20/08	32.63	30.16
		06/24/08	33.51	29.28
		09/16/08	34.22	28.57
		12/09/08	34.53	28.26
		02/24/09	33.63	29.16
		05/14/09	34.27	28.52
		07/23/09	34.65	28.14
		02/19/10	33.22	29.57
		09/01/10	35.02	27.77
		01/20/11	33.01	29.78
		08/23/11	33.72	29.07
		12/15/11	34.87	27.92
		02/22/12	35.31	27.48
		08/07/12	35.65	27.14
		11/20/12	36.58	26.21
UST MW-6	63.97	03/20/08	33.84	30.13
		06/24/08	34.72	29.25
		09/16/08	35.44	28.53
		12/09/08	35.74	28.23
		02/24/09	34.85	29.12
		05/14/09	35.48	28.49
		07/23/09	35.86	28.11
		02/19/10	34.43	29.54
		09/01/10	36.21	27.76
		01/20/11	34.21	29.76
		08/23/11	34.90	29.07
		12/15/11	36.05	27.92
		02/22/12	36.51	27.46
		08/07/12	36.85	27.12
		11/20/12	37.70	26.27

TABLE 1: Summary of Groundwater Depths and Elevations
1555 N. Olive Street, Ventura, California 93001

Well No.	Casing Elevation (feet amsl)	Date	Depth to Groundwater (feet btc)	Groundwater Elevation (feet amsl)
UST MW-7	62.36	02/19/10	30.55	31.81
		09/01/10	32.27	30.09
		01/20/11	30.33	32.03
		08/23/11	31.00	31.36
		12/15/11	32.10	30.26
		02/22/12	32.60	29.76
		08/07/12	32.85	29.51
		11/20/12	33.78	28.58
UST MW-8	63.31	02/19/10	31.41	31.90
		09/01/10	33.12	30.19
		01/20/11	31.18	32.13
		08/23/11	31.81	31.50
		12/15/11	33.00	30.31
		02/22/12	33.45	29.86
		08/07/12	33.73	29.58
		11/20/12	34.67	28.64

Notes: amsl – above mean sea level; btc – below top of casing

Wells UST MW-1, 2, 3, & 4 were surveyed by Dulin & Boynton on June 4, 2007

Benchmarks: Vertical Datum = NGVD29; Horizontal Datum = NAD83

Wells UST MW-5 & 6 were surveyed by Omni Design Group on May 9, 2008

Benchmarks: Vertical Datum = NGVD29; Horizontal Datum = NAD83

Wells UST MW-7 & 8 were surveyed by Omni Design Group on October 5, 2009

Benchmarks: Vertical Datum = NGVD29; Horizontal Datum = NAD83

TABLE 2: Summary of Groundwater Chemical Analysis
1555 Olive Street, Ventura, California 93001

Well No.	Sample Date	TPH as Gasoline (C4-C12)	TPH as Diesel (C13-C22)	TPH as Heavy HCs (C23-C40)	Benzene	Toluene	Ethyl-benzene	Total xylenes	MTBE	DIPE	ETBE	TBA
		µg/L										
UST MW-1	06/01/06	6,160,000	—	—	1.3	<0.5	38.4	6.5	6,260	ND<0.5	—	—
	08/28/06	4,410	613	—	0.9J	0.9J	16.7	5.1	4,100	<0.5	0.5J	3,060
	11/20/06	4,740	1,210	<100	0.56J	1.59	9.51	4.32	9,890	<0.5	<0.5	159
	02/12/07	4,950	2,310	<100	0.6J	0.8J	2.5	1.4J	4,870	<0.5	0.5J	495
	05/24/07	2,640	235J	<100	<0.5	<0.5	0.5J	<0.5	2,260	<0.5	<0.5	77.8
	08/24/07	2,680	537	<100	<0.5	<0.5	<0.5	<0.5	1,800	<0.5	<0.5	934
	11/08/07	4,800	529	<100	<0.5	<0.5	<0.5	<0.5	4,010	<0.5	<0.5	117
	03/20/08	7,040	712	<100	<0.5	0.590J	0.610J	1.86J	1,710	<0.5	<0.5	136
	06/24/08	4,200	—	—	<0.5	<0.5	<0.5	0.560J	2,730	<0.5	<0.5	239
	09/16/08	2,300	428J	<100	<0.5	<0.5	<0.5	<1.0	1,850	<0.5	<0.5	16,470
	12/09/08	2,290	307J	<100	<0.5	<0.5	<0.5	<1.0	1,410	<0.5	<0.5	127
	02/24/09	846	408J	<100	<0.5	<0.5	<0.5	<1.0	265	<0.5	<0.5	<10
	05/14/09	3,370	440J	<100	<0.5	0.500J	<0.5	0.590J	1,260	<0.5	<0.5	4,920
	07/23/09	4,880	592	<100	<0.5	<0.5	<0.5	0.610J	3,170	<0.5	<0.5	1,200
	02/19/10	2,900	690	<100	<0.5	<0.5	0.580J	1.22	2,600	<0.5	<0.5	1,210
	09/01/10	1,600	372J	<100	<0.5	<0.5	<0.5	<1.0	1,190	<0.5	<0.5	965
	01/20/11	1,270	697	<100	<0.5	<0.5	<0.5	0.830J	1,080	<0.5	<0.5	945
	08/23/11	699	288	<100	0.760J	0.910J	1.34	77.7	127	<0.5	<0.5	121
	02/22/12	794	267J	<100	0.590J	<0.5	<0.5	0.630J	414	<0.5	<0.5	<0.5
	08/07/12	501	736	<100	<0.5	<0.5	0.920J	1.41	320	<0.5	<0.5	396
	11/20/12	267	327J	<100	<0.5	<0.5	0.690J	6.02	57	<0.5	<0.5	88
UST MW-2	05/24/07	645	638	<100	<0.5	<0.5	<0.5	<0.5	141	<0.5	<0.5	13.3J
	08/24/07	682	934	<100	<0.5	<0.5	<0.5	<0.5	101	<0.5	<0.5	68.3
	11/08/07	931	596	<100	<0.5	<0.5	<0.5	<0.5	157	<0.5	<0.5	14.1J
	03/19/08	729	581	<100	<0.5	<0.5	<0.5	<0.5	117	<0.5	<0.5	51.3
	06/24/08	895	—	—	<0.5	<0.5	<0.5	<1.0	45.9	<0.5	<0.5	<10
	09/16/08	849	692	<100	<0.5	<0.5	<0.5	<1.0	113	<0.5	<0.5	<10
	12/09/08	783	616	<100	<0.5	<0.5	<0.5	<1.0	104	<0.5	<0.5	<10
	02/24/09	486	396J	<100	<0.5	<0.5	<0.5	<1.0	283	<0.5	<0.5	115
	05/14/09	761	633	<100	<0.5	<0.5	<0.5	<1.0	41	<0.5	<0.5	59.6
	07/23/09	733	756	<100	<0.5	<0.5	<0.5	<1.0	71	<0.5	<0.5	56.5
	02/19/10	576	975	<100	<0.5	<0.5	<0.5	<1.0	69.2	<0.5	<0.5	79.8
	09/01/10	338	629	<100	<0.5	<0.5	<0.5	<1.0	46.2	<0.5	<0.5	38.4
	01/20/11	217	377J	<100	<0.5	<0.5	<0.5	<1.0	34.6	<0.5	<0.5	41.2J
	08/23/11	372	681	<100	<0.5	<0.5	<0.5	<1.0	5.6	<0.5	<0.5	<10
	02/22/12	404	544	<100	<0.5	<0.5	<0.5	<1.0	12.0	<0.5	<0.5	38.5J
	08/07/12	323	671	<100	<0.5	<0.5	<0.5	<1.0	11.2	<0.5	<0.5	15.3J
	11/20/12	144	213J	<100	<0.5	<0.5	<0.5	<1.0	7.56	<0.5	<0.5	14.6J

TABLE 2: Summary of Groundwater Chemical Analysis
1555 Olive Street, Ventura, California 93001

Well No.	Sample Date	TPH as Gasoline (C4-C12)	TPH as Diesel (C13-C22)	TPH as Heavy HCs (C23-C40)	Benzene	Toluene	Ethyl-benzene	Total xylenes	MTBE	DIPE	ETBE	TBA
		µg/L										
UST MW-3	05/24/07	2,540	1,030	<100	<0.5	<0.5	<0.5	<0.5	2,360	0.54J	<0.5	147
	08/24/07	2,430	1,130	<100	<0.5	<0.5	<0.5	<0.5	1,900	0.62J	<0.5	1,210
	11/08/07	3,200	719	<100	<0.5	<0.5	<0.5	<0.5	2,550	0.530J	<0.5	150
	03/20/08	2,840	722	<100	<0.5	<0.5	<0.5	<0.5	640	<0.5	<0.5	54
	06/24/08	2,890	—	—	<0.5	<0.5	<0.5	<1.0	2,130	<0.5	<0.5	154
	09/16/08	4,600	1,450	<100	<0.5	<0.5	<0.5	<1.0	5,600	<0.5	<0.5	3,340
	12/09/08	3,950	1,160	<100	<0.5	<0.5	<0.5	<1.0	3,490	0.600J	<0.5	361
	02/24/09	1,940	1,980	<100	<0.5	<0.5	<0.5	<1.0	1,590	<0.5	<0.5	314
	05/14/09	3,100	962	<100	<0.5	<0.5	<0.5	<1.0	1,980	0.660J	<0.5	4,720
	07/23/09	10,400	1,150	<100	<0.5	<0.5	<0.5	<1.0	8,800	<0.5	<0.5	9,150
	02/19/10	3,520	1,740	<100	<0.5	<0.5	<0.5	<1.0	4,090	<0.5	<0.5	1,260
	09/01/10	6,130	1,250	<100	<0.5	<0.5	<0.5	<1.0	7,190	<0.5	<0.5	3,800
	01/20/11	493	625	<100	<0.5	<0.5	<0.5	<1.0	791	<0.5	<0.5	3,610
	08/23/11	570	698	<100	<0.5	<0.5	<0.5	<1.0	511	<0.5	<0.5	170
	02/22/12	1,930	1,020	<100	<0.5	<0.5	<0.5	<1.0	2,210	<0.5	<0.5	1,010
	08/07/12	1,120	1,480	<100	<0.5	<0.5	<0.5	<1.0	1,160.0	<0.5	<0.5	1,880
	11/20/12	902	1,090	<100	<0.5	<0.5	<0.5	<1.0	773.00	<0.5	<0.5	2,200
UST MW-4	05/24/07	704	534	<100	<0.5	<0.5	<0.5	<0.5	324	<0.5	<0.5	18.1J
	08/24/07	1,050	966	<100	<0.5	<0.5	<0.5	<0.5	310	<0.5	<0.5	<10
	11/08/07	1,900	554	<100	<0.5	<0.5	<0.5	<0.5	1,070	<0.5	<0.5	81.8
	03/19/08	864	583	<100	<0.5	<0.5	<0.5	<0.5	43.6	<0.5	<0.5	22.9J
	06/24/08	1,040	—	—	<0.5	<0.5	<0.5	<1.0	72.9	<0.5	<0.5	<10
	09/16/08	871	708	<100	<0.5	<0.5	<0.5	<1.0	374	<0.5	<0.5	235
	12/09/08	952	934	<100	<0.5	<0.5	<0.5	<1.0	370	<0.5	<0.5	83.1
	02/24/09	644	941	<100	<0.5	<0.5	<0.5	<1.0	235	<0.5	<0.5	<10
	05/14/09	864	632	<100	<0.5	<0.5	<0.5	<1.0	221	<0.5	<0.5	49.2J
	07/23/09	1,440	963	<100	<0.5	<0.5	<0.5	<1.0	473	<0.5	<0.5	492
	02/19/10	569	1,040	<100	<0.5	<0.5	<0.5	<1.0	16.3	<0.5	<0.5	23.0J
	09/01/10	714	726	<100	<0.5	<0.5	<0.5	<1.0	348.0	<0.5	<0.5	232
	01/20/11	359	594	<100	<0.5	<0.5	<0.5	<1.0	5.49	<0.5	<0.5	10.6J
	08/23/11	395	457J	<100	<0.5	<0.5	<0.5	<1.0	6.46	<0.5	<0.5	<10
	02/22/12	578	643	<100	<0.5	<0.5	<0.5	<1.0	115.00	<0.5	<0.5	145
	08/07/12	474	983	<100	<0.5	<0.5	<0.5	<1.0	67.0	<0.5	<0.5	73
	11/20/12	525	737	<100	<0.5	<0.5	<0.5	<1.0	9.93	<0.5	<0.5	41.5J
UST MW-5	03/20/08	1,940	543	<100	<0.5	<0.5	<0.5	<0.5	720	<0.5	<0.5	90.1
	06/24/08	2,600	—	—	<0.5	<0.5	<0.5	<1.0	2,500	<0.5	<0.5	360
	09/16/08	1,300	332J	<100	<0.5	<0.5	<0.5	<1.0	1,190	<0.5	<0.5	1,200
	12/09/08	1,020	243J	<100	<0.5	<0.5	<0.5	<1.0	725	<0.5	<0.5	43.0J
	02/24/09	805	266J	<100	<0.5	<0.5	<0.5	<1.0	782	<0.5	<0.5	29.6J
	05/14/09	991	<100	304J	<0.5	<0.5	<0.5	<1.0	830	<0.5	<0.5	1,520
	07/23/09	1,320	332J	<100	<0.5	<0.5	<0.5	<1.0	1,020	<0.5	<0.5	1,370
	02/19/10	2,950	905	<100	<0.5	<0.5	<0.5	<1.0	2,570	<0.5	<0.5	806
	09/01/10	767	249J	<100	<0.5	<0.5	<0.5	<1.0	822	<0.5	<0.5	628
	01/20/11	732	498J	<100	<0.5	<0.5	<0.5	<1.0	1,860	<0.5	<0.5	914
	08/23/11	882	413J	<100	<0.5	<0.5	<0.5	<1.0	1,370	<0.5	<0.5	153
	02/22/12	660	128J	<100	<0.5	<0.5	<0.5	<1.0	919	<0.5	<0.5	332
	08/07/12	498	236	<100	<0.5	<0.5	<0.5	<1.0	648.0	<0.5	<0.5	233
	11/20/12	566	2,490	<100	<5	<5	<5	<10	468.00	<5	<5	140J

TABLE 2: Summary of Groundwater Chemical Analysis
1555 Olive Street, Ventura, California 93001

Well No.	Sample Date	TPH as Gasoline (C4-C12)	TPH as Diesel (C13-C22)	TPH as Heavy HCs (C23-C40)	Benzene	Toluene	Ethyl-benzene	Total xylenes	MTBE	DIPE	ETBE	TBA
		µg/L										
UST MW-6	03/20/08	6,340	654	<100	<0.5	<0.5	<0.5	<0.5	2,590	<0.5	<0.5	221
	06/24/08	3,680	—	—	<0.5	<0.5	<0.5	<1.0	3,320	<0.5	<0.5	580
	09/16/08	2,290	708	<100	<0.5	<0.5	<0.5	<1.0	2,140	<0.5	<0.5	1,830
	12/09/08	2,660	808	<100	<0.5	<0.5	<0.5	<1.0	1,790	<0.5	<0.5	302
	02/24/09	1,550	898	<100	<0.5	<0.5	<0.5	<1.0	765	<0.5	<0.5	97.1
	05/14/09	2,670	541	<100	<0.5	<0.5	<0.5	<1.0	1,510	<0.5	<0.5	5,000
	07/23/09	2,470	857	<100	<0.5	<0.5	<0.5	<1.0	1,930	<0.5	<0.5	2,500
	02/19/10	1,940	721	<100	<0.5	<0.5	<0.5	<1.0	1,990	<0.5	<0.5	699
	09/01/10	1,740	770	<100	<0.5	<0.5	<0.5	<1.0	1,610	<0.5	<0.5	1,250
	01/20/11	747	414J	<100	<0.5	<0.5	<0.5	<1.0	1,560	<0.5	<0.5	1,160
	08/23/11	1,200	510	<100	<0.5	<0.5	<0.5	<1.0	1,840	<0.5	<0.5	565
	02/22/12	820	612	<100	<0.5	<0.5	<0.5	<1.0	481	<0.5	<0.5	2,530
	08/07/12	543	840	<100	<0.5	<0.5	<0.5	<1.0	57.4	<0.5	<0.5	1,130
	11/20/12	460	1,300	<100	<5	<5	<5	<10	394.00	<5	<5	690
UST MW-7	02/19/10	120	<100	<100	<0.5	<0.5	<0.5	<1.0	3.81	<0.5	<0.5	<10
	09/01/10	<100	<100	<100	<0.5	<0.5	<0.5	<1.0	0.790J	<0.5	<0.5	<10
	09/01/10	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	1.61	<0.5	<0.5	<10
	08/23/11	7.82J	<100	<100	<0.5	<0.5	<0.5	<1.0	0.600j	<0.5	<0.5	<10
	02/22/12	8.19J	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	11.4J
	08/07/12	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	21
	11/20/12	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
UST MW-8	02/19/10	155	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
	09/01/10	<100	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
	01/20/11	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
	08/23/11	5.62J	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
	02/22/12	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
	08/07/12	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
	11/20/12	<5	<100	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<10
UST IW-1	08/23/11	647	947	<100	1.01	<0.5	0.72J	<1.0	113	<0.5	<0.5	326
	02/22/12	762	704	<100	1.02	<0.5	0.720J	<1.0	173	<0.5	<0.5	451
	08/07/12	458	2,380	117	<5	<5	<5	<10	224.0	<5	<5	531
	11/20/12	1,110	1,080	<100	<5	<5	<5	<10	379.00	<5	<5	258J

Notes:
µg/L – micrograms per liter
— – analysis not conducted
J – analyte was detected; however, analyte concentration is an estimated value which is between the method detection limit and the practical quantitation limit.

HC – hydrocarbon
TPH – total petroleum hydrocarbons
MTBE – methyl tertiary butyl ether
DIPE – di-isopropyl ether
ETBE – ethyl tertiary butyl ether

TABLE 3
Summary of Additional Background Chemical Parameters
1555 Olive Street, Ventura, California 93001

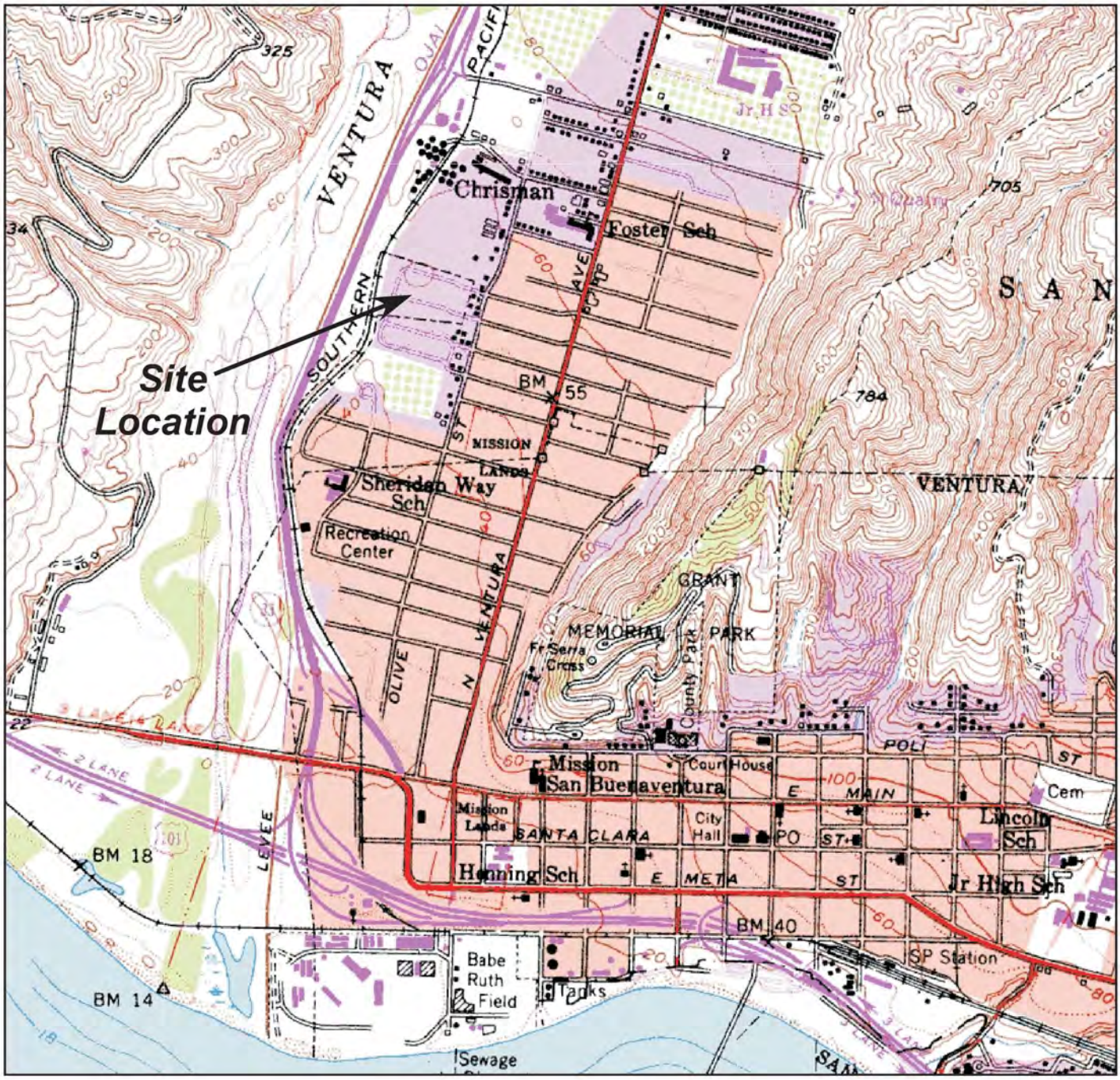
	Analyte:	Chromium (VI)	TDS	DO	Bromide	Chloride	Sulphate	Boron	Cadmium	Chromium	Lead	Manganese	Nickel	Formaldehyde	Ferrous Iron
	Analytical Method:	*7199**	*160.1**	*4500 OG***	*300.0**	*300.0**	*300.0**	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*P216 (D-19)****	*3500 FE-D***
Well ID	**Sample Date**	**µg/L**	**mg/L**												
UST IW-1	1/20/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2012	ND<2.0	6010	4.55	0.21	167	270	0.509	ND<0.01	0.0286J	ND<0.03	0.105	0.0536	ND<0.5	0.12
	11/20/2012	ND<2.0	6010	2.6	1.3	125	165	0.407	ND<0.01	0.429J	ND<0.03	0.0853	0.0579	ND<0.5	<0.05
UST MW-1	1/20/2011	ND<2.0	1,030	1.21	ND<0.01	41.5	ND<0.02	1.01	ND<0.01	ND<0.01	ND<0.03	0.730	ND<0.01	ND<0.5	5.50
	12/15/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2012	ND<2.0	1900	3.77	0.81	72.5	8.62	1.68	ND<0.01	ND<0.01	ND<0.03	0.359	ND<0.01	ND<0.5	ND<0.05
	11/20/2012	ND<2.0	5690	3.04	ND<0.01	81.1	576	0.24	ND<0.01	ND<0.01	ND<0.03	0.136	0.01443	ND<0.5	ND<0.05
UST MW-2	1/20/2011	ND<2.0	1,260	1.89	ND<0.01	52.9	129	1.03	ND<0.01	ND<0.01	ND<0.03	0.820	ND<0.01	ND<0.5	3.63
	6/2/2011	ND<2.0	1,060	3.26	1.05	46.1	1.70	0.901	ND<0.01	ND<0.01	ND<0.03	0.684	ND<0.01	ND<0.5	0.887
	12/15/2011	ND<2.0	1,000	2.74	0.55	44.6	ND<0.02	0.899	ND<0.01	ND<0.01	ND<0.03	0.614	ND<0.01	ND<0.5	1.26
	6/20/2012	ND<2.0	1,090	4.84	0.65	49.4	0.97	0.867	ND<0.01	ND<0.01	ND<0.03	0.599	ND<0.01	ND<0.5	0.9
	8/7/2012	ND<2.0	1,090	2.73	0.68	59	0.63	0.983	ND<0.01	ND<0.01	ND<0.03	0.569	ND<0.01	ND<0.5	ND<0.05
	11/20/2012	ND<2.0	913	2.53	0.8	76.9	1.70	0.714	ND<0.01	ND<0.01	ND<0.03	0.897	ND<0.01	ND<0.5	ND<0.05
UST MW-3	1/20/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/2/2011	ND<2.0	1,110	2.94	1.00	53.6	7.70	0.905	ND<0.01	ND<0.01	ND<0.03	0.96	ND<0.01	ND<0.5	ND<0.05
	12/15/2011	ND<2.0	1,200	0.77	0.70	66.9	1.95	1.07	ND<0.01	ND<0.01	ND<0.03	0.578	ND<0.01	ND<0.5	4.09
	6/20/2012	ND<2.0	1,280	3.5	0.92	80.4	0.22	1.11	ND<0.01	ND<0.01	ND<0.03	0.523	ND<0.01	ND<0.5	1.42
	8/7/2012	ND<2.0	1,300	2.59	0.94	87.5	4.78	1.17	ND<0.01	ND<0.01	ND<0.03	0.537	ND<0.01	ND<0.5	ND<0.05
	11/20/2012	ND<2.0	1,290	2.12	1.00	80	ND<0.02	1.09	ND<0.01	ND<0.01	ND<0.03	ND<0.03	ND<0.01	ND<0.5	0.451

TABLE 3
Summary of Additional Background Chemical Parameters
1555 Olive Street, Ventura, California 93001

Analyte:		Chromium (VI)	TDS	DO	Bromide	Chloride	Sulphate	Boron	Cadmium	Chromium	Lead	Manganese	Nickel	Formaldehyde	Ferrous Iron
Analytical Method:		*7199**	*160.1**	*4500 OG***	*300.0**	*300.0**	*300.0**	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*6010B* (ICP)*	*P216 (D-19)****	*3500 FE-D***
Well ID	**Sample Date**	**µg/L**	**mg/L**												
UST MW-4	1/20/2011	ND<2.0	1,090	3.68	ND<0.01	36.3	ND<0.02	1.21	ND<0.01	ND<0.01	ND<0.03	0.666	ND<0.01	ND<0.5	2.30
	6/2/2011	ND<2.0	1,110	3.66	0.600	33.7	ND<0.02	1.08	ND<0.01	ND<0.01	ND<0.03	0.648	ND<0.01	ND<0.5	0.854
	12/15/2011	ND<2.0	991	3.32	0.550	46.9	ND<0.02	1.05	ND<0.01	ND<0.01	ND<0.03	0.564	ND<0.01	ND<0.5	2.93
	6/20/2012	ND<2.0	1,060	3.01	0.830	58.1	7.39	0.867	ND<0.01	ND<0.01	ND<0.03	0.674	ND<0.01	ND<0.5	5.08
	8/7/2012	ND<2.0	1120	3.09	0.820	44.1	4.9	1.05	ND<0.01	ND<0.01	ND<0.03	0.525	ND<0.01	ND<0.5	0.905
	11/20/2012	ND<2.0	1070	2.19	0.600	39.4	22.3	1.02	ND<0.01	ND<0.01	ND<0.03	0.358	ND<0.01	ND<0.5	2.72
UST MW-5	1/20/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2012	ND<2.0	991	2.73	0.650	75.5	0.35	0.794	ND<0.01	ND<0.01	ND<0.03	0.679	ND<0.01	ND<0.5	0.5
	11/20/2012	9.58	12000	17.3	ND<0.01	36.9	660	0.845	ND<0.05	ND<0.05	0.212	<0.15	<0.05	ND<0.5	<0.05
UST MW-6	1/20/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2012	ND<2.0	1120	2.03	0.79	60.500	0.15J	1.04	ND<0.01	ND<0.01	ND<0.03	0.285	ND<0.01	ND<0.5	0.9
	11/20/2012	ND<2.0	12900	11.2	ND<0.01	72.500	831	0.812	ND<0.05	ND<0.05	ND<0.015	<0.15	ND<0.05	ND<0.5	<0.05
UST MW-7	1/20/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2012	ND<2.0	925	2.6	0.140	90	55	0.778	ND<0.01	ND<0.01	ND<0.03	0.72	ND<0.01	ND<0.5	ND<0.05
	11/20/2012	ND<2.0	928	3.38	0.800	87	58.2	0.636	ND<0.01	ND<0.01	ND<0.03	0.757	ND<0.01	ND<0.5	ND<0.05
UST MW-8	1/20/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/7/2012	ND<2.0	994	2.64	0.180	99.5	193	0.678	ND<0.01	ND<0.01	ND<0.03	0.382	ND<0.01	ND<0.5	ND<0.05
	11/20/2012	ND<2.0	953	3.1	0.950	95.2	184	0.643	ND<0.01	ND<0.01	ND<0.03	0.101	ND<0.01	ND<0.5	ND<0.05

Notes:
mg/L = milligrams per liter
µg/L = micrograms per liter
ND<"X" = concentration non-detect at or above the method detection limit cited.
NS = not sampled
TDS = Total Dissolved Solids
DO = Dissolved Oxygen
ICP = Inductively Coupled Plasma
* EPA = Environmental Protection Agency
** SM = Standard Method
*** ASTM = American Society of Testing Materials

FIGURES



Base Map: USGS Ventura, California Quadrangle

Approximate Scale:

0 840 1,680 feet

N
W E
S

Environmental Excellence	Eco & Associates, Inc. 1855 W. Katella Avenue, Suite 340 Orange, California 92867 Phone: 714.289.0995 Fax: 714.289.0965	**SITE LOCATION MAP** Southern California Gas Company 1555 N. Olive Street, Ventura, CA Project No.: Eco-05-201.1 Dated February 2013	FIGURE 1

Environmental Excellence

GROUNDWATER ELEVATION
4TH QUARTER-2012

Southern California Gas Company
1555 N. Olive Street, Ventura, CA

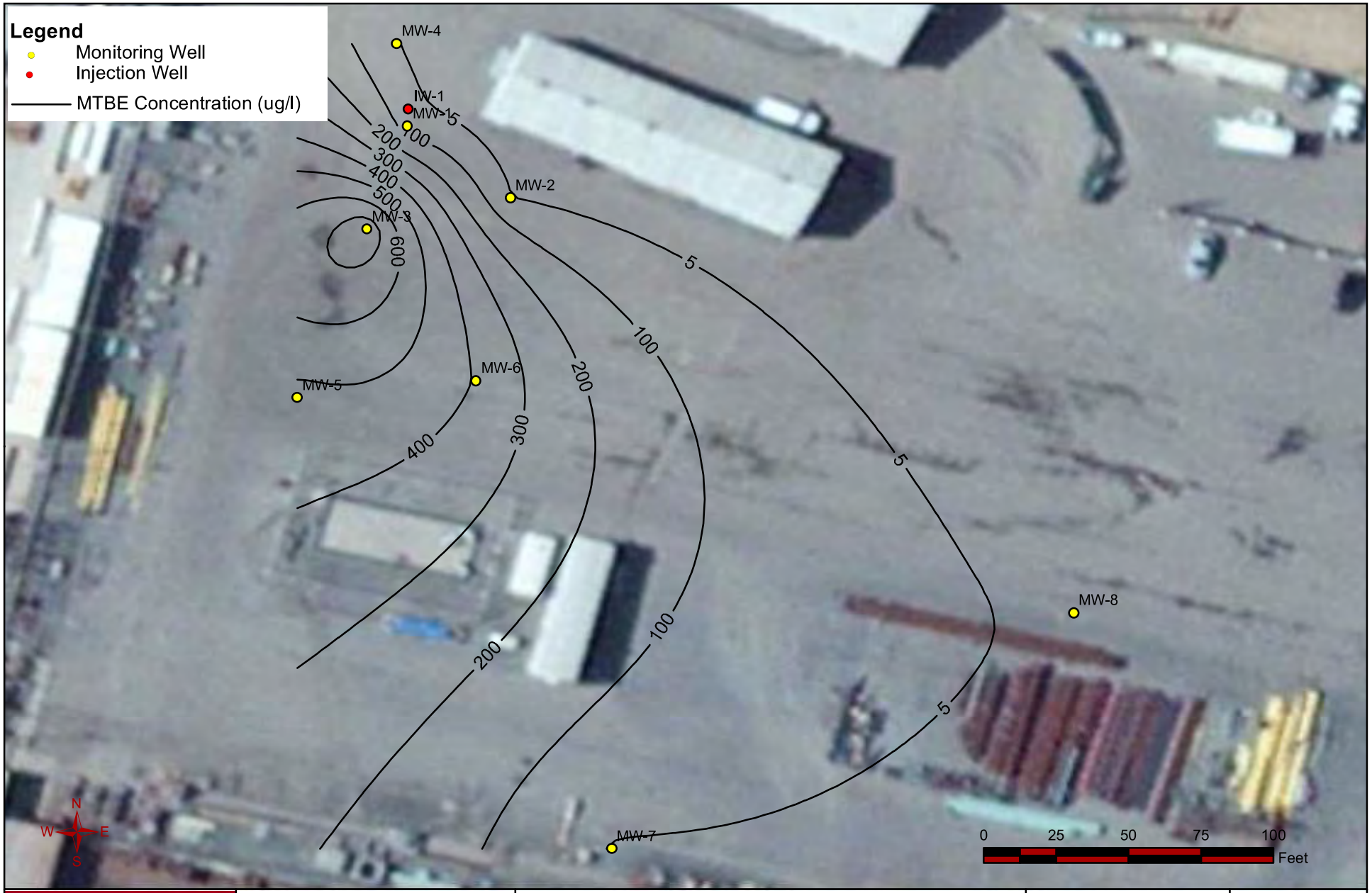
Project No. Eco-05-201.1

Dated February 2013

FIGURE

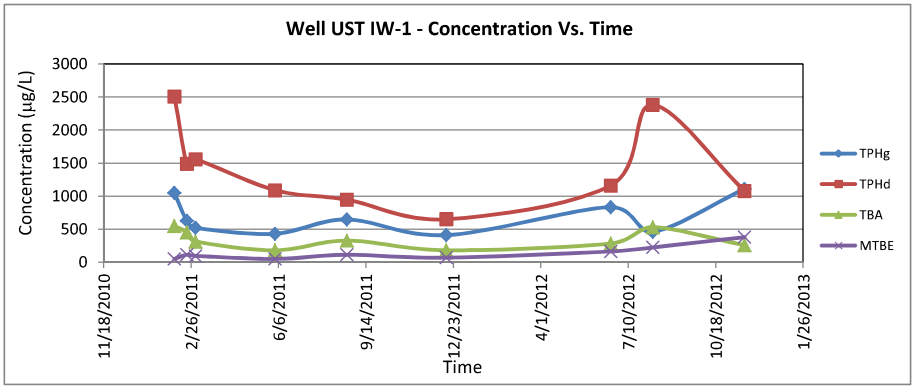
2

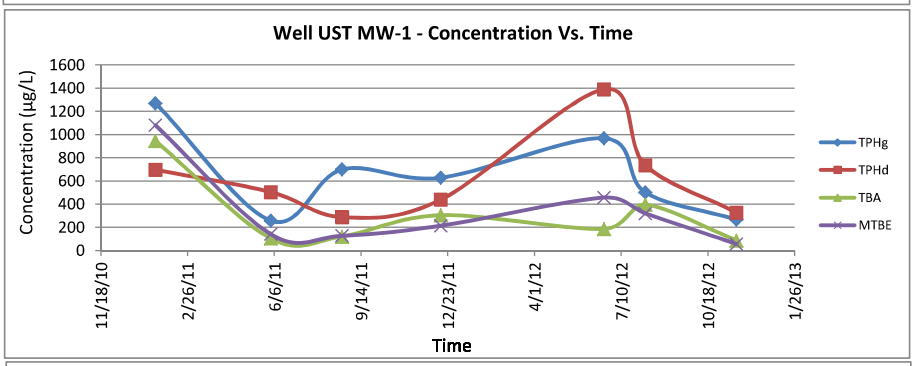
Environmental Excellence	**Eco & Associates, Inc.** 1855 W. Katella Avenue, Suite 340 Orange, California 92867 Phone: 714.289.0995 Fax: 714.289.0965	**GASOLINE-IMPACTED GROUNDWATER** **4TH QUARTER-2012** Southern California Gas Company 1555 N. Olive Street, Ventura, CA	Project No. Eco-05-201.1 Dated February 2013	FIGURE 3

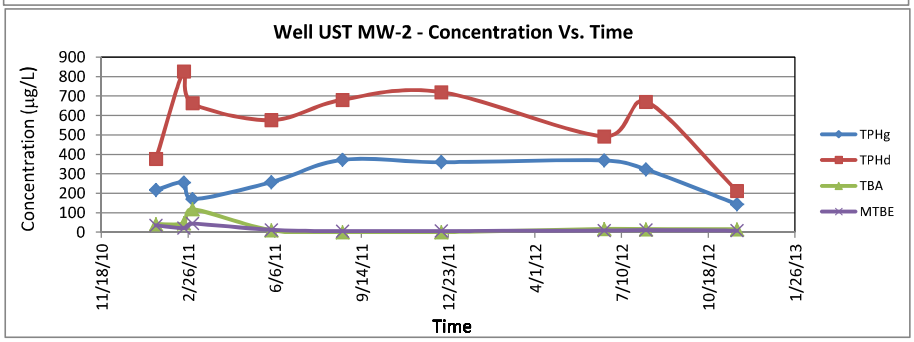


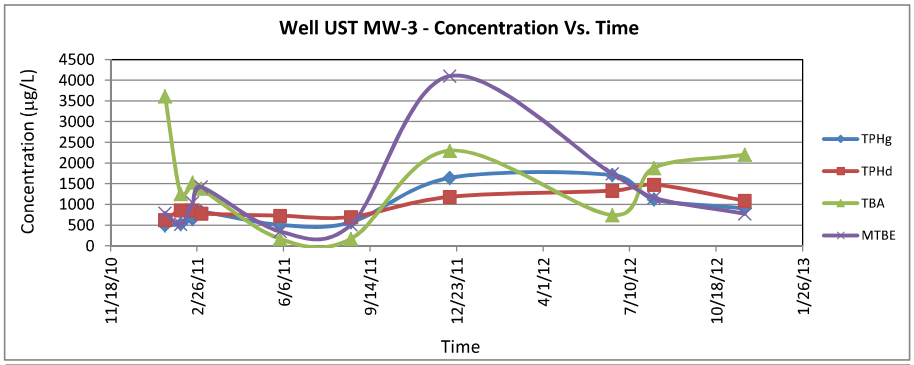
Environmental Excellence	**Eco & Associates, Inc.** 1855 W. Katella Avenue, Suite 340 Orange, California 92867 Phone: 714.289.0995 Fax: 714.289.0965	**MTBE-IMPACTED GROUNDWATER** **4TH QUARTER-2012** Southern California Gas Company 1555 N. Olive Street, Ventura, CA	Project No. Eco-05-201.1 Dated February 2013	FIGURE 4

FIGURE 5
Concentration Versus Time
1555 N. Olive Street, Ventura, California 93001









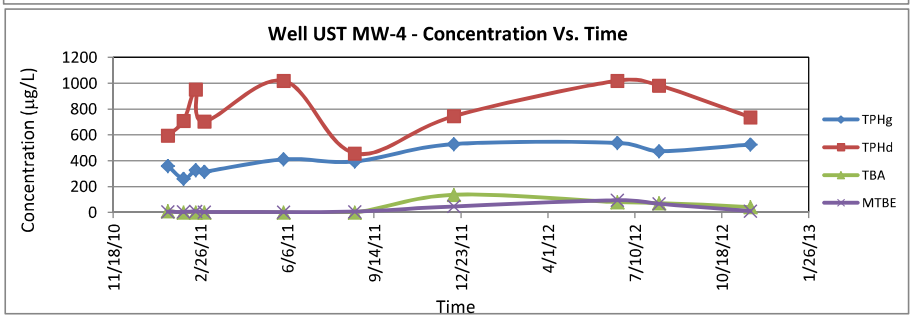
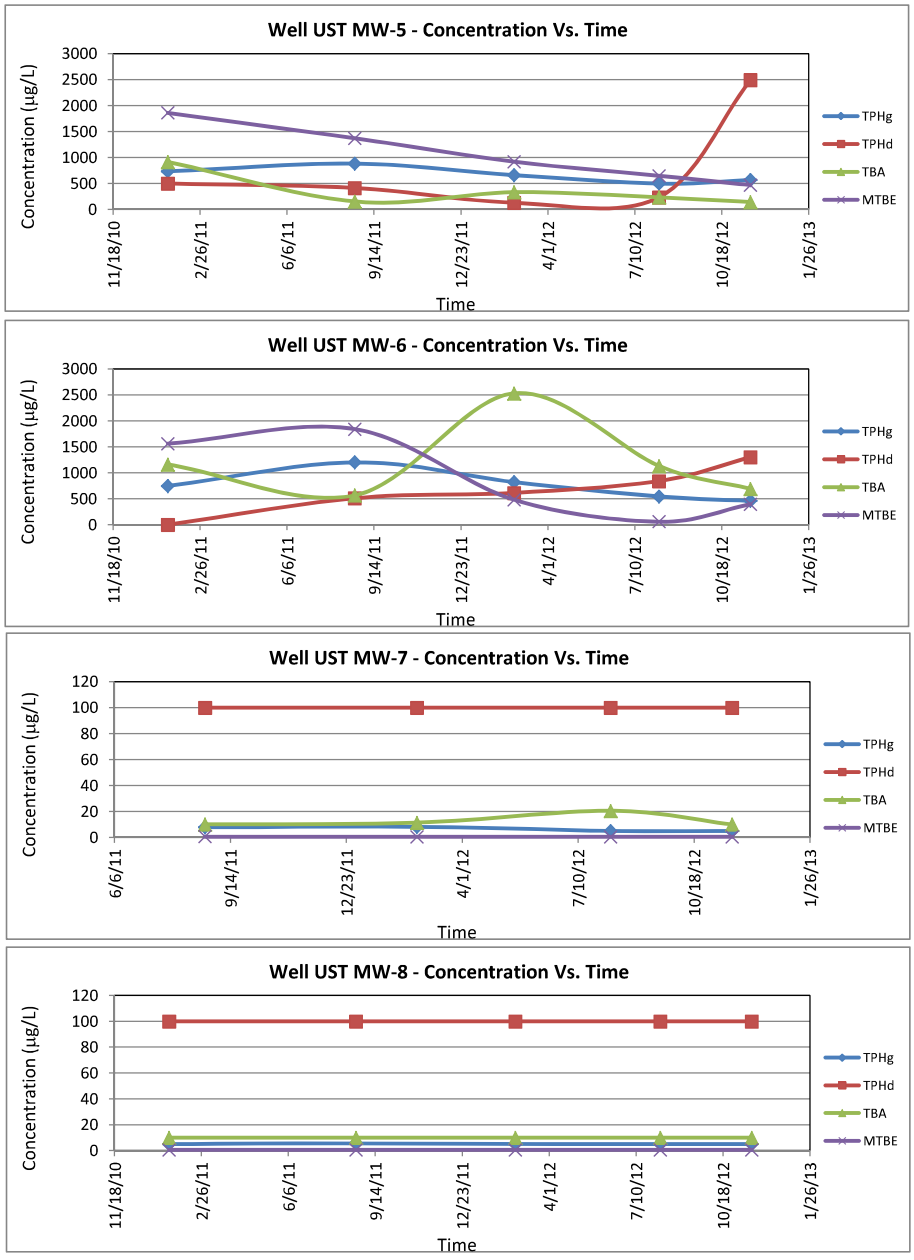


FIGURE 5
Concentration Versus Time
1555 N. Olive Street, Ventura, California 93001



APPENDIX A

FIELD LOGS

Eco & Associates, Inc. – QUALITY CONTROL REPORT

DAILY LOG OF CONSTRUCTION ACTIVITIES

ECO PROJECT: Eco-05-201.1 & 2	**REPORT NO.:**
PROJECT LOCATION: 1555 N Olive St. Ventura	**DATE:** 08/07/12
DESCRIPTION: Semi-Annual and pre-injection monitoring	**CONTRACT NO.:**
PERSONNEL: OA and SS	**TASK ORDER NO.:**
SIGNATURE: Omar Argueta	**WEATHER CONDITION:** Hot

1. ANY DELAYS IN WORK PROGRESS TODAY? ☒ No ☐ Yes If yes, explain:

2. ANY VERBAL INSTRUCTION GIVEN BY THE GOVERNMENT, REGULATOR, OR CLIENT? ☒ No ☐ Yes If yes, to whom and explain:

3. ANY CONDITION DEVELOPED WHICH MIGHT LEAD TO A CHANGE ORDER OR CLAIM OR FINDINGS OF FACTS?

☒ No ☐ Yes If yes, explain:

ANY POTENTIAL CHANGE ORDER OR CLAIM MUST BE REPORTED TO THE PROJECT DIRECTOR/MANAGER.

4. ANY DEFICIENCIES, ACTIONS TAKEN TO CORRECT THE DEFICIENCIES? ☒ No ☐ Yes If yes, explain:

5. SAFETY MEETING/TAILGATE MEETING HELD TODAY? ☐ No ☒ Yes

ANY LOST TIME ACCIDENT TODAY? ☒ No ☐ Yes If yes, attach an accident report.

6. PRIME CONTRACTOR AND SUBCONTRACTOR WORK FORCE SIGN IN AND OUT IN THE SPACE BELOW.

NAME	INITIAL	COMPANY	TRADE	IN	OUT	IN	OUT	TOTAL HOURS
Omar Argueta	OA	Eco & Associates, Inc.	Tech	0715	1845			
Steven Saunders	SS	Eco & Associates, Inc.	Geologist	1245	1730			
Omid Rabbani	OR	Eco & Associates, Inc.	Tech	1245	1845			

7A. CUMULATIVE HOURS WORKED PREVIOUSLY:	7B. TOTAL HOURS WORKED TODAY:	7B. TOTAL HOURS WORKED TO DATE (7A+7B:

Eco & Associates, Inc. – QUALITY CONTROL REPORT

DAILY LOG OF CONSTRUCTION ACTIVITIES

8. VISITOR'S LOG

NAME	INITIAL	COMPANY	IN	OUT	IN	OUT	IN	OUT

9. MAJOR ITEMS OF EQUIPMENT.

TYPE / CAPACITY	NUMBER	STANDBY HOURS	OPERATING HOURS

10. TIME AND ACTIVITY LOG

TIME	DESCRIPTION
0745	Eco arrived on site (Omar).
	Waiting otside gate for Masood and Truck driver that will
	deliver injection product.
0800	Driver arrived on site. let him know I was waiting for
	someone to come and open the gate. He park across the
	street.
0815	Tom Kauffman arrived onsite (Account Manager fo SCG). I
	told him we were weiting for our contact Masood
	to come and open the gate for us. and ask him
	if it was ok to go in with him he said to have
	Masood talk to him and he will let us in. I call
	Masood and gave him the phone. Masood explain
	to him what we were doing and if he can let
	us inside the property. he let us inside after
	talking to masood.
0825	I show driver the location for the injection
	Product and he drop it off. A total of 6 pallets
	were drop off.
0845	Driver (Hector Tapia) off site.
0850	I open wells that are going to be used to

	Inject the product
	MW-5 has some water inside the well case. I remove the water from inside the well case. This well has ~2 inches of 4 inch pipe coming out of the ground inside the well case.
	MW-6 has ½ inch coming out of the ground inside well case. We need to break the concrete around the 4 inch well.
0905	Masood arrived on site. I show him the two wells we are using for injection. I let him know we will need to break concrete around the well MW-6 in order to be able to connect our injection manifold. I let him know we will be sampling after it when the rest of the Eco crew arrives on site. I let him know I will be going to get supplies and I will need access back inside the property. He talked to Tom Kauffman and he gave us his number. We can call him and he will let us inside the property. Also tomorrow morning we can call him to let us inside the property.
0930	Masood off site.
	I drove to store to get injection supplies
1130	I arrived back on site. Call Tom to ask if he can open gate. I was not able to get a hold on him.
1245	Eco crew arrived on site. SCG truck arrived on site and let us inside the property.
1300	getting ready to start groundwater sampling. setting up at well IW-1
1325	Purge well IW-1 (see groundwater Sampling log for all well purge data and depth to water)
1331	Sampling IW-1
1345	finish Sampling IW-1
1403	Setting up at well MW-1
1410	Purging well MW-1
1415	Sampling MW-1
1420	Sampling FDUP-1
1430	Setting up at MW-3

1435	Purging well MW-3
1440	Sampling well MW-3
1450	Setting up at well MW-2
1455	~~Sam~~ Purging MW-2
1510	Sampling MW-2
1515	Setting up at well MW-4
1517	Purging well MW-4
1523	Sampling well MW-4
1530	Purging well MW-5
1540	Sampling Well MW-5
1555	Setting up at well MW-6
1600	Purging well MW-6
1606	Sampling well MW-6
1615	Setting up at well MW-7
1620	Purging well MW-7
1628	Sampling well MW-7
1645	Setting up at well MW-8
1651	Purging well MW-8
1657	Sampling well MW-8
1700	cleaning up
1730	steven off site take all the samples
	continue cleaning and getting ready for
	tomorow injection.
1845	Eco ~~off~~ site.

Eco & Associates, Inc. – QUALITY CONTROL REPORT

DAILY LOG OF CONSTRUCTION ACTIVITIES

ECO PROJECT: Eco-05-201.1 & 2	**REPORT NO.:**
PROJECT LOCATION: 1555 N Olive St. Ventura	**DATE:** 08/08/12
DESCRIPTION: Injection at MW-5	**CONTRACT NO.:**
PERSONNEL: OA and OR	**TASK ORDER NO.:**
SIGNATURE: Omar Arguet	**WEATHER CONDITION:** Hot

1. ANY DELAYS IN WORK PROGRESS TODAY? ☒ No ☐ Yes If yes, explain:

2. ANY VERBAL INSTRUCTION GIVEN BY THE GOVERNMENT, REGULATOR, OR CLIENT? ☒ No ☐ Yes If yes, to whom and explain:

3. ANY CONDITION DEVELOPED WHICH MIGHT LEAD TO A CHANGE ORDER OR CLAIM OR FINDINGS OF FACTS?

☒ No ☐ Yes If yes, explain:

ANY POTENTIAL CHANGE ORDER OR CLAIM MUST BE REPORTED TO THE PROJECT DIRECTOR/MANAGER.

4. ANY DEFICIENCIES, ACTIONS TAKEN TO CORRECT THE DEFICIENCIES? ☒ No ☐ Yes If yes, explain:

5. SAFETY MEETING/TAILGATE MEETING HELD TODAY? ☐ No ☒ Yes

ANY LOST TIME ACCIDENT TODAY? ☒ No ☐ Yes If yes, attach an accident report.

6. PRIME CONTRACTOR AND SUBCONTRACTOR WORK FORCE SIGN IN AND OUT IN THE SPACE BELOW.

NAME	INITIAL	COMPANY	TRADE	IN	OUT	IN	OUT	TOTAL HOURS
Omar Argueta	OA	Eco & Associates, Inc.	Tech	0830	1730			
Omid Rabbani	OR	Eco & Associates, Inc.	Tech	0830	1730			

7A. CUMULATIVE HOURS WORKED PREVIOUSLY:	7B. TOTAL HOURS WORKED TODAY:	7B. TOTAL HOURS WORKED TO DATE (7A+7B:

Eco & Associates, Inc. – QUALITY CONTROL REPORT

DAILY LOG OF CONSTRUCTION ACTIVITIES

8. VISITOR'S LOG

NAME	INITIAL	COMPANY	IN	OUT	IN	OUT	IN	OUT

9. MAJOR ITEMS OF EQUIPMENT.

TYPE / CAPACITY	NUMBER	STANDBY HOURS	OPERATING HOURS

10. TIME AND ACTIVITY LOG

TIME	DESCRIPTION
0830	Eco arrived onsite. call ~~Foth~~ Tom Kauffman and ask him
	to open tn gate. He Said he was on his way.
0900	Tom has not open the gate, call him 3 times and
	no answer. I call masood and left voise mail.
0920	Tom open the gate.
0930	getting equipment ready to start injection
	on well MW-5.
1000	starting to fill up the tanks with water.
1030	mixing product B with water
1045	Tank #1 ready for injection (6 buckets of product B)
	filing up Tank #2 with water
1050	starting injection of tank #1 (10 Psi)
1100	mixing product B in tank #2
1105	stop injection of tank #1, the manifold separated
	from well.
1020	after re-tightening manifold and adding straps to
	well to help hold down the manifold, continued
	with the injection of Tank #1.
1135	finish injection of Tank #1.
1146	start injection of Tank #2. (10 Psi) (6 buckets 200gal water tank)

1150	filing up tank #3 with water
1205	mixing Product B in tank #3 (5 buckets 200gal water)
1240	finish injecting tank #2 (25 Psi)
1245	start injecting Tank #3 (25 Psi)
1305	finish injecting Tank #3. (25 Psi)
1315	starting to inject Tank #1 (clean water to flush well) 30(Psi)
1336	Water injection Tank #1 finish. filing up with water
1340	water injection Tank #2 started (30 Psi)
1400	finish water Injection Tank #2 (30 Psi)
1407	start filing up @ Tank with water
1410	mixing Product A Tank #1 (3 buckets 200gal)
1422	start injecting Tank #1 with Product A (40 Psi)
1435	finish filing up Tank with water ~30 min to fillup 200gal tank
1510	finish injecting Tank #1 (40 Psi) had to turnoff pump - release air inside well and turn back on to keep pressure under 30 Psi. it keep going back to 40Psi.
1514	start injecting Tank #2 (40 Psi)
1640	finish injecting Tank #2 (40 Psi).
1645	start injecting Tank #1 200gal water only.
1710	started at 30 Psi and when down to 20 Psi finish injecting water.
1715	cleaning up filling tanks up with water. tanks left in the same place.
	After picking up hoses and tools, water turnoff area secure with Orange cones.
1730	Eco off site. we will continue injection tomorrow at 0630 am.

Eco & Associates, Inc. – QUALITY CONTROL REPORT

DAILY LOG OF CONSTRUCTION ACTIVITIES

ECO PROJECT: Eco-05-201.1 & 2	**REPORT NO.:**
PROJECT LOCATION: 1555 N Olive St. Ventura	**DATE:** 8/9/12
DESCRIPTION: Injection at MW-5	**CONTRACT NO.:**
PERSONNEL: OA and OR	**TASK ORDER NO.:**
SIGNATURE: Omar Argueta	**WEATHER CONDITION:** Hot

1. ANY DELAYS IN WORK PROGRESS TODAY? ☒ No ☐ Yes If yes, explain:

2. ANY VERBAL INSTRUCTION GIVEN BY THE GOVERNMENT, REGULATOR, OR CLIENT? ☒ No ☐ Yes If yes, to whom and explain:

3. ANY CONDITION DEVELOPED WHICH MIGHT LEAD TO A CHANGE ORDER OR CLAIM OR FINDINGS OF FACTS?

☒ No ☐ Yes If yes, explain:

ANY POTENTIAL CHANGE ORDER OR CLAIM MUST BE REPORTED TO THE PROJECT DIRECTOR/MANAGER.

4. ANY DEFICIENCIES, ACTIONS TAKEN TO CORRECT THE DEFICIENCIES? ☒ No ☐ Yes If yes, explain:

5. SAFETY MEETING/TAILGATE MEETING HELD TODAY? ☐ No ☒ Yes

ANY LOST TIME ACCIDENT TODAY? ☒ No ☐ Yes If yes, attach an accident report.

6. PRIME CONTRACTOR AND SUBCONTRACTOR WORK FORCE SIGN IN AND OUT IN THE SPACE BELOW.

NAME	INITIAL	COMPANY	TRADE	IN	OUT	IN	OUT	TOTAL HOURS
Omar Argueta	OA	Eco & Associates, Inc.	Tech	0630	1700			
Omid Rubbani	OR	Eco & Associates, Inc.	Tech	0630	1700			

7A. CUMULATIVE HOURS WORKED PREVIOUSLY:	7B. TOTAL HOURS WORKED TODAY:	7B. TOTAL HOURS WORKED TO DATE (7A+7B:

Eco & Associates, Inc. – QUALITY CONTROL REPORT

DAILY LOG OF CONSTRUCTION ACTIVITIES

8. VISITOR'S LOG

NAME	INITIAL	COMPANY	IN	OUT	IN	OUT	IN	OUT

9. MAJOR ITEMS OF EQUIPMENT.

TYPE / CAPACITY	NUMBER	STANDBY HOURS	OPERATING HOURS

10. TIME AND ACTIVITY LOG

TIME	DESCRIPTION
0630	Eco arrived on site / setting up hoses and manifold
	Poly under hoses pump and around well.
0637	Injecting clean water to flush well MW-5 (27 PSi)
0647	finish injecting water ~100 gal
	Mixing Product A (3 buckets in 200 gal tank) using drill
	to mix.
0650	Starting first injection of the day Tank #3 200gal
	tank mix with Product A.
0700	continued injection - half of tank at 28 PSi injected.
0703	open air realize valve ~5% pressure coming down to 26 PSi
	only air coming out.
0707	Open air realize valve ~10% no water coming out
	pressure down to 24 PSi
0712	finish injection of Tank #3 of 19
0714	starting to inject Tank #4 of 19 (27 PSi)
	first tank of the day ~22 min to inject
	filling up tank with water
0732	Mixing tank #5 of 19 with Product A
0733	Tank #4 of 19 ~~finish~~ injected.
0734	injecting Tank #5 of 19

0736	Filling up Tank # 6 with water
0745	mixing tank #6 with 3 buckets and 200gal water
0755	Finish injecting Tank # 5 of 19
0801	Injecting Tank # 6
	filling up tank # with water
0807	Injecting at (18 PSi)
0820	Finish injecting Tank # 6 (22 PSi)
0825	Starting Tank # 7 injection
0846	Finish injecting Tank # 7
0848	started injecting Tank # 8 (18 PSi)
0913	Finish injecting Tank # 8 (26 PSi)
	started injecting Tank # 9 of 19
	filling up tank with water
0935	finish with Tank # 9 of 19
	started Tank # 10
	filling up tank with water
0958	Finish with Tank # 10
	continued filing up Tank with water
1009	stared injecting Tank # 11 (18 PSi)
1030	Finish injecting Tank # 11
1032	replacing bracker fitting by the pump.
1037	stared injecting Tank # 12 (18 PSi)
1041	continued injecting tank # 12 (18 PSi)
1100	Finish injecting tank # 12
	water spiled / cleaning up with vacuum
1118	starting to inject Tank # 13 (7 PSi)
1135	Finish injecting Tank # 13
1136	starting to Tank # 14
1154	Finish injecting Tank # 14
1200	Stop / when to get fuel for the truck.
1220	back on site
1230	started injecting tank # 15
1250	Finish injecting tank # 15
1253	started injecting Tank # 16
1313	Finish injecting Tank # 16
1315	started injecting tank # 17
1340	Finish injecting Tank # 17

1343	started injecting tank #18
1359	Finish injecting tank #18
1410	Started injecting Tank #19 (100gal water 1 bucket)
1422	Finish injecting Tank #19
	Total of 55 bucket of product A
1430	Injecting water to flush well Tank 1
1452	Finish injecting tank#1 of water starting tank#2
1515	Finish injecting Tank #2 of water.
1520	cleaning up.
	Tanks move next to the building tide down with strap.
	Pallets of Product A and B secure next to building. cones around Pallets.
	hoses next to the tanks.
	buckets back of the tanks.
	Rope, Hose, water hose are left on site for next week injection.
1600	water collected in vacuum was put inside drum
1700	Eco off site. area secure.

ECO & ASSOCIATES, INC. – QUALITY CONTROL REPORT

DAILY LOG OF PROJECT ACTIVITIES

ECO PROJECT:	**REPORT NO.:**
PROJECT LOCATION: VENTURA, CA	**DATE:** 08-16-12
DESCRIPTION: GW-6 injection	**CONTRACT NO.:**
ONSITE PERSONNEL: OR, OA	**TASK ORDER NO.:**
SIGNATURE: Omid	**WEATHER CONDITION:** Sunny

1. ANY DELAYS IN WORK PROGRESS TODAY? ☒ No ☐ Yes If yes, explain:

2. ANY VERBAL INSTRUCTION GIVEN BY THE GOVERNMENT, REGULATOR, OR CLIENT? ☒ No ☐ Yes If yes, to whom and explain:

3. ANY CONDITION DEVELOPED WHICH MIGHT LEAD TO A CHANGE ORDER OR CLAIM OR FINDINGS OF FACTS?

☒ No ☐ Yes If yes, explain:

ANY POTENTIAL CHANGE ORDER OR CLAIM MUST BE REPORTED TO THE PROJECT DIRECTOR/MANAGER.

4. ANY DEFICIENCIES, ACTIONS TAKEN TO CORRECT THE DEFICIENCIES? ☒ No ☐ Yes If yes, explain:

5. SAFETY MEETING/TAILGATE MEETING HELD TODAY? ☐ No ☒ Yes

ANY LOST TIME ACCIDENT TODAY? ☐ No ☐ Yes If yes, attach an accident report.

6. PRIME CONTRACTOR AND SUBCONTRACTOR WORK FORCE SIGN IN AND OUT IN THE SPACE BELOW.

NAME	INITIAL	COMPANY	TRADE	IN	OUT	IN	OUT	TOTAL HOURS
Omar Argueta	OA	Eco & Associates, Inc.	Tech	0910	1715			
Omid Rabbani	OR	Eco & Associates, Inc.	Tech	0910	5:15PM			

7A. CUMULATIVE HOURS WORKED PREVIOUSLY:	7B. TOTAL HOURS WORKED TODAY:	TOTAL HOURS WORKED TO DATE (7A+7B):

ECO & ASSOCIATES, INC. – QUALITY CONTROL REPORT

DAILY LOG OF PROJECT ACTIVITIES

8. VISITOR'S LOG

NAME	INITIAL	COMPANY	IN	OUT	IN	OUT	IN	OUT

9. MAJOR ITEMS OF EQUIPMENT.

TYPE / CAPACITY	NUMBER	STANDBY HOURS	OPERATING HOURS

10. TIME AND ACTIVITY LOG

TIME	DESCRIPTION
0910	Eco arrived on site. Gate was open
0915	braking concre around well and setting up pump, hoses,
	tanks and poly to get started injecting.
1000	Filing up tanks with water
	Vacuuming broken concrete pices around well.
1030	Getting buckets ready (Part B).
1040	Finish braking concrete around well, setting up
	manifold.
11:07	start adding part (B)
11:10	Start injection First Tank
11:17	Reading Pressure (PSI = 0)
11:27	Finish injection First Tank Part (B)
11:27	start injection Second Tank Part (B)
11:30	Reading Pressure (PSI = 10)
11:39	Reading Pressure (PSI = 20)
11:42	Finish injection Second Tank Part (B)
11:57	start injecting the 3rd Tank Part (B)
12:15	Pressure was recorded 30 PSI, the manifold took off the place
12:30	Manifold was put in place, b/c the pressure was high, shut down the system for
	the rest

(Use additional sheets as needed.)

10. TIME AND ACTIVITY LOG (Continued)	
TIME	DESCRIPTION
13:05	start injection water and check the gague / pressure high 30 PSI
1311	Pressure is going down after water injection 25 PSI
1321	continue with Tank 3 22 PSI
1330	start injecting water Pressure 40 PSI
1335	stop injecting waters
1510	start injecting waters Pressure 30 PSI
1530	Finish injecting water pressure 30 PSI
1530	start injecting Part (A) 1st Tank
1535	stop injecting part(A) due to the high pressure 40 PSI
1552	continue injecting Part (A) - Between 16:00 to 16:20 flushing water to reduce the Pressure
1700	Finish injecting Part (A), cleaning the site Between 1700-1710
1715	Eco left the facility

ECO & ASSOCIATES, INC. – QUALITY CONTROL REPORT

DAILY LOG OF PROJECT ACTIVITIES

ECO PROJECT:	**REPORT NO.:**
PROJECT LOCATION: Ventura, CA	**DATE:** 08-17-12
DESCRIPTION: GW-6 injection	**CONTRACT NO.:**
ONSITE PERSONNEL: Omar A. / Omid R.	**TASK ORDER NO.:**
SIGNATURE: Omid R	**WEATHER CONDITION:** Partly Cloudy

1. ANY DELAYS IN WORK PROGRESS TODAY? ☒ No ☐ Yes If yes, explain:

2. ANY VERBAL INSTRUCTION GIVEN BY THE GOVERNMENT, REGULATOR, OR CLIENT? ☒ No ☐ Yes If yes, to whom and explain:

3. ANY CONDITION DEVELOPED WHICH MIGHT LEAD TO A CHANGE ORDER OR CLAIM OR FINDINGS OF FACTS?
☒ No ☐ Yes If yes, explain:

ANY POTENTIAL CHANGE ORDER OR CLAIM MUST BE REPORTED TO THE PROJECT DIRECTOR/MANAGER.

4. ANY DEFICIENCIES, ACTIONS TAKEN TO CORRECT THE DEFICIENCIES? ☒ No ☐ Yes If yes, explain:

5. SAFETY MEETING/TAILGATE MEETING HELD TODAY? ☐ No ☒ Yes

ANY LOST TIME ACCIDENT TODAY? ☐ No ☐ Yes If yes, attach an accident report.

6. PRIME CONTRACTOR AND SUBCONTRACTOR WORK FORCE SIGN IN AND OUT IN THE SPACE BELOW.

NAME	INITIAL	COMPANY	TRADE	IN	OUT	IN	OUT	TOTAL HOURS
Omid Rabbani	OR	Eco & Associates, Inc	Tech	0622	1330			
Omar Argueta	OA	Eco & Associates, Inc	Tech	0622	1330			

7A. CUMULATIVE HOURS WORKED PREVIOUSLY:	7B. TOTAL HOURS WORKED TODAY:	TOTAL HOURS WORKED TO DATE (7A+7B):

ECO & ASSOCIATES, INC. – QUALITY CONTROL REPORT

DAILY LOG OF PROJECT ACTIVITIES

8. VISITOR'S LOG

NAME	INITIAL	COMPANY	IN	OUT	IN	OUT	IN	OUT

9. MAJOR ITEMS OF EQUIPMENT.

TYPE / CAPACITY	NUMBER	STANDBY HOURS	OPERATING HOURS

10. TIME AND ACTIVITY LOG

TIME	DESCRIPTION
0622	Eco arrived at the site
0630	Injecting water 1st Tank Pressur 40 PSI
0720	Finish injecting wather 1st Tank pressure 38 PSI
0720	start injecting water 2nd Tank pressure 38 PSI
0753	pressure reading 34 PSI
0802	Finish injecting water 2nd Tank
0802	Start injecting 2nd Tank Part (A) Pressure reading 36 PSI
0815	Pressure reading 44 PSI
0820	Stop injecting due to high pressure (45 PSI)
0847	start injecting PSI =45
0909	Reading the Pressure 50 PSI
0930	Finish injecting Tank #2
0934	Start injecting Tank #3
0945	Pressure reading PSI = 50
1035	Spill due to the high Pressure from manifold
1035	STOP injection - 80 galons of 200 G remained - Start cleaning
	Transferring the Tanks close to the MW#5 using the truck / injecting
	80 galons part (A) into the GW#5 / injecting a full tank of remained water
	into GWM #5/ clean up the site
13:30	Eco left the Facility

(Use additional sheets as needed.)

ECO & ASSOCIATES, INC. – QUALITY CONTROL REPORT

DAILY LOG OF PROJECT ACTIVITIES

ECO PROJECT: Ventura UST (Eco-05-201.2)	REPORT NO.:
PROJECT LOCATION: 1555 N Olive, Ventura CA	DATE: 6/24/2012
DESCRIPTION: Injections	CONTRACT NO.: –
ONSITE PERSONNEL: CH, OR	TASK ORDER NO.: –
SIGNATURE:	WEATHER CONDITION: Clear, warm to hot

1. ANY DELAYS IN WORK PROGRESS TODAY? ☒ No ☐ Yes If yes, explain:

2. ANY VERBAL INSTRUCTION GIVEN BY THE GOVERNMENT, REGULATOR, OR CLIENT? ☒ No ☐ Yes If yes, to whom and explain:

3. ANY CONDITION DEVELOPED WHICH MIGHT LEAD TO A CHANGE ORDER OR CLAIM OR FINDINGS OF FACTS?
☒ No ☐ Yes If yes, explain:

ANY POTENTIAL CHANGE ORDER OR CLAIM MUST BE REPORTED TO THE PROJECT DIRECTOR/MANAGER.

4. ANY DEFICIENCIES, ACTIONS TAKEN TO CORRECT THE DEFICIENCIES? ☒ No ☐ Yes If yes, explain:

5. SAFETY MEETING/TAILGATE MEETING HELD TODAY? ☐ No ☒ Yes

ANY LOST TIME ACCIDENT TODAY? ☒ No ☐ Yes If yes, attach an accident report.

6. PRIME CONTRACTOR AND SUBCONTRACTOR WORK FORCE SIGN IN AND OUT IN THE SPACE BELOW.

NAME	INITIAL	COMPANY	TRADE	IN	OUT	IN	OUT	TOTAL HOURS
Carlos Hernandez	CH	Eco & Associates	Chemist	0800	1925			
Omid Rabbani	OR	"	Tech	0800	1925			

7A. CUMULATIVE HOURS WORKED PREVIOUSLY:	7B. TOTAL HOURS WORKED TODAY:	TOTAL HOURS WORKED TO DATE (7A+7B):

ECO & ASSOCIATES, INC. – QUALITY CONTROL REPORT

DAILY LOG OF PROJECT ACTIVITIES

8. VISITOR'S LOG

NAME	INITIAL	COMPANY	IN	OUT	IN	OUT	IN	OUT

9. MAJOR ITEMS OF EQUIPMENT.

TYPE / CAPACITY	NUMBER	STANDBY HOURS	OPERATING HOURS

10. TIME AND ACTIVITY LOG

TIME	DESCRIPTION
0800	Arrive onsite and are let into gate. SCG personnel said they will be leaving within 2 hours and so need to speak with Masood.
0815	Held tailgate safety meeting and begin setting up for injection.
0912	Begin injecting first tank of the day (Part A) into UST-MW-6.
1030	1st tank completed. Progress was slow and pressure reached ~40 psi.
1045	Begin injecting 2nd tank.
1130	Pump is not functioning. Leave site for new pump
1200	Onsite and preparing to resume injection.
1230	Pressure is reaching ~40 psi and flow rate is < 5 gpm
1330	Cease injection halfway thru second tank and move to UST-MW-5.
1415	Completed injection of 2nd tank (into UST-MW-5).
1420	Begin 3rd tank
1438	Complete 3rd tank
1438	Begin 4th tank
1452	Complete 4th
1455	Begin 5th
1515	Complete 5th
1520	Begin 6th
1540	Complete 6th, begin 7th
1600	Complete 7th, begin 8th (progress v. slow on 8th tank)

(Use additional sheets as needed.)

10. TIME AND ACTIVITY LOG (Continued)

TIME	DESCRIPTION
1640	Complete 8th tank. Begin rinsing tanks and injecting boring volume of water. ↳(last tank w/ product)
1925	Cleaned up site and departed.

APPENDIX B

LABORATORY REPORTS

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
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Ordered By

Southern California Gas Company
555 W. 5th St.-GT17E3
Los Angeles, CA 90013-1011

Number of Pages	**51**
Date Received	**11/20/2012**
Date Reported	**12/10/2012**

Telephone: (213)244-3292
Attention: Masood Hosseini

Job Number	Order Date	Client
67573	11/20/2012	SC/G

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program
Site: 1555 N. Olive Street
Ventura, CA 93001

Enclosed please find results of analyses of 11 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.

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CHAIN OF CUSTODY RECORD

№ 81347

AETL JOB No. 67573

Page 1 of 1

COMPANY: So Cal Gas – Eco Assoc	PROJECT MANAGER: Masood Hosseini
COMPANY ADDRESS: 1855 W. Katella Ave., Suite 340	PHONE / FAX:
PROJECT NAME: Ventura UST	PROJECT #: ECO-05-201.2
SITE NAME AND ADDRESS: 1555 N. Olive St. Ventura, CA	PO #: ECO-05-201.2

	SAMPLE ID	LAB ID	DATE	TIME	MATRIX	CONTAINER NUMBER/SIZE	PRES.
1	UST MW-1	67573-01	11/20/12	1322	Water	12/various	Hcl/Ice
2	UST IW-1	67573-02		1252			
3	UST MW-2	67573-03		1202			
4	UST MW-3	67573-04		1125			
5	UST MW-4	67573-05		1228			
6	UST MW-5	67573-06		1055			
7	UST MW-6	67573-07		1025			
8	UST MW-7	67573-08		0955			
9	UST MW-8	67573-09		0915			
10	DUP-1	67573-10		—			
11	TB-1	67573-11		1200		2 VOA	
12							
13							
14							
15							

ANALYSIS REQUESTED

8015 G+D	8260B oxygenates + VOCs	Acetone/Ethanol	Formaldehyde	Wet Chem *	Metals **				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
X	X	X	X	X	X				
	X								

TEST INSTRUCTIONS & COMMENTS

* TDS, Chloride, Bromide, Sulfate, DO, Ferrous Iron,
** Boron, Lead, Nickel, Cadmium, Manganese, Total Cr, Cr VI

SAMPLE RECEIPT - TO BE FILLED BY LABORATORY

TOTAL NUMBER OF CONTAINERS	122	PROPERLY COOLED Y / N / NA	
CUSTODY SEALS Y / N / NA		SAMPLES INTACT Y / N / NA	
RECEIVED IN GOOD COND. Y / N		SAMPLES ACCEPTED Y / N	

TURN AROUND TIME

☒ NORMAL ☐ RUSH ☐ SAME DAY ☐ NEXT DAY ☐ 2 DAYS ☐ 3 DAYS

DATA DELIVERABLE REQUIRED

☐ HARD COPY ☐ PDF ☐ GEOTRACKER (GLOBAL ID) _____ ☐ OTHER (PLEASE SPECIFY) _____

	1.	2.	3.
RELINQUISHED BY SAMPLER: / RELINQUISHED BY:	Signature:	Signature:	Signature:
	Printed Name: Jack Callaghan	Printed Name:	Printed Name: Thomas Robinson
	Date: 11/20/12 Time: 1350	Date: Time:	Date: 11-20-12 Time: 1620
RECEIVED BY: / RECEIVED BY LABORATORY:	Signature:	Signature:	Signature:
	Printed Name: Thomas LaGrasa	Printed Name:	Printed Name: Jean Claude
	Date: 11-20-12 Time: 1350	Date: Time:	Date: 11/20/12 Time: 1620

DISTRIBUTION: WHITE - Laboratory, CANARY - Laboratory, PINK - Project/Account Manager, YELLOW - Sampler/Originator

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Southern California Gas Company
555 W. 5th St.-GT17E3
Los Angeles, CA 90013-1011

Telephone: (213)244-3292
Attention: Masood Hosseini

Project ID: VENTURA UST 4Q12
Date Received 11/20/2012
Date Reported 12/10/2012

Job Number	Order Date	Client
67573	11/20/2012	SC/G

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 11 samples with the following specification on 11/20/2012.

Lab ID	Sample ID	Sample Date	Matrix	QTY of Containers
67573.01	UST MW-1	11/20/2012	Aqueous	12
67573.02	UST IW-1	11/20/2012	Aqueous	12
67573.03	UST MW-2	11/20/2012	Aqueous	12
67573.04	UST MW-3	11/20/2012	Aqueous	12
67573.05	UST MW-4	11/20/2012	Aqueous	12
67573.06	UST MW-5	11/20/2012	Aqueous	12
67573.07	UST MW-6	11/20/2012	Aqueous	12
67573.08	UST MW-7	11/20/2012	Aqueous	12
67573.09	UST MW-8	11/20/2012	Aqueous	12
67573.10	DUP-1	11/20/2012	Aqueous	12
67573.11	TB-1	11/20/2012	Aqueous	2

The samples were analyzed as specified on the enclosed chain of custody.
Analytical non-conformances have been noted on the report.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

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ANALYTICAL RESULTS

Ordered By

Southern California Gas Company
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Los Angeles, CA 90013-1011

Telephone: (213)244-3292
Attn: Masood Hosseini
Page: **2**

Site

1555 N. Olive Street
Ventura, CA 93001

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			Method Blank	67573.01			
Client Sample I.D.				UST MW-1			
Date Sampled				11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/28/2012	11/29/2012			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Acetone	10	10	ND	ND			
Benzene	0.5	1.0	ND	ND			
Bromobenzene (Phenyl bromide)	0.5	1.0	ND	ND			
Bromochloromethane	0.5	1.0	ND	ND			
Bromodichloromethane	0.5	1.0	ND	ND			
Bromoform (Tribromomethane)	2.5	5.0	ND	ND			
Bromomethane (Methyl bromide)	1.5	3.0	ND	ND			
2-Butanone (MEK)	5.0	5.0	ND	ND			
n-Butylbenzene	0.5	1.0	ND	1.82			
sec-Butylbenzene	0.5	1.0	ND	ND			
tert-Butylbenzene	0.5	1.0	ND	0.830J			
Carbon Disulfide	0.5	1.0	ND	0.540J			
Carbon tetrachloride	0.5	1.0	ND	ND			
Chlorobenzene	0.5	1.0	ND	ND			
Chloroethane	1.5	3.0	ND	ND			
2-Chloroethyl vinyl ether	2.5	5.0	ND	ND			
Chloroform (Trichloromethane)	0.5	1.0	ND	2.24			
Chloromethane (Methyl chloride)	1.5	3.0	ND	ND			
2-Chlorotoluene	0.5	1.0	ND	ND			
4-Chlorotoluene	0.5	1.0	ND	ND			
1,2-Dibromo-3-chloropropane (DBCP)	2.5	5.0	ND	ND			
Dibromochloromethane	0.5	1.0	ND	ND			
1,2-Dibromoethane (EDB)	0.5	1.0	ND	ND			
Dibromomethane	0.5	1.0	ND	ND			
1,2-Dichlorobenzene	0.5	1.0	ND	ND			
1,3-Dichlorobenzene	0.5	1.0	ND	ND			
1,4-Dichlorobenzene	0.5	1.0	ND	ND			
Dichlorodifluoromethane	1.5	3.0	ND	ND			

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			Method Blank	67573.01			
Client Sample I.D.				UST MW-1			
Date Sampled				11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/28/2012	11/29/2012			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,1-Dichloroethane	0.5	1.0	ND	ND			
1,2-Dichloroethane (EDC)	0.5	1.0	ND	ND			
1,1-Dichloroethene	0.5	1.0	ND	ND			
cis-1,2-Dichloroethene	0.5	1.0	ND	ND			
trans-1,2-Dichloroethene	0.5	1.0	ND	ND			
1,2-Dichloropropane	0.5	1.0	ND	ND			
1,3-Dichloropropane	0.5	1.0	ND	ND			
2,2-Dichloropropane	0.5	1.0	ND	ND			
1,1-Dichloropropene	0.5	1.0	ND	ND			
cis-1,3-Dichloropropene	0.5	1.0	ND	ND			
trans-1,3-Dichloropropene	0.5	1.0	ND	ND			
Ethylbenzene	0.5	1.0	ND	0.690J			
Hexachlorobutadiene	1.5	3.0	ND	ND			
2-Hexanone	2.5	5.0	ND	ND			
Iodomethane	0.5	1.0	ND	ND			
Isopropylbenzene	0.5	1.0	ND	ND			
p-Isopropyltoluene	0.5	1.0	ND	ND			
4-Methyl-2-pentanone (MIBK)	2.5	5.0	ND	ND			
Methylene chloride (DCM)	2.0	4.0	ND	ND			
Naphthalene	0.5	1.0	ND	0.880J			
n-Propylbenzene	0.5	1.0	ND	ND			
Styrene	0.5	1.0	ND	ND			
1,1,1,2-Tetrachloroethane	0.5	1.0	ND	ND			
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND			
Tetrachloroethene	0.5	1.0	ND	ND			
Toluene (Methyl benzene)	0.5	1.0	ND	ND			
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND			
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND			
1,1,1-Trichloroethane	0.5	1.0	ND	ND			
1,1,2-Trichloroethane	0.5	1.0	ND	ND			
Trichloroethene	0.5	1.0	ND	ND			
Trichlorofluoromethane	0.5	1.0	ND	ND			
1,2,3-Trichloropropane	0.5	1.0	ND	ND			
1,2,4-Trimethylbenzene	0.5	1.0	ND	1.61			

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			Method Blank	**67573.01**			
Client Sample I.D.				UST MW-1			
Date Sampled				11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/28/2012	11/29/2012			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,3,5-Trimethylbenzene	0.5	1.0	ND	2.22			
Vinyl Acetate	0.5	5.0	ND	ND			
Vinyl chloride (Chloroethene)	0.5	3.0	ND	ND			
o-Xylene	0.5	1.0	ND	3.13			
m,p-Xylenes	1.0	2.0	ND	2.89			
tert-Butyl alcohol (TBA)	10	50	ND	87.7			
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND			
Ethyl alcohol (Ethanol)	250	500	ND	ND			
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND			
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	56.9			
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	0.660J			
Our Lab I.D.			Method Blank	**67573.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	75-125		103	102			
Dibromofluoromethane	75-125		103	105			
Toluene-d8	75-125		103	102			

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ANALYTICAL RESULTS

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Page: 5

Site

1555 N. Olive Street
Ventura, CA 93001

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.02				
Client Sample I.D.			UST IW-1				
Date Sampled			11/20/2012				
Date Prepared			11/28/2012				
Preparation Method			5030B				
Date Analyzed			11/29/2012				
Matrix			Aqueous				
Units			ug/L				
Dilution Factor			10				
Analytes	**MDL**	**PQL**	**Results**				
Acetone	100	100	ND				
Benzene	5	10	ND				
Bromobenzene (Phenyl bromide)	5	10	ND				
Bromochloromethane	5	10	ND				
Bromodichloromethane	5	10	ND				
Bromoform (Tribromomethane)	25	50	ND				
Bromomethane (Methyl bromide)	15	30	ND				
2-Butanone (MEK)	50	50	ND				
n-Butylbenzene	5	10	ND				
sec-Butylbenzene	5	10	ND				
tert-Butylbenzene	5	10	ND				
Carbon Disulfide	5	10	ND				
Carbon tetrachloride	5	10	ND				
Chlorobenzene	5	10	ND				
Chloroethane	15	30	ND				
2-Chloroethyl vinyl ether	25	50	ND				
Chloroform (Trichloromethane)	5	10	ND				
Chloromethane (Methyl chloride)	15	30	ND				
2-Chlorotoluene	5	10	ND				
4-Chlorotoluene	5	10	ND				
1,2-Dibromo-3-chloropropane (DBCP)	25	50	ND				
Dibromochloromethane	5	10	ND				
1,2-Dibromoethane (EDB)	5	10	ND				
Dibromomethane	5	10	ND				
1,2-Dichlorobenzene	5	10	ND				
1,3-Dichlorobenzene	5	10	ND				
1,4-Dichlorobenzene	5	10	ND				
Dichlorodifluoromethane	15	30	ND				

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			**67573.02**				
Client Sample I.D.			UST IW-1				
Date Sampled			11/20/2012				
Date Prepared			11/28/2012				
Preparation Method			5030B				
Date Analyzed			11/29/2012				
Matrix			Aqueous				
Units			ug/L				
Dilution Factor			10				
Analytes	**MDL**	**PQL**	**Results**				
1,1-Dichloroethane	5	10	ND				
1,2-Dichloroethane (EDC)	5	10	ND				
1,1-Dichloroethene	5	10	ND				
cis-1,2-Dichloroethene	5	10	ND				
trans-1,2-Dichloroethene	5	10	ND				
1,2-Dichloropropane	5	10	ND				
1,3-Dichloropropane	5	10	ND				
2,2-Dichloropropane	5	10	ND				
1,1-Dichloropropene	5	10	ND				
cis-1,3-Dichloropropene	5	10	ND				
trans-1,3-Dichloropropene	5	10	ND				
Ethylbenzene	5	10	ND				
Hexachlorobutadiene	15	30	ND				
2-Hexanone	25	50	ND				
Iodomethane	5	10	ND				
Isopropylbenzene	5	10	ND				
p-Isopropyltoluene	5	10	ND				
4-Methyl-2-pentanone (MIBK)	25	50	ND				
Methylene chloride (DCM)	20	40	ND				
Naphthalene	5	10	ND				
n-Propylbenzene	5	10	ND				
Styrene	5	10	ND				
1,1,1,2-Tetrachloroethane	5	10	ND				
1,1,2,2-Tetrachloroethane	5	10	ND				
Tetrachloroethene	5	10	ND				
Toluene (Methyl benzene)	5	10	ND				
1,2,3-Trichlorobenzene	5	10	ND				
1,2,4-Trichlorobenzene	5	10	ND				
1,1,1-Trichloroethane	5	10	ND				
1,1,2-Trichloroethane	5	10	ND				
Trichloroethene	5	10	ND				
Trichlorofluoromethane	5	10	ND				
1,2,3-Trichloropropane	5	10	ND				
1,2,4-Trimethylbenzene	5	10	ND				

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			**67573.02**				
Client Sample I.D.			UST IW-1				
Date Sampled			11/20/2012				
Date Prepared			11/28/2012				
Preparation Method			5030B				
Date Analyzed			11/29/2012				
Matrix			Aqueous				
Units			ug/L				
Dilution Factor			10				
Analytes	**MDL**	**PQL**	**Results**				
1,3,5-Trimethylbenzene	5	10	ND				
Vinyl Acetate	5	50	ND				
Vinyl chloride (Chloroethene)	5	30	ND				
o-Xylene	5	10	ND				
m,p-Xylenes	10	20	ND				
tert-Butyl alcohol (TBA)	100	500	258J				
Diisopropyl ether (DIPE)	5	10	ND				
Ethyl alcohol (Ethanol)	2500	5000	ND				
Ethyl-tert-butyl ether (ETBE)	5	10	ND				
Methyl-tert-butyl ether (MTBE)	5	10	379				
tert-Amyl methyl ether (TAME)	5	10	5.80J				
Our Lab I.D.			**67573.02**				
Surrogates	**%Rec.Limit**		**% Rec.**				
Bromofluorobenzene	75-125		103				
Dibromofluoromethane	75-125		106				
Toluene-d8	75-125		103				

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ANALYTICAL RESULTS

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Attn: Masood Hosseini

Site

1555 N. Olive Street
Ventura, CA 93001

Page: 8

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.03	67573.04	67573.05		
Client Sample I.D.			UST MW-2	UST MW-3	UST MW-4		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/28/2012	11/28/2012	11/28/2012		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			11/28/2012	11/28/2012	11/28/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Acetone	10	10	ND	ND	ND		
Benzene	0.5	1.0	ND	ND	ND		
Bromobenzene (Phenyl bromide)	0.5	1.0	ND	ND	ND		
Bromochloromethane	0.5	1.0	ND	ND	ND		
Bromodichloromethane	0.5	1.0	ND	ND	ND		
Bromoform (Tribromomethane)	2.5	5.0	ND	ND	ND		
Bromomethane (Methyl bromide)	1.5	3.0	ND	ND	ND		
2-Butanone (MEK)	5.0	5.0	ND	ND	ND		
n-Butylbenzene	0.5	1.0	ND	ND	ND		
sec-Butylbenzene	0.5	1.0	ND	ND	ND		
tert-Butylbenzene	0.5	1.0	ND	5.36	1.16		
Carbon Disulfide	0.5	1.0	ND	ND	ND		
Carbon tetrachloride	0.5	1.0	ND	ND	ND		
Chlorobenzene	0.5	1.0	ND	ND	ND		
Chloroethane	1.5	3.0	ND	ND	ND		
2-Chloroethyl vinyl ether	2.5	5.0	ND	ND	ND		
Chloroform (Trichloromethane)	0.5	1.0	ND	ND	ND		
Chloromethane (Methyl chloride)	1.5	3.0	ND	ND	ND		
2-Chlorotoluene	0.5	1.0	ND	ND	ND		
4-Chlorotoluene	0.5	1.0	ND	ND	ND		
1,2-Dibromo-3-chloropropane (DBCP)	2.5	5.0	ND	ND	ND		
Dibromochloromethane	0.5	1.0	ND	ND	ND		
1,2-Dibromoethane (EDB)	0.5	1.0	ND	ND	ND		
Dibromomethane	0.5	1.0	ND	ND	ND		
1,2-Dichlorobenzene	0.5	1.0	ND	ND	ND		
1,3-Dichlorobenzene	0.5	1.0	ND	ND	ND		
1,4-Dichlorobenzene	0.5	1.0	ND	ND	ND		
Dichlorodifluoromethane	1.5	3.0	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.03	67573.04	67573.05		
Client Sample I.D.			UST MW-2	UST MW-3	UST MW-4		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/28/2012	11/28/2012	11/28/2012		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			11/28/2012	11/28/2012	11/28/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,1-Dichloroethane	0.5	1.0	ND	ND	ND		
1,2-Dichloroethane (EDC)	0.5	1.0	ND	ND	ND		
1,1-Dichloroethene	0.5	1.0	ND	ND	ND		
cis-1,2-Dichloroethene	0.5	1.0	ND	ND	ND		
trans-1,2-Dichloroethene	0.5	1.0	ND	ND	ND		
1,2-Dichloropropane	0.5	1.0	ND	ND	ND		
1,3-Dichloropropane	0.5	1.0	ND	ND	ND		
2,2-Dichloropropane	0.5	1.0	ND	ND	ND		
1,1-Dichloropropene	0.5	1.0	ND	ND	ND		
cis-1,3-Dichloropropene	0.5	1.0	ND	ND	ND		
trans-1,3-Dichloropropene	0.5	1.0	ND	ND	ND		
Ethylbenzene	0.5	1.0	ND	ND	ND		
Hexachlorobutadiene	1.5	3.0	ND	ND	ND		
2-Hexanone	2.5	5.0	ND	ND	ND		
Iodomethane	0.5	1.0	ND	ND	ND		
Isopropylbenzene	0.5	1.0	ND	ND	ND		
p-Isopropyltoluene	0.5	1.0	ND	ND	ND		
4-Methyl-2-pentanone (MIBK)	2.5	5.0	ND	ND	ND		
Methylene chloride (DCM)	2.0	4.0	ND	ND	ND		
Naphthalene	0.5	1.0	0.550J	ND	ND		
n-Propylbenzene	0.5	1.0	ND	ND	ND		
Styrene	0.5	1.0	ND	ND	ND		
1,1,1,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND		
Tetrachloroethene	0.5	1.0	ND	ND	ND		
Toluene (Methyl benzene)	0.5	1.0	ND	ND	ND		
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND		
1,1,1-Trichloroethane	0.5	1.0	ND	ND	ND		
1,1,2-Trichloroethane	0.5	1.0	ND	ND	ND		
Trichloroethene	0.5	1.0	ND	ND	ND		
Trichlorofluoromethane	0.5	1.0	ND	ND	ND		
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND		
1,2,4-Trimethylbenzene	0.5	1.0	ND	ND	ND		

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.03	67573.04	67573.05		
Client Sample I.D.			UST MW-2	UST MW-3	UST MW-4		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/28/2012	11/28/2012	11/28/2012		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			11/28/2012	11/28/2012	11/28/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
1,3,5-Trimethylbenzene	0.5	1.0	ND	ND	ND		
Vinyl Acetate	0.5	5.0	ND	ND	ND		
Vinyl chloride (Chloroethene)	0.5	3.0	ND	ND	ND		
o-Xylene	0.5	1.0	ND	ND	ND		
m,p-Xylenes	1.0	2.0	ND	ND	ND		
tert-Butyl alcohol (TBA)	10	50	14.6J	2,200	41.5J		
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND	ND		
Ethyl alcohol (Ethanol)	250	500	ND	ND	ND		
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND	ND		
Methyl-tert-butyl ether (MTBE)	0.5	1.0	7.65	773	9.93		
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	1.66	ND		
Our Lab I.D.			**67573.03**	**67573.04**	**67573.05**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
Bromofluorobenzene	75-125		103	103	103		
Dibromofluoromethane	75-125		105	106	106		
Toluene-d8	75-125		103	103	102		

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ANALYTICAL RESULTS

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555 W. 5th St.-GT17E3
Los Angeles, CA 90013-1011

Telephone: (213)244-3292
Attn: Masood Hosseini
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Site

1555 N. Olive Street
Ventura, CA 93001

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.06	67573.07			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/29/2012	11/29/2012			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			10	10			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Acetone	100	100	ND	ND			
Benzene	5	10	ND	ND			
Bromobenzene (Phenyl bromide)	5	10	ND	ND			
Bromochloromethane	5	10	ND	ND			
Bromodichloromethane	5	10	ND	ND			
Bromoform (Tribromomethane)	25	50	ND	ND			
Bromomethane (Methyl bromide)	15	30	ND	ND			
2-Butanone (MEK)	50	50	ND	ND			
n-Butylbenzene	5	10	ND	ND			
sec-Butylbenzene	5	10	ND	ND			
tert-Butylbenzene	5	10	ND	ND			
Carbon Disulfide	5	10	ND	ND			
Carbon tetrachloride	5	10	ND	ND			
Chlorobenzene	5	10	ND	ND			
Chloroethane	15	30	ND	ND			
2-Chloroethyl vinyl ether	25	50	ND	ND			
Chloroform (Trichloromethane)	5	10	ND	ND			
Chloromethane (Methyl chloride)	15	30	ND	ND			
2-Chlorotoluene	5	10	ND	ND			
4-Chlorotoluene	5	10	ND	ND			
1,2-Dibromo-3-chloropropane (DBCP)	25	50	ND	ND			
Dibromochloromethane	5	10	ND	ND			
1,2-Dibromoethane (EDB)	5	10	ND	ND			
Dibromomethane	5	10	ND	ND			
1,2-Dichlorobenzene	5	10	ND	ND			
1,3-Dichlorobenzene	5	10	ND	ND			
1,4-Dichlorobenzene	5	10	ND	ND			
Dichlorodifluoromethane	15	30	ND	ND			

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.06	67573.07			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/29/2012	11/29/2012			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			10	10			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,1-Dichloroethane	5	10	ND	ND			
1,2-Dichloroethane (EDC)	5	10	ND	ND			
1,1-Dichloroethene	5	10	ND	ND			
cis-1,2-Dichloroethene	5	10	ND	ND			
trans-1,2-Dichloroethene	5	10	ND	ND			
1,2-Dichloropropane	5	10	ND	ND			
1,3-Dichloropropane	5	10	ND	ND			
2,2-Dichloropropane	5	10	ND	ND			
1,1-Dichloropropene	5	10	ND	ND			
cis-1,3-Dichloropropene	5	10	ND	ND			
trans-1,3-Dichloropropene	5	10	ND	ND			
Ethylbenzene	5	10	ND	ND			
Hexachlorobutadiene	15	30	ND	ND			
2-Hexanone	25	50	ND	ND			
Iodomethane	5	10	ND	ND			
Isopropylbenzene	5	10	ND	ND			
p-Isopropyltoluene	5	10	ND	ND			
4-Methyl-2-pentanone (MIBK)	25	50	ND	ND			
Methylene chloride (DCM)	20	40	ND	ND			
Naphthalene	5	10	ND	ND			
n-Propylbenzene	5	10	ND	ND			
Styrene	5	10	ND	ND			
1,1,1,2-Tetrachloroethane	5	10	ND	ND			
1,1,2,2-Tetrachloroethane	5	10	ND	ND			
Tetrachloroethene	5	10	ND	ND			
Toluene (Methyl benzene)	5	10	ND	ND			
1,2,3-Trichlorobenzene	5	10	ND	ND			
1,2,4-Trichlorobenzene	5	10	ND	ND			
1,1,1-Trichloroethane	5	10	ND	ND			
1,1,2-Trichloroethane	5	10	ND	ND			
Trichloroethene	5	10	ND	ND			
Trichlorofluoromethane	5	10	ND	ND			
1,2,3-Trichloropropane	5	10	ND	ND			
1,2,4-Trimethylbenzene	5	10	ND	ND			

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			**67573.06**	**67573.07**			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/29/2012	11/29/2012			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			10	10			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
1,3,5-Trimethylbenzene	5	10	ND	ND			
Vinyl Acetate	5	50	ND	ND			
Vinyl chloride (Chloroethene)	5	30	ND	ND			
o-Xylene	5	10	ND	ND			
m,p-Xylenes	10	20	ND	ND			
tert-Butyl alcohol (TBA)	100	500	140J	690			
Diisopropyl ether (DIPE)	5	10	ND	ND			
Ethyl alcohol (Ethanol)	2500	5000	ND	ND			
Ethyl-tert-butyl ether (ETBE)	5	10	ND	ND			
Methyl-tert-butyl ether (MTBE)	5	10	468	394			
tert-Amyl methyl ether (TAME)	5	10	ND	ND			
Our Lab I.D.			**67573.06**	**67573.07**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	75-125		102	104			
Dibromofluoromethane	75-125		104	105			
Toluene-d8	75-125		102	102			

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ANALYTICAL RESULTS

Ordered By

Southern California Gas Company
555 W. 5th St.-GT17E3
Los Angeles, CA 90013-1011

Telephone: (213)244-3292
Attn: Masood Hosseini

Site

1555 N. Olive Street
Ventura, CA 93001

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.08	67573.09	67573.10	67573.11	
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1	TB-1	
Date Sampled			11/20/2012	11/20/2012	11/20/2012	11/20/2012	
Date Prepared			11/28/2012	11/28/2012	11/28/2012	11/28/2012	
Preparation Method			5030B	5030B	5030B	5030B	
Date Analyzed			11/29/2012	11/28/2012	11/28/2012	11/28/2012	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Acetone	10	10	ND	ND	ND	ND	
Benzene	0.5	1.0	ND	ND	ND	ND	
Bromobenzene (Phenyl bromide)	0.5	1.0	ND	ND	ND	ND	
Bromochloromethane	0.5	1.0	ND	ND	ND	ND	
Bromodichloromethane	0.5	1.0	ND	ND	ND	ND	
Bromoform (Tribromomethane)	2.5	5.0	ND	ND	ND	ND	
Bromomethane (Methyl bromide)	1.5	3.0	ND	ND	ND	ND	
2-Butanone (MEK)	5.0	5.0	ND	ND	ND	ND	
n-Butylbenzene	0.5	1.0	ND	ND	ND	ND	
sec-Butylbenzene	0.5	1.0	ND	ND	ND	ND	
tert-Butylbenzene	0.5	1.0	ND	ND	5.18	ND	
Carbon Disulfide	0.5	1.0	ND	ND	ND	ND	
Carbon tetrachloride	0.5	1.0	ND	ND	ND	ND	
Chlorobenzene	0.5	1.0	ND	ND	ND	ND	
Chloroethane	1.5	3.0	ND	ND	ND	ND	
2-Chloroethyl vinyl ether	2.5	5.0	ND	ND	ND	ND	
Chloroform (Trichloromethane)	0.5	1.0	ND	ND	ND	ND	
Chloromethane (Methyl chloride)	1.5	3.0	ND	ND	ND	ND	
2-Chlorotoluene	0.5	1.0	ND	ND	ND	ND	
4-Chlorotoluene	0.5	1.0	ND	ND	ND	ND	
1,2-Dibromo-3-chloropropane (DBCP)	2.5	5.0	ND	ND	ND	ND	
Dibromochloromethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dibromoethane (EDB)	0.5	1.0	ND	ND	ND	ND	
Dibromomethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,3-Dichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,4-Dichlorobenzene	0.5	1.0	ND	ND	ND	ND	
Dichlorodifluoromethane	1.5	3.0	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.08	67573.09	67573.10	67573.11	
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1	TB-1	
Date Sampled			11/20/2012	11/20/2012	11/20/2012	11/20/2012	
Date Prepared			11/28/2012	11/28/2012	11/28/2012	11/28/2012	
Preparation Method			5030B	5030B	5030B	5030B	
Date Analyzed			11/29/2012	11/28/2012	11/28/2012	11/28/2012	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
1,1-Dichloroethane	0.5	1.0	ND	ND	ND	ND	
1,2-Dichloroethane (EDC)	0.5	1.0	ND	ND	ND	ND	
1,1-Dichloroethene	0.5	1.0	ND	ND	ND	ND	
cis-1,2-Dichloroethene	0.5	1.0	ND	ND	ND	ND	
trans-1,2-Dichloroethene	0.5	1.0	ND	ND	ND	ND	
1,2-Dichloropropane	0.5	1.0	ND	ND	ND	ND	
1,3-Dichloropropane	0.5	1.0	ND	ND	ND	ND	
2,2-Dichloropropane	0.5	1.0	ND	ND	ND	ND	
1,1-Dichloropropene	0.5	1.0	ND	ND	ND	ND	
cis-1,3-Dichloropropene	0.5	1.0	ND	ND	ND	ND	
trans-1,3-Dichloropropene	0.5	1.0	ND	ND	ND	ND	
Ethylbenzene	0.5	1.0	ND	ND	ND	ND	
Hexachlorobutadiene	1.5	3.0	ND	ND	ND	ND	
2-Hexanone	2.5	5.0	ND	ND	ND	ND	
Iodomethane	0.5	1.0	ND	ND	ND	ND	
Isopropylbenzene	0.5	1.0	ND	ND	ND	ND	
p-Isopropyltoluene	0.5	1.0	ND	ND	ND	ND	
4-Methyl-2-pentanone (MIBK)	2.5	5.0	ND	ND	ND	ND	
Methylene chloride (DCM)	2.0	4.0	ND	ND	ND	ND	
Naphthalene	0.5	1.0	ND	ND	ND	ND	
n-Propylbenzene	0.5	1.0	ND	ND	ND	ND	
Styrene	0.5	1.0	ND	ND	ND	ND	
1,1,1,2-Tetrachloroethane	0.5	1.0	ND	ND	ND	ND	
1,1,2,2-Tetrachloroethane	0.5	1.0	ND	ND	ND	ND	
Tetrachloroethene	0.5	1.0	ND	ND	ND	ND	
Toluene (Methyl benzene)	0.5	1.0	ND	ND	ND	ND	
1,2,3-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trichlorobenzene	0.5	1.0	ND	ND	ND	ND	
1,1,1-Trichloroethane	0.5	1.0	ND	ND	ND	ND	
1,1,2-Trichloroethane	0.5	1.0	ND	ND	ND	ND	
Trichloroethene	0.5	1.0	ND	ND	ND	ND	
Trichlorofluoromethane	0.5	1.0	ND	ND	ND	ND	
1,2,3-Trichloropropane	0.5	1.0	ND	ND	ND	ND	
1,2,4-Trimethylbenzene	0.5	1.0	ND	ND	ND	ND	

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ANALYTICAL RESULTS

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1

Our Lab I.D.			67573.08	67573.09	67573.10	67573.11	
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1	TB-1	
Date Sampled			11/20/2012	11/20/2012	11/20/2012	11/20/2012	
Date Prepared			11/28/2012	11/28/2012	11/28/2012	11/28/2012	
Preparation Method			5030B	5030B	5030B	5030B	
Date Analyzed			11/29/2012	11/28/2012	11/28/2012	11/28/2012	
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	
Units			ug/L	ug/L	ug/L	ug/L	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
1,3,5-Trimethylbenzene	0.5	1.0	ND	ND	ND	ND	
Vinyl Acetate	0.5	5.0	ND	ND	ND	ND	
Vinyl chloride (Chloroethene)	0.5	3.0	ND	ND	ND	ND	
o-Xylene	0.5	1.0	ND	ND	ND	ND	
m,p-Xylenes	1.0	2.0	ND	ND	ND	ND	
tert-Butyl alcohol (TBA)	10	50	ND	ND	1,910	ND	
Diisopropyl ether (DIPE)	0.5	1.0	ND	ND	ND	ND	
Ethyl alcohol (Ethanol)	250	500	ND	ND	ND	ND	
Ethyl-tert-butyl ether (ETBE)	0.5	1.0	ND	ND	ND	ND	
Methyl-tert-butyl ether (MTBE)	0.5	1.0	ND	ND	981	ND	
tert-Amyl methyl ether (TAME)	0.5	1.0	ND	ND	1.59	ND	
Our Lab I.D.			**67573.08**	**67573.09**	**67573.10**	**67573.11**	
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	
Bromofluorobenzene	75-125		103	106	104	104	
Dibromofluoromethane	75-125		103	106	107	104	
Toluene-d8	75-125		102	102	102	102	

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1555 N. Olive Street
Ventura, CA 93001

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 112812OB1

Our Lab I.D.			Method Blank	**67573.01**			
Client Sample I.D.				UST MW-1			
Date Sampled				11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/28/2012	11/28/2012			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	0.267			
Our Lab I.D.			Method Blank	**67573.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	75-125		103	88.8			

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Ventura, CA 93001

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 112812OB1

Our Lab I.D.			**67573.02**				
Client Sample I.D.			UST IW-1				
Date Sampled			11/20/2012				
Date Prepared			11/28/2012				
Preparation Method			5030B				
Date Analyzed			11/28/2012				
Matrix			Aqueous				
Units			mg/L				
Dilution Factor			10				
Analytes	**MDL**	**PQL**	**Results**				
TPH as Gasoline and Light HC. (C4-C12)	0.050	0.100	1.11				
Our Lab I.D.			**67573.02**				
Surrogates	**%Rec.Limit**		**% Rec.**				
Bromofluorobenzene	75-125		90.6				

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 112812OB1

Our Lab I.D.			67573.03	67573.04	67573.05		
Client Sample I.D.			UST MW-2	UST MW-3	UST MW-4		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/28/2012	11/28/2012	11/28/2012		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			11/28/2012	11/28/2012	11/28/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	0.144	0.902	0.525		
Our Lab I.D.			**67573.03**	**67573.04**	**67573.05**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
Bromofluorobenzene	75-125		90.6	95.6	95.2		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 112812OB1

Our Lab I.D.			**67573.06**	**67573.07**			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/28/2012	11/28/2012			
Preparation Method			5030B	5030B			
Date Analyzed			11/28/2012	11/28/2012			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			10	10			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
TPH as Gasoline and Light HC. (C4-C12)	0.050	0.100	0.566	0.460			
Our Lab I.D.			**67573.06**	**67573.07**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
Bromofluorobenzene	75-125		91.8	95.8			

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 112812OB1

Our Lab I.D.			**67573.08**	**67573.09**	**67573.10**		
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/28/2012	11/28/2012	11/28/2012		
Preparation Method			5030B	5030B	5030B		
Date Analyzed			11/28/2012	11/28/2012	11/28/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
TPH as Gasoline and Light HC. (C4-C12)	0.005	0.010	ND	ND	0.792		
Our Lab I.D.			**67573.08**	**67573.09**	**67573.10**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
Bromofluorobenzene	75-125		89.0	84.6	87.8		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015D, TPH as Diesel and Heavy Hydrocarbons Using GC/FID

QC Batch No: 112712DB1

Our Lab I.D.			Method Blank	**67573.01**	**67573.02**	**67573.03**	**67573.04**
Client Sample I.D.				UST MW-1	UST IW-1	UST MW-2	UST MW-3
Date Sampled				11/20/2012	11/20/2012	11/20/2012	11/20/2012
Date Prepared			11/27/2012	11/27/2012	11/27/2012	11/27/2012	11/27/2012
Preparation Method			3510C	3510C	3510C	3510C	3510C
Date Analyzed			11/29/2012	11/29/2012	11/29/2012	11/29/2012	11/29/2012
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
TPH as Diesel (C13-C22)	0.1	0.5	ND	0.327J	1.08	0.213J	1.09
TPH as Heavy Hydrocarbons (C23-C40)	0.1	0.5	ND	ND	ND	ND	ND
TPH Total as Diesel and Heavy HC.C13-C40	0.1	0.5	ND	0.327J	1.08	0.213J	1.09
Our Lab I.D.			Method Blank	**67573.01**	**67573.02**	**67573.03**	**67573.04**
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**
Chlorobenzene	60-125		108	106	108	112	105

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015D, TPH as Diesel and Heavy Hydrocarbons Using GC/FID

QC Batch No: 112712DB1

Our Lab I.D.			67573.05	67573.06	67573.07	67573.08	67573.09
Client Sample I.D.			UST MW-4	UST MW-5	UST MW-6	UST MW-7	UST MW-8
Date Sampled			11/20/2012	11/20/2012	11/20/2012	11/20/2012	11/20/2012
Date Prepared			11/27/2012	11/27/2012	11/27/2012	11/27/2012	11/27/2012
Preparation Method			3510C	3510C	3510C	3510C	3510C
Date Analyzed			11/29/2012	11/29/2012	11/29/2012	11/29/2012	11/29/2012
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
TPH as Diesel (C13-C22)	0.1	0.5	0.737	2.49	1.30	ND	ND
TPH as Heavy Hydrocarbons (C23-C40)	0.1	0.5	ND	ND	ND	ND	ND
TPH Total as Diesel and Heavy HC.C13-C40	0.1	0.5	0.737	2.49	1.30	ND	ND
Our Lab I.D.			**67573.05**	**67573.06**	**67573.07**	**67573.08**	**67573.09**
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**
Chlorobenzene	60-125		105	105	101	104	82.0

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015D, TPH as Diesel and Heavy Hydrocarbons Using GC/FID

QC Batch No: 112712DB1

Our Lab I.D.			**67573.10**				
Client Sample I.D.			DUP-1				
Date Sampled			11/20/2012				
Date Prepared			11/27/2012				
Preparation Method			3510C				
Date Analyzed			11/29/2012				
Matrix			Aqueous				
Units			mg/L				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
TPH as Diesel (C13-C22)	0.1	0.5	1.39				
TPH as Heavy Hydrocarbons (C23-C40)	0.1	0.5	ND				
TPH Total as Diesel and Heavy HC.C13-C40	0.1	0.5	1.39				
Our Lab I.D.			**67573.10**				
Surrogates	**%Rec.Limit**		**% Rec.**				
Chlorobenzene	60-125		92.0				

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Total Arsenic

QC Batch No: 1130122C3

Our Lab I.D.			Method Blank	67573.01	67573.02	67573.03	67573.04
Client Sample I.D.				UST MW-1	UST IW-1	UST MW-2	UST MW-3
Date Sampled				11/20/2012	11/20/2012	11/20/2012	11/20/2012
Date Prepared			11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Preparation Method			3005A	3005A	3005A	3005A	3005A
Date Analyzed			12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Arsenic	0.05	0.10	ND	0.0534J	0.241	ND	ND

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Total Arsenic

QC Batch No: 1130122C3

Our Lab I.D.			67573.05				
Client Sample I.D.			UST MW-4				
Date Sampled			11/20/2012				
Date Prepared			11/30/2012				
Preparation Method			3005A				
Date Analyzed			12/03/2012				
Matrix			Aqueous				
Units			mg/L				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Arsenic	0.05	0.10	ND				

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Total Arsenic

QC Batch No: 1130122C3

Our Lab I.D.			67573.06	67573.07			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/30/2012	11/30/2012			
Preparation Method			3005A	3005A			
Date Analyzed			12/03/2012	12/03/2012			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			5	5			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Arsenic	0.25	0.50	0.555	0.420J			

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Total Arsenic

QC Batch No: 1130122C3

Our Lab I.D.			67573.08	67573.09	67573.10		
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/30/2012	11/30/2012	11/30/2012		
Preparation Method			3005A	3005A	3005A		
Date Analyzed			12/03/2012	12/03/2012	12/03/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Arsenic	0.05	0.10	ND	ND	ND		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Boron by ICP

QC Batch No: 1127122C4

Our Lab I.D.			Method Blank	67573.01	67573.02	67573.03	67573.04
Client Sample I.D.				UST MW-1	UST IW-1	UST MW-2	UST MW-3
Date Sampled				11/20/2012	11/20/2012	11/20/2012	11/20/2012
Date Prepared			11/27/2012	11/27/2012	11/27/2012	11/27/2012	11/27/2012
Preparation Method			3005A	3005A	3005A	3005A	3005A
Date Analyzed			11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Boron	0.050	0.100	ND	0.240	0.407	0.714	1.09

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Boron by ICP

QC Batch No: 1127122C4

Our Lab I.D.			67573.05				
Client Sample I.D.			UST MW-4				
Date Sampled			11/20/2012				
Date Prepared			11/27/2012				
Preparation Method			3005A				
Date Analyzed			11/30/2012				
Matrix			Aqueous				
Units			mg/L				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Boron	0.050	0.100	1.02				

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Boron by ICP

QC Batch No: 1127122C4

Our Lab I.D.			67573.06	67573.07			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/27/2012	11/27/2012			
Preparation Method			3005A	3005A			
Date Analyzed			11/30/2012	11/30/2012			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			5	5			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Boron	0.250	0.500	0.845	0.812			

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Ventura, CA 93001

Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Boron by ICP

QC Batch No: 1127122C4

Our Lab I.D.			67573.08	67573.09	67573.10		
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/27/2012	11/27/2012	11/27/2012		
Preparation Method			3005A	3005A	3005A		
Date Analyzed			11/30/2012	11/30/2012	11/30/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Boron	0.050	0.100	0.636	0.643	1.01		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Cd, Cr, Pb, Mn, and Ni Metals by ICP

QC Batch No: 1130122C3

Our Lab I.D.			Method Blank	67573.01	67573.02	67573.03	67573.04
Client Sample I.D.				UST MW-1	UST IW-1	UST MW-2	UST MW-3
Date Sampled				11/20/2012	11/20/2012	11/20/2012	11/20/2012
Date Prepared			11/30/2012	11/30/2012	11/30/2012	11/30/2012	11/30/2012
Preparation Method			3005A	3005A	3005A	3005A	3005A
Date Analyzed			12/03/2012	12/03/2012	12/03/2012	12/03/2012	12/03/2012
Matrix			Aqueous	Aqueous	Aqueous	Aqueous	Aqueous
Units			mg/L	mg/L	mg/L	mg/L	mg/L
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Cadmium	0.01	0.05	ND	ND	ND	ND	ND
Chromium	0.01	0.05	ND	ND	0.0429J	ND	ND
Lead	0.03	0.10	ND	ND	ND	ND	ND
Manganese	0.03	0.05	ND	0.136	0.0853	0.897	ND
Nickel	0.01	0.05	ND	0.0144J	0.0579	ND	ND

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Cd, Cr, Pb, Mn, and Ni Metals by ICP

QC Batch No: 1130122C3

Our Lab I.D.			67573.05				
Client Sample I.D.			UST MW-4				
Date Sampled			11/20/2012				
Date Prepared			11/30/2012				
Preparation Method			3005A				
Date Analyzed			12/03/2012				
Matrix			Aqueous				
Units			mg/L				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Cadmium	0.01	0.05	ND				
Chromium	0.01	0.05	ND				
Lead	0.03	0.10	ND				
Manganese	0.03	0.05	0.358				
Nickel	0.01	0.05	ND				

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Cd, Cr, Pb, Mn, and Ni Metals by ICP

QC Batch No: 1130122C3

Our Lab I.D.			67573.06	67573.07			
Client Sample I.D.			UST MW-5	UST MW-6			
Date Sampled			11/20/2012	11/20/2012			
Date Prepared			11/30/2012	11/30/2012			
Preparation Method			3005A	3005A			
Date Analyzed			12/03/2012	12/03/2012			
Matrix			Aqueous	Aqueous			
Units			mg/L	mg/L			
Dilution Factor			5	5			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Cadmium	0.05	0.25	ND	ND			
Chromium	0.05	0.25	ND	ND			
Lead	0.15	0.50	0.212J	ND			
Manganese	0.15	0.25	ND	ND			
Nickel	0.05	0.25	ND	ND			

Comment(s):
67573.06,07: Samples were diluted due to high sodium concentration.

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Cd, Cr, Pb, Mn, and Ni Metals by ICP

QC Batch No: 1130122C3

Our Lab I.D.			67573.08	67573.09	67573.10		
Client Sample I.D.			UST MW-7	UST MW-8	DUP-1		
Date Sampled			11/20/2012	11/20/2012	11/20/2012		
Date Prepared			11/30/2012	11/30/2012	11/30/2012		
Preparation Method			3005A	3005A	3005A		
Date Analyzed			12/03/2012	12/03/2012	12/03/2012		
Matrix			Aqueous	Aqueous	Aqueous		
Units			mg/L	mg/L	mg/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Cadmium	0.01	0.05	ND	ND	ND		
Chromium	0.01	0.05	ND	ND	ND		
Lead	0.03	0.10	ND	ND	ND		
Manganese	0.03	0.05	0.757	0.101	0.549		
Nickel	0.01	0.05	ND	ND	ND		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Analytes			Total Dissolved Solids	Oxygen, Dissolved	Chromium (VI)	Formaldehyde
Methods of Analyses			160.1	SM-4500-OG	7199	ASTM(D-19)P216
Date Prepared			11/21/2012	11/21/2012	11/21/2012	11/28/2012
Date Analyzed			11/22/2012	11/21/2012	11/21/2012	11/28/2012
Matrix			Aqueous	Aqueous	Aqueous	Aqueous
QC Batch Number			112112-1	112112-1	112112-2	112812-1
Units			mg/L	mg/L	ug/L	mg/L
Method Detection Limit			5.0	0.10	2.0	0.5
Practical Quantitation Limit			10.0	0.10	2.0	1.0
Dilution Factor			1	1	1	1
Lab ID	**Sample ID**	**Sampled**	**Results**	**Results**	**Results**	**Results**
67573.01	UST MW-1	11/20/2012	5,690	3.04	ND	ND
67573.02	UST IW-1	11/20/2012	6,010	2.60	ND	ND
67573.03	UST MW-2	11/20/2012	913	2.53	ND	ND
67573.04	UST MW-3	11/20/2012	1,290	2.12	ND	ND
67573.05	UST MW-4	11/20/2012	1,070	2.19	ND	ND
67573.06	UST MW-5	11/20/2012	12,000	17.3	9.58	ND
67573.07	UST MW-6	11/20/2012	12,900	11.2	7.75	ND
67573.08	UST MW-7	11/20/2012	928	3.38	ND	ND
67573.09	UST MW-8	11/20/2012	953	3.10	ND	ND
67573.10	DUP-1	11/20/2012	1,310	2.44	ND	ND
N/A	Method Blank	11/20/2012	ND	NA	ND	ND

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Analytes			Bromide	Chloride	Sulfate	
Methods of Analyses			300.0	300.0	300.0	
Date Prepared			11/27/2012	11/27/2012	11/27/2012	
Date Analyzed			11/27/2012	11/27/2012	11/27/2012	
Matrix			Aqueous	Aqueous	Aqueous	
QC Batch Number			112712-1	112712-1	112712-1	
Units			mg/L	mg/L	mg/L	
Method Detection Limit			0.01	0.02	0.02	
Practical Quantitation Limit			0.10	0.20	0.20	
Dilution Factor			1	1	1	
Lab ID	**Sample ID**	**Sampled**	**Results**	**Results**	**Results**	
67573.01	UST MW-1	11/20/2012	ND	81.1	576	
67573.02	UST IW-1	11/20/2012	1.30	125	165	
67573.03	UST MW-2	11/20/2012	0.800	76.9	1.70	
67573.04	UST MW-3	11/20/2012	1.00	80.0	ND	
67573.05	UST MW-4	11/20/2012	0.600	39.4	2.30	
67573.06	UST MW-5	11/20/2012	ND	36.9	660	
67573.07	UST MW-6	11/20/2012	ND	72.5	831	
67573.08	UST MW-7	11/20/2012	0.800	87.0	58.2	
67573.09	UST MW-8	11/20/2012	0.950	95.2	184	
67573.10	DUP-1	11/20/2012	0.900	79.4	ND	
N/A	Method Blank	11/20/2012	ND	ND	ND	

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Analytes			Ferrous Iron			
Methods of Analyses			SM-3500-FE-D			
Date Prepared			11/21/2012			
Date Analyzed			11/21/2012			
Matrix			Aqueous			
QC Batch Number			112112-1			
Units			mg/L			
Method Detection Limit			0.05			
Practical Quantitation Limit			0.10			
Dilution Factor			1			
Lab ID	**Sample ID**	**Sampled**	**Results**			
67573.01	UST MW-1	11/20/2012	ND			
67573.02	UST IW-1	11/20/2012	ND			
67573.03	UST MW-2	11/20/2012	ND			
67573.04	UST MW-3	11/20/2012	0.451			
67573.06	UST MW-5	11/20/2012	ND			
67573.07	UST MW-6	11/20/2012	ND			
67573.08	UST MW-7	11/20/2012	ND			
67573.09	UST MW-8	11/20/2012	ND			
67573.10	DUP-1	11/20/2012	0.761			
N/A	Method Blank	11/20/2012	ND			

Analytes			Ferrous Iron			
Methods of Analyses			SM-3500-FE-D			
Date Prepared			11/21/2012			
Date Analyzed			11/21/2012			
Matrix			Aqueous			
QC Batch Number			112112-1			
Units			mg/L			
Method Detection Limit			0.25			
Practical Quantitation Limit			0.50			
Dilution Factor			5			
Lab ID	**Sample ID**	**Sampled**	**Results**			
67573.05	UST MW-4	11/20/2012	2.72			

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 160.1, Total Dissolved Solids, Gravimetric, Dried at 180 C

QC Batch No: 112112-1; Dup or Spiked Sample: 67539.01; LCS: Clean Water; LCS Prepared: 11/21/2012; LCS Analyzed: 11/22/2012; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Total Dissolved Solids	1,120	1,140	1.8	<15	100	92.0	92.0	80-120		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 300.0, Determination of Inorganic Anion in water by IC

QC Batch No: 112712-1; Dup or Spiked Sample: 67573.03; LCS: Clean Water; LCS Prepared: 11/27/2012; LCS Analyzed: 11/27/2012; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Bromide	2.00	1.93	96.5	2.00	1.91	95.5	1.0	80-120	<20	
Chloride	20.0	18.9	94.5	20.0	19.0	95.0	<1	80-120	<20	
Sulfate	20.0	19.0	95.0	20.0	19.1	95.5	<1	80-120	<20	

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Total Arsenic

QC Batch No: 1130122C3; Dup or Spiked Sample: 67583.08; LCS: Clean Water; QC Prepared: 11/30/2012; QC Analyzed: 12/03/2012; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Arsenic	0.00	1.00	0.881	88.1	1.00	0.872	87.2	1.0	80-120	<15

QC Batch No: 1130122C3; Dup or Spiked Sample: 67583.08; LCS: Clean Water; QC Prepared: 11/30/2012; QC Analyzed: 12/03/2012; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Arsenic	1.00	0.886	88.6	1.00	0.867	86.7	2.2	80-120	<15	

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Boron by ICP

QC Batch No: 1127122C4; Dup or Spiked Sample: 67583.01; LCS: Clean Water; QC Prepared: 11/27/2012; QC Analyzed: 11/30/2012; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Boron	0.883	1.00	1.71	82.7	1.00	1.69	80.7	2.45	80-120	<20

QC Batch No: 1127122C4; Dup or Spiked Sample: 67583.01; LCS: Clean Water; QC Prepared: 11/27/2012; QC Analyzed: 11/30/2012; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Boron	1.00	0.880	88.1	1.00	0.900	90.0	2.13	80-120	<20	

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 6010BSCAN, Cd, Cr, Pb, Mn, and Ni Metals by ICP

QC Batch No: 1130122C3; Dup or Spiked Sample: 67583.08; LCS: Clean Water; QC Prepared: 11/30/2012; QC Analyzed: 12/03/2012; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Cadmium	0.00	1.00	0.900	90.0	1.00	0.910	91.4	1.54	80-120	<15
Chromium	0.00	1.00	0.880	87.6	1.00	0.890	88.6	1.14	80-120	<15
Lead	0.00	1.00	0.860	85.9	1.00	0.850	85.1	<1	80-120	<15
Manganese	0.00	1.00	0.880	87.9	1.00	0.880	88.1	<1	80-120	<15
Nickel	0.00	1.00	0.860	85.5	1.00	0.860	86.3	<1	80-120	<15

QC Batch No: 1130122C3; Dup or Spiked Sample: 67583.08; LCS: Clean Water; QC Prepared: 11/30/2012; QC Analyzed: 12/03/2012; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Cadmium	1.00	0.910	91.3	1.00	0.920	92.0	<1	80-120	<15	
Chromium	1.00	0.890	89.4	1.00	0.900	90.1	<1	80-120	<15	
Lead	1.00	0.860	85.6	1.00	0.850	84.5	1.29	80-120	<15	
Manganese	1.00	0.890	88.8	1.00	0.900	89.5	<1	80-120	<15	
Nickel	1.00	0.860	85.5	1.00	0.860	86.3	<1	80-120	<15	

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Ventura, CA 93001

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 7199, Chromium Hexavalent by Ion Chromatography

QC Batch No: 112112-2; Dup or Spiked Sample: 67573.01; LCS: Clean Water; QC Prepared: 11/21/2012; QC Analyzed: 11/21/2012; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Chromium (VI)	0.00	10.0	8.02	80.2	10.0	8.52	85.2	6.0	85-115	<20

QC Batch No: 112112-2; Dup or Spiked Sample: 67573.01; LCS: Clean Water; QC Prepared: 11/21/2012; QC Analyzed: 11/21/2012; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
Chromium (VI)	10.0	8.29	82.9	80-120						

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: 8260B, Volatile Organic Compounds by GC/MS (SW846)

QC Batch No: 1128126A1; Dup or Spiked Sample: B1128126A1; LCS: Clean Water; QC Prepared: 11/28/2012;MS Analyzed: 11/29/2012; LCS Analyzed: 11/28/2012; Units: ug/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Benzene	0.00	50.0	51.0	102	50.0	49.8	99.6	2.38	75-125	<20
Chlorobenzene	0.00	50.0	47.2	94.4	50.0	45.6	91.2	3.45	75-125	<20
1,1-Dichloroethene	0.00	50.0	56.5	113	50.0	55.0	110	2.69	75-125	<20
Toluene (Methyl benzene)	0.00	50.0	50.5	101	50.0	48.6	97.2	3.83	75-125	<20
Trichloroethene	0.00	50.0	50.0	100	50.0	49.2	98.4	1.61	75-125	<20
Methyl-tert-butyl ether (MTBE)	0.00	50.0	51.5	103	50.0	51.0	102	<1	75-125	<20
Surrogates										
Bromofluorobenzene	0.00	50.0	50.5	101	50.0	51.0	102	<1	75-125	<20
Dibromofluoromethane	0.00	50.0	51.0	102	50.0	51.0	102	<1	75-125	<20
Toluene-d8	0.00	50.0	49.7	99.3	50.0	49.6	99.2	<1	75-125	<20

QC Batch No: 1128126A1; Dup or Spiked Sample: B1128126A1; LCS: Clean Water; QC Prepared: 11/28/2012;MS Analyzed: 11/29/2012; LCS Analyzed: 11/28/2012; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
Benzene	50.0	48.9	97.8	50.0	49.9	100	2.22	75-125	<20	
Chlorobenzene	50.0	47.7	95.4	50.0	48.5	97.0	1.66	75-125	<20	
1,1-Dichloroethene	50.0	54.1	108	50.0	55.7	111	2.74	75-125	<20	
Toluene (Methyl benzene)	50.0	51.0	102	50.0	51.8	104	1.94	75-125	<20	
Trichloroethene	50.0	49.7	99.4	50.0	50.4	101	1.60	75-125	<20	
Methyl-tert-butyl ether (MTBE)	50.0	49.6	99.2	50.0	51.5	103	3.76	75-125	<20	
Surrogates										
Bromofluorobenzene	50.0	50.3	101	50.0	50.5	101	<1	75-125	<20	
Dibromofluoromethane	50.0	49.8	99.6	50.0	49.6	99.3	<1	75-125	<20	
Toluene-d8	50.0	50.2	100	50.0	50.0	100	<1	75-125	<20	
LCS										
Chloroform (Trichloromethane)	50.0	49.3	98.6	50.0	51.0	102	3.39	75-125	<20	
Ethylbenzene	50.0	51.7	103	50.0	52.7	105	1.92	75-125	<20	
1,1,1-Trichloroethane	50.0	49.9	99.8	50.0	51.4	103	3.16	75-125	<20	
o-Xylene	50.0	46.9	93.8	50.0	47.7	95.0	1.27	75-125	<20	
m,p-Xylenes	100	98.9	98.9	100	101	101	2.10	75-125	<20	

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: ASTM(D-19)P216, Formaldehyde

QC Batch No: 112812-1; Dup or Spiked Sample: B112812; LCS: Clean Water; QC Prepared: 11/28/2012; QC Analyzed: 11/28/2012; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
Formaldehyde	0.00	0.500	0.489X	97.8	0.500	0.470X	94.0	4.0	80-120	<30

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015D, TPH as Diesel and Heavy Hydrocarbons Using GC/FID

QC Batch No: 112712DB1; Dup or Spiked Sample: 1127; LCS: Clean Water; QC Prepared: 11/27/2012; QC Analyzed: 11/29/2012; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
TPH as Diesel (C13-C22)	0.00	5.00	5.08	102	5.00	5.07	101	<1	75-125	<20
Surrogates										
Chlorobenzene	0.00	2.00	1.77	88.5	2.00	2.15	108	22.0	60-125	<20

QC Batch No: 112712DB1; Dup or Spiked Sample: 1127; LCS: Clean Water; QC Prepared: 11/27/2012; QC Analyzed: 11/29/2012; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
TPH as Diesel (C13-C22)	5.00	5.00	100	75-125						
Surrogates										
Chlorobenzene	2.00	2.14	107	60-125						

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: M8015G, TPH as Gasoline and Light Hydrocarbons Using GC/FID

QC Batch No: 112812OB1; Dup or Spiked Sample: B112812OB1; LCS: Clean Water; QC Prepared: 11/28/2012; QC Analyzed: 11/29/2012; Units: mg/L

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
TPH as Gasoline and Light HC. (C4-C12)	0.00	0.500	0.530	105	0.500	0.530	105	<1	75-125	<20
Surrogates										
Bromofluorobenzene	0.00	0.0500	0.0445	89.0	0.0500	0.0438	87.6	1.57	75-125	<20

QC Batch No: 112812OB1; Dup or Spiked Sample: B112812OB1; LCS: Clean Water; QC Prepared: 11/28/2012; QC Analyzed: 11/29/2012; Units: mg/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
TPH as Gasoline and Light HC. (C4-C12)	0.500	0.490	98.4	75-125						
Surrogates										
Bromofluorobenzene	0.0500	0.0530	106	75-125						

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: SM-3500-FE-D, Ferrous Iron (Phenanthroline Method)

QC Batch No: 112112-1; Dup or Spiked Sample: 67573.01; LCS: Clean Water; LCS Prepared: 11/21/2012; LCS Analyzed: 11/21/2012; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit		
Ferrous Iron	ND	ND	<1	<20	0.200	0.172	86.0	75-125		

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Project ID: VENTURA UST 4Q12
Project Name: Groundwater Monitoring Program

AETL Job Number	Submitted	Client
67573	11/20/2012	SC/G

Method: SM-4500-OG, Total Dissolved Oxygen (Std. Methods; 19th ed.)

QC Batch No: 112112-1; Dup or Spiked Sample: 67573.01; Units: mg/L

Analytes	SM Result	SM DUP Result	RPD %	SM RPD % Limit						
Oxygen, Dissolved	3.04	3.00	1.3	<15						

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

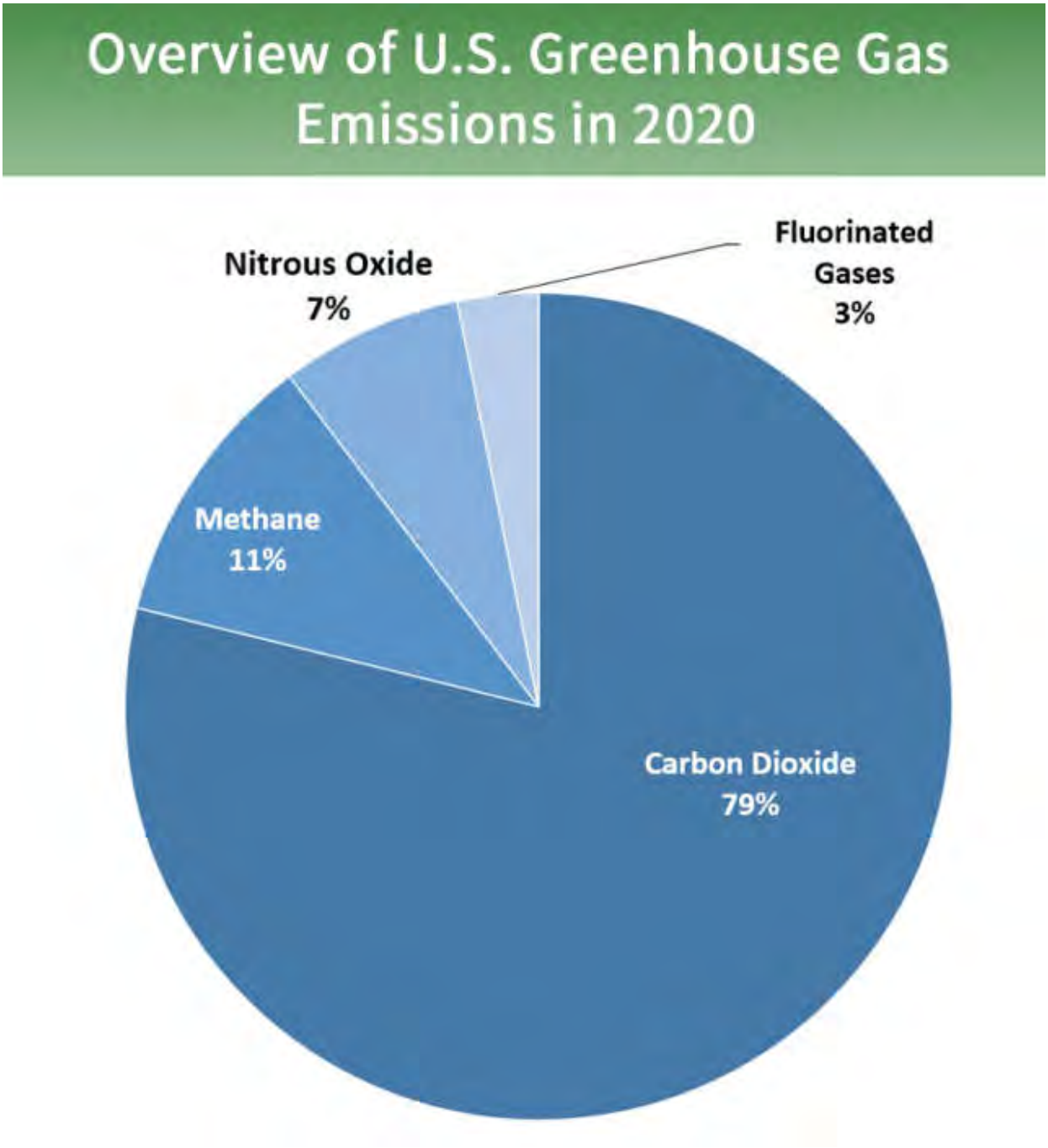
MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

Greenhouse Gas Emissions

CONTACT US <https://epa.gov/ghgemissions/forms/contact-us-about-greenhouse-gas-emissions>

Overview of Greenhouse Gases

On this page:



Total U.S. Emissions in 2020 = 5,981 Million Metric Tons of CO2 equivalent (excludes land sector). Percentages may not add up to 100% due to independent rounding.

Larger image to save or print <https://epa.gov/system/files/images/2022-04/gases-by-source-2022-caption.png>

Gases that trap heat in the atmosphere are called greenhouse gases. This section provides information on emissions and removals of the main greenhouse gases to and from the atmosphere. For more information on the other climate forcers, such as black

carbon <https://www3.epa.gov/airquality/blackcarbon/>, please visit the Climate Change Indicators: Climate Forcing <https://epa.gov/climate-indicators/climate-change-indicators-climate-forcing> page.

- **Carbon dioxide (CO_2)**: Carbon dioxide enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees and other biological materials, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
- **Methane (CH_4)**: Methane is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices, land use and by the decay of organic waste in municipal solid waste landfills.
- **Nitrous oxide (N_2O)**: Nitrous oxide is emitted during agricultural, land use, and industrial activities; combustion of fossil fuels and solid waste; as well as during treatment of wastewater.

Fluorinated gases: Hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride are synthetic, powerful greenhouse gases that are emitted from a variety of household, commercial, and industrial applications and processes. Fluorinated gases (especially hydrofluorocarbons) are sometimes used as substitutes for stratospheric ozone-depleting substances <https://epa.gov/ozone-layer-protection> (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). Fluorinated gases are typically emitted in smaller quantities than other greenhouse gases, but they are potent greenhouse gases. With global warming potentials (GWPs) <https://epa.gov/ghgemissions/understanding-global-warming-potentials> that typically range from thousands to tens of thousands, they are sometimes referred to as high-GWP gases because, for a given amount of mass, they trap substantially more heat than CO_2.

Each gas's effect on climate change depends on three main factors:

How much is in the atmosphere?

Concentration, or abundance, is the amount of a particular gas in the air. Larger emissions of greenhouse gases lead to higher concentrations in the atmosphere. Greenhouse gas concentrations are measured in parts per million, parts per billion, and even parts per trillion. One part per million is equivalent to one drop of water diluted

into about 13 gallons of liquid (roughly the fuel tank of a compact car). To learn more about the increasing concentrations of greenhouse gases in the atmosphere, visit the Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases <https://epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases> page.

How long do they stay in the atmosphere?

Each of these gases can remain in the atmosphere for different amounts of time, ranging from a few years to thousands of years. All of these gases remain in the atmosphere long enough to become well mixed, meaning that the amount that is measured in the atmosphere is roughly the same all over the world, regardless of the source of the emissions.

How strongly do they impact the atmosphere?

Some gases are more effective than others at making the planet warmer and "thickening the Earth's blanket."

For each greenhouse gas, a Global Warming Potential (GWP) <https://epa.gov/ghgemissions/understanding-global-warming-potentials> was developed to allow comparisons of the global warming impacts of different gases. Specifically, it is a measure of how much energy the emissions of 1 ton of a gas will absorb over a given period of time, relative to the emissions of 1 ton of carbon dioxide (CO_2). Gases with a higher GWP absorb more energy, per pound emitted, than gases with a lower GWP, and thus contribute more to warming Earth.

Note: All emission estimates are from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.*

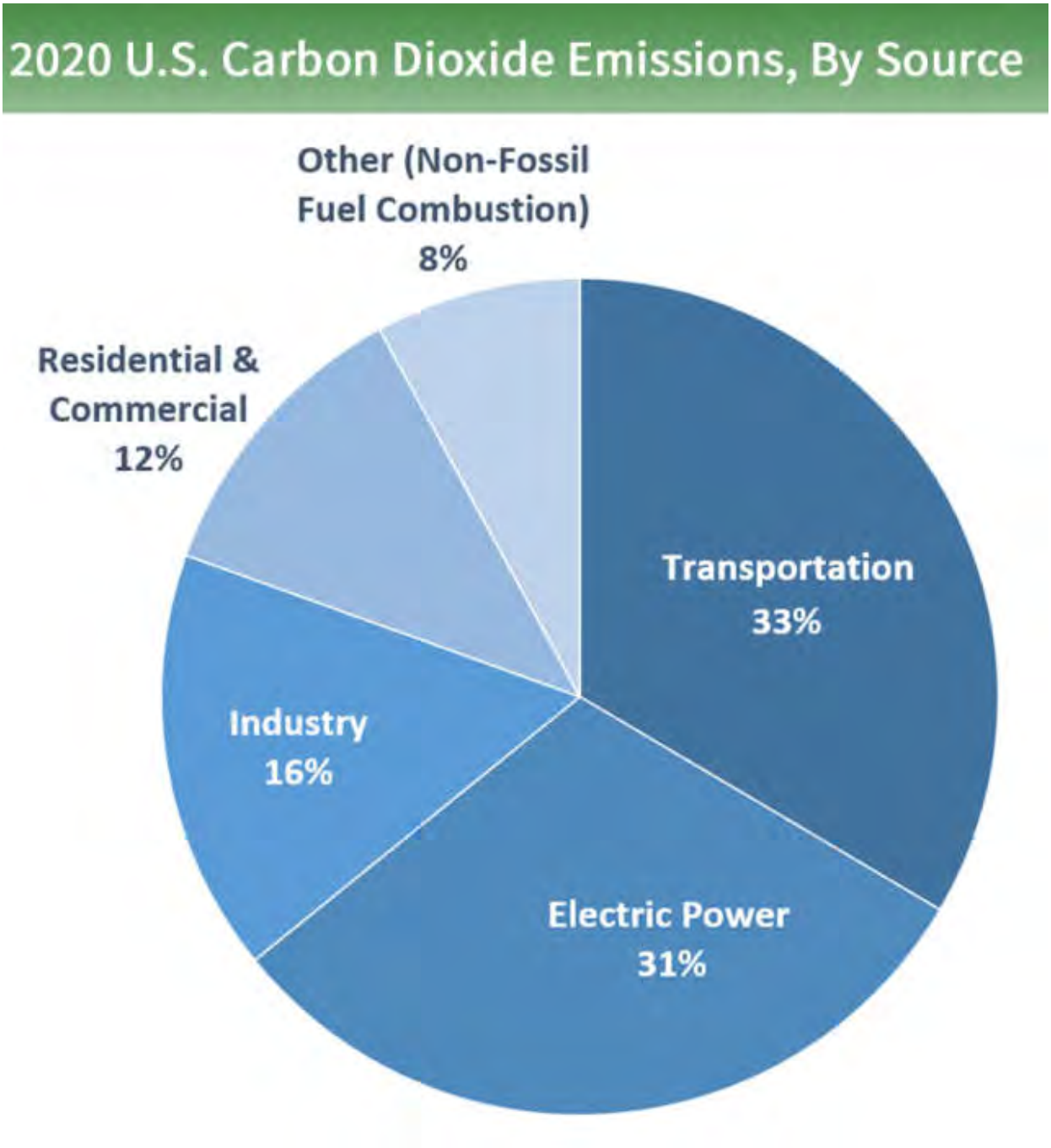
Carbon Dioxide Emissions

Properties of Carbon Dioxide

Chemical Formula: CO_2
Lifetime in Atmosphere: See below[1]
Global Warming Potential <https://epa.gov/ghgemissions/understanding-global-warming-

potentials> **(100-year)**: 1

Carbon dioxide (CO_2) is the primary greenhouse gas emitted through human activities. In 2020, CO_2 accounted for about 79% of all U.S. greenhouse gas emissions from human activities. Carbon dioxide is naturally present in the atmosphere as part of the Earth's carbon cycle (the natural circulation of carbon among the atmosphere, oceans, soil, plants, and animals). Human activities are altering the carbon cycle–both by adding more CO_2 to the atmosphere and by influencing the ability of natural sinks, like forests and soils, to remove and store CO_2 from the atmosphere. While CO_2 emissions come from a variety of natural sources, human-related emissions are responsible for the increase that has occurred in the atmosphere since the industrial revolution.[2]



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> (excludes land sector).*

Larger image to save or print <https://epa.gov/system/files/images/2022-04/gases-by-co2-2022-caption.png>

The main human activity that emits CO_2 is the combustion of fossil fuels (coal, natural gas, and oil) for energy and transportation. Certain industrial processes and land-use changes also emit CO_2. The main sources of CO_2 emissions in the United States are described below.

- **Transportation** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#transportation>. The combustion of fossil fuels such as gasoline and diesel to transport people and goods was the largest source of CO_2 emissions in 2020, accounting for about 33% of total U.S. CO_2 emissions and 26% of total U.S. greenhouse gas emissions. This category includes domestic transportation sources such as highway and passenger vehicles, air travel, marine transportation, and rail.
- **Electricity** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#electricity>. Electricity is a significant source of energy in the United States and is used to power homes, business, and industry. In 2020, the combustion of fossil fuels to generate electricity was the second largest source of CO_2 emissions in the nation, accounting for about 31% of total U.S. CO_2 emissions and 24% of total U.S. greenhouse gas emissions. The types of fossil fuel used to generate electricity emit different amounts of CO_2. To produce a given amount of electricity, burning coal will produce more CO_2 than natural gas or oil.
- **Industry** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#industry>. Many industrial processes emit CO_2 through fossil fuel consumption. Several processes also produce CO_2 emissions through chemical reactions that do not involve combustion, and examples include the production of mineral products such as cement, the production of metals such as iron and steel, and the production of chemicals. The fossil fuel combustion component of various industrial processes accounted for about 16% of total U.S. CO_2 emissions and 13% of total U.S. greenhouse gas emissions in 2020. Many industrial processes also use electricity and therefore indirectly result in CO_2 emissions from electricity generation.

Carbon dioxide is constantly being exchanged among the atmosphere, ocean, and land surface as it is both produced and absorbed by many microorganisms, plants, and animals. Emissions and removal of CO_2 by these natural processes, however, tend to balance, absent anthropogenic impacts. Since the Industrial Revolution began around 1750, human activities have contributed substantially to climate change by adding CO_2 and other heat-trapping gases to the atmosphere.

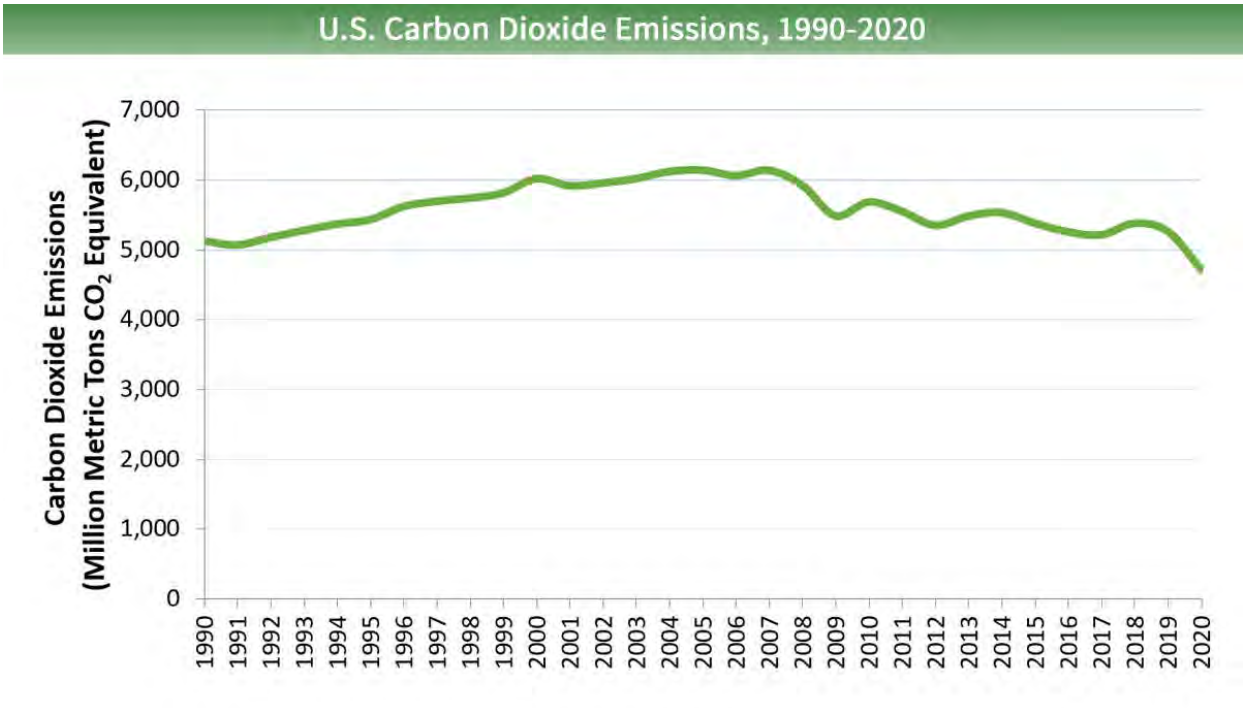
In the United States, the management of forests and other land (e.g., cropland, grasslands, etc.) has acted as a net sink of CO_2, which means that more CO_2 is removed from the atmosphere, and stored in plants and trees, than is emitted. This carbon sink

offset is about 14% of total emissions in 2020 and is discussed in more detail in the Land Use, Land-Use Change, and Forestry <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#land-use-and-forestry> section.

To find out more about the role of CO_2 in warming the atmosphere and its sources, visit the Climate Change Indicators <https://epa.gov/climate-indicators> page.

Emissions and Trends

Carbon dioxide emissions in the United States decreased by about 8% between 1990 and 2020. Since the combustion of fossil fuel is the largest source of greenhouse gas emissions in the United States, changes in emissions from fossil fuel combustion have historically been the dominant factor affecting total U.S. emission trends. Changes in CO_2 emissions from fossil fuel combustion are influenced by many long-term and short-term factors, including population growth, economic growth, changing energy prices, new technologies, changing behavior, and seasonal temperatures. In 2020, the decrease in CO_2 emissions from fossil fuel combustion corresponded with a decrease in energy use as a result of decreases in economic, manufacturing, and travel activity in response to the coronavirus pandemic, in addition to a continued shift from coal to less carbon-intensive natural gas and renewables in the electric power sector.



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020* <*https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks*>.

Larger image to save or print <https://epa.gov/system/files/images/2022-04/gases-by-co2-2022-line-caption.png>

Reducing Carbon Dioxide Emissions

The most effective way to reduce CO_2 emissions is to reduce fossil fuel consumption. Many strategies for reducing CO_2 emissions from energy are cross-cutting and apply to homes, businesses, industry, and transportation.

EPA is taking common sense regulatory actions to reduce greenhouse gas emissions.

- Learn about EPA's motor vehicle standards <https://epa.gov/vehicles-and-engines>.

Examples of Reduction Opportunities for Carbon Dioxide

Strategy	Examples of How Emissions Can be Reduced
Energy Efficiency	Improving the insulation of buildings, traveling in more fuel-efficient vehicles, and using more efficient electrical appliances are all ways to reduce energy use, and thus CO_2 emissions. • See EPA's ENERGY STAR® program <https://www.energystar.gov/> for more information on energy-efficient appliances and ways to save at home and work. • See EPA's and DOE's fueleconomy.gov site <https://www.fueleconomy.gov/> for more information on fuel-efficient vehicles. • Learn about EPA's motor vehicle standards <https://epa.gov/vehicles-and-engines> that improve vehicle efficiency and save drivers money.

Strategy	Examples of How Emissions Can be Reduced
Energy Conservation	Reducing personal energy use by turning off lights and electronics when not in use reduces electricity demand. Reducing distance traveled in vehicles reduces petroleum consumption. Both are ways to reduce energy CO_2 emissions through conservation. Learn more about What You Can Do at Home, at School, in the Office <https://epa.gov/climate-change/what-you-can-do-about-climate-change>, and on the Road <https://epa.gov/transportation-air-pollution-and-climate-change/what-you-can-do-reduce-pollution-vehicles-and> to save energy and reduce your carbon footprint.
Fuel Switching	Producing more energy from renewable sources and using fuels with lower carbon contents are ways to reduce carbon emissions.
Carbon Capture and Sequestration (CCS)	Carbon dioxide capture and sequestration is a set of technologies that can potentially greatly reduce CO_2 emissions from new and existing coal- and gas-fired power plants, industrial processes, and other stationary sources of CO_2. For example, a CCS project might capture CO_2 from the stacks of a coal-fired power plant before it enters the atmosphere, transport the CO_2 via pipeline, and inject the CO_2 deep underground at a carefully selected and suitable subsurface geologic formation, such as a nearby abandoned oil field, where it is securely stored. Learn more about CCS <https://epa.gov/uic/class-vi-wells-used-geologic-sequestration-carbon-dioxide>.

Strategy	Examples of How Emissions Can be Reduced
Changes in Uses of Land and Land Management Practices	Learn more about Land Use, Land Use Change and Forestry Sector. <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#land-use-and-forestry>

[1] Atmospheric CO_2 is part of the global carbon cycle, and therefore its fate is a complex function of geochemical and biological processes. Some of the excess carbon dioxide will be absorbed quickly (for example, by the ocean surface), but some will remain in the atmosphere for thousands of years, due in part to the very slow process by which carbon is transferred to ocean sediments.

[2]IPCC (2013). Climate Change 2013: The Physical Science Basis. <https://www.ipcc.ch/report/ar5/wg1/> *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* [Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P. M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1585 pp.

Methane Emissions

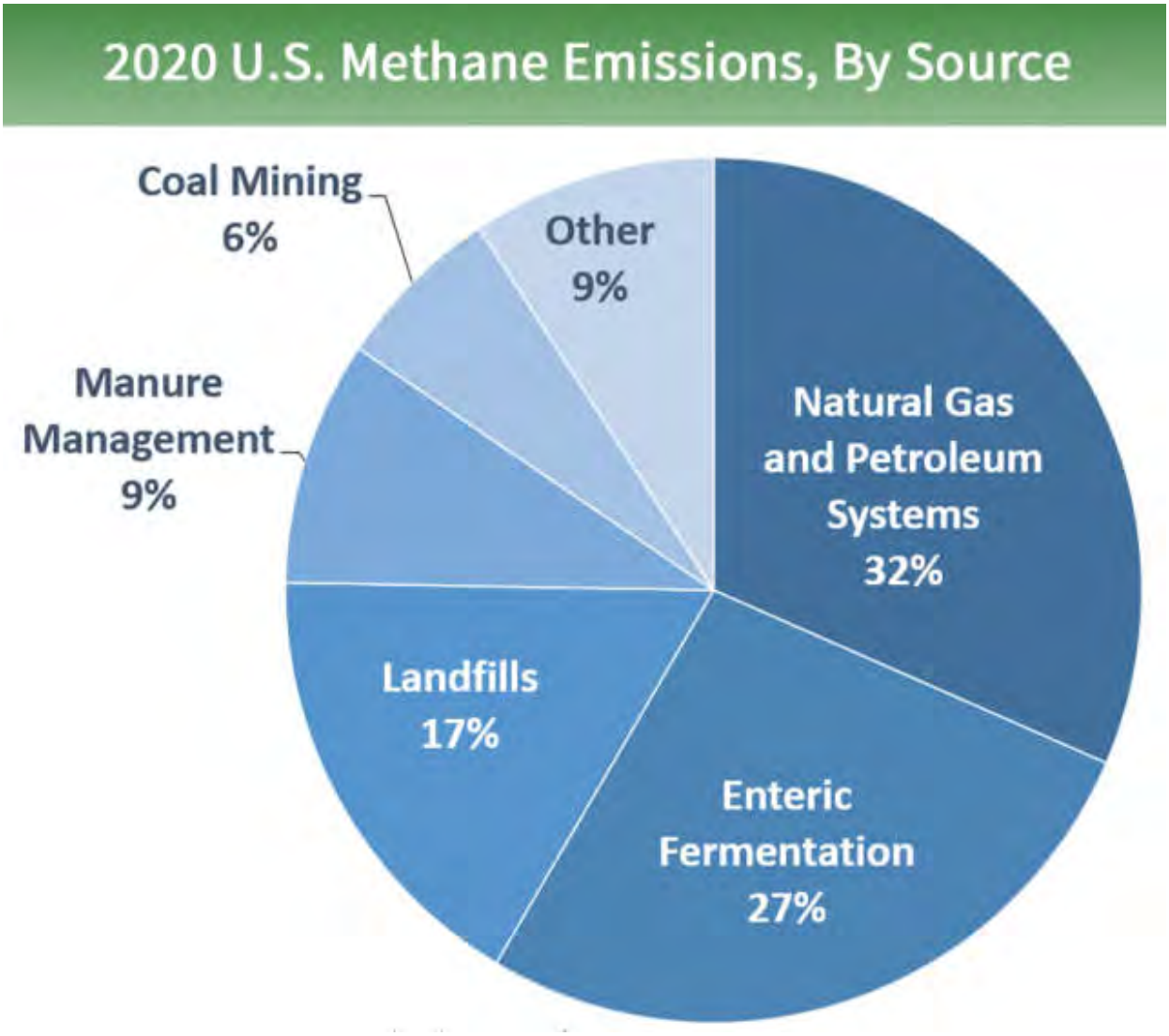
Properties of Methane

Chemical Formula: CH_4
Lifetime in Atmosphere: 12 years
Global Warming Potential <https://epa.gov/ghgemissions/understanding-global-warming-potentials> **(100-year)**: 25[1]

In 2020, methane (CH_4) accounted for about 11% of all U.S. greenhouse gas emissions from human activities. Human activities emitting methane include leaks from natural gas systems and the raising of livestock. Methane is also emitted by natural sources such as natural wetlands. In addition, natural processes in soil and chemical reactions

in the atmosphere help remove CH_4 from the atmosphere. Methane's lifetime in the atmosphere is much shorter than carbon dioxide (CO_2), but CH_4 is more efficient at trapping radiation than CO_2. Pound for pound, the comparative impact of CH_4 is 25 times greater than CO_2 over a 100-year period.[1]

Globally, 50-65% of total CH_4 emissions come from human activities.[2, 3] Methane is emitted from energy, industry, agriculture, land use, and waste management activities, described below.



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> (excludes land sector).*

Larger image to save or print <https://epa.gov/system/files/images/2022-04/gases-by-ch4-2022-caption.png>

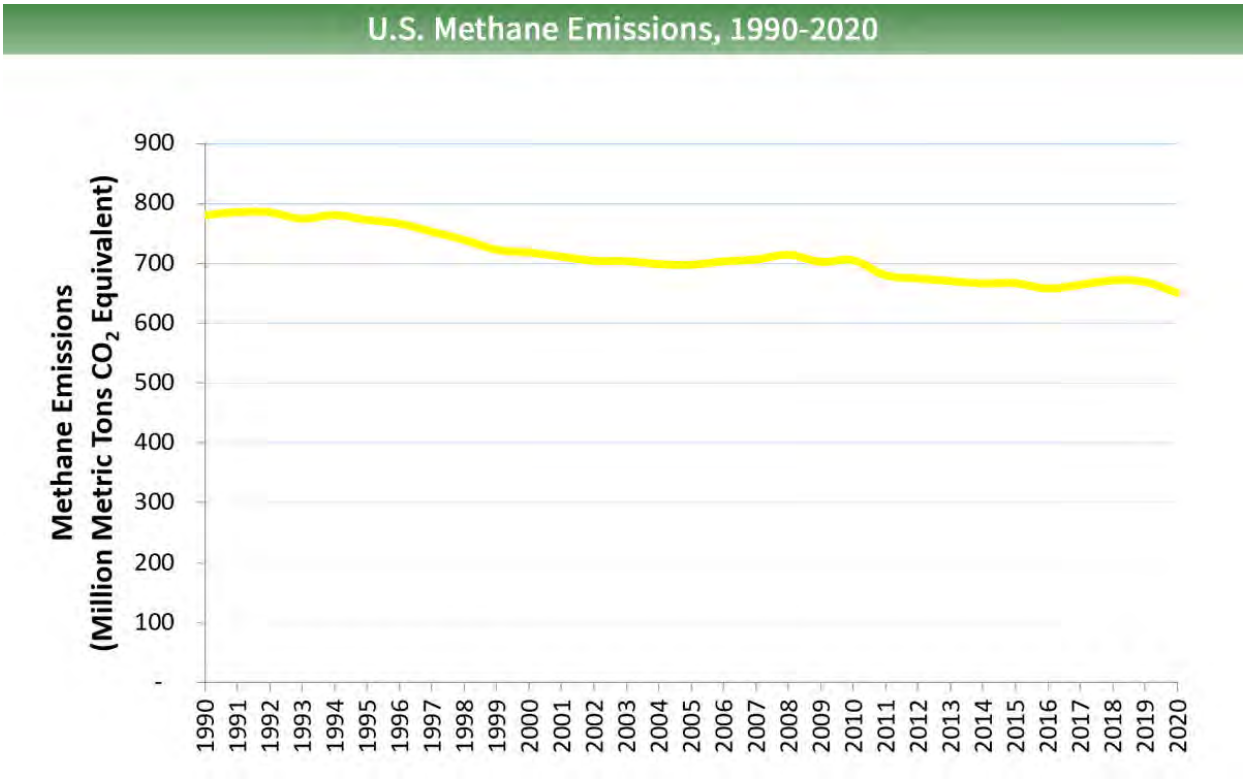
- **Agriculture** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#agriculture>. Domestic livestock such as cattle, swine, sheep, and goats produce CH_4 as part of their normal digestive process. Also, when animal manure is stored or managed in lagoons or holding tanks, CH_4 is produced. Because humans raise these animals for food and other products, the emissions are considered human-related. The Agriculture sector is the largest source of CH_4 emissions in the United States. For more information, see the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> Agriculture chapter. While not shown in the figure and less significant, emissions of CH_4 also occur as a result of land use and land management activities in the Land Use, Land-Use Change, and Forestry <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#land-use-and-forestry> sector (e.g. forest and grassland fires, decomposition of organic matter in coastal wetlands).
- **Energy and Industry** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#industry>. Natural gas and petroleum systems are the second largest source of CH_4 emissions in the United States. Methane is the primary component of natural gas. Methane is emitted to the atmosphere during the production, processing, storage, transmission, and distribution of natural gas and the production, refinement, transportation, and storage of crude oil. Coal mining is also a source of CH_4 emissions. For more information, see the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> sections on Natural Gas Systems and Petroleum Systems.
- **Waste from Homes and Businesses** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#commercial-and-residential>**.** Methane is generated in landfills as waste decomposes and in the treatment of wastewater. Landfills are the third-largest source of CH_4 emissions in the United States. Methane is also generated from domestic and industrial wastewater treatment and from composting and anaerobic digestion. For more information, see the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> Waste chapter.

Methane is also emitted from a number of natural sources. Natural wetlands are the largest source, emitting CH_4 from bacteria that decompose organic materials in the absence of oxygen. Smaller sources include termites, oceans, sediments, volcanoes, and wildfires.

To find out more about the role of CH_4 in warming the atmosphere and its sources, visit the Climate Change Indicators <https://epa.gov/climate-indicators> page.

Emissions and Trends

Methane emissions in the United States decreased by 17% between 1990 and 2020. During this time period, emissions increased from sources associated with agricultural activities, while emissions decreased from other sources including landfills and coal mining and from natural gas and petroleum systems.



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020* <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>. These estimates use a global warming potential <https://epa.gov/ghgemissions/understanding-global-warming-potentials> for methane of 25, based on reporting requirements under the United Nations Framework Convention on Climate Change.

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Reducing Methane Emissions

There are a number of ways to reduce CH_4 emissions. Some examples are discussed below. EPA has a series of voluntary programs for reducing CH_4 emissions, in addition to regulatory initiatives <https://epa.gov/controlling-air-pollution-oil-and-natural-gas-industry>. EPA also supports the Global Methane Initiative <https://www.globalmethane.org/>, an international partnership encouraging global methane reduction strategies.

Examples of Reduction Opportunities for Methane

Emissions Source	How Emissions Can be Reduced
Industry	Upgrading the equipment used to produce, store, and transport oil and natural gas can reduce many of the leaks that contribute to CH_4 emissions. Methane from coal mines can also be captured and used for energy. Learn more about the EPA's Natural Gas STAR Program <https://epa.gov/natural-gas-star-program> and Coalbed Methane Outreach Program <https://epa.gov/cmop>.
Agriculture	Methane from manure management practices can be reduced and captured by altering manure management strategies. Additionally, modifications to animal feeding practices may reduce emissions from enteric fermentation. Learn more about improved manure management practices at EPA's AgSTAR Program <https://epa.gov/agstar>.
Waste from Homes and Businesses	Because CH_4 emissions from landfill gas are a major source of CH_4 emissions in the United States, emission controls that capture landfill CH_4 are an effective reduction strategy. Learn more about these opportunities and the EPA's Landfill Methane Outreach Program <https://epa.gov/lmop>.

References

[1]IPCC (2007). *Climate Change 2007: The Physical Science Basis* <http://www.ipcc.ch/report/ar4/>. *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. [S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press. Cambridge, United Kingdom 996 pp.
[2]IPCC (2013). Climate Change 2013: The Physical Science Basis. <https://www.ipcc.ch/report/ar5/wg1/> *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change.* [Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P. M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1585 pp.
[3]Saunois et al. (2020). The Global Methane Budget 2000-2017. Earth Syst. Sci. Data, 12, 1561–1623, 2020. https://doi.org/10.5194/essd-12-1561-2020 <https://doi.org/10.5194/essd-12-1561-2020>.

Nitrous Oxide Emissions

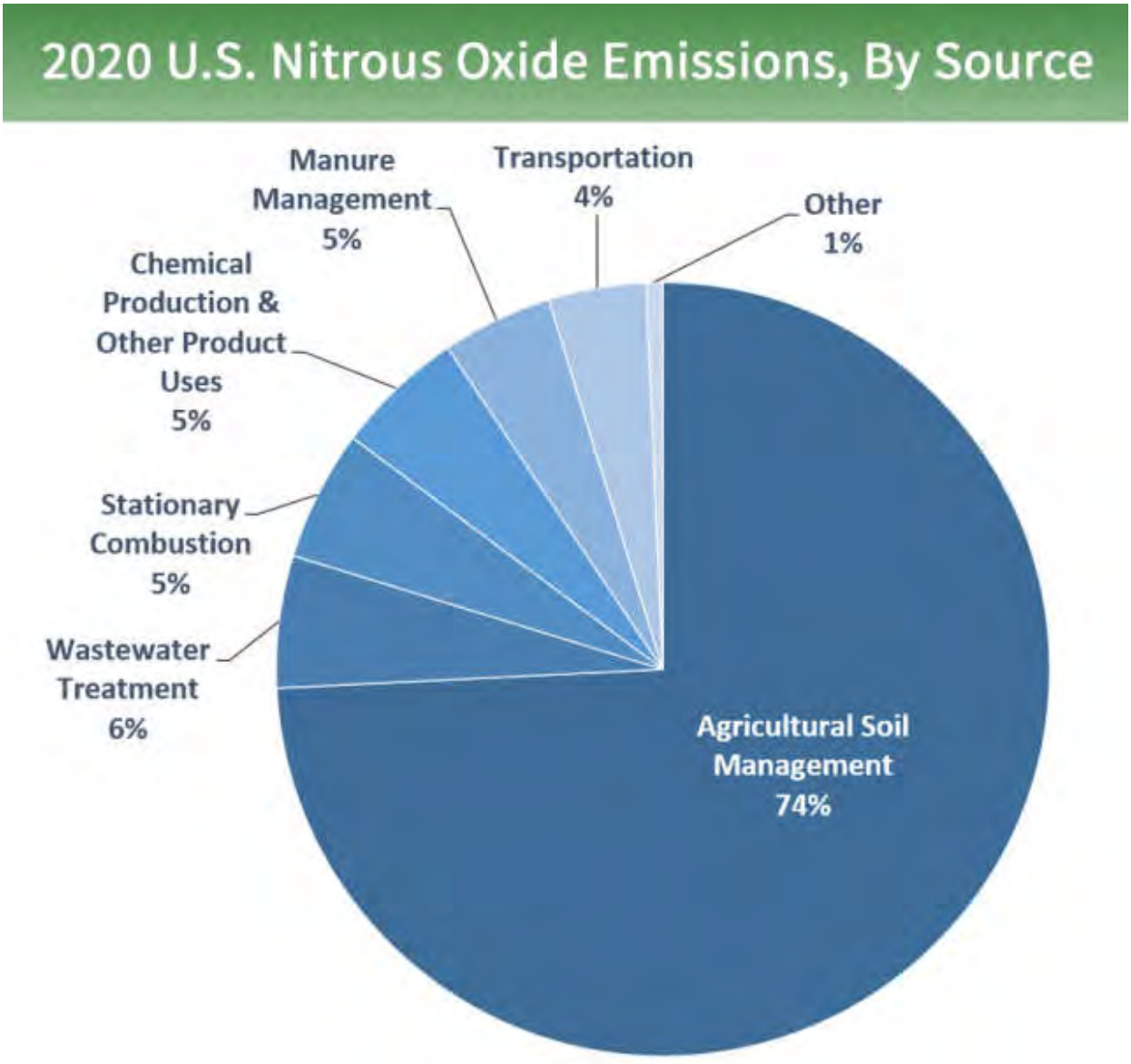
Properties of Nitrous Oxide

Chemical Formula: N_2O
Lifetime in Atmosphere: 114 years
Global Warming Potential <https://epa.gov/ghgemissions/understanding-global-warming-potentials> **(100-year)**: 298[1]

In 2020, nitrous oxide (N_2O) accounted for about 7% of all U.S. greenhouse gas emissions from human activities. Human activities such as agriculture, fuel combustion, wastewater management, and industrial processes are increasing the amount of N_2O in the atmosphere. Nitrous oxide is also naturally present in the atmosphere as part of the Earth's nitrogen cycle and has a variety of natural sources. Nitrous oxide molecules stay in the atmosphere for an average of 114 years before being

removed by a sink or destroyed through chemical reactions. The impact of 1 pound of N_2O on warming the atmosphere is almost 300 times that of 1 pound of carbon dioxide.[1]

Globally, about 40% of total N_2O emissions come from human activities.[2] Nitrous oxide is emitted from agriculture, land use, transportation, industry, and other activities, described below.



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> (excludes land sector).*

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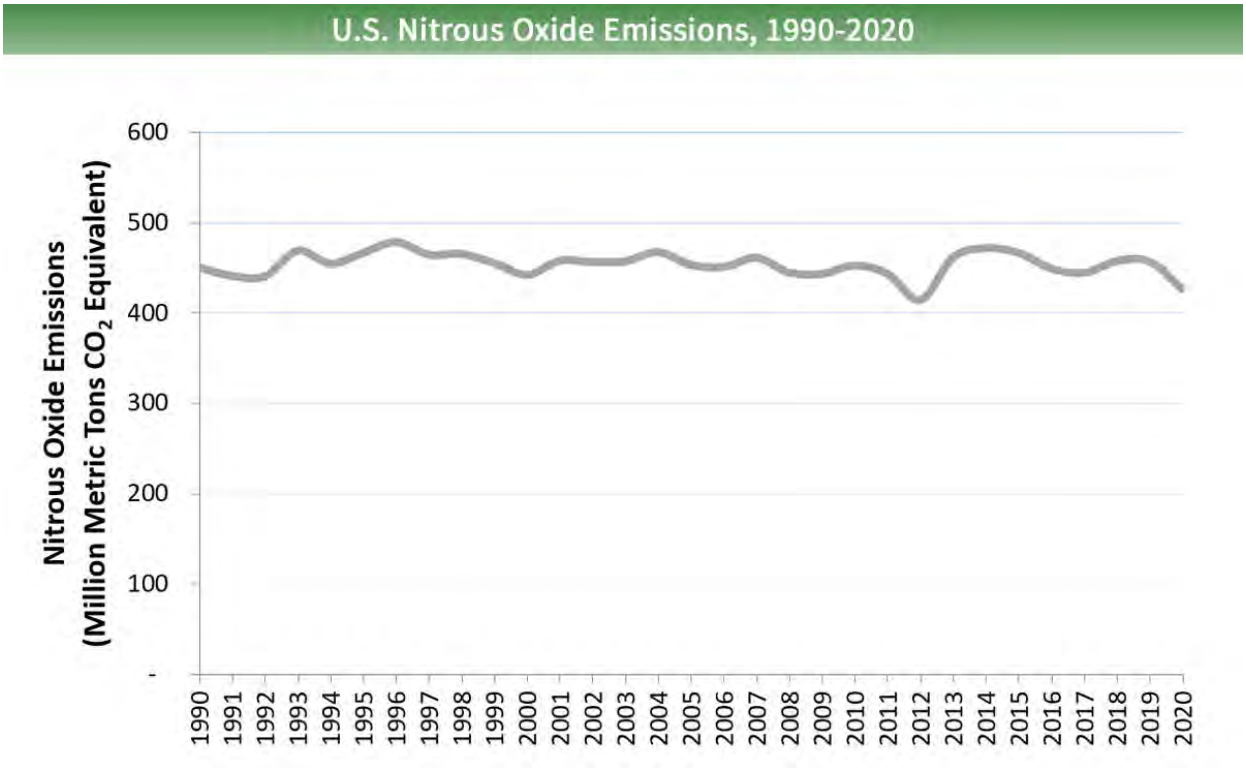
- **Agriculture** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#agriculture>**.** Nitrous oxide can result from various agricultural soil management activities, such as application of synthetic and organic fertilizers and other cropping practices, the management of manure, or burning of agricultural residues. Agricultural soil management is the largest source of N_2O emissions in the United States, accounting for about 74% of total U.S. N_2O emissions in 2020. While not shown in the figure and less significant, emissions of N_2O also occur as a result of land use and land management activities in the Land Use, Land-Use Change, and Forestry <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#land-use-and-forestry> sector (e.g. forest and grassland fires, application of synthetic nitrogen fertilizers to urban soils (e.g., lawns, golf courses) and forest lands, etc.).
- **Fuel Combustion** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#transportation>**.** Nitrous oxide is emitted when fuels are burned. The amount of N_2O emitted from burning fuels depends on the type of fuel and combustion technology, maintenance, and operating practices.
- **Industry** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#industry>**.** Nitrous oxide is generated as a byproduct during the production of chemicals such as nitric acid, which is used to make synthetic commercial fertilizer, and in the production of adipic acid, which is used to make fibers, like nylon, and other synthetic products.
- **Waste** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#commercial-and-residential>**.** Nitrous oxide is also generated from treatment of domestic wastewater during nitrification and denitrification of the nitrogen present, usually in the form of urea, ammonia, and proteins.

Nitrous oxide emissions occur naturally through many sources associated with the nitrogen cycle, which is the natural circulation of nitrogen among the atmosphere, plants, animals, and microorganisms that live in soil and water. Nitrogen takes on a variety of chemical forms throughout the nitrogen cycle, including N_2O. Natural emissions of N_2O are mainly from bacteria breaking down nitrogen in soils and the oceans. Nitrous oxide is removed from the atmosphere when it is absorbed by certain types of bacteria or destroyed by ultraviolet radiation or chemical reactions.

To find out more about the sources of N_2O and its role in warming the atmosphere, visit the Climate Change Indicators <https://epa.gov/climate-indicators> page.

Emissions and Trends

Nitrous oxide emissions in the United States decreased by 5% between 1990 and 2020. During this time, nitrous oxide emissions from mobile combustion decreased by 61% as a result of emission control standards for on-road vehicles. Nitrous oxide emissions from agricultural soils have varied during this period and were about the same in 2020 as in 1990.



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.*

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Reducing Nitrous Oxide Emissions

There are a number of ways to reduce emissions of N_2O, discussed below.

Examples of Reduction Opportunities for Nitrous Oxide Emissions

Emissions Source	Examples of How Emissions Can be Reduced

Emissions Source	Examples of How Emissions Can be Reduced
Agriculture	The application of nitrogen fertilizers accounts for the majority of N_2O emissions in the United States. Emissions can be reduced by reducing nitrogen-based fertilizer applications and applying these fertilizers more efficiently,[3] as well as modifying a farm's manure management practices.
Fuel Combustion	• Nitrous oxide is a byproduct of fuel combustion, so reducing fuel consumption in motor vehicles and secondary sources can reduce emissions. • Additionally, the introduction of pollution control technologies (e.g., catalytic converters to reduce exhaust pollutants from passenger cars) can also reduce emissions of N_2O.
Industry	• Nitrous oxide is generally emitted from industry through fossil fuel combustion, so technological upgrades and fuel switching are effective ways to reduce industry emissions of N_2O. • Production of nitric acid and adipic acid result in N_2O emissions that can be reduced through technological upgrades and use of abatement equipment.

References

[1] IPCC (2007) *Climate Change 2007: The Physical Science Basis* <http://www.ipcc.ch/report/ar4/>. *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. [S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press. Cambridge, United Kingdom 996 pp.

[2]IPCC (2013). Climate Change 2013: The Physical Science Basis <https://www.ipcc.ch/report/ar5/wg1/>. *Contribution of Working Group I to the Fifth Assessment*

Report of the Intergovernmental Panel on Climate Change. [Stocker, T. F., D. Qin, G.-K. Plattner, M. Tignor, S. K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P. M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1585 pp.

[3]EPA (2005). *Greenhouse Gas Mitigation Potential in U.S. Forestry and Agriculture*. U.S. Environmental Protection Agency, Washington, DC, USA.

Emissions of Fluorinated Gases

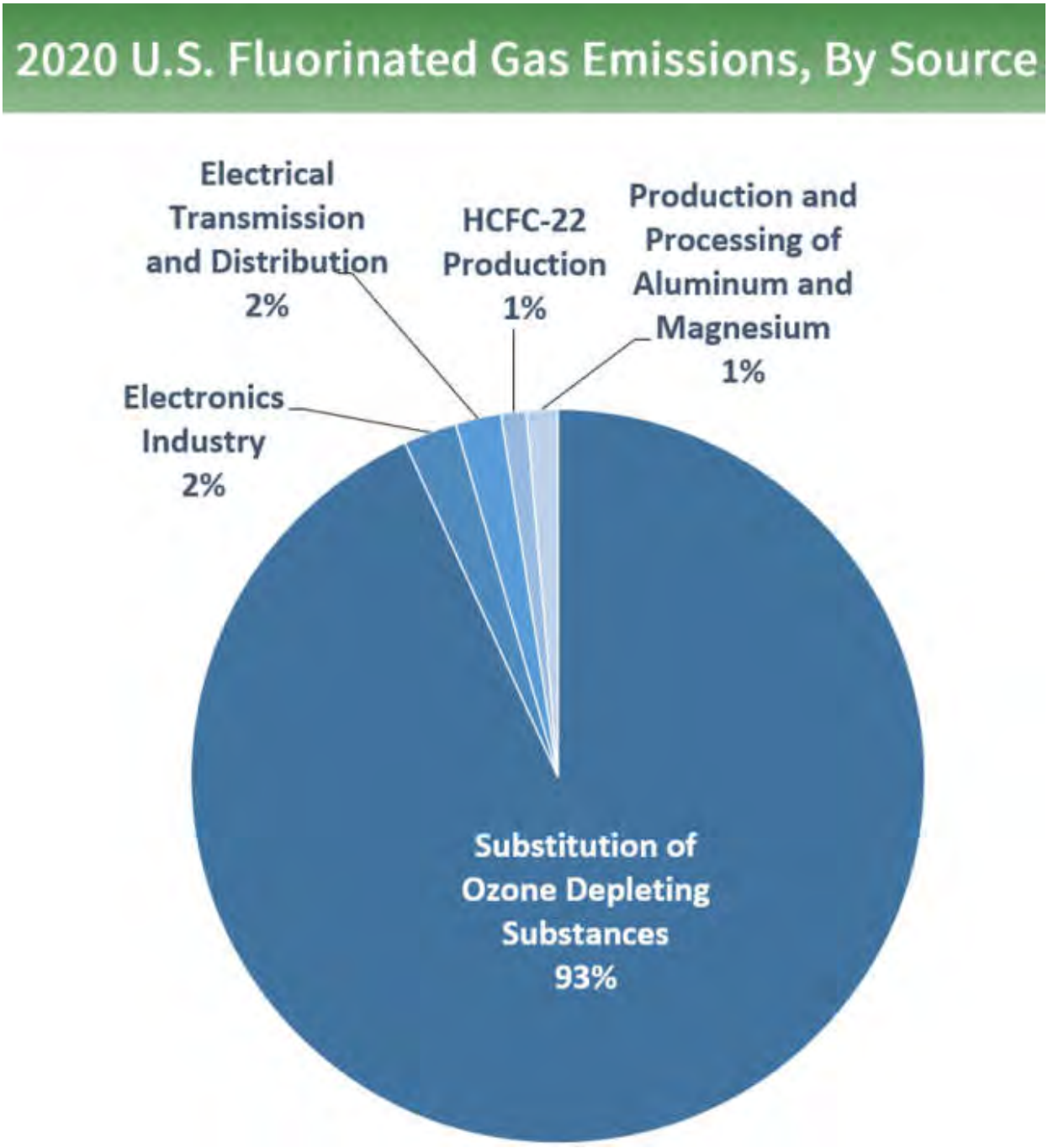
Properties of F-gases

Chemical Formulas:
HFCs, PFCs, NF_3, SF_6
Lifetime in Atmosphere:
HFCs: up to 270 years
PFCs: 2,600–50,000 years
NF_3: 740 years
SF_6: 3,200 years
Global Warming Potential <https://epa.gov/ghgemissions/understanding-global-warming-potentials> **(100-year)**:[1]
HFCs: up to 14,800
PFCs: up to 12,200
NF_3: 17,200
SF_6: 22,800

Unlike many other greenhouse gases, fluorinated gases have no significant natural sources and come almost entirely from human-related activities. They are emitted through their use as substitutes for ozone-depleting substances (e.g., as refrigerants) and through a variety of industrial processes such as aluminum and semiconductor manufacturing. Many fluorinated gases have very high global warming potentials (GWPs) relative to other greenhouse gases, so small atmospheric concentrations can have disproportionately large effects on global temperatures. They can also have long atmospheric lifetimes—in some cases, lasting thousands of years. Like other long-lived greenhouse gases, most fluorinated gases are well-mixed in the atmosphere, spreading

around the world after they are emitted. Many fluorinated gases are removed from the atmosphere only when they are destroyed by sunlight in the far upper atmosphere. In general, fluorinated gases are the most potent and longest lasting type of greenhouse gases emitted by human activities.

There are four main categories of fluorinated gases—hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). The largest sources of fluorinated gas emissions are described below.



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020* <*https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks*>.

Larger image to save or print <https://epa.gov/system/files/images/2022-04/gases-by-fluorinated-2022-caption.png>

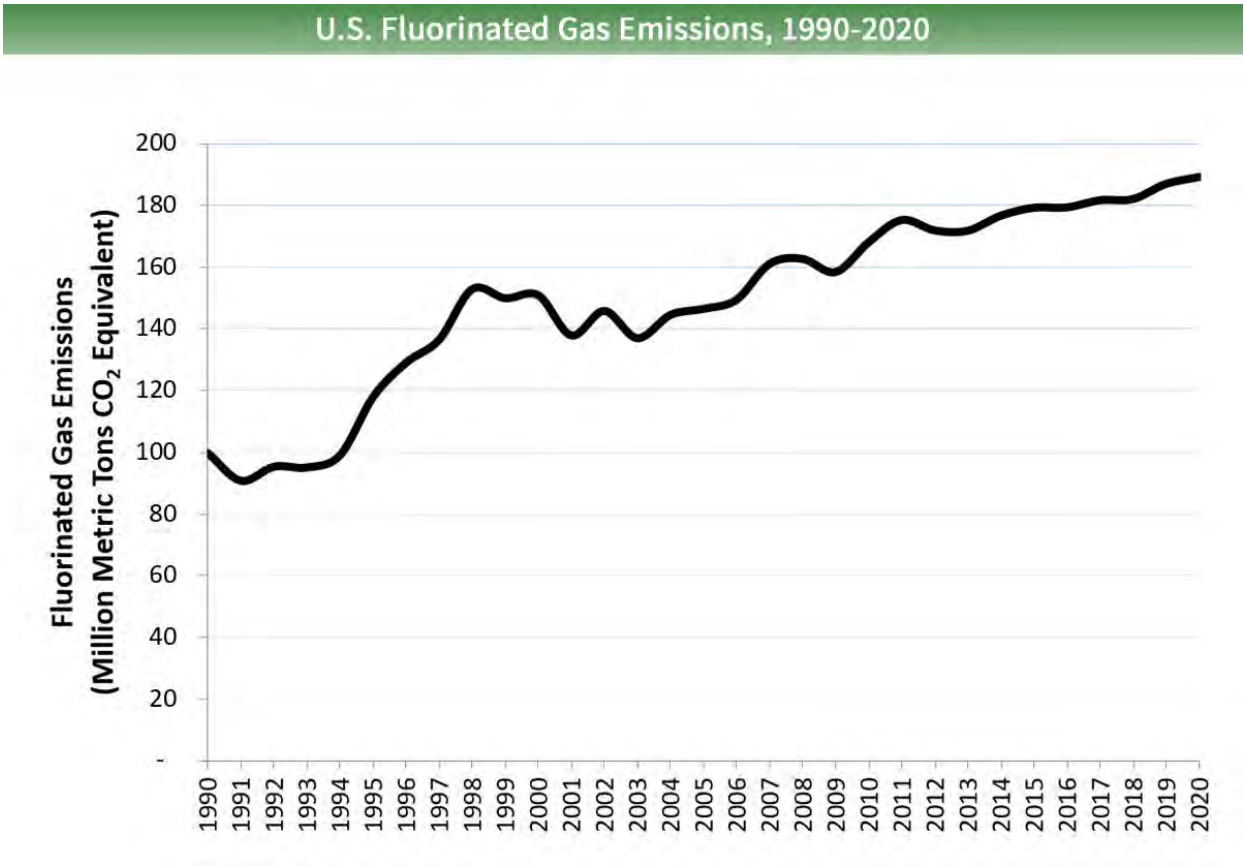
- **Substitution for Ozone-Depleting Substances** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#commercial-and-residential>**.** Hydrofluorocarbons are used as refrigerants, aerosol propellants, foam blowing agents, solvents, and fire retardants. The major emissions source of these compounds is their use as refrigerants—for example, in air conditioning systems in both vehicles and buildings. These chemicals were developed as a replacement for chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) because they do not deplete the stratospheric ozone layer. Chlorofluorocarbons and HCFCs are also greenhouse gases; however, their contribution is not included here because they are being phased out under an international agreement, called the Montreal Protocol. HFCs are potent greenhouse gases with high GWPs, and they are released into the atmosphere during manufacturing processes and through leaks, servicing, and disposal of equipment in which they are used. Newly developed hydrofluoroolefins (HFOs) are a subset of HFCs and are characterized by short atmospheric lifetimes and lower GWPs. HFOs are currently being introduced as refrigerants, aerosol propellants and foam blowing agents. The American Innovation and Manufacturing (AIM) Act <https://epa.gov/climate-hfcs-reduction/aim-act> of 2020 directs EPA to address HFCs by providing new authorities in three main areas: to phase down the production and consumption of listed HFCs in the United States by 85% over the next 15 years, manage these HFCs and their substitutes, and facilitate the transition to next-generation technologies that do not rely on HFCs.
- **Industry** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#industry>**.** Perfluorocarbons are produced as a byproduct of aluminum production and are used in the manufacturing of semiconductors. PFCs generally have long atmospheric lifetimes and GWPs near 10,000. Sulfur hexafluoride is used in magnesium processing and semiconductor manufacturing, as well as a tracer gas for leak detection. Nitrogen trifluoride is used in semiconductor manufacturing. HFC-23 is produced as a byproduct of HCFC-22 production and is used in semiconductor manufacturing.

- **Transmission and Distribution of Electricity** <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions#electricity>**.** Sulfur hexafluoride is used as an insulating gas in electrical transmission equipment, including circuit breakers. The GWP of SF_6 is 22,800, making it the most potent greenhouse gas that the Intergovernmental Panel on Climate Change has evaluated.

To find out more about the role of fluorinated gases in warming the atmosphere and their sources, visit the Fluorinated Greenhouse Gas Emissions <https://epa.gov/ghgreporting/fluorinated-greenhouse-gas-emissions-and-supplies-reported-ghgrp> page.

Emissions and Trends

Overall, fluorinated gas emissions in the United States have increased by about 90% between 1990 and 2020. This increase has been driven by a 284% increase in emissions of hydrofluorocarbons (HFCs) since 1990, as they have been widely used as a substitute for ozone-depleting substances. Emissions of perfluorocarbons (PFCs) and sulfur hexafluoride (SF_6) have actually declined during this time due to emission-reduction efforts in the aluminum production industry (PFCs) and the electrical transmission and distribution industry (SF_6).



Note: All emission estimates from the *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020 <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.*

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Reducing Fluorinated Gas Emissions

Because most fluorinated gases have a very long atmospheric lifetime, it will take many years to see a noticeable decline in current concentrations. There are, however, a number of ways to reduce emissions of fluorinated gases, described below.

Examples of Reduction Opportunities for Fluorinated Gases

Emissions Source	Examples of How Emissions Can be Reduced

Emissions Source	Examples of How Emissions Can be Reduced
Substitution of Ozone-Depleting Substances in Homes and Businesses	Refrigerants used by businesses and residences emit fluorinated gases. Emissions can be reduced by better handling of these gases and use of substitutes with lower global warming potentials and other technological improvements. Visit EPA's Ozone Layer Protection site <https://epa.gov/ozone-layer-protection> and HFC Phasedown site <https://epa.gov/climate-hfcs-reduction> to learn more about reduction opportunities in this sector.
Industry	Industrial users of fluorinated gases can reduce emissions by adopting fluorinated gas recycling and destruction processes, optimizing production to minimize emissions, and replacing these gases with alternatives. EPA has experience with these gases in the following sectors: • Aluminum <https://epa.gov/f-gas-partnership-programs/aluminum-industry> • Magnesium <https://epa.gov/f-gas-partnership-programs/magnesium-industry> • Semiconductor <https://epa.gov/f-gas-partnership-programs/semiconductor-industry>
Electricity Transmission and Distribution	Sulfur hexafluoride is an extremely potent greenhouse gas that is used for several purposes when transmitting electricity through the power grid. EPA is working with industry to reduce emissions through the SF_6 Emission Reduction Partnership for Electric Power Systems <https://epa.gov/eps-partnership>, which promotes leak detection and repair, use of recycling equipment, and consideration of alternative technologies that do not use SF_6.

Emissions Source	Examples of How Emissions Can be Reduced
Transportation	Hydrofluorocarbons (HFCs) are released through the leakage of refrigerants used in vehicle air-conditioning systems. Leakage can be reduced through better system components and through the use of alternative refrigerants with lower global warming potentials than those presently used. EPA's light-duty and heavy-duty vehicle standards <https://epa.gov/vehicles-and-engines> provided incentives for manufacturers to produce vehicles with lower HFC emissions.

References

[1]IPCC (2007) Climate Change 2007: The Physical Science Basis <http://www.ipcc.ch/report/ar4/>. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. [S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press. Cambridge, United Kingdom 996 pp.

5,981 million metric tons of CO_2: What does that mean?

An explanation of units:

A million metric tons is equal to about 2.2 billion pounds, or 1 trillion grams. For comparison, a small car is likely to weigh a little more than 1 metric ton. Thus, a million metric tons is roughly the same mass as 1 million small cars!

The U.S. Inventory uses metric units for consistency and comparability with other countries. For reference, a metric ton is a little bit larger (about 10%) than a U.S. "short" ton.

GHG emissions are often measured in carbon dioxide (CO_2) equivalent. To convert emissions of a gas into CO_2 equivalent, its emissions are multiplied by the gas's Global Warming Potential (GWP) <https://epa.gov/ghgemissions/understanding-global-warming-potentials>. The GWP takes into account the fact that many gases are more effective at warming Earth than CO_2, per unit mass.

The GWP values appearing in the Emissions webpages reflect the values used in the U.S. Inventory, which are drawn from the IPCC's Fourth Assessment Report (AR4). For further discussion of GWPs and an estimate of GHG emissions using updated GWPs, see Annex 6 of the U.S. Inventory <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020> and the IPCC's discussion on GWPs (PDF) <http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html> (106 pp, 7.7MB).

GHG Emissions and Removals Home <https://epa.gov/ghgemissions>

Overview of Greenhouse Gases

Sources of GHG Emissions and Removals <https://epa.gov/ghgemissions/sources-greenhouse-gas-emissions>

Global Emissions and Removals <https://epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

National Emissions and Removals <https://epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

State and Tribal GHG Data and Resources <https://epa.gov/ghgemissions/state-and-tribal-greenhouse-gas-data-and-resources>

Facility-Level Emissions <https://epa.gov/ghgreporting>

Carbon Footprint Calculator <https://epa.gov/ghgemissions/household-carbon-footprint-calculator>

GHG Equivalencies Calculator <http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

Capacity Building for GHG Inventories <https://epa.gov/ghgemissions/capacity-building-national-greenhouse-gas-inventories>

Contact Us <https://epa.gov/ghgemissions/forms/contact-us-about-greenhouse-gas-emissions> to ask a question, provide feedback, or report a problem.

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Follow.

NFPA 70E® - Standard for Electrical Safety in the Workplace® Scope

(A) Workplaces Covered.

This standard addresses electrical safety-related work practices, safety-related maintenance requirements, and other administrative controls for employee workplaces that are necessary for the practical safeguarding of employees relative to the hazards associated with electrical energy during activities such as the installation, removal, inspection, operation, maintenance, and demolition of electric conductors, electric equipment, signaling and communications conductors and equipment, and raceways. This standard also includes safe work practices for employees performing other work activities that can expose them to electrical hazards as well as safe work practices for the following:

(1) Installation of conductors and equipment that connect to the supply of electricity
(2) Installations used by the electric utility, such as office buildings, warehouses, garages, machine shops, and recreational buildings that are not an integral part of a generating plant, substation, or control center

Informational Note:

This standard addresses safety of workers whose job responsibilities involve interaction with energized electrical equipment and systems with potential exposure to electrical hazards. Concepts in this standard are often adapted to other workers whose exposure to electrical hazards is unintentional or not recognized as part of their job responsibilities. The highest risk for injury from electrical hazards for other workers involve unintentional contact with overhead power lines and electric shock from machines, tools, and appliances.

(B) Workplaces Not Covered.

This standard does not cover safety-related work practices for the following:

(1) Installations in ships, watercraft other than floating buildings, railway rolling stock, aircraft, or automotive vehicles other than mobile homes and recreational vehicles
(2) Installations of railways for generation, transformation, transmission, or distribution of power used exclusively for operation of rolling stock or installations used exclusively for signaling and communications purposes
(3) Installations of communications equipment under the exclusive control of communications utilities located outdoors or in building spaces used exclusively for such installations
(4) Installations under the exclusive control of an electric utility where such installations:
a. Consist of service drops or service laterals, and associated metering, or
b. Are located in legally established easements or rights-of-way designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for

such installations, or

c. Are on property owned or leased by the electric utility for the purpose of communications, metering, generation, control, transformation, transmission, or distribution of electric energy, or

d. Are located by other written agreements either designated by or recognized by public service commissions, utility commissions, or other regulatory agencies having jurisdiction for such installations. These written agreements shall be limited to installations for the purpose of communications, metering, generation, control, transformation, transmission, or distribution of electric energy where legally established easements or rights-of-way cannot be obtained. These installations shall be limited to federal lands, Native American reservations through the U.S. Department of the Interior Bureau of Indian Affairs, military bases, lands controlled by port authorities and state agencies and departments, and lands owned by railroads.

Print

CAMEO Chemicals

Chemical Datasheet

METHANE

Chemical Identifiers

CAS Number	UN/NA Number	DOT Hazard Label	USCG CHRIS Code
74-82-8	1971	Flammable Gas	MTH

NIOSH Pocket Guide
none

International Chem Safety Card
METHANE

NFPA 704

Diamond	Hazard	Value	Description
4 2 0	Health	2	Can cause temporary incapacitation or residual injury.
	Flammability	4	Burns readily. Rapidly or completely vaporizes at atmospheric pressure and normal ambient temperature.
	Instability	0	Normally stable, even under fire conditions.
	Special		

(NFPA, 2010)

General Description

Methane is a colorless odorless gas. It is also known as marsh gas or methyl hydride. It is easily ignited. The vapors are lighter than air. Under prolonged exposure to fire or intense heat the containers may rupture violently and rocket. It is used in making other chemicals and as a constituent of the fuel, natural gas.

Hazards

Reactivity Alerts

- Highly Flammable
- Strong Reducing Agent

Air & Water Reactions

Highly flammable.

Fire Hazard

Special Hazards of Combustion Products: None (USCG, 1999)

Health Hazard

High concentrations may cause asphyxiation. No systemic effects, even at 5% concentration in air. (USCG, 1999)

Reactivity Profile

METHANE is a reducing agent, it is involved in many explosions when combined with especially powerful oxidizers such as bromine pentafluoride, chlorine trifluoride, chlorine, iodine, heptafluoride, dioxygenyl tetrafluoroborate, dioxygen difluoride, trioxygen difluoride and liquid oxygen. Other violent reactions include, chlorine dioxide and nitrogen trifluoride. Liquid oxygen gives an explosive mixture when combined with liquid methane [NFPA 1991]. Contact of very cold liquefied gas with water may result in vigorous or violent boiling of the product and extremely rapid vaporization due to the large temperature differences involved. If the water is hot, there is the possibility that a liquid "superheat" explosion may occur. Pressures may build to dangerous levels if liquid gas contacts water in a closed container [Handling Chemicals Safely 1980].

Belongs to the Following Reactive Group(s)

- Hydrocarbons, Aliphatic Saturated

Potentially Incompatible Absorbents

No information available.

Response Recommendations

Isolation and Evacuation

Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]:

IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area for at least 100 meters (330 feet) in all directions.

LARGE SPILL: Consider initial downwind evacuation for at least 800 meters (1/2 mile).

FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 1600 meters (1 mile) in all directions; also, consider initial evacuation for 1600 meters (1 mile) in all directions. In fires involving Liquefied Petroleum Gases (LPG) (UN1075), Butane (UN1011), Butylene (UN1012), Isobutylene (UN1055), Propylene (UN1077), Isobutane (UN1969), and Propane (UN1978), also refer to BLEVE - SAFETY PRECAUTIONS (ERG page 366). (ERG, 2020)

Firefighting

Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]:

DO NOT EXTINGUISH A LEAKING GAS FIRE UNLESS LEAK CAN BE STOPPED. CAUTION: Hydrogen (UN1049), Deuterium (UN1957), Hydrogen, refrigerated liquid (UN1966) and Hydrogen and Methane mixture, compressed (UN2034) will burn with an invisible flame. Use an alternate method of detection (thermal camera, broom handle, etc.).

SMALL FIRE: Dry chemical or CO2.

LARGE FIRE: Water spray or fog. If it can be done safely, move undamaged containers away from the area around the fire. CAUTION: For LNG - Liquefied natural gas (UN1972) pool fires, DO NOT USE water. Use dry chemical or high-expansion foam.

FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned master stream devices or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Do not direct water at source of leak

or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned master stream devices or monitor nozzles; if this is impossible, withdraw from area and let fire burn. (ERG, 2020)

Non-Fire Response

Excerpt from ERG Guide 115 [Gases - Flammable (Including Refrigerated Liquids)]:

ELIMINATE all ignition sources (no smoking, flares, sparks or flames) from immediate area. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Stop leak if you can do it without risk. If possible, turn leaking containers so that gas escapes rather than liquid. Use water spray to reduce vapors or divert vapor cloud drift. Avoid allowing water runoff to contact spilled material. Do not direct water at spill or source of leak. CAUTION: For LNG - Liquefied natural gas (UN1972), DO NOT apply water, regular or alcohol-resistant foam directly on spill. Use a high-expansion foam if available to reduce vapors. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Isolate area until gas has dispersed. CAUTION: When in contact with refrigerated/cryogenic liquids, many materials become brittle and are likely to break without warning. (ERG, 2020)

Protective Clothing

Self-contained breathing apparatus for high concentrations; protective clothing if exposed to liquid. (USCG, 1999)

DuPont Tychem® Suit Fabrics

No information available.

First Aid

EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

SKIN: CAUTION: Exposure of skin to compressed gases may result in freezing of the skin. Treatment for frostbite may be necessary. Remove the victim from the source of contamination. IMMEDIATELY wash affected areas gently with COLD water (and soap, if necessary) while removing and isolating all contaminated clothing. Dry carefully with clean, soft towels. If symptoms such as inflammation or irritation develop, IMMEDIATELY call a physician or go to a hospital for treatment.

INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

INGESTION: This compound is a gas, therefore inhalation is the first route of exposure. (NTP, 1992)

Physical Properties

Chemical Formula: CH4

Flash Point: -306°F (NTP, 1992)

Lower Explosive Limit (LEL): 5 % (NTP, 1992)

Upper Explosive Limit (UEL): 15 % (NTP, 1992)

Autoignition Temperature: 1004°F (USCG, 1999)

Melting Point: -296.5°F (NTP, 1992)

Vapor Pressure: 258574 mmHg at 100°F ; 760 mmHg at -258.7°F (NTP, 1992)

Vapor Density (Relative to Air): 0.55 (NTP, 1992)

Specific Gravity: 0.422 at -256°F (USCG, 1999)

Boiling Point: -258.7°F at 760 mmHg (NTP, 1992)

Molecular Weight: 16.04 (NTP, 1992)

Water Solubility: 3.5 mL/100 mL at 63°F (NTP, 1992)

Ionization Energy/Potential: data unavailable

IDLH: data unavailable

AEGLs (Acute Exposure Guideline Levels)

No AEGL information available.

ERPGs (Emergency Response Planning Guidelines)

No ERPG information available.

PACs (Protective Action Criteria)

Chemical	PAC-1	PAC-2	PAC-3	
Methane (74-82-8)	65000 ppm	230000 ppm	400000 ppm	LEL = 50000 ppm

indicates value is 100% or more of LEL.

(DOE, 2018)

Regulatory Information

EPA Consolidated List of Lists

Regulatory Name	CAS Number/ 313 Category Code	EPCRA 302 EHS TPQ	EPCRA 304 EHS RQ	CERCLA RQ	EPCRA 313 TRI	RCRA Code	CAA 112(r) RMP TQ
Methane	74-82-8						10000 pounds

(EPA List of Lists, 2022)

CISA Chemical Facility Anti-Terrorism Standards (CFATS)

		RELEASE			THEFT			SABOTAGE		
Chemical of Interest	CAS Number	Min Conc	STQ	Security Issue	Min Conc	STQ	Security Issue	Min Conc	STQ	Security Issue
Methane	74-82-8	1.00 %	10000 pounds	flammable						

(CISA, 2007)

OSHA Process Safety Management (PSM) Standard List

No regulatory information available.

Alternate Chemical Names

- BIOGAS
- FIRE DAMP
- MARSH GAS

- METHANE
- METHANE, COMPRESSED
- METHANE, REFRIGERATED LIQUID
- METHYL HYDRIDE
- NATURAL GAS
- R 50
- R 50 (REFRIGERANT)

Removal Action Workplan
Property South of Parcel A
Former Ventura Manufactured Gas Plant

1555 North Olive Street,
Ventura California

Submitted to:

Department of Toxic Substances Control

9211 Oakdale Avenue
Chatsworth, California 91311-6505

Prepared for:

Southern California Gas Company

Prepared by:

NOREAS
Environmental Engineering and Science

16361 Scientific Way
Irvine, California 92618

August 2020
Revised November 2020
Revised December 2020

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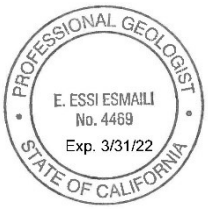

Date: December 18, 2020

Essi Esmaili, Ph.D., P.G.
Project Manager

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Attachments

ACRONYMS AND ABBREVIATIONS

API	American Petroleum Institute
ARARs	Applicable, Relevant, and Appropriate Requirements
B(a)P	Benzo(a)pyrene
bgs	below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CCR	Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
COPCs	Chemicals of potential concern
CPAHs	Carcinogenic PAHs
DCE	Dichloroethene
DOT	Department of Transportation
DTSC	California Department of Toxic Substances Control
EAs	Exposure areas
Eco	Eco & Associates, Inc.
EHD	Environmental Health Division
EMI	Electromagnetic instrument
EPA	U.S. Environmental Protection Agency
GPR	Ground-penetrating radar
HASP	Health and Safety Plan
HBGs	Health Based Goals
HHRA	Human health risk assessment
ISCOX	In situ chemical oxidation
LDR	Land Disposal Restriction
LNPAL	Light non-aqueous phase liquid
LUC	Land Use Covenant
NOREAS	NOREAS, Inc.
mg/kg	Milligrams per kilogram
MGP	Manufactured Gas Plant
MTBE	Methyl tertiary butyl ether
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOE	Notice of Exemption
N.O.S.	Not Otherwise Specified
PAHs	Polycyclic aromatic hydrocarbons
RACR	Removal Action Completion Report
RAOs	Remedial action objectives
RAW	Removal Action Workplan
SoCalGas	Southern California Gas Company

SRI	Supplemental Remedial Investigation
SRIR	Supplemental Remedial Investigation Report
TBA	Tertiary butyl alcohol
TBC	To be considered
TCE	Trichloroethene
TPH	Total Petroleum Hydrocarbons
TPH-g	TPH in the gasoline range
TPH-d	TPH in the diesel range
TPH-hh	TPH with heavy hydrocarbons
USCS	Unified Soil Classification System
UST	Underground Storage Tank
VC	Vinyl Chloride
VCAPCD	Ventura County Air Pollution Control District
VMP	Vapor monitoring probes
VOCs	Volatile organic compounds
Water Board	California Regional Water Quality Control Board
µg/L	Micrograms per liter

1.0 INTRODUCTION

On behalf of the Southern California Gas Company (SoCalGas), NOREAS, Inc. (NOREAS) has prepared this Removal Action Workplan (RAW) to describe proposed remedial activities at the southern portion of the Site located at 1555 N. Olive Street in Ventura, California (Site). Figure 1 depicts the Site location and Figure 2 shows the Site plan. The northern portion of the Site (Parcel A) was a part of the former Ventura Manufactured Gas Plant (MGP) that was divided into seven parcels (A through G) (Figure 2) based on modern ownership. Parcel A is the only one of the seven parcels that is still owned by SoCalGas. Parcels A, B, and C have been characterized and remediated as described in more detail in Section 2.0.

The Site is currently used as a compressor station and is scheduled for sitewide modernization. The modernization plan will include construction of a new compressor building, a new office building, a new warehouse, and a new Motor Control Center Room (Figures 2 and 3). The current existing office building and warehouse in the southern portion of the Site are scheduled for demolition. This RAW is primarily focused on the southern portion of the Site, where remediation has not occurred.

A RAW was prepared by Tetra Tech (2009) for the remediation of Parcel A. The RAW was approved by the DTSC and the approval letter is attached as Attachment A. The RAW was implemented in 2011. Details regarding the Site description, previous activities, and the nature and extent of contamination are provided in the RAW. The remedial excavation activities, including post-remediation sampling, are documented in the Soil Removal Action Completion Report (RACR) (Tetra Tech, 2011). As part of Parcel A remediation, impacted soil was excavated and transported offsite for treatment and disposal. However, potentially impacted soil was left in place in four inaccessible areas (Figure 2). Those inaccessible areas will be subject to evaluation, and potential remediation, if they become accessible at a later date. Otherwise, a Land Use Covenant (LUC) will be used to restrict for Parcel A.

In February and March 2020, NOREAS performed a Supplemental Remedial Investigation (SRI) at the southern portion of the Site. The results of investigation were submitted to the Department of Toxic Substance Control (DTSC) in a SRI Report (SRIR), dated May 2020 (NOREAS, 2020a). The investigation revealed presence of limited soil impact at the southern portion of the Site that may require remediation. In addition, concentrations of some volatile organic compounds (VOCs) in soil vapor samples exceeded screening levels. These VOCs were mainly attributed to residual groundwater impact, primarily originating from upgradient sources.

1.1 Purpose of the RAW

The overall purpose of the RAW is to identify and evaluate the most effective remedial alternatives for addressing environmental impacts at the southern portion of the Site. This RAW also summarizes the results of a human health risk assessment (HHRA) (NOREAS, 2020b) for determining the need for remediation and establishing cleanup levels, as necessary, for soil and

soil vapor at the southern portion of the Site. In addition, this RAW presents the methodologies for implementation of the selected remedial actions in the southern portion of the Site.

Specifically, this RAW presents a detailed approach for removing impacted soils at the southern portion of Site, including polycyclic aromatic hydrocarbons (PAHs), arsenic and lead. The basis for the approach described in this RAW is the information presented in the SRIR (NOREAS, 2020a) and HHRA (NOREAS, 2020b).

2.0 BACKGROUND INFORMATION

2.1 Site Description

The Site is located at 1555 N. Olive Street and covers an area of approximately 8.5 acres. The southern portion of the parcel, which is the subject of this RAW, is approximately 4.3 acres. Other pertinent Site information is listed below.

- Envirostor ID number: 56490101
- USEPA Facility Registry Number: 110033615791
- Assessor Parcel Number: 068-0-142-030 (Parcel map is included as Attachment B)
- Ownership: SoCalGas
- Owner Contact: Leticia Hernandez
  Environmental Programs Manager
  Environmental Services
  Southern California Gas Company
  8101 S. Rosemead Boulevard
  Pico Rivera, CA 90660
  Office: 562-806-4216

As mentioned previously, the northern portion of the Site (Parcel A) was a part of the former Ventura MGP. Parcel A is currently occupied by a natural gas compressor building, gas metering equipment, aboveground gas piping and associated features. The southern portion of the Site is currently in use as a storage and maintenance yard and is occupied by two small buildings used as an office and a warehouse (Figure 2). The southern portion of the Site was formerly used to service fleet vehicles.

To the north, south, and west of the Site are primarily industrial and commercial facilities. The Ventura River and vacant hillsides lie further west of the property. Residential/commercial properties and the E.P. Foster Elementary School are located to the east of the Site. The former Ventura MGP is in Township 3 North, Range 23 West, Section 33 of the San Bernardino baseline and meridian.

As mentioned previously, SoCalGas is developing plans for a compressor station modernization project that will include a new compressor building, a new office building, a new warehouse, and a new Motor Control Center Room (Figure 2). An architectural rendering of these buildings is shown in Figure 3. The existing office building, and warehouse at the southern portion of the Site are scheduled for demolition prior to soil remediation.

2.2 Historical MGP Operation

The Ventura MGP operated between 1905 and 1919. The MGP used crude oil in the gas production process. Most of the MGP operations occurred on Parcel A and on a small portion of Parcel B. The MGP was taken out of service in 1920 and much of the equipment and structures were removed.

Since 1923, Parcel A has been used as a natural gas compressor station. During the 1940s, various buildings and structures were added and during the 1950s and 1960s the compressor station was renovated and upgraded. In the late 1980s SoCalGas modernized and upgraded the compressor station as part of an overall transmission system upgrade.

2.3 Previous Investigations and Removal Actions at the Former Ventura MGP

Various investigation and removal actions were conducted in the northern and southern portions of the Site. The actions in the northern part of the Site were mainly related to the MGP operations. The actions in the southern part of the Site were associated with fleet vehicles services. The previous actions are discussed in the following sections.

2.3.1 Previous Investigations and Removal Actions in Northern Portion of the Site

Between October 2003 and November 2004, SoCalGas conducted a comprehensive soil, soil vapor, and groundwater investigation of the former MGP Parcels (A through G) (Tetra Tech, 2006). Based on a review of the results of the investigation, Tetra Tech concluded that there were two sources of contamination beneath the MGP Parcels, as follows:

1) A shallow impacted soil (approximately from 0-10 feet below ground surface [bgs]) under Parcels A, B, C, and G resulting from combined past MGP operations and former oil refinery operations; and,
2) A deep impacted soil (approximately between >10 feet bgs and groundwater) under Parcels B, C, and G resulting solely from former oil refinery and petroleum bulk storage tank farm operations.

Parcels A, B, and C were remediated between October 2009 and April 2011. Parcel A was excavated to depths ranging from 5 to 12 feet bgs, and in the southwestern portion to as much as 32 feet bgs. Parcel B was excavated to depths ranging from 10 to 19 feet bgs. Parcel C was excavated to depths ranging from 5 to 16 feet bgs. An estimated 83,075 cubic yards of impacted soil was removed from all three parcels and transported to the Soil Safe of California facility in Adelanto, California, for treatment by thermal desorption. An estimated 6,067 cubic yards of California-hazardous waste (soil contaminated with lead) was also removed from Parcel A and transported to the Clean Harbors Class 1 Landfill in Buttonwillow, California for disposal.

Parcels D and E were not impacted by past MGP operations and therefore did not require any remediation. Parcel G could not be remediated without seriously disrupting business operations at C.D. Lyon and T&T, and therefore was not remediated. Parcel F was found to be non-impacted during the remedial investigation

The final Removal Action Completion Reports for Parcels A, B, and C were approved by DTSC on October 17, 2012, October 26, 2012, and June 24, 2014, respectively.

As part of groundwater investigations at and around the former MGP, 28 groundwater monitoring wells had been installed at Parcels A through C and G, including two monitoring wells (DMW-2 and MW-3) on the southern portion of the Site (Figure 2). As discussed in the following Section

2.3, eight groundwater monitoring wells (UST MW-1 through UST MW-8) were also installed in the southern portion of the Site during an Underground Storage Tank (UST)-related groundwater investigation.

Based on the information collected during the groundwater investigations, groundwater beneath the Site occurs in fine- to coarse-grained sand, gravel, cobbles, and boulders. Groundwater is unconfined and has a flow direction generally to the east and southeast. The depth to groundwater has reportedly ranged from approximately 34 to 46 feet bgs.

The analytical testing program for groundwater sampling at the former Ventura MGP included volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260B, polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8310, total petroleum hydrocarbons (TPH) in the gasoline range (TPH-g) and the diesel range (TPH-d) by EPA Method 8015 Modified, and four water quality indicator field parameters (i.e., specific conductivity, pH, temperature, and turbidity). Chemicals detected during the groundwater monitoring program at the former Ventura MGP included:

- Benzene, toluene, ethylbenzene, and xylenes (BTEX);
- Naphthalene, benzo(a)pyrene [B(a)P], and other PAHs;
- TPH-d and TPH-g;
- Methyl-tert-butyl ether (MTBE);
- Common motor fuel indicator chemicals, such as trimethylbenzene isomers, butylbenzene isomers, isopropylbenzene, and isopropyltoluene; and
- Trichloroethene (TCE) and several degradation daughter products (e.g., cis-1,2-dichloroethene [DCE], trans-1,2-DCE, and vinyl chloride [VC]).

Tetra Tech (2015) stated that some of the above contaminants (i.e., MTBE, TCE, DCE, VC) are not related to MGP operations, and some (i.e., BTEX, TPH, and naphthalene) may be related to multiple sources, including MGP operations.

Tetra Tech (2015) reported that water quality improved in all wells located at the former Ventura MGP and downgradient of Parcels A, B, and C, where extensive soil remediation occurred. Naphthalene, B(a)P, and benzene plumes decreased markedly in concentration and size over the period of 2004 through 2015, resulting in greater than 90 to 95 percent mass removal and 80 to 90 percent reduction in plume size. TPH-d concentrations (and to a lesser extent TPH-g concentrations) decreased but remained in the groundwater under Parcel C, because there is residual TPH-impacted soil existing in deep soil beneath the remedial excavation floor under Parcel C, not attributable to MGP operations (i.e., not associated with B(a)P-impacted soil). The deeper TPH-impacted soil was believed to have resulted from historical releases from the former bulk storage tank farm.

Accordingly, Tetra Tech (2015) proposed closure of the groundwater case, based on the following information:

- Soil remediation in Parcels A, B & C had been completed and sources removed to the

extent possible[1]

- The results of groundwater sampling and analysis showed significant reduction of MGP residuals in groundwater
- There are non-MGP related analytes (e.g., MTBE, TCE, DCE, VC) from unrelated, upgradient offsite sources

In a letter dated March 18, 2016, DTSC concurred with groundwater closure request. In the letter, DTSC stated that *"All of the accessible manufactured gas plant (MGP) related contaminants have been removed from the Site and the remaining groundwater contaminants are from petroleum fuel releases unrelated to former MGP operations."*

Following submittal of a closure request, the wells at the former MGP parcels (including wells DMW-2 and MW-3 at the Site) were destroyed in 2017 following issuance of written closure by the DTSC (DTSC Letters, dated March 18, 2016 and May 17, 2017).

Summaries of the previous site investigations, the nature and extent of soil impact delineated during investigations, and remedial action at Parcel A of the former MGP were presented in RACR (Tetra Tech, 2011). A review of the RACR showed that impacted soil likely extended past the southern boundary of Parcel A and onto the Site. The RACR also showed the locations of a former seepage pit that reportedly existed just south of the southwestern corner of Parcel A and an area of former USTs just south of the southeastern portion of Parcel A (Figure 2).

2.3.2 PREVIOUS INVESTIGATIONS AND REMOVAL ACTIONS IN SOUTHERN PORTION OF THE SITE

Potions of the southern portion of the Site were investigated and remediated in 2004 through 2007. The southern portion was further investigated in 2020 in advance of the modernization project. These investigations are discussed in the following sections.

2.3.2.1 PAST INVESTIGATIONS (2004 THROUGH 2013)

Review of a report by Eco & Associates, Inc. (Eco) revealed that two USTs and associated piping/dispenser existed in the western portion of the southern portion of the Site near the seepage pit (Eco, 2007). These included a 6,000-gallon gasoline UST and a 500-gallon diesel UST (Figure 2). The two USTs and associated piping/dispenser were removed from the southern portion of the Site in December 2004 (Eco, 2007). The soil beneath the dispenser was found to have been impacted with gasoline. Accordingly, approximately 55 tons of gasoline-impacted soil were excavated from beneath the dispenser and transported offsite for disposal. The USTs, however, were found to be in good condition with no evidence of release (Eco, 2013a).

Due to the presence of impacted soil encountered under the dispenser, a groundwater investigation was performed, which resulted in the installation of eight monitoring wells (UST MW-1 through UST MW-8, Figure 2). Two additional wells (DMW-2 and MW-3) were previously installed in

[1] The sources of the remaining groundwater contaminants in Parcels C and G (and the southwestern portion of Parcel B) are deep-seated petroleum fuel releases from former bulk storage tank farm operations not associated with former MGP operations.

the southern portion of the Site as part of the MGP investigations (Figure 2). Groundwater was found to contain mainly TPH-g, TPH-d, MTBE, and tertiary butyl alcohol (TBA). Subsequently, a groundwater remediation program was undertaken, using in situ chemical oxidation (ISCOX), under the oversight of the County of Ventura, Resource Management Agency, Environmental Health Division (EHD) (Eco, 2013a).

The UST cleanup project at the southern portion of the Site was granted closure by the County of Ventura in August 2013 (County of Ventura, Environmental Health Division, 2013). The final closure report (Eco 2013a) showed that concentrations of TPH-g (1,100 µg/L maximum), TPH-d (2,490 µg/L maximum), MTBE (773 µg/L maximum), and TBA (2,200 µg/L maximum) remaining in groundwater. Subsequently, all eight of the wells were destroyed (Eco 2013b).

A geotechnical investigation was conducted at the Site in 2019 in which 7 borings (VCU 3 through VCU 9) were drilled by Wood Environmental & Infrastructure, Inc. (Wood, 2019) (Figure 2). The boring logs noted petroleum odors in four of the borings (VCU 3, VCU 4, VCU 6, VCU 7).

2.3.2.2 SUPPLEMENTAL REMEDIAL INVESTIGATION (2020)

As part of SRI, the southern portion of the Site was investigated by NOREAS in February and March 2020. This work was performed in accordance with the Revised Work Plan (NOREAS, 2020c), following its approval by the California Department of Toxic Substances Control (DTSC). The results of the investigation were presented in the SRIR (NOREAS, 2020a) and submitted to the DTSC. In addition, the results of the SRI were used to conduct the HHRA (NOREAS, 2020b) and submitted to the DTSC.

As mentioned previously, SoCalGas is planning for modernization of the Site that will initially include construction of new buildings and other structures in the southern portion of the Site (Figures 2 and 3). The 2020 SRI was performed to assess potential environmental impacts that need to be addresses before the modernization project is initiated.

During the investigation, 18 soil borings were installed at the southern portion of the Site (Figure 4). Soil samples were collected at 2 feet bgs, 5 feet bgs, and at 5-foot intervals thereafter to depths ranging from 15 to 35 feet bgs. Upon completion of drilling and soil sampling, vapor monitoring probes (VMPs) were installed at depths of 5 feet, 15 feet, and 25 feet in several borings. Soil samples were analyzed for VOCs using EPA Method 8260B, TPH-g, TPH-d, and TPH heavy hydrocarbons (TPH-hh) using EPA Method 8015, PAHs using EPA Method 8310, and metals using EPA Method 6010B/7000. The soil vapor samples were analyzed for VOCs by EPA Method TO-15 and TPH-g by EPA Method TO-3. The results of the 2020 investigations are discussed in Section 3.0

2.4 Geologic Setting

Based on the previous investigations at the former Ventura MGP, the general sequence of lithologic units is fill material underlain by alluvium. The alluvial deposits consist of unconsolidated mixtures of sand, silt, and clay, with locally abundant pebble- to boulder-sized rocks. Based on previous investigations, alluvial materials are approximately 110 feet thick in the

vicinity the former MGP [Dames & Moore, 1989]. In many of the Parcel A well borings and in the borings south of Parcel A, one to two-foot thick, discontinuous silt and clay lenses were observed in the alluvium at depths ranging between 15 feet bgs and 42 feet bgs.

Fill material within the Site appears to vary from as shallow as approximately one foot to as much as approximately 32 feet bgs. The fill consisted of gravels, sand, silty sand, and silt.

2.5 Local Hydrology

As noted previously, groundwater investigations at the former MGP included the installation of 28 groundwater monitoring wells at Parcels A through C and G, including two monitoring wells (DMW-2 and MW-3) in the southern portion of the Site (Figure 2). Also, eight groundwater wells (UST MW-1 through UST MW-8) were installed at the southern portion of the Site during the UST-related groundwater investigation.

Based on the information collected during the groundwater investigations, groundwater beneath the Site occurs in fine- to coarse-grained sand, gravel, cobbles, and boulders. Groundwater is unconfined and has a flow direction generally to the east and southeast, depending on the Ventura River water level. The Ventura River is located approximately 1,100 feet west of the Site. As noted in Groundwater Evaluation (Tetra Tech, 2015), the gradual change in groundwater flow direction across the former MGP may be attributed to the change in distance from the Ventura River. Separate-phase hydrocarbon fluids (i.e., light non-aqueous phase liquid [LNAPL]) were not observed in wells at the Site. However, LNAPL sheens had been reported in some wells located on Parcels B, C, and G of the former MGP.

3.0 NATURE, SOURCE, AND EXTENT OF SOIL AND SOIL VAPOR IMPACTS

As mentioned in Section 2.3.2, the SRI was performed in 2020 to assess potential environmental impacts that need to be addressed before the redevelopment project in the southern portion of the Site is initiated. The results of VOCs and TPH for the soil samples collected in 2020 are summarized in Table 1. The results of PAHs and metals for the soil samples are summarized in Table 2. In Table 2, benzo(a)pyrene Equivalent [B(a)P Equivalent] concentrations were calculated for carcinogenic PAHs (CPAH), in accordance with California Cancer Potency Factors (Cal/EPA, 1994). The results of the soil vapor samples are summarized in Table 3. The nature, source, and extent of soil and soil vapor impacts are discussed in the following sections. These results are also used as the basis for conducting a HHRA, as presented in Section 4.0. The results of the HHRA are used to determine the cleanup levels for the southern portion of the Site.

3.1 Soil Impact

Some of the soil samples contained mainly petroleum and MGP-related constituents, as summarized in Tables 1 and 2 and shown on Figure 4. Significant TPH-d concentrations were noted in the soil at a depth of 5 feet bgs at the location of I11-S1. Please note that I11-S1 represents the results of the conformation samples collected during the remediation of Parcel A (Tetra Tech, 2011). However, significant TPH-d concentrations were mainly detected in 30-foot and 35-foot samples in the western part of the southern portion of the Site. The presence of TPH at depths of 30 and 35 feet (near the water table) in a few soil borings correlates with impacted groundwater from upgradient sources in Parcels B and C (see discussion in Section 2.2).

VOC concentrations in soil samples (Table 1) were generally less than laboratory reporting limits. When detected above reporting limits, VOC concentrations were commonly low (J-flagged) and all were well below their respective commercial/industrial screening levels.

The only significant constituents detected in shallow soil (0 to 5 feet bgs) were TPH, PAHs, arsenic, and total lead in I15-S3, I11-S1 I7-S1, B1, B2, and/or B15 (Table 2). Please note that I15-S3, I11-S1 and I7-S1 represent the results of the confirmation samples collected during the remediation of Parcel A (Tetra Tech, 2011). Borings B1, B2, and/or B15 are closest to Parcel A and indicate that MGP-impacted soil likely extended beyond the southern limits of Parcel A. This is also consistent with the reported observations in the southern excavation sidewalls during remediation of Parcel A (I15-S3, I11-S1 I7-S1). Therefore, this shallow impacted soil should be addressed before the initiation of the planned modernization of the southern portion of the Site. The cleanup levels for these compounds are developed as part of the HHRA (Section 4.0).

3.2 Soil Vapor Impact

The results of the soil vapor samples are summarized in Table 3 and Figure 5. Mainly, the following compounds were detected in Soil Vapor samples: benzene, chloroform, 1,4-dichlorobenzene, cis-1,2-dichloroethene, ethylbenzene, methyl-tert-butyl ether, naphthalene, tetrachloroethene, trichloroethene, vinyl chloride, xylenes, and TPH-g (Table 3 and Figure 5).

Most of the constituents detected in soil vapor were not detected in soil samples. Therefore, it is reasonable to conclude that the soil vapor results most likely reflect the existing residual groundwater impacts from upgradient sources. As noted in Section 2.3.1, Tetra Tech (2015) determined that several of the groundwater contaminants (i.e., MTBE, TCE, DCE, VC) are not related to MGP operations, and some (i.e., BTEX, TPH, and naphthalene) may be related to multiple sources, including but not limited to MGP operations. It should be noted that TPH-g, TPH-d, MTBE were also apparently associated with the former UST at the southern portion of the Site (Section 2.3). As mentioned above, the residual groundwater impact is believed to be mainly originating from upgradient sources in Parcels B and C, where deep impacted soil is present, resulting from former oil refinery and petroleum bulk storage tank farm operations (see discussion in Section 2.3).

4.0 HUMAN HEALTH RISK ASSESSMENT

As discussed in Section 2.3.2.2, the results of the SRI (NOREAS, 2020a) were used to conduct the HHRA (NOREAS, 2020b). Human health impacts were estimated for various exposure zones at the southern portion of the Site (i.e., south of Parcel A).

Chemicals of potential concern (COPCs) were selected by the following criteria: they are detected in sufficient concentration, above background concentrations, and are of sufficient toxicity to warrant further evaluation. Table 4 includes a list of COPCs for the Site. The background levels of CPAHs in southern California ranged from 0.0054 mg/kg to 4.0520 mg/kg[2]. As such, only CPAHs at B15s (2 feet bgs) exceed the background range. However, a remedial action target level of 0.9 mg/kg[3] in B(a)P equivalent was set to reduce the concentrations of CPAHs in soils at the southern portion of the Site to levels that are equivalent to background concentrations. Likewise, arsenic was screened against southern California regional concentrations. Similarly, a target level of 12 mg/kg was set to reduce the concentrations of arsenic in soils to levels that are equivalent to background concentrations. To assess lead, concentrations were compared to the DTSC residential screening level. Accordingly, a target level of 80 mg/kg was set for removal action.

Potential health impacts were assessed for the potential future use of the southern portion of the Site, which was assumed to be industrial. A construction scenario was also considered, to assess potential health impacts that workers could incur while working at the southern portion of the Site during the planned construction activities. In addition, a residential scenario was evaluated to represent health impacts under the maximum beneficial use of the southern portion of the Site. Health impacts were assessed at four exposure areas (EAs) that are descriptive of where the future buildings (i.e., new compressor building, new office building, new warehouse, and new Motor Control Center Room shown on Figures 2 and 3) are proposed, utilizing representative data for soil and soil vapor. The detection of COPCs indicate that contamination is limited to the western part of the southern portion of the Site, immediately south of Parcel A. This location is where the new Compressor Building is proposed to be built.

In addition to the calculation of health risks and hazards, the HHRA utilized the exposure assumptions to calculate Health Based Goals (HBGs) that can be used to assess potential health impacts on a point by point basis throughout the southern portion of the Site. The HBGs provide media specific concentrations that are protective of human health and can be used to decide the areas of the Site that require remediation and/or mitigation. Tables 5 and 6 present the HBGs for soil and soil vapor at the Site. Table 7 presents a summary of the locations where soil vapor concentrations exceed the HBGs. In addition to the above-mentioned EAs (i.e., new compressor building, new office building, new warehouse, and new Motor Control Center Room), the HBGs

[2] DTSC PAH Studies in the Manufactured Gas Plant Site Cleanup Process (July 1, 2009) (https://dtsc.ca.gov/AssessingRis k/upload/MGP PAH Advisory 070109.pdf)

[3] A 0.9 mg/kg in B(a)P equivalent corresponds to the 95% Upper Tolerance Limit (UTL) of the background distribution

were used to assess potential health impacts at B7, B14, and B16, as these locations were not evaluated as part of an EA. COPC concentrations were below HBGs at the locations of B7, B14, and B16.

Potential health impacts resulting from direct exposure to soil were consistently below the carcinogenic risk level of $1x10^{-6}$. This is a result of the exclusion of CPAHs and arsenic from evaluation in the HHRA, which are assumed to be removed to background concentrations. The EA with the highest risks and hazards associated with direct soil contact was the Compressor Building location, with risks ranging from $3.4x10^{-7}$ to $1.6x10^{-7}$, and hazards of 2 (residential scenario), 0.8 (industrial scenario), and 1.6 (construction scenario). These hazards are mostly attributed to the concentrations of TPH detected at the Compressor Building location. In the HHRA, HBGs of 1,700 mg/kg, 250 mg/kg, and 2,700 mg/kg are established for TPH-g, TPH-d, and TPH-hh (NOREAS, 2020b). These HBGs are also presented in Table 5.

Under the assessment of indoor air, the health risks were $8.5x10^{-5}$ under the residential scenario and $1.4x10^{-5}$ under the industrial scenario at the new Compressor Building. The largest contributor to risk was naphthalene, which was assumed to volatilize to indoor air spaces. Other contributors greater than $1x10^{-6}$ were vinyl chloride ($3.5x10^{-5}$ residential and $2x10^{-6}$ industrial), and ethylbenzene ($2.1x10^{-6}$ industrial and $9.5x10^{-6}$ residential). For noncarcinogens, the total hazard exceeded unit, or 1, under each of the evaluated scenarios (5 residential and 1.2 for the industrial scenario) at the new Compressor Building location. The primary contributor was the maximum detected concentration of TPH gasoline/light hydrocarbon, resulting in a residential hazard of 3, and an industrial hazard of 0.7. At the Warehouse, the residential indoor air risk was $1.6x10^{-6}$ with naphthalene contributing a risk of $1.1x10^{-6}$. Under the industrial scenario, indoor air risks were less than $1x10^{-6}$. The indoor air assessment is uncertain, as the building design and use may not be conducive to indoor air accumulation (see Sections 8.1.2 and 10.2). Also, the occupancy of the building may differ from the assumed depiction in the HHRA.

HHRA may not account for every exposure scenario possible. However, by using health-protective assumptions, most, if not all potential exposures can be accounted for. For example, the HHRA evaluated health impacts resulting from VOCs in outdoor air under residential, industrial, and construction activities. The results from these evaluations at the impacted areas such as the new Compressor Building with residential risk of $4.8x10^{-8}$ and hazard of less than 1, can be used to infer potential health impacts to the visitors of the southern portion of the Site, which will be less than the residential risk of outdoor air ($4.8x10^{-8}$ and a hazard less than 1).

The result of this HHRA is used to support the remedial actions at the southern portion of the Site to achieve protection of human health. The primary contaminants at the southern portion of the Site soil are CPAHs. The removal of CPAHs to background levels will ensure that health risks associated with the southern portion of the Site CPAHs do not pose a greater risk than that posed by ambient concentrations. Also, lead and arsenic were detected at concentrations above their screening levels (i.e., 12 mg/kg for arsenic and 80 mg/kg for lead) at only two locations. The background level for arsenic of 12 mg/kg was exceeded only twice: 29.5 mg/kg at B15S (2 feet-

bgs), and 13.3 mg/kg at B2 (2-feet bgs). For lead, the DTSC 80 mg/kg screening level is only exceeded at B1 (2 feet bgs), at a concentration of 560 mg/kg. All other concentrations are below the residential lead screening level.

Based on the results of the HHRA, the shallow impacted soil in the area of B1, B2, and B15s will be removed to clean up the shallow soil to unrestricted (residential) levels. This will require demolition of the existing office and warehouse buildings. Following the removal of the impacted soil, confirmation samples will be collected and analyzed for PAHs, VOCs, TPH, and metals.

As discussed in the HHRA (NOREAS, 2020b), soil vapor samples concentrations exceeded the residential HBGs screening levels for the following compounds: TPH-g, benzene, 1,4-dichlorobenzene, ethylbenzene, MTBE, naphthalene, and vinyl chloride in the area of the proposed new Compressor Building. The residential HBG for naphthalene of 83 $\mu g/m^3$ was marginally exceeded at the Warehouse area, where B8-14 had a concentration of 85.7 $\mu g/m^3$, and B8-25 had a concentration of 89.6 $\mu g/m^3$. The presence of these compounds in soil vapor is consistent with previous assessment data that indicate that VOCs in deep soil are likely related to residual groundwater impact, mainly originating from upgradient sources in Parcels B and C. Therefore, remediation of groundwater or soil vapor from upgradient sources is not feasible. As such, soil vapor mitigation measures should be considered, as discussed in the following sections of this RAW.

5.0 REMOVAL ACTION GOALS AND OBJECTIVES

The remedial action objectives (RAOs) are developed to restore the southern portion of the Site to conditions that would entail minimum usage restrictions. The following are the RAOs for the southern portion of the Site:

- Protect human receptors (onsite hypothetical residents, commercial workers, and intrusive workers) from exposure to COPCs in shallow soil (0 to 15 feet) at concentrations presenting unacceptable risk; and
- Protect human receptors (onsite commercial workers) from intrusion of COPCs into indoor air of the proposed onsite buildings.

The RAOs have been formulated based on reasonably anticipated future uses at the southern portion of the Site for industrial/commercial purposes. It should be noted that following attainment of these RAOs, LUCs will be needed because of the potential vapor intrusion.

The RAOs for shallow soil and vapor intrusion are discussed separately in the following sections.

5.1 RAOs for Shallow Soil

The RAOs for the shallow soil (top 15 feet) at the southern portion of the Site are to minimize potential future exposure of humans (onsite hypothetical residents, commercial workers, visitors, and intrusive workers) to the COPCs through inhalation, dermal absorption and/or ingestion, and thereby eliminate future land use restrictions with respect to shallow soil. As such, the shallow soil where PAHs, lead, arsenic, and TPHs exceeded residential levels are targeted for removal (Figure 6). However, presence of elevated TPH concentrations in deeper soils (e.g., B1, B3, B5, and B6 at 30 feet or 35 feet bgs) exceed either residential or industrial HBG screening levels. As such, a LUC will be required for the Site, as discussed in Section 10.4. Specifically, the remedial action goal for the shallow soil is to remediate to the point that minimizes the need for any future land use restrictions. The goal for the shallow soil, following remediation, will be to be able to support that residual levels of TPHs are below residential HBGs, PAHs and arsenic are within background, lead below the cleanup level of 80 mg/kg, and that the cumulative cancer risks and noncancer hazards posed by all residual chemicals in shallow soil are considered safe and acceptable for future unrestricted residential land use[4]. If onsite physical constraints limit the ability to achieve these overall objectives, then the post-remediation completion report will clearly document the areas where impacted material remains in shallow soil and will identify the types of institutional controls that may be necessary to ensure long-term protection.

Based on the HHRA (Section 4.0), initial remediation targets of 0.9 mg/kg of CPAHs in B(a)P equivalent concentrations and 12 mg/kg of arsenic were identified to restore the southern portion

[4] The goal of unrestricted land use applies only to the shallow soil (top 15 feet). However, presence of elevated TPH concentrations in deeper soils (e.g., B1, B3, B5, and B6 at 30 feet or 35 feet bgs) exceed both residential or industrial HBGs. As such, a LUC will be required for the Site, as discussed in Section 10.4.

of the Site to the background conditions. In addition, a lead cleanup level of 80 mg/kg was established for remediation of lead-impacted soil in the B1 area to residential level. The HBGs for TPH-g, TPH-d, and TPH-hh are 1,700 mg/kg, 250 mg/kg, and 2,700 mg/kg, respectively. However, Environmental Screening Levels (ESLs) have also been issued by the San Francisco Bay Regional Water Quality Control Board (SFRWQCB, 2019) for TPH-g, TPH-d, and TPH-hh at 430 mg/kg, 260 mg/kg, and 12,000 mg/kg, respectively, based on a residential scenario. Therefore, at the request of the DTSC, the above ESLs have been selected as initial removal target levels for TPH-g, TPH-d, and TPH-hh in this RAW for consistency with other DTSC projects. .

As such, the soils with B(a)P equivalent concentrations in excess of 0.9 mg/kg, and/or with arsenic in excess of 12 mg/kg, lead in excess of 80 mg/kg, TPHs exceeding ESLs will be remediated from the areas delineated in Figure 6 so that no future land use restrictions with respect to shallow soil would be required at the southern portion of the Site.

5.2 RAOs for Vapor Intrusion

As discussed in Section 4.0, soil vapor samples concentrations exceeded the residential HBGs for the following compounds: TPH-g, benzene, 1,4-dichlorobenzene, ethylbenzene, MTBE, naphthalene, and vinyl chloride in the area of the proposed Compressor Building (NOREAS, 2020b). The residential HBG for naphthalene of 83 $\mu g/m^3$ was marginally exceeded at the Warehouse area, where B8-14 had a concentration of 85.7 $\mu g/m^3$, and B8-25 had a concentration of 89.6 $\mu g/m^3$. The industrial soil vapor HBGs were exceeded for ethylbenzene, naphthalene, and vinyl chloride, all located at the Compressor Building. No industrial soil gas HBGs were exceeded outside of the Compression Building location. Therefore, the RAOs for vapor intrusion pathway include designing mitigation measures to protect human receptors (onsite workers) from intrusion of COPCs into indoor air of the planned Compressor Building at the southern portion of the Site.

5.3 Potential Applicable, Relevant, and Appropriate Requirements (ARARs)

This section provides a summary of the ARARs identified, with additional detail provided in Attachment C. ARARs include standards, requirements, criteria, or limitations under federal, or more stringent State environmental law (CERCLA Section 121 (d)(2)(A)). To be adopted as an ARAR at a site, it must be determined that the requirement is either "applicable" to conditions at the Site or, if not applicable, that it is both "relevant" and "appropriate" based on Site conditions. A requirement is applicable if compliance with it is legally required. A requirement is relevant and appropriate if it is determined, based on discretion, that the requirement is well suited to addressing Site conditions. In addition, State requirements are ARARs only if they are identified by the State in a timely manner.

Other factors to be considered (TBC) are non-promulgated criteria, advisories, guidance, and proposed standards issued by federal or state governments. TBCs are not enforceable, and a response action is not required to attain TBCs. However, TBCs may be appropriate in shaping or guiding the development or implementation of a response action in certain circumstances, for example, where ARARs do not provide sufficient direction.

There are four basic criteria that define ARARs (USEPA 1988). ARARs are (1) substantive rather than administrative, (2) applicable or relevant and appropriate, (3) promulgated, and (4) categorized as one of the following.

- Chemical-specific ARARs that address specific hazardous substances and are typically health- or risk-based numerical values that cleanups must achieve.

- Location-specific ARARs that must be achieved because of the specific location of the release and the related response action (e.g., requirements that address the conduct of activities in sensitive areas such as floodplains, wetlands, and locations where endangered species or significant cultural resources are present). Location-specific ARARs often focus on protecting resources in a specific area.

- Action-specific ARARs that are typically technology- or activity-based requirements or limitations on actions conducted to respond to the release of specific hazardous substances. Action-specific ARARs generally prescribe *how* a selected alternative must be implemented rather than *what* alternative may be selected.

The results of the ARARs analysis, including state ARARs, are summarized in the Tables 1 through 6 in Attachment C.

6.0 PUBLIC PARTICIPATION AND CEQA

During the previous remedial action, the Site related documents such the previous RAW, RACR, fact sheets, and California Environmental Quality Act initial study (CEQA) Notice of Exemption (NOE) have been placed at the information repositories (Ventura County Library - Avenue Library) and DTSC - Chatsworth Office for public review.

SoCalGas' Public Affairs team has developed and executed a multi-pronged community outreach strategy for recent assessment work that included:

- Bilingual (English/Spanish) Pre-Construction Notification Letter and Construction Advisory to residents via mail and neighborhood canvassing.
- Bilingual pre-construction notification letter and in-person visit to nearby Boys & Girls Club of Greater Ventura and local elementary school.
- Informed City of Ventura and childcare facilities.
- To Date: 0 inquiries and 0 complaints

As part of the proposed additional remediation, SoCalGas will collaborate with DTSC, including distribution of Project Information Fact Sheet, pre-construction notifications and neighborhood canvasing consistent with previous outreach effort on an as needed basis.

As previously discussed in this RAW, SoCalGas plans to modernize the compressor station at the Site following the completion of the soil remediation. The location of the new proposed compressor building is where the current warehouse and administrative buildings are located. The scope of the soil remediation will entail demolishing the existing warehouse and administrative buildings to gain access to the contaminated soil. The soil remediation will then take place. Once it is backfilled with clean fill, the modernization construction will begin. Modernization of the compressor station will require a permit to construct from the Ventura County Air Pollution Control District (VCAPCD) and other ministerial permits from the City of Ventura; no additional discretionary permits are anticipated.

A CEQA NOE was issued for remediation of the northern portion of the Site (Parcel A) in August, 2009. The additional proposed soil remediation work on the southern portion of the Site is substantially similar to the previous soil remediation work conducted at Parcel A. As such, DTSC has already issued a CEQA NOE for the proposed removal project. .

7.0 FEASIBILITY STUDY, IDENTIFICATION AND ANALYSIS OF REMOVAL ACTION ALTERNATIVES

This section presents the screening and evaluation process for identifying appropriate remedial alternatives for the southern portion of the Site. Remedial alternatives screened and evaluated in this RAW are directed at soil and soil vapor. As discussed in SRIR (NOREAS, 2020a), groundwater closure for the Site was issued by DTSC in a letter, dated March 18, 2016. In the letter, DTSC stated that *"All of the accessible manufactured gas plant (MGP) related contaminants have been removed from the Site and the remaining groundwater contaminants are from petroleum fuel releases unrelated to former MGP operations."* Therefore, alternatives for groundwater is not addressed in this RAW. A range of remedial technologies are identified and screened for soil and soil vapor in this section to select technologies that are expected to be effective, implementable, and cost-effective, as discussed in the following sections.

7.1 Remedial Technology Screening

To identify the most appropriate potential technologies, a variety of remedial options were initially screened. A summary of the screening process is included in Tables 8 and 9 for soil and soil vapor, respectively. The purpose of this screening was to identify and eliminate from further consideration remedial technologies that, because of Site-specific conditions or costs, are not the most feasible and/or practicable. Based on the screening (Tables 4 and 5), the remedial action technologies determined to be the most practical for the southern portion of the Site are as follows:

- Alternative 1 for Soil and Soil Vapor: No Further Action (as required for consideration by the National Oil and Hazardous Substances Pollution Contingency Plan [NCP]).
- Alternative 2 for soil and soil vapor: Land Use Covenant (LUC).
- Alternative 3 for soil: Excavation of impacted soil and offsite treatment/disposal.
- Alternative 4 for soil vapor: Soil vapor mitigation for the proposed Compressor Building.

The following subsections describe each of the above identified alternatives and include evaluations of effectiveness, implementability, and cost. The evaluation of effectiveness includes consideration of overall protection of human health and the environment and both the long-term and short-term effectiveness of each alternative. Evaluation of implementability of each alternative includes consideration of the technical and administrative feasibility. The cost evaluation of each alternative is based upon estimates for capital costs and, if applicable, long-term monitoring costs.

7.2 Alternative 1 for Soil and Soil Vapor: No Further Action for Soil

Under the no further action alternative, no additional soil or soil vapor remediation or mitigation are proposed for the southern portion of the Site. The no further action alternative would, therefore, assume site closure under existing conditions, requiring no additional remediation or monitoring.

7.2.1 EFFECTIVENESS

The no further action alternative would be effective only if the current use of the Site is continued[5], land use remains unchanged, and the impacted soil is not disturbed[6]. Additionally, this alternative requires no remediation or monitoring, which would likely make closure of the southern portion of the Site difficult. Because of these issues, the long-term effectiveness of the no further action alternative is low.

7.2.2 IMPLEMENTABILITY

The no further action alternative is easy to implement as no additional remedial activities would be conducted.

7.2.3 COST

There is no significant cost associated with this alternative.

7.2.4 CONCLUSION ON ALTERNATIVE 1

Alternative 1 is not selected for the southern portion of the Site.

7.3 Alternative 2 for Soil and Soil Vapor: Land Use Covenant

Alternative 2 does not involve removal or remediation of impacted soil or soil vapor. Therefore, institutional controls by way of an LUC would be necessary. LUC would include land-use restrictions to limit exposure of Site users to impacted soil or soil vapor.

Alternative 2 is expected to provide for permanent, long-term Site restrictions to prevent disturbance of the impacted soil at the southern portion of the Site and construction of new buildings to ensure the protection of human health and the environment. Alternative 2 assumes that Site closure can be obtained under existing conditions, requiring no additional remediation or monitoring in the future. However, receiving unrestricted Site closure under current Site conditions would likely be unachievable.

It should be noted that even with the implementation of soil excavation and soil vapor mitigation measures as part of Alternatives 3 and 4, residual soil and soil vapor concentrations are expected to remain in soil at the southern portion of the Site. Therefore, LUC would be required in conjunction with implementation of Alternatives 3 and 4 to prevent the use of the southern portion of the Site for potential future residential uses. In addition, in case other buildings are planned at the southern portion of the Site, the LUC will require the SoCalGas to evaluate proposed location for potential risks associated with vapor intrusion and take adequate precautions for protection of human health and safety of the planned building occupants (if any).

[5] This assumes the currently existing office building and warehouse will be demolished and removed in the near future, as called for in the modernization plans.

[6] Impacted soil is currently capped.

7.3.1 EFFECTIVENESS

The LUC alternative would be effective only if impacted soil is not disturbed. LUC will provide a relative assurance that the impacted soil is not disturbed. As such, the long-term effectiveness of the LUCs only alternative is relatively high. In addition, LUC in conjunction of soil vapor mitigation measures (Alternative 4) ensures that future buildings at the Site will be evaluated for vapor intrusion and mitigation measure will be put in place, if needed.

7.3.2 IMPLEMENTABILITY

An LUC is moderately easy to implement and enforce. LUC implementation may consist of annual Site inspections and reporting.

7.3.3 COST

The following assumptions were made to develop a cost estimate for Alternative 2:

- The cost estimate assumes 30 years of annual site inspection and reporting (30 annual LUC inspection reports).

The total costs for Alternative 2 are estimated at approximately $126,424 (Table 10). The details of the estimated costs associated with annual LUC inspections and five-year reviews are summarized in Table 11.

7.3.4 CONCLUSION ON ALTERNATIVE 2

Alternative 2 is not selected for the shallow soil at the southern portion of the Site. However, an LUC is selected in conjunction with implementation of Alternative 4 (mitigation measure for vapor intrusion).

7.4 Alternative 3 for Soil: Soil Excavation and Offsite Treatment/Disposal

Alternative 3 relies on the excavation and removal of shallow soil impacted by PAHs, arsenic, and/or lead in the area shown on Figure 6. The excavated soil will be profiled and transported to offsite facilities for treatment and recycling or disposal.

7.4.1 EFFECTIVENESS

The excavation alternative for shallow soil is considered an effective alternative that is protective of both human health and the environment by reducing the volume of impacted soil at the southern portion of the Site. Excavation for soil would likely bring about unrestricted closure with respect to shallow soil (0 to 15 feet) at the southern portion of the Site.

7.4.2 IMPLEMENTABILITY

Under current conditions at the southern portion of the Site, the excavation alternative for soil is feasible as the impacted soil is primarily located in an area with open access, after demolishing the existing office building and warehouse. Alternative 3 uses standard equipment and labor skills and is readily implementable. The primary limitation to this alternative is short-term exposure

during the excavation, which will be minimized with engineered controls and protective equipment, as discussed in Section 9.0.

7.4.3 COST

The following assumptions were made to develop a cost estimate for Alternative 3:

- Soil excavations will be limited in horizontal extent to areas shown in Figure 6. The average depth of excavation is expected to be approximately 3.5 feet bgs, with some areas up to 7 feet bgs. However, the ultimate extent and depth of excavations will be determined based on field observation and the results of the confirmation sampling. Accordingly, the total volume of impacted soil requiring remediation is estimated to be approximately 1,700 cubic yards (2,500 tons).

- All excavated soil will be removed from the southern portion of the Site (Figure 6) and replaced with clean fill.

- The excavated soil will be transported to appropriate offsite facilities for treatment and recycling or disposal (see Section 9.5 for details).

The total costs for Alternative 3 are estimated at approximately $664,424 (Table 10). These costs include the excavation and removal of approximately 1,700 cubic yards (approximately 2,500 tons) of impacted soil, and a final closure report for the southern portion of the Site.

As mentioned in Section 7.3, LUC would be required in conjunction with implementation of Alternative 3 to prevent the use of the southern portion of the Site for potential future residential uses. Therefore, the estimated costs for preparation and implementation of LUC, annual inspections and five-year reviews are included for Alternative 3. The details of the estimated costs associated with annual LUC inspections and five-year reviews are summarized in Table 11.

7.4.4 CONCLUSION ON ALTERNATIVE 3

Alternative 3 is selected for implementation at the southern portion of the Site.

7.5 Alternative 4 for Soil Vapor: Soil Vapor Mitigation at New Compressor Building

As discussed in Section 4.0, under the assessment of indoor air, the health risk was calculated at 1.4×10^{-5} under the industrial scenario at the new Compressor Building. Alternative 4 is selected to mitigate this risk. This alternative relies on mitigation of potential vapor intrusion via the designed operation of the Compressor Building (see Section 8.1.2 for further details).

It should be noted that soil vapor mitigation measures may also be required for other potential future buildings at the Site that have not been discussed in this document, depending on the locations of such potential buildings.

7.5.1 EFFECTIVENESS

As discussed in Sections 4.0 and 8.1.2, the new Compressor Building is designed as a large utility-type building (162.5 feet long, 60 feet wide and 41.8 feet high). It will be equipped with an approximately 153-foot long roof-ridge ventilator to allow indoor air to be evacuated into the atmosphere. The Building will also be equipped with a minimum of three (3) wall-mounted air supply fans, to supply air into the building. Accordingly, the building will be ventilated at a minimum rate of 6 air changes per hour during normal operation, per the requirements in API RP 500[7]. Therefore, the planned operation of the building is considered an effective alternative that is protective of both human health and the environment by removing any potential vapor intrusion.

7.5.2 IMPLEMENTABILITY

Alternative 4 is readily implementable due to the built-in design of the building.

7.5.3 COST

The following assumptions were made to develop a cost estimate for Alternative 4:

- Ventilation of the Compressor Building is part of the design, construction, and operation of the building. Therefore, no cost is included for the design, construction, or operation of the ventilation system.

- The cost in Table 10 includes one round of indoor air sampling and analysis for VOCs and TPH-g, after the construction and within one month of the operation of the building. The cost also include preparation of a workplan to be reviewed and approved by DTSC.

The total costs for Alternative 4 are estimated at approximately $42,000 (Table 10).

As mentioned in Section 7.3, LUC would be required in conjunction with implementation of Alternative 4 to prevent the use of the southern portion of the Site for potential future residential uses. However, the estimated costs for preparation and implementation of LUC, annual inspections and five-year reviews are included for Alternative 3. Therefore, these costs are not repeated as part of the Alternative 4 estimated costs. As mentioned above, the details of the estimated costs associated with annual LUC inspections and five-year reviews are summarized in Table 11.

7.5.4 CONCLUSION ON ALTERNATIVE 4

Alternative 4 is selected for implementation at the new proposed Compressor Building to be built in the southern portion of the Site.

[7] American Petroleum Institute (API) RP 500 – Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class I, Division 1 and Division 2.

7.6 Summary and Recommendation

This section compares the alternatives evaluated above and specifies the basis for recommendation of the recommended alternatives. The following alternatives for soil were evaluated for the Site:

- Alternative 1 for Soil and Soil Vapor: No Further Action (as required NCP).
- Alternative 2 for soil and soil vapor: LUC.
- Alternative 3 for soil: Excavation of impacted soil and offsite treatment/disposal.
- Alternative 4 for soil vapor: Soil vapor mitigation for the proposed Compressor Building.

Based on the evaluations of the above alternatives, Alternatives 3 and 4 are proposed for the Site, for the following reasons.

Alternative 1 is rated low for long-term effectiveness and permanence because no measures or controls are associated with this alternative to minimize risk. Alternatives 2, 3, and 4 are considered effective to minimize risk. However, Alternative 2 will require restricted land use with respect to shallow or deep impacted soil. Under Alternative 3,the shallow impacted soil will be removed and transported offsite for treatment, recycling, and/or disposal. As such, Alternative 3 allows for the future land use with minimal restrictions related to shallow soil. However, a LUC will be required because impacted deep soil will still remain in place. In addition, if impacted shallow soil has to remain in place in an area due to physical constraints, LUC will also cover that area. Alternative 4 allows for effective mitigation of potential indoor air issues. However, a LUC will be required to prevent the use of the Site for residential purposes. In addition, following the construction of the compressor building, and the completion of the indoor air sampling, a report will be prepared based on the review of the operation manual for the building, and the results of the indoor air sampling. The report will include an evaluation of building operation and whether an Operation and Maintenance (O&M) plan should be required. The report will be submitted to DTSC for review and comment. Then a decision will be made in concurrence with DTSC regarding the necessity for an O&M for the Compressor Building.

Alternatives 1, 2, 3, and 4 are readily implementable. Alternative 1 is the easiest to implement. Alternatives 2 is easier than Alternatives 3 and 4 to implement because activities are largely administrative.

Alternative 1 has no estimated cost. Alternative 2 is less expensive than Alternative 3, with estimated costs of $126,424 versus $664,424, respectively (Table 10). The cost for Alternative 4 is estimated at $42,000 for one round of indoor air sampling. The estimated costs for preparation and implementation of LUC, annual inspections and five-year reviews are included for Alternative 3. Therefore, these costs are not repeated as part of the Alternative 4 estimated costs. As mentioned above, the details of the estimated costs associated with annual LUC inspections and five-year

reviews are summarized in Table 11. A cost for ventilation of the Compressor Building is not included based on the understanding that ventilation of the Compressor Building is part of the normal operation of the Buildings. Therefore, no cost is included for the design, construction, or operation of the ventilation system. However, a review of the operation and maintenance of the ventilation system will be included in each of the annual site inspection reports.

Implementation of the soil removal portion of Alternative 3 is discussed in detail in Section 8.0.

8.0 REMOVAL ACTION PLAN

This section presents the plan for the removal actions proposed for the southern portion of the Site. The RAOs developed for the southern portion of the Site are discussed in Section 5.0. The RAOs for the shallow soil (top 15 feet) at the southern portion of the Site is to eliminate potential future exposure of humans (hypothetical future residents, onsite workers, intrusive construction workers, and visitors) to the COPCs in shallow soil through inhalation, dermal absorption and/or ingestion, and thereby eliminate future land use restrictions. For vapor intrusion pathway, the RAOs include designing mitigation measures to protect human receptors (onsite workers) from potential intrusion of COPCs into indoor air of the planned Compressor Building at the southern portion of the Site.

The proposed remedial plans to address shallow impacted soil and vapor intrusion are discussed below.

8.1 Proposed Removal Activities

Proposed removal activities in the southern portion of the Site include removal of the impacted shallow soil and mitigation measures for vapor intrusion into the proposed new Compressor Building. These plans are discussed in the following sections.

8.1.1 AREA AND VOLUME OF SHALLOW SOIL REMOVAL

Areas and volumes of impacted soil were estimated based on data obtained during the SRI (NOREAS, 2020a) and the results of the confirmation samples collected during the remediation of Parcel A, as presented in RACR (Tetra Tech, 2009). Consistent with the results of the HHRA (Section 4.0), the initial excavation targets for CPAHs, expressed in B(a)P equivalent concentrations, arsenic, and lead are established at 0.9 mg/kg, 12 mg/kg, and 80 mg/kg, respectively. In addition, areas with TPHs exceeding residential HBGs are slated for excavation. The initial areas targeted for soil removal are depicted in Figure 6. The average depth of the removal is estimated at 3.5 bgs. However, some areas are expected to be excavated to 5 feet or deeper. The actual depth will be determined during the removal action based on field observation and the results of confirmation sampling. Based on the extent of impact shown in Figure 6, the total volume of impacted soil requiring remediation is estimated to be approximately 1,700 cubic yards (2,500 tons).

As shown on Figure 6, the area targeted for soil removal is located adjacent and south of the area of excavation in Parcel A, mainly along the western boundary of the southern portion of the Site. This will require demolition of the existing office and warehouse buildings. A post-remediation health risk assessment for the southern portion of the Site will be conducted (as discussed in Section 10.0) to ensure that the overall health risks associated with shallow soil to future hypothetical residents at the southern portion of the Site will be within the acceptable risk range.

Details of the removal of the shallow soil are presented in Section 9.0.

8.1.2 MITIGATION MEASURES FOR VAPOR INTRUSION

As discussed in Section 4.0, soil vapor sample concentrations exceeded the residential HBGs screening levels for the following compounds: TPH-g, benzene, 1,4-dichlorobenzene, ethylbenzene, MTBE, naphthalene, and vinyl chloride in the area of the proposed Compressor Building. As noted in the SRIR (NOREAS, 2020a) several of these compounds (i.e., MTBE, 1,4-dichlorobenzene, VC) are not related to MGP operations, and some (i.e., benzene, TPH, and naphthalene) may be related to multiple sources, including but not limited to MGP operations. It should be noted that TPH-g, TPH-d, and MTBE were also associated with the former UST at the southern portion of the Site. As such, a good portion of these compounds, if not all, are most likely related to residual groundwater impact, mainly originating from upgradient offsite sources such as Parcels B and C. Consequently, potential remediation of groundwater or soil vapor at the Site will not be practical because of presence of offsite sources. Therefore, it is prudent to consider mitigation measures for the planned future Compressor Building at the southern portion of the Site.

Based on the current design, the proposed new Compressor Building will be 162.5 feet long, 60 feet wide, and 41.8 feet high. The Compressor Building will house four large gas compressors. The building floor slab will be built five (5) feet above the grade. The foundation for each gas compressor is 30.5 feet long, 18 feet wide and 12.5 feet thick. In addition, concrete lined grate-covered trenches (pipe galleries) will surround the compressor foundations. The trenches will be covered with steel grates and house gas lines to and from the compressors. The proposed Compressor Building will be equipped with an approximately 153-foot long roof-ridge ventilator to allow indoor air to be evacuated into the atmosphere. The Building will also be equipped with at least three (3) wall mounted air supply fans, installed approximately 9 feet above the floor of the building to supply air into the building. Accordingly, the building will be ventilated at a minimum rate of 6 air changes per hour during normal operation, per the requirements in API RP 500[8].

The design of the proposed new Compressor building (12-foot thick foundation for Compressor Engines and trenches throughout the building for gas pipes) will make a potential design and installation of a vapor barrier very difficult, if not impossible. Therefore, ventilation of the building is considered as the most practical mitigation method. However, the design and operation of this building, which requires the building to be ventilated at a minimum rate of 6 air changes per hour during normal operation, will negate the need for any additional measures.

[8] American Petroleum Institute (API) RP 500 – Recommended Practice for Classification of Locations for Electrical Installation at Petroleum Facilities Classified as Class I, Division 1 and Division 2.

9.0 SHALLOW SOIL REMOVAL ACTION IMPLEMENTATION

This section presents detailed procedures for implementation of the removal action, related to the impacted shallow soil at the southern portion of the Site. As discussed in Section 8.1.1, soil impacted with CPAHs, arsenic and lead will be excavated from the area of the southern portion of the Site shown in Figure 6. The excavated soil will be transported offsite for treatment and/or disposal. The depth of the removal is estimated at 3.5 bgs. However, the actual depth will be determined during the removal action based on field observation and the results of the confirmation sampling. Based on the depth and extent shown in Figure 6, the total volume of impacted soil requiring removal is estimated to be approximately 1,700 cubic yards (2,500 tons).

9.1 Permitting/Notifications

The necessary permits for soil removal activities, transportation, and air quality will be obtained prior to Site mobilization. Copies of the permits will be kept onsite during working hours and will be made available for inspection. The anticipated permits to be secured and rules to be adhered to during soil removal may include, but are not limited to the following:

- Excavation and grading permit.
- Cal-OSHA permits.
- Waste transportation route permit and encroachment permit (if necessary).
- VCAPCD applicable permits.

Other permits are not anticipated. However, the procedures proposed for removal activities will comply with federal, State, and local rules and regulations, regardless of whether permits will be required.

9.2 Preparatory Activities

Preparatory activities and meetings will follow SoCalGas guidelines and procedures, as described in the following sections.

9.2.1 KICK-OFF MEETING

At least 2 weeks prior to the start of field activities, a kickoff meeting will be held between SoCalGas, oversight engineer, remedial contractor, and any pertinent subcontractors. The purpose of this meeting will be to develop a mutual understanding of the remedial activities.

9.2.2 HEALTH AND SAFETY PLAN

The Health and Safety Plan (HASP) prepared for the southern portion of the Site and submitted as a stand-alone document. The HASP has been prepared by NOREAS in accordance with California Code of Regulations (CCR) Title 8. The HASP includes hazard evaluation, key personnel, training requirements and certifications, personal protective equipment requirements, and site control measures at a minimum. The HASP will be implemented during all field activities related to this Removal Plan.

9.2.3 SURFACE GEOPHYSICAL SURVEYING

Prior to any excavation activities, the Site will be marked and Underground Service Alert (Dig Alert) of Southern California will be notified to identify potential underground service lines within and near the area of excavation. In addition, a surface geophysical survey will be conducted over the proposed excavation area using ground-penetrating radar (GPR) and/or an electromagnetic instrument (EMI) or equivalent technologies. Standard utility marking colors (paints, stakes, or flags) will be used to mark the identified utilities within the vicinity of the excavation areas. If utilities are identified, the intent will be to excavate around them and provide structural support as needed. Excavation around the piping will be performed in such a manner to avoid any damage to the existing piping. Hand excavation (to uncover utilities) may be required in some cases when the excavation is within 5 feet of the utility.

9.2.4 ADDITIONAL INVESTIGATION

To further define the excavation limits and procedures, additional investigation will be performed. The additional investigation will include collecting shallow soil samples (2 to 5 feet) in the vicinity of B1, B2, and B15 to further define the extent of soil impacted with lead, arsenic, and PAHs. Due to presence of large cobbles and boulders, which makes drilling and soil sampling very difficult, samples will be collected from small potholes, using a small backhoe. Select samples will be submitted to an analytical laboratory and analyzed for PAHs by US EPA Method 8310, TPH-g, TPH-d, and TPH-h using EPA Method 8015, and lead and arsenic by EPA Method 6010B.

As mentioned above, the additional investigation is primarily meant to more accurately define the area of excavation prior to the start of the excavation. The results should also help to segregate the excavated soil for profiling purposes. Some of the results that represent the soil that ultimately will remain in place will be used in post-remediation risk assessment. The most important point to be emphasized is that all the soil that exceed the cleanup levels will be removed based on field observations and/or confirmation sampling. If impacted soil has to remain in place in an area due to physical constraints, samples will be collected from that area and analyzed to document the remaining impacted soil.

9.3 Mobilization

Mobilization activities will include movement of equipment and materials to the Site, and orientation and training of field personnel. Additionally, project-specific personnel and all permit required notifications (e.g. Haul Route Permit), will be notified regarding the planned schedule for mobilization and soil excavation activities.

9.3.1 PREPARATION OF WORK AREAS

Upon receipt of the approved records and authorizations, field personnel, temporary facilities, and required construction materials will be mobilized to the Site. The temporary facilities will include, but are not limited to, restrooms, security fencing (if needed), runoff controls, small equipment, and material storage area, as needed.

The majority of equipment and materials will be mobilized to the Site on an as-needed basis to minimize storage requirements and to prevent the spread of contamination by the project equipment. Dedicated laydown areas, to be established in the field during mobilization, will be used for short-term storage of equipment and materials.

9.3.2 VCAPCD Rules Implementation

As discussed in Section 9.6.4, during all field activities, VCAPCD Rules related to opacity, fugitive dust control, nuisance, and emission of volatile organic compounds (if any) will be implemented. Accordingly, real-time air/dust monitoring along the eastern, western, and southern property boundary will be conducted to ensure protection of adjacent offsite receptors during soil excavation. Additional information regarding air monitoring is provided in Section 9.6.4

9.3.3 Temporary Fencing and Barricade Installation

The Site is already fenced at the perimeters and secured. In addition, per the request of onsite SoCalGas personnel (if any), the designated construction area may need to be fenced off and secured to provide additional protection and safety for onsite personnel and equipment, and to prevent unauthorized access. The existing perimeter fences and construction area fences (if any) will be covered with a visual barrier (tarpaulins), as needed. During nonworking hours, the fencing will be fully closed and locked. During all removal activities, Site access will be restricted to authorized personnel only.

9.3.4 Soil Stockpile Area Construction

Efforts will be made to direct-loaded excavated soil will to trucks for offsite treatment and disposal. As discussed in the following sections, the soil impacted with PAHs, arsenic, and/or lead may have to be disposed at different disposal facilities. Therefore, based on the results of the additional investigations (Section 9.2.4), the soil in certain areas may have to be excavated and loaded separately for transportation and disposal purpose. If needed, the excavated soil may be stockpiled temporarily within the construction area for profiling purposes, in accordance with the requirements of VCAPCD. A plastic membrane will be placed on at the bottom and top of the soil if any temporary stockpile must be located outside the area scheduled for excavation. Soil excavated from areas impacted with PAHs, arsenic, and lead will be stockpiled separately, as needed.

The temporary stockpile height may not be greater than the top of perimeter Site fence at any time and stockpiled soils will be disposed of off-site by the end of each day. In cases that this is not possible, the temporary stockpile will be covered with plastic that is weighed down to avoid being displaced from covering the stockpile.

9.4 Soil Excavation

The impacted soils will be generally excavated in an open excavation, using an excavator or backhoe. The excavation is anticipated to be shallow (approximately 3.5 feet) and sidewall failure is not expected. Nevertheless, daily inspections will be performed by a competent person to assess the stability of sidewalls and excavated areas. Excavations will be conducted in accordance with CCR Title 8, Section 1539 through 1543, and 29 Code of Federal Regulations (CFR), Parts 1910 and 1926. Excavation activities will be under the supervision of a field engineer or geologist experienced in the safe practices associated with excavation, handling, and transportation of hazardous materials.

9.4.1 Confirmation Sampling and Analysis

Confirmation soil samples will be collected from the floor and sidewalls of the excavations, in accordance with the Sampling and Analysis Plan (Attachment D). Excavation floor confirmation samples will be collected at a spacing of 30 feet. Sidewall samples will be collected at 30-foot intervals, in the midpoint (vertically) of the sidewall. Preliminary locations of the confirmation samples are shown on Figure 6. If the soil excavation extends beyond four feet bgs, additional sidewall samples will be collected from deeper intervals (e.g., every two feet) to ensure the excavation boundary is properly defined vertically.

The confirmation samples will be analyzed for VOCs using EPA Method 8260B, TPH-g, TPH-d, and TPH-h using EPA Method 8015, PAHs using EPA Method 8310, and Metals using EPA Method 6010B/7000.

If confirmation samples indicate concentrations above the target remediation goal in the base of the excavation, a 1-foot lift will be excavated below the base in the location containing the exceedance, and an additional confirmation sample will be collected. If confirmation samples results are below the remediation goals, excavations at those locations will cease and the excavation will be backfilled.

A Quality Assurance/Quality Control (QA/QC) plan has been prepared for confirmation sampling and analysis and is included as Attachment E. The Plan describes the protocol and specifications for sample collection, processing, detection limits, holding times, and documentation (i.e., chain of custody).

9.4.2 Backfill Placement and Compaction

The excavation area will be backfilled using clean fill material to three (3) inches below the surrounding grade. Imported clean fill material will be sampled and approved according to the DTSC and SoCalGas requirements.

Imported fill material[9] will be obtained from a SoCalGas approved source that has been determined to contain no hazardous chemicals above screening level concentrations. The fill will be non-expansive and inorganic. Imported fill will have sufficient binder to prevent caving during placement and compaction. The fill material will be classified as SP (poorly graded sand or poorly graded sand with gravel), SW (well graded sand or well graded sand with gravel), or SM (silty sand or silty sand with gravel) in accordance with the Unified Soil Classification System (ASTM 1998). The fill material will be placed in the excavation in no thicker than 8-inch loose lifts, water added, or the soil dried back, until the moisture content is within 2% of optimum and then compacted in lifts. The fill material will be compacted to a minimum relative compaction of 90 percent with respect to the maximum dry density as determined in accordance with the ASTM D 1557 testing method. A minimum of one in-place density test will be performed for each 2,500 square feet per lift of fill placed.

For those areas ready for receiving new fill, the exposed subgrade will be scarified to a depth of 4-inches, moisture-conditioned to approximately 2 percent above optimum, and compacted in accordance with the recommendations for fill presented in this subsection. The finished compacted subgrade will be firm and non-yielding under the weight of compaction equipment.

9.4.3 SITE RESTORATION

Following completion of placement and compaction of the fill material, the remaining area of the excavation will be backfilled with a minimum of three inches of ¾" gravel that will serve as an erosion control measure.

9.5 Transportation and Offsite Disposal

The waste generated during the remedial actions (see Section 9.5.1) will be transported to appropriate offsite facilities for treatment and/or disposal. These facilities are discussed in Section 9.5.5.

9.5.1 WASTE STREAMS

Waste streams generated during the remedial action will likely include:

- PAH impacted soil
- Arsenic impacted soil
- Lead impacted soil
- Uncontaminated debris such as daily trash

[9] Prior to importing the fill material to the Site, it will be tested following the DTSC Clean Fill Advisory (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/SMP_FS_Cleanfill-Schools.pdf) for sampling and analysis of candidate borrow sources. The test results will be provided to DTSC for review prior to importing.

- Personal protective equipment, used sampling equipment, and liners
- Decontamination water

Prior to offsite transport, treatment, recycling or disposal, the wastes will be profiled in accordance with Title 22, Division 4.5 of the California Code of Regulations and/or the requirements of the offsite facilities.

9.5.2 Loading and Sealing of Trucks

Trucks will be used for the offsite transportation of impacted soil and debris. Trucks will be backed in toward the excavation area from N. Olive Street and will remain on clean areas at all times in order to minimize the need to decontaminate the truck tires. Excavated soil will be direct-loaded in to trucks where practical to avoid double handling. Loading of trucks will be performed in accordance with the requirements of VCAPCD. Alternatively, the excavated soil may temporarily be stockpiled before loading onto trucks, as discussed in Section 9.4. Stockpiling activities will be performed in accordance with the requirements of VCAPCD. Great care will be exercised to prevent spillage of soil during loading, and to prevent the dispersion of dust. If decontamination becomes necessary, it will be conducted in accordance with the Health and Safety Plan for the Site. Trucks will be equipped with covers to prevent release of potential dust and emissions during staging and transport.

9.5.3 Documentation and Records Retention

Prior to offsite disposal of any waste, manifests will be provided and reviewed by a SoCalGas representative for accuracy. Only SoCalGas designated personnel have the authority to sign disposal documents including the profile, waste manifest, Land Disposal Restriction (LDR), and certain other documents as required by the disposal facility.

Every load of waste material will be manifested with either a nonhazardous or hazardous waste manifest, as appropriate, prior to leaving the Site. At a minimum, the manifest form will include the following information:

- Generator information including name, address, contact, phone number.
- Transporter information including name, address, contact, phone number.
- Designated facility information including name, address, phone number.
- Site name including street/mailing address.
- DOT proper shipping name (e.g., hazardous waste solid, Not Otherwise Specified (N.O.S.), 9, UN 3077, PG III [D008]).
- Type and number of containers.
- Quantity of waste (volumetric estimate).
- Waste codes.

- Profile number.
- 24-hour emergency phone number.

The SoCalGas representative and the transporter must sign the manifest prior to the load of waste leaving the Site. If waste is hazardous, an LDR certification also will be required to accompany the manifest during transportation to the disposal facility. A copy of the "generator's initial copy" signed by the generator and transporter will be sent to the State of California Department of Toxic Substance Control (DTSC) within 30 days of waste pickup.

If any signed hazardous waste manifest from the designated facility is not received within 35 days, the generator must contact the transporter or the designated facility to determine the status of the waste. If the signed hazardous waste manifest has not been received within 45 days, the generator must submit an "Exception Report" to DTSC, as required under 22 CCR 66262.42.

9.5.4 TRAFFIC CONTROL

Traffic controls will be used for the safe and efficient implementation of the remedial action, while minimizing impacts to normal traffic. Traffic controls will be required during waste transportation activities. Traffic controls may include, but will not be limited to, the following:

- Loading and hauling of impacted soil and debris as well as delivery of imported clean materials, and equipment during off-peak hours to minimize disruption to local traffic; and,
- Flaggers used during the hauling of impacted soil and debris and delivery of imported borrow fill.

In order to prevent congestion of Site access roads during loading and hauling operations, no trucks will be allowed to queue along neighboring streets.

Other project-specific measures will be used to minimize the impacts of the construction activities. These measures include the following:

- Provide sufficient area to park all vehicles during construction, including parking for haul trucks.
- Traffic control activities shall conform to the applicable specifications of the State of California Manual of Traffic Controls for Construction and Maintenance Work Zones (Caltrans, 1996) and will be approved by SCE.

9.5.5 TREATMENT AND DISPOSAL FACILITIES

The excavated soil impacted with PAHs and arsenic will be transported to Soil Safe, located in Adelanto, California. The Soil Safe facility is approved by SoCalGas as a thermal desorption treatment/recycling facility. In the event profiling is indicative of elevated arsenic concentrations that exceed Soil Safe permit requirements, arsenic-impacted soil will be transported to an

appropriate disposal facility approved by SoCalGas. The soil impacted with lead will be transported to an approved facility approved by SoCalGas.

The excavated soil will be chemically profiled prior to shipment to Soil Safe or other appropriate facilities to ensure that it meets the standards under their permit requirements.

Water generated as a result of decontaminating the sampling tools or equipment will be placed inside 55-gallon, Department of Transportation (DOT)-approved drums. The drums will be labeled, and the contents will be profiled. Upon completing the waste profile, the drums will be transported to an appropriate recycling facility approved by SoCalGas.

9.5.6 TRANSPORTATION ROUTES

Trucks will use the transportation route shown on Figure 7 for transportation to Soil Safe in Adelanto, California. In the event profiling is indicative of elevated arsenic concentrations that exceed Soil Safe permit requirements, the arsenic-impacted soil will be transported to an appropriate waste facility approved by SoCalGas. The soil impacted with lead will be transported to an appropriate waste facility approved by SoCalGas.

9.6 Mitigation Measures

The following sections address mitigation measures during the soil removal activities. These measures include noise control, stormwater management, dust and odor control, and air monitoring.

9.6.1 NOISE CONTROL

To effectively manage noise levels during the Site remediation, equipment operation will be limited to Monday through Friday. Occasional servicing of equipment and other non-equipment-based activities may be conducted during weekends. If any noise complaint is received during the removal activities, appropriate measures will be taken to implement additional engineering controls to reduce the noise levels. These measures may include the following:

- Mufflers may be used on equipment;
- Sound barriers may be installed to deflect sound from sensitive areas;
- Alternate equipment may be considered; and,
- Operation times may be modified.

9.6.2 STORMWATER MANAGEMENT

The targeted area of the excavation is approximately 20,000 square feet, which is significantly below the one-acre threshold for preparation of a formal Stormwater Pollution Prevention Plan (SWPPP) under the Construction General Permit. However, the selected remediation contractor will be required to develop a project-specific Erosion and Sediment Control Plan (ESCP) that will be in part based on the contractor's remedial approach. That is, the ESCP will be based in part on how and where the selected contractor stages equipment and materials.

The purpose of the ESCP is to control run-on runoff and such that excess sediment is contained and does not enter the local storm drain system and reach creeks that eventually reach the Pacific Ocean. Prior to removal action activities, the storm drains onsite and near the Site (offsite), if any, will be located and temporarily protected by placing a waterproof cover over the drains or placing berms (e.g., sand bags) around them to prevent an unauthorized discharge into storm drain. These temporary controls will be inspected daily to ensure proper placement and integrity.

During excavation activities, and in case of heavy rainfall, the excavation areas will be covered with heavy plastic sheets or will be protected by placing berms around the excavation area to prevent water run-on or run-off. In addition, sump pumps or a vacuum truck may be used to keep all excavations free of water. Any exposed soil will remain covered if rain continues for several days. All soil stockpiles will be covered with plastic and surrounded by berms.

In addition, the stormwater management activities will include the identification and implementation of best management practices (BMPs) to reduce sources of sediment and other pollutants that may affect stormwater discharges, in accordance with the California Stormwater Quality Association (CASQA) BMP Handbook. Prior to beginning excavation of impacted soil, the contractor will implement BMPs for field activities. On an as needed basis, the BMPs for erosion and sediment control may include:

- Silt fence or straw wattles to be used along the perimeter of the area to be excavated to redirect and filter stormwater flow.
- Sand or gravel bags to be used as a drainage diversion, sediment trapping, and stormwater velocity/erosion control.
- Street sweeping and vacuuming will be used as necessary to ensure that sediments are not tracked offsite. This will be implemented on the paved areas adjacent to the excavation.

9.6.3 DUST AND ODOR CONTROL

Dust control measures will be implemented at the Site during the removal activities to reduce the potential for fugitive dust and migration of contamination, including, but not limited to, the following measures:

- The Site perimeter fencing will be fitted with low permeability windscreen, which reduces the potential for fugitive dust.
- Work will not be conducted when 15-minute average wind speeds exceed 15 mph, or when instantaneous wind speeds exceed 25 mph.
- Dust suppression will be performed by lightly spraying or misting the active work areas (i.e., the working face and other points of dust generation) with water.
- Work will stop when visible dust is noticed, and additional misting of the area will be performed prior to continuing work.
- Efforts will be made to minimize the soil drop height from the excavator or loader bucket into the transport trucks and misting will be used to minimize dust.
- After the soil is loaded into the transport trucks, the soil will be covered (tarped) to prevent soil from spilling out of the truck during transport to the treatment/recycling facility.
- While on the Site, vehicles will maintain slow speeds (i.e., less than 5 mph) for safety purposes and for dust control measures.
- Track-out of particulates onto public paved roadways will be controlled by implementing a series of rumble plates and dry decontamination to remove bulk material from tires and trucks undercarriage before they exit the Site. In addition, the remedial contractor will clean the truck tires prior to exit from the site so that no soil track is left on offsite roads. Trucks will be loaded one truck at a time, to reduce any traffic congestion. Trucks will not enter the active excavation area, rather will be temporarily staged outside and radioed in one at a time.
- Street sweeping procedures will be implemented, as necessary, to reduce the potential for fugitive dust and migration of contamination.

9.6.4 AIR MONITORING

Prior to the start of the project, the contractor will contact VCAPCD to verify that the project will be exempt from VCAPCD permits as was the case during previous removal actions in Parcel A. However, compliance with VCAPCD Rule 50 (Opacity), Rule 51 (Nuisance), and Rule 55 (Fugitive Dust), and 74.29 (Soil Decontamination Operations) will be required. The Contractor will comply with all the applicable rules, in accordance with the requirements of the VCAPCD.

Airborne dust monitoring will be conducted using portable hand-held dust monitors to verify and document daily dust suppression efforts as well as using upwind and downwind sampling stations. As mentioned previously, fugitive dust control measures will be implemented at the Site to mitigate offsite dust migration onto neighboring properties through light watering of the active excavation area throughout the removal action activities. Factors considered in providing fugitive dust control measures include wind direction and speed monitoring, dust control, and dust suppression.

During excavation activities, dust monitoring through visible observations and continuous real time monitoring equipment equipped with data loggers will be conducted to ensure that dust suppression is sufficient to prevent visible dust from crossing the property boundary and creating a nuisance in violation of VCAPCD rules.

The National Ambient Air Quality Standard (NAAQS) for dust is 50 micrograms per cubic meter ($\mu g/m^3$), based on dust particles measuring 10 micrometers or less (PM10). The NAAQS dust standard (50 $\mu g/m^3$), steady for five minutes, has been selected as the action level for dust monitoring activities at the perimeter of the property (difference between upwind and downwind readings).

The action level for dust for the equipment operators and workers will initially be set at 2 milligrams per cubic meter (mg/m^3) steady for five minutes. This action level will trigger increased dust suppression activities to mitigate dust levels below 2 mg/m^3. Respiratory protection will be worn by the craft field labor if dust levels exceed 2 mg/m^3 for greater than five minutes. Additional dust suppression activities will be applied to reduce dust levels below 2 mg/m^3.

Dust monitoring and visible observations will be conducted to ensure compliance with VCAPCD regulations which require that dust suppression be adequate to prevent visible dust from crossing the property boundary. Track-out of particulates onto public paved roadways will be controlled by cleaning truck tires before the trucks leave the Site and by providing street sweeping as necessary on adjacent streets.

Vapor monitoring will be conducted during excavation activities and transport and disposal activities, in accordance with VCAPCD Rule 74.29. Monitoring will be conducted using a photo-ionization detector (PID) in the work area and in the operator's breathing zone to document the absence of any VOCs within the work area.

9.7 Demobilization and Decontamination

Demobilization will consist of decontamination of all equipment, cleaning the project Site, inspection, and certification of completion. The activities will include decontamination and removal of all construction equipment and materials as well as collection and disposal of all contaminated material, including decontamination water.

Temporary storage and sanitary facilities, fencing and barricades, and other temporary structures added during the removal action will be removed following the completion of work.

9.7.1 EQUIPMENT AND TOOL DECONTAMINATION

Prior to removal from the Site, decontaminated equipment and material will be inspected and accepted by the Site Superintendent. The Site Superintendent will certify that decontamination was performed for all equipment and materials. Heavy equipment and other moving vehicles will be subject to the requirements of VCAPCD. Heavy equipment will be decontaminated using dry methods, a pressure washer and/or steam cleaner, or equivalent. Special attention will be paid to removal of material on and within the bucket, undercarriage and tires of the excavators and other equipment. Decontamination of temporary facilities will be limited to exterior cleaning.

9.7.2 PRE-FINAL INSPECTION

Site cleaning work will include cleaning of all areas used for construction; removal of all materials such as excess construction material, wood, debris, and other foreign material; and removal of all construction equipment. All office and storage trailers will be disconnected from utilities, removed, and returned to the rental company. A pre-final inspection will be conducted by a SoCalGas representative during demobilization activities. Outstanding items will be noted in the punch list and will be corrected prior to the final inspection.

10.0 POST REMEDIATION ACTIVITIES

The post-remediation activities are focused on shallow soil (0 to 15 feet) and vapor intrusion. These activities are discussed separately in the following sections.

10.1 Shallow Soil Post-Remediation

As discussed in Section 5.0, the fundamental remedial action objective for the shallow soil is to minimize potential future exposure of humans (hypothetical residents, site workers, construction workers, and visitors) to the COPCs in soil, thereby reducing or eliminating future land use restrictions.

To meet this objective, the remedial action goal is set to restore the shallow soils (0 to 15 feet) at the southern portion of the Site to background conditions such that hypothetical future residents (in a hypothetical residential scenario) will have no more exposure to PAHs and arsenic than they would have in the absence of the former MGP. In addition, the lead-impacted soil will be removed at or above concentrations exceeding the risk-based level. The goal, following remediation, is to be able to support the finding that residual levels of PAHs and arsenic are within the range of background concentrations, and that the cumulative cancer risks and noncancer hazards posed by all other residual chemicals are considered safe and acceptable for future unrestricted residential land use.

Following excavation, confirmation soil samples will be collected and analyzed for VOCs, PAHs, metals, and TPH. A post-remediation risk assessment will be conducted to document that the cumulative cancer risks and noncancer hazard posed by post-remedial conditions are acceptable and protective of a hypothetical future residential land use scenario. As part of the post-remediation risk assessment, statistical analyses will be conducted to compare post-remediation concentrations of CPAHs and arsenic against background concentrations and to confirm that concentrations of CPAHs and arsenic have been restored to background conditions. In addition, soil with concentrations of other chemicals (for example lead) exceeding the acceptable residential level has been removed and transported offsite for treatment/disposal.

If these criteria are met, SoCalGas will apply for a Certificate of Completion for shallow soil for the southern portion of the Site, following the DTSC's review of a comprehensive Completion Report that evaluates the results of the post- remediation conditions.

10.2 Vapor Intrusion Mitigation Measure

As discussed in Section 4.0, soil vapor concentrations exceeded the risk-based levels for industrial/commercial scenario beneath the proposed new Compressor Building. As discussed in Sections 3.2 and 4.0, the presence of VOCs in soil vapor is consistent with previous assessment data that indicate that VOCs in deep soil are likely related to residual groundwater impact, mainly

originating from upgradient sources in Parcels B and C. Therefore, remediation of groundwater or soil vapor from upgradient sources is not practical. As such, soil vapor mitigation measures should be considered for the proposed new Compressor Building. As discussed previously, operation of a ventilation system at Compressor Building is deemed to be the most effective mitigation measures for the proposed new Compressor Building. In addition, one round of post mitigation indoor-air sampling and analysis is proposed to make sure that the mitigation measures work as intended.

Once design drawings for the compressor building are complete, an Operations and Maintenance (O&M) plan will be developed for review by DTSC. The intent of the O&M Plan will be to outline the specific criteria that will be used to ensure that the building is adequately ventilated

10.3 Remedial Action Completion Report (RACR)

The goal, following remediation, is to be able to support the finding that residual levels of PAHs and arsenic are within the range of background concentrations, lead concentration is below the residential cleanup level, and that the cumulative cancer risks and noncancer hazards posed by all residual chemicals in shallow soil (0 to 15 feet) are considered safe and acceptable for future unrestricted residential land use. To achieve this goal, confirmation soil samples will be collected and analyzed for PAHs, metals, TPH, and VOCs. The analytical results will be used in a post-remediation health risk assessment, the result of which will be presented to the DTSC in a RACR. The RACR will evaluate post-remediation conditions at the southern portion of the Site. SoCalGas will apply for a Certificate of Completion following the DTSC's review of the RACR.

10.4 Land Use Covenant (LUC)

As discussed in Section 5.0, the fundamental remedial action objective for the shallow soil is to minimize potential future exposure of humans (site workers, hypothetical residents, construction workers, and visitors) to the COPCs in soil, thereby reducing or eliminating future land use restrictions. Following soil removal discussed in Section 7.4, 8.0, and 9.0 it is anticipated that no restriction will be necessary for the shallow soil at the Site. However, a LUC will be required for shallow soil if the unrestricted land use criteria cannot be met due to physical constraints. In addition, as discussed in Sections 5.1 and 7.5, following shallow soil remediation, residual soil contamination in deeper soil (e.g., B1, B3, B5, and B6 at 30 feet or 35 feet bgs), as well as vapor concentrations are expected to remain in soil, requiring a LUC to prevent the potential use of the southern portion of the Site for future residential uses. The LUC will stipulate that a soil management plan will be required if the impacted soils are to be disturbed in the future. In addition, in case other buildings are planned at the Site, the LUC will require SoCalGas to evaluate proposed locations for potential risks associated with vapor intrusion and take adequate precautions for protection of human health and safety of the building occupants.

11.0 PROJECT SCHEDULE

The tentative schedule for remedial action at the southern portion of the Site work is listed below.

Site Remediation:	Within 90 Days of RAW approval
Draft Completion Report to the DTSC:	Within 90 Days of Remediation Completion

The above tentative schedule was projected based on information available at the time of preparation of this document. The schedule may be modified based on potential circumstances outside the control of SoCalGas.

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TABLES

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B1								B2							
Sample ID:	Units	B1-2	B1-5	B1-10	B1-15	B1-20	B1-25	B1-30	B1-35	B2-2	B2S-4.5	B2S-10	B2S-15	B2S-20	B2S-25	B2S-30	B2S-35
Sample Date:		2/12/2020	2/13/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/12/2020	2/12/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020
Laboratory Job Number:		103529	103581	103599	103599	103599	103599	103599	103599	103529	103529	103617	103617	103617	103617	103617	103617
TPH Using GC/FID Method (M8015D)																	
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	**2.77**	**5.86**	**0.541J**	**0.184J**	**0.233J**	ND<0.100	**2.45**	**3.42**	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.168J**	**0.417J**
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	**353**	**102**	**8.50**	ND<1.0	**5.50**	**4.00J**	**384**	**880**	**4.90J**	ND<1.0	ND<1.0	ND<1.0	**13.5**	ND<1.0	ND<1.0	**5.87**
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	**1,550**	**465**	**27.2**	ND<1.0	ND<1.0	**2.70J**	**74.9**	**67.9**	**105**	**40.7**	ND<1.0	ND<1.0	**15.5**	ND<1.0	ND<1.0	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	**1,900**	**567**	**35.7**	ND<1.0	**5.50**	**6.70**	**459**	**948**	**110**	**28.7**	ND<1.0	ND<1.0	**29.0**	ND<1.0	ND<1.0	**5.87**
VOCs by GC/MS (SW846) Method (8260B)																	
Benzene	ug/Kg	ND<39	ND<5	**1.66J**	**3.69J**	**3.45J**	**3.50J**	ND<1.0	ND<55	**1.30J**	**2.37J**	**1.21J**	**1.73J**	**2.81J**	**2.31J**	**1.85J**	**1.34J**
n-Butylbenzene	ug/Kg	ND<195	ND<25	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<195	ND<25	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	**331J**	**65.5**	**23.2**	**5.27J**	ND<5.0	ND<5.0	**8.88J**	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<195	**98.0**	**11.9**	**4.13J**	ND<5.0	ND<5.0	ND<5.0	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<39	ND<5	**1.02J**	**1.35J**	**1.34J**	ND<1.0	ND<1.0	ND<55	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**2.01J**	**1.30J**	**1.95J**	**3.30J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<78	ND<10	**3.52J**	**2.01J**	ND<2.0	ND<2.0	ND<2.0	ND<110	**3.07J**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<195	ND<25	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<195	ND<25	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	ND<39	ND<5	**2.45J**	**7.52J**	**4.52J**	**6.95J**	ND<1.0	ND<55	**1.22J**	**2.57J**	**1.36J**	**2.88J**	**8.40J**	**4.84J**	**2.36J**	**4.01J**
1,2,4-Trimethylbenzene	ug/Kg	ND<195	ND<25	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<275	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<39	ND<5	ND<1.0	**1.22J**	ND<1.0	ND<1.0	ND<1.0	ND<55	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.77J**	ND<1.0	ND<1.0	ND<1.0
m,p-Xylenes	ug/Kg	ND<39	ND<5	**1.24J**	**3.61J**	**2.56J**	**3.70J**	ND<1.0	ND<55	ND<1.0	**1.16J**	ND<1.0	**1.39J**	**5.72J**	**3.20J**	ND<1.0	**1.83J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - not detected at or above indicated method detection limit
ND - indicates constituents not detected (refer to original laboratory reports for detection limits)

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B3								B4							
Sample ID:	Units	B3-2.5	B3-5	B3-10	B3-15	B3-20	B3-25	B3-30	B3-35	B4-1.5	B4-4.5	B4-10	B4-15	B4-20	B4-25	B4-30	B4-35
Sample Date:		2/11/2020	2/11/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/11/2020	2/11/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020
Laboratory Job Number:		103503	103503	103599	103599	103599	103599	103599	103599	103503	103503	103641	103641	103641	103641	103641	103641
TPH Using GC/FID Method (M8015D)																	
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	**0.197J**	**0.190J**	**0.284J**	**0.250J**	**0.193J**	**4.12J**	**546**	**75.4**	ND<0.100	ND<0.100	**0.223J**	**0.253J**	**0.144J**	**0.263J**	**0.768J**	**0.782J**
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	**7.20**	**7.60**	**5.50**	ND<1.0	**4.20J**	**38.3**	**373**	**148**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**5.90**	**9.60**
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	**142**	**138**	**5.80**	ND<1.0	**6.10**	**5.20**	**47.7**	**17.0**	ND<1.0	**26.1**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.80J**
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	**149**	**146**	**11.3**	ND<1.0	**10.3**	**43.5**	**421**	**165**	ND<1.0	**26.1**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**5.90**	**13.4**
VOCs by GC/MS (SW846) Method (8260B)																	
Benzene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	**2.59J**	**1.43J**	ND<1.0	ND<41	ND<43	ND<1.0	ND<1.0	**2.01J**	ND<1.0	**1.66J**	**1.84J**	**2.06J**	**3.07J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**15.4**	**2,140**	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**391J**	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	**9.72J**	**7.29J**	**13.6**	**5.92J**	ND<5.0	ND<5.0	**932**	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<205	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	**1.90J**	**1.34J**	ND<1.0	**162J**	ND<43	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**2.47J**	**1.41J**	**3.71J**	**3.08J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<82	ND<86	ND<2.0	ND<2.0	**2.59J**	ND<2.0	**2.59J**	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**92.9**	**1,180**	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**2,540**	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**1.00J**	ND<1.0	**1.45J**	**6.21J**	**4.16J**	ND<1.0	ND<41	ND<43	ND<1.0	ND<1.0	**2.21J**	ND<1.0	**4.45J**	**4.85J**	**4.23J**	**9.40**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	**7.35J**	ND<5.0	ND<5.0	ND<205	ND<215	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	**2.24J**	**1.60J**	ND<1.0	ND<41	ND<43	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.41J**	ND<1.0	**1.85J**
m,p-Xylenes	ug/Kg	ND<1.0	ND<1.0	ND<1.0	**6.72J**	**4.56J**	ND<1.0	ND<41	ND<43	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.13J**	**4.40J**	**1.95J**	**6.92J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - indicates constituent(s) not detected at or above method detection limit

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B5								B6							
Sample ID:	Units	B5S-2.5	B5S-5	B5S-10	B5S-15	B5S-20	B5S-25	B5S-30	B5S-35	B6-2	B6-4	B6-10	B6-15	B6-20	B6-25	B6-30	B6-35
Sample Date:		2/13/2020	2/13/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/13/2020	2/13/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020
Laboratory Job Number:		103559	103559	103641	103641	103641	103641	103641	103641	103559	103559	103665	103665	103665	103665	103665	103665
TPH Using GC/FID Method (M8015D)																	
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	**0.110J**	**0.182J**	**0.379J**	**0.676J**	**1.31**	ND<0.100	**0.222J**	**261**	ND<0.100	**0.102J**	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.168J**	**0.799J**
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	**3.20J**	**6.10**	**4.00J**	**5.00**	**16.4**	**11.8**	**11.7**	**3,290**	**8.50**	**2.60J**	ND<1.0	ND<1.0	ND<1.0	**4.10J**	**24.7**	**410**
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	**21.6**	**91.4**	ND<1.0	ND<1.0	ND<1.0	**6.90**	ND<1.0	**468**	**134**	**31.1**	ND<1.0	ND<1.0	ND<1.0	**16.6**	**9.20**	**68.5**
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	**24.8**	**97.5**	**4.00J**	**5.00**	**16.4**	**18.7**	**11.7**	**3,760**	**143**	**33.7**	ND<1.0	ND<1.0	ND<1.0	**20.7**	**33.9**	**479**
VOCs by GC/MS (SW846) Method (8260B)																	
Benzene	ug/Kg	**2.75J**	**2.06J**	**3.30J**	**4.11J**	ND<1.0	ND<1.0	**2.30J**	ND<47	**1.30J**	**2.15J**	**1.78J**	**3.67J**	ND<1.0	**2.55J**	**2.64J**	**2.56J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<235	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<235	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	**32.0**	**16.5**	**7.60J**	**15.7**	ND<5.0	ND<5.0	ND<5.0	**348J**	ND<5.0	**7.91J**	**7.97J**	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<235	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	ND<1.0	**1.35J**	**1.59J**	ND<1.0	ND<1.0	**1.50J**	ND<47	ND<1.0	**1.03J**	ND<1.0	**1.36J**	ND<1.0	**1.89J**	**1.35J**	**1.87J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	**45.6**	**27.7**	**5.56J**	**9.23**	ND<2.0	ND<2.0	**3.40J**	ND<94	**9.17J**	**16.9**	**9.21**	**6.89J**	ND<2.0	**1.93J**	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<235	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<235	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**3.13J**	**3.02J**	**7.53J**	**6.46J**	ND<1.0	ND<1.0	**3.72J**	ND<47	**1.23J**	**2.79J**	**3.04J**	**4.33J**	**1.19J**	**5.27J**	**4.77J**	**6.89J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<235	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	ND<1.0	**1.71J**	**1.34J**	ND<1.0	ND<1.0	ND<1.0	ND<47	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.25J**
m,p-Xylenes	ug/Kg	**1.28J**	**1.24J**	**6.08J**	**4.22J**	ND<1.0	ND<1.0	**2.06J**	ND<47	ND<1.0	**1.22J**	**1.50J**	**2.03J**	ND<1.0	**2.73J**	**2.65J**	**5.03J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
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TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B7							B8						
Sample ID:	Units	B7-5	B7-10	B7-15	B7-20	B7-25	B7-30	B7-35	B8-5	B8-10	B8-15	B8-20	B8-25	B8-30	B8-35
Sample Date:		2/13/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/13/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020
Laboratory Job Number:		103581	103641	103641	103641	103641	103641	103641	103581	103686	103686	103686	103686	103686	103686
TPH Using GC/FID Method (M8015D)															
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	ND<0.100	**0.215J**	ND<0.100	**0.100J**	ND<0.100	**0.177J**	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.169J**
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**9.90**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**6.74**	ND<1.0
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	ND<1.0	**6.20**	ND<1.0	ND<1.0	ND<1.0	**9.00**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**5.56**	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	ND<1.0	**6.20**	ND<1.0	ND<1.0	ND<1.0	**18.9**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**12.3**	ND<1.0
VOCs by GC/MS (SW846) Method (8260B)															
Benzene	ug/Kg	**2.88J**	**5.04J**	**4.50J**	**1.77J**	**2.72J**	**1.35J**	ND<1.0	ND<1.0	**1.23J**	**2.49J**	**1.26J**	**1.89J**	**2.39J**	**2.73J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	**1.81J**	**2.42J**	**1.23J**	**1.97J**	**1.70J**	ND<1.0	ND<1.0	ND<1.0	**2.39J**	ND<1.0	**1.18J**	**2.06J**	**2.14J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**1.68J**	**9.50J**	**14.5**	**4.43J**	**4.42J**	**2.69J**	ND<1.0	ND<1.0	**1.44J**	**5.78J**	**1.30J**	**3.20J**	**5.80J**	**7.47J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	**5.36J**	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	**1.79J**	**4.35J**	**1.02J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.84J**
m,p-Xylenes	ug/Kg	ND<1.0	**5.50J**	**14.9J**	**3.23J**	**2.03J**	**1.60J**	ND<1.0	ND<1.0	ND<1.0	**2.26J**	ND<1.0	**1.55J**	**2.88J**	**5.46J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - indicates constituent(s) not detected at or above method detection limit

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B9								B10							
Sample ID:	Units	B9-2	B9-5	B9-10	B9-15	B9-20	B9-25	B9-30	B9-35	B10-2	B10-5	B10-10	B10-15	B10-20	B10-25	B10-30	B10-35
Sample Date:		2/19/2020	2/19/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/21/2020	2/21/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020
Laboratory Job Number:		103617	103617	103707	103707	103707	103707	103707	103707	103665	103665	103737	103737	103737	103737	103737	103737
TPH Using GC/FID Method (M8015D)																	
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.139J**	**0.192J**	ND<0.100	**0.117J**	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.189J**	ND<0.100	**0.117J**	ND<0.100
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
VOCs by GC/MS (SW846) Method (8260B)																	
Benzene	ug/Kg	ND<1.0	**3.11J**	**1.29J**	**2.91J**	**1.93J**	**6.50J**	**1.27J**	**2.85J**	**1.12J**	**1.27J**	**1.17J**	**2.26J**	ND<1.0	ND<1.0	**2.43J**	**1.21J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	**1.40J**	**1.40J**	**1.16J**	**3.96J**	**2.52J**	**1.20J**	**2.14J**	ND<1.0	ND<1.0	ND<1.0	**1.92J**	ND<1.0	**1.12J**	**1.11J**	**1.15J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	ND<1.0	**2.78J**	**1.43J**	**5.05J**	**6.14J**	**10.7**	**2.65J**	**6.00J**	**1.05J**	**1.22J**	**1.58J**	**5.60J**	**1.49J**	**2.07J**	**4.14J**	**2.50J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.02J**	**1.89J**	ND<1.0	**1.32J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
m,p-Xylenes	ug/Kg	ND<1.0	ND<1.0	ND<1.0	**3.29J**	**3.43J**	**5.23J**	**1.95J**	**4.37J**	ND<1.0	ND<1.0	ND<1.0	**2.32J**	ND<1.0	**1.47J**	**2.04J**	**1.26J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
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Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B11								B12						
Sample ID:	Units	B11-2	B11-5	B11-10	B11-15	B11-20	B11-25	B11-30	B11-35	B12-4.5	B12-10	B12-15	B12-20	B12-25	B12-30	B12-35
Sample Date:		2/13/2020	2/13/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/13/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/26/2020
Laboratory Job Number:		103559	103581	103736	103736	103736	103736	103736	103736	103581	103736	103736	103736	103736	103736	103736
TPH Using GC/FID Method (M8015D)																
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.170J**	ND<0.100	ND<0.100	**0.111J**	ND<0.100	ND<0.100	ND<0.100	**0.194J**	ND<0.100	**0.175J**	**0.198J**
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	**2.90J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.80J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	**80.0**	**22.1**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**78.9**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**20.9**	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	**82.9**	**22.1**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**80.7**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**20.9**	ND<1.0
VOCs by GC/MS (SW846) Method (8260B)																
Benzene	ug/Kg	**3.05J**	ND<1.0	**4.31J**	**1.44J**	**3.55J**	**2.01J**	**1.60J**	**2.20J**	ND<1.0	**2.16J**	**1.94J**	**3.80J**	**5.18J**	**1.98J**	**1.96J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.71J**	**2.73J**	**1.25J**	**1.21J**	**1.03J**	**1.63J**	**2.12J**	**1.78J**	**1.24J**	**3.97J**	**1.34J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**1.36J**	ND<1.0	**4.77J**	**1.21J**	**5.89J**	**5.15J**	**3.61J**	**4.62J**	**1.49J**	**5.47J**	**4.98J**	**10.1**	**5.94J**	**5.56J**	**3.81J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**1.37J**	**1.26J**	ND<1.0	ND<1.0	ND<1.0	**1.29J**	**1.11J**	**2.40J**	**1.41J**	ND<1.0	ND<1.0
m,p-Xylenes	ug/Kg	ND<1.0	ND<1.0	**2.33J**	ND<1.0	**5.23J**	**4.78J**	**3.09J**	**2.42J**	ND<1.0	**4.12J**	**3.27J**	**7.47J**	**4.83J**	**2.61J**	**2.10J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - indicates constituent(s) not detected at or above method detection limit

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B13							B14							
Sample ID:	Units	B13-5	B13-10	B13-15	B13-20	B13-25	B13-30	B13-35	B14-2	B14-5	B14-10	B14-15	B14-20	B14-25	B14-30	B14-35
Sample Date:		2/13/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/20/2020	2/20/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020
Laboratory Job Number:		103581	103686	103686	103686	103686	103686	103686	103641	103641	103736	103736	103736	103737	103737	103737
TPH Using GC/FID Method (M8015D)																
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	ND<0.100	**0.136J**	ND<0.100	ND<0.100	**0.220J**	**0.142J**	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.119J**	**0.101J**	**0.101J**	ND<0.100
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**20.7**	**39.3**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	ND<1.0	**6.04**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**56.5**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	ND<1.0	**6.04**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**77.2**	**39.3**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
VOCs by GC/MS (SW846) Method (8260B)																
Benzene	ug/Kg	**1.04J**	**3.04J**	**1.55J**	**1.68J**	**3.13J**	**1.09J**	**2.09J**	ND<1.0	**1.02J**	ND<1.0	**1.90J**	**3.54J**	**3.19J**	**1.42J**	**1.32J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	**1.48J**	**1.06J**	ND<1.0	**1.49J**	ND<1.0	**1.18J**	ND<1.0	ND<1.0	ND<1.0	**1.07J**	**1.50J**	**1.69J**	ND<1.0	**1.20J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**1.26J**	**7.03J**	**3.04J**	**3.15J**	**6.10J**	**1.10J**	**3.35J**	ND<1.0	ND<1.0	**1.32J**	**2.94J**	**5.72J**	**4.75J**	**2.35J**	**1.82J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	**1.42J**	ND<1.0	ND<1.0	**1.08J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**0.930J**	ND<1.0	ND<1.0	ND<1.0
m,p-Xylenes	ug/Kg	ND<1.0	**4.51J**	**1.55J**	**1.60J**	**3.89J**	ND<1.0	**1.83J**	ND<1.0	ND<1.0	ND<1.0	**1.37J**	**3.27J**	**2.62J**	**1.44J**	ND<1.0
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - indicates constituent(s) not detected at or above method detection limit

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B15								B16							
Sample ID:	Units	B15S-2	B15S-5	B15S-10	B15S-15	B15S-20	B15S-25	B15S-30	B15S-35	B16-2	B16-5	B16-10	B16-15	B16-20	B16-25	B16-30	B16-35
Sample Date:		2/13/2020	2/13/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/20/2020	2/20/2020	2/21/2020	2/21/2020	2/21/2020	2/21/2020	2/21/2020	2/21/2020
Laboratory Job Number:		103559	103559	103617	103617	103617	103617	103617	103617	103641	103641	103665	103665	103665	103665	103665	103665
TPH Using GC/FID Method (M8015D)																	
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	ND<0.100	ND<0.100	ND<0.100	ND<0.100	**0.149J**	ND<0.100	**0.129J**	**0.123J**	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100	ND<0.100
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	**94.3**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	**612**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**13.7**	**5.80**	ND<1.0	ND<1.0	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	**706**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**13.7**	**5.80**	ND<1.0	ND<1.0	ND<1.0
VOCs by GC/MS (SW846) Method (8260B)																	
Benzene	ug/Kg	**4.81J**	**3.71J**	**1.50J**	**1.75J**	**1.74J**	**1.56J**	**1.55J**	**1.73J**	**1.65J**	**1.37J**	**4.42J**	**2.69J**	**2.65J**	ND<1.0	**3.27J**	**2.23J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	**1.76J**	**1.17J**	**1.42J**	ND<1.0	**1.25J**	ND<1.0	**1.15J**	ND<1.0	ND<1.0	**3.09J**	**1.23J**	**1.44J**	ND<1.0	**1.73J**	**1.69J**
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**3.27J**	**3.32J**	**1.90J**	**3.31J**	**3.16J**	**1.93J**	**1.86J**	**2.74J**	ND<1.0	**1.40J**	**10.2**	**4.31J**	**3.79J**	**1.29J**	**5.32J**	**4.45J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**2.19J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
m,p-Xylenes	ug/Kg	**1.05J**	**1.19J**	ND<1.0	**1.85J**	**1.65J**	ND<1.0	ND<1.0	**1.25J**	ND<1.0	ND<1.0	**5.88J**	**1.80J**	**1.67J**	ND<1.0	**2.60J**	**2.27J**
Other VOCs	ug/Kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - indicates constituent(s) not detected at or above method detection limit

TABLE 1
Summary of Soil Analytical Results for TPH as Gasoline/ Diesel Fuel/Heavy Hydrocarbons and VOCs
Former Ventura Manufactured Gas Plan
1555 North Olive Street Ventura, California

Boring ID:		B17		
Sample ID:	Units	B17-5	B17-10	B17-15
Sample Date:		2/19/2020	2/26/2020	2/26/2020
Laboratory Job Number:		103617	103737	103737
TPH Using GC/FID Method (M8015D)				
TPH as Gasoline and Light HC (C4-C12)	mg/Kg	ND<0.100	ND<0.100	ND<0.100
TPH as Diesel (C13-C22)[ESL=260]	mg/Kg	ND<1.0	ND<1.0	ND<1.0
TPH as Heavy Hydrocarbons (C23-C40)[1600]	mg/Kg	**14.9**	ND<1.0	ND<1.0
TPH Total as Diesel and Heavy HC (C13-C40)	mg/Kg	**14.9**	ND<1.0	ND<1.0
VOCs by GC/MS (SW846) Method (8260B)				
Benzene	ug/Kg	ND<1.0	**1.44J**	**1.90J**
n-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
sec-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
tert-Butylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
1,4-Dichlorobenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
Ethylbenzene	ug/Kg	ND<1.0	ND<1.0	ND<1.0
Methyl-tert-butyl ether (MTBE)	ug/Kg	ND<2.0	ND<2.0	ND<2.0
Naphthalene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
n-Propylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
Toluene (Methyl benzene)	ug/Kg	**1.18J**	**2.56J**	**1.31J**
1,2,4-Trimethylbenzene	ug/Kg	ND<5.0	ND<5.0	ND<5.0
o-Xylene	ug/Kg	ND<1.0	ND<1.0	ND<1.0
m,p-Xylenes	ug/Kg	ND<1.0	**1.12J**	ND<1.0
Other VOCs	ug/Kg	ND	ND	ND

NOTES:
mg/Kg - milligrams per kilogram or parts per million
TPH - Total Petroleum Hydrocarbons quantified as either Gasoline, Diesel Fuel, or Heavy Hydrocarbons based on carbon range (ie. C4-C12) by GC/FID Method: (M8015D)
3,290 - positive detections shown in bold
ug/Kg - micrograms per kilogram or parts per billion
ND<0.100 - indicates constituent(s) not detected at or above method detection limit

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B1								B2								B3			
Sample ID:	Units	B1-2	B1-5	B1-10	B1-15	B1-20	B1-25	B1-30	B1-35	B2-2	B2S-4.5	B2S-10	B2S-15	B2S-20	B2S-25	B2S-30	B2S-35	B3-2.5	B3-5	B3-10	B3-15
Sample Date:		2/12/2020	2/13/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/12/2020	2/12/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/11/2020	2/11/2020	2/18/2020	2/18/2020
Laboratory Job Number:		103529	103581	103599	103599	103599	103599	103599	103599	103529	103529	103617	103617	103617	103617	103617	103617	103503	103503	103599	103599
PAHs By Method 8310																					
Acenaphthene	mg/Kg	**0.322**	**0.195**	**0.237**	**0.0329**	ND<0.010	ND<0.010	ND<0.010	**0.101**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Anthracene	mg/Kg	**0.472**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(g,h,i)perylene	mg/Kg	**1.44**	**0.0978**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0229**	**0.0637**	**0.0347**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluoranthene	mg/Kg	**1.97**	**0.103**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.172**	**0.0647**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluorene	mg/Kg	**0.365**	**0.0170J**	**0.0442**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Naphthalene	mg/Kg	ND<0.020	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	**1.82**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0245**	ND<0.010	**0.253**	**0.0412**	ND<0.010	ND<0.010	ND<0.010	**0.0108J**	ND<0.010	ND<0.010	**0.0126J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Pyrene	mg/Kg	**2.27**	**0.120**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0686**	**0.372**	**0.0525**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0124J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010
2-Methylnaphthalene	mg/Kg	**0.661**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	**0.328**	**0.285**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0463**	**0.502**	**0.0245**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)pyrene	mg/Kg	**0.885**	**0.0424**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0135J**	**0.0509**	**0.0536**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(b)fluoranthene	mg/Kg	**0.722**	**0.0381**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0121J**	**0.0353**	**0.033**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(k)fluoranthene	mg/Kg	**0.263**	**0.0210**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0135J**	**0.0172J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Chrysene	mg/Kg	**0.768**	**0.125**	ND<0.010	ND<0.010	ND<0.010	**0.0193J**	**0.0119J**	**0.109**	**0.0478**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Indeno(1,2,3-cd)pyrene	mg/Kg	**0.998**	**0.0793**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0276**	**0.0473**	**0.0413**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
B(a)P Equivalent	mg/Kg	**1.1**	**0.091**	**0.012**	**0.012**	**0.012**	**0.012**	**0.028**	**0.12**	**0.071**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**
CAM Metals By Method 6010B/7000																					
Arsenic	mg/Kg	**5.70**	**6.91**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**13.3**	**7.00**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Barium	mg/Kg	**655**	**142**	**72.5**	**92.6**	**107**	**111**	**135**	**138**	**127**	**112**	**82.3**	**75.8**	**194**	**155**	**111**	**143**	**33.8**	**26.6**	**35.4**	**82.3**
Chromium	mg/Kg	**35.1**	**14.8**	**21.6**	**13.8**	**14.1**	**17.0**	**14.0**	**26.1**	**11.8**	**10.9**	**11.1**	**14.9**	**17.2**	**22.6**	**25.8**	**18.1**	**4.37J**	**4.38J**	**4.94J**	**11.8**
Cobalt	mg/Kg	**6.11**	**6.68**	**4.08J**	**4.65J**	**4.06J**	**5.14**	**4.24J**	**3.61J**	**6.51**	**5.35**	**3.42J**	**4.53J**	**4.98J**	**4.89J**	**6.49**	**5.50**	ND<2.5	ND<2.5	ND<2.5	**4.23J**
Copper	mg/Kg	**44.6**	**18.8**	**10.3**	**8.91**	**10.5**	**11.9**	**9.09**	**9.43**	**15.6**	**11.9**	**8.07**	**9.40**	**9.78**	**9.79**	**15.0**	**8.80**	**4.11J**	**4.42J**	**4.81J**	**10.4**
Lead	mg/Kg	**560**	**45.1**	**3.78J**	**3.90J**	**3.65J**	**4.35J**	**3.63J**	**6.54**	**8.69**	**5.98**	**3.26J**	**3.14J**	**3.29J**	**3.45J**	**4.67J**	**4.46J**	ND<2.5	ND<2.5	ND<2.5	**2.93J**
Mercury (By EPA 7471)	mg/Kg	**0.249**	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	**0.156J**
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	**3.32J**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**25.0**	**29.7**	**17.0**	**12.1**	**13.2**	**12.2**	**12.4**	**13.7**	**22.8**	**18.3**	**13.0**	**17.0**	**15.3**	**12.5**	**27.9**	**10.8**	**4.22J**	**3.80J**	**5.20**	**12.0**
Vanadium	mg/Kg	**36.0**	**35.3**	**23.8**	**24.0**	**23.8**	**28.2**	**21.7**	**25.6**	**33.6**	**27.5**	**14.5**	**22.2**	**23.8**	**24.5**	**30.6**	**27.9**	**9.06**	**8.84**	**9.65**	**23.0**
Zinc	mg/Kg	**302**	**69.0**	**40.5**	**36.3**	**38.0**	**41.2**	**35.5**	**33.1**	**48.8**	**37.6**	**28.7**	**34.9**	**38.8**	**37.7**	**50.3**	**37.5**	**18.1**	**20.1**	**17.2**	**38.5**

NOTES:

PAHs - Polycyclic Aromatic Hydrocarbons (SW-846) analyzed using Method 8310
mg/Kg - milligrams per kilogram or parts per million
ND<0.010 - indicates constituent(s) not detected at or above method detection limit
331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).
1.134 - positive detections shown in bold
CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B3				B4								B5							
Sample ID:	Units	B3-20	B3-25	B3-30	B3-35	B4-1.5	B4-4.5	B4-10	B4-15	B4-20	B4-25	B4-30	B4-35	B5S-2.5	B5S-5	B5S-10	B5S-15	B5S-20	B5S-25	B5S-30	B5S-35
Sample Date:		2/18/2020	2/18/2020	2/18/2020	2/18/2020	2/11/2020	2/11/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/13/2020	2/13/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020
Laboratory Job Number:		103599	103599	103599	103599	103503	103503	103641	103641	103641	103641	103641	103641	103559	103559	103641	103641	103641	103641	103641	103641
PAHs By Method 8310																					
Acenaphthene	mg/Kg	ND<0.010	**0.0460**	**0.232**	**0.0171J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.549**
Anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0480**
Benzo(g,h,i)perylene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0302**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.256**
Fluoranthene	mg/Kg	ND<0.010	ND<0.010	**0.0265**	**0.0208**	ND<0.010	**0.0209**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0153J**	ND<0.010	ND<0.010	**0.0592**	ND<0.010	ND<0.010	**0.0513**	**0.0145J**	ND<0.010	**0.743**
Fluorene	mg/Kg	ND<0.010	**0.0290**	**0.148**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0566**
Naphthalene	mg/Kg	**0.0317**	**0.405**	**0.671**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	**0.0369**	**0.389**	**1.21**	**0.0252**	ND<0.010	**0.0129J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0102J**	**0.0158J**	ND<0.010	**0.038**	**0.0172J**	ND<0.010	ND<0.010	**0.0416**	ND<0.010	**1.04**
Pyrene	mg/Kg	ND<0.010	**0.0230**	**0.0806**	**0.0494**	ND<0.010	**0.0134J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0211**	**0.0154J**	ND<0.010	**0.0539**	ND<0.010	ND<0.010	**0.0697**	**0.0250**	ND<0.010	**1.15**
2-Methylnaphthalene	mg/Kg	**0.0610**	**0.596**	**2.05**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	ND<0.010	**0.0197J**	**0.0720**	**0.0295**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.600**	ND<0.010	ND<0.010	ND<0.010	**0.0178J**	ND<0.010	ND<0.010	**0.0240**	ND<0.010	ND<0.010	**0.557**
Benzo(a)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0299**	ND<0.010	ND<0.010	**0.0101J**	ND<0.010	ND<0.010	**0.239**
Benzo(b)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0196J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.162**
Benzo(k)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0142J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0661**
Chrysene	mg/Kg	ND<0.010	**0.0113J**	**0.0320**	**0.0123J**	ND<0.010	**0.0138J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0284**	ND<0.010	ND<0.010	**0.0135J**	**0.0137J**	ND<0.010	**0.409**
Indeno(1,2,3-cd)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0550**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.213**
B(a)P Equivalent	mg/Kg	**0.012**	**0.014**	**0.019**	**0.015**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.072**	**0.012**	**0.012**	**0.012**	**0.046**	**0.012**	**0.012**	**0.019**	**0.012**	**0.012**	**0.35**
CAM Metals By Method 6010B/7000																					
Arsenic	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.19J**	**3.79J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Barium	mg/Kg	**146**	**108**	**121**	**160**	**131**	**73.0**	**81.5**	**139**	**117**	**85.2**	**101**	**97.8**	**123**	**119**	**119**	**6.89**	**368**	**118**	**115**	**133**
Chromium	mg/Kg	**14.2**	**15.0**	**21.9**	**16.6**	**14.4**	**18.3**	**12.7**	**12.7**	**11.9**	**11.6**	**18.6**	**9.48**	**10.1**	**11.8**	**12.3**	**13.0**	**10.8**	**16.6**	**17.3**	**16.0**
Cobalt	mg/Kg	**3.91J**	**4.21J**	**5.45**	**3.91J**	**4.61J**	**4.20J**	**4.12J**	**3.12J**	**2.80J**	**3.66J**	**4.26J**	**3.03J**	**5.11**	**6.01**	**3.03J**	**3.59J**	**2.99J**	**3.95J**	**4.02J**	**4.08J**
Copper	mg/Kg	**8.11**	**12.2**	**12.2**	**13.2**	**12.6**	**10.1**	**9.92**	**8.94**	**7.52**	**8.68**	**12.6**	**6.60**	**12.6**	**14.0**	**6.60**	**7.69**	**8.28**	**9.79**	**11.0**	**10.5**
Lead	mg/Kg	**4.89J**	**5.66**	**3.94J**	**5.57**	**5.17**	**4.40J**	**3.43J**	**2.94J**	ND<2.5	**3.15J**	**3.37J**	**2.91J**	**6.10**	**7.42**	**2.91J**	**4.79J**	**2.64J**	**4.31J**	**4.12J**	**5.97**
Mercury (By EPA 7471)	mg/Kg	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**11.0**	**14.9**	**22.0**	**13.4**	**14.9**	**13.5**	**15.9**	**9.69**	**8.62**	**10.2**	**12.9**	**10.8**	**19.2**	**28.1**	**10.8**	**8.20**	**12.1**	**11.0**	**14.3**	**12.5**
Vanadium	mg/Kg	**21.8**	**25.7**	**25.4**	**21.9**	**22.6**	**22.3**	**20.6**	**25.7**	**18.2**	**21.5**	**26.2**	**17.7**	**27.7**	**27.1**	**17.7**	**19.2**	**21.5**	**24.1**	**20.5**	**21.7**
Zinc	mg/Kg	**31.3**	**42.5**	**43.8**	**36.1**	**38.7**	**37.1**	**36.1**	**30.5**	**28.6**	**31.9**	**40.2**	**26.9**	**39.9**	**52.3**	**26.9**	**29.5**	**29.9**	**36.1**	**34.0**	**37.9**

NOTES:

PAHs - Polynuclear Aromatic Hydrocarbons (SW-846) analyzed using Method 8310

mg/Kg - milligrams per kilogram or parts per million

ND<0.010 - indicates constituent(s) not detected at or above method detection limit

331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).

1.134 - positive detections shown in bold

CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B6								B7							B8				
Sample ID:	Units	B6-2	B6-4	B6-10	B6-15	B6-20	B6-25	B6-30	B6-35	B7-5	B7-10	B7-15	B7-20	B7-25	B7-30	B7-35	B8-5	B8-10	B8-15	B8-20	B8-25
Sample Date:		2/13/2020	2/13/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/20/2020	2/13/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/13/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020
Laboratory Job Number:		103559	103559	103665	103665	103665	103665	103665	103665	103581	103641	103641	103641	103641	103641	103641	103581	103686	103686	103686	103686
PAHs By Method 8310																					
Acenaphthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0420**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(g,h,i)perylene	mg/Kg	**0.0505**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0510**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluoranthene	mg/Kg	**0.0298**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0740**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0187J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluorene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Naphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	**0.0192J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0154J**	**0.148**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0128J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Pyrene	mg/Kg	**0.0256**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0187J**	**0.222**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0149J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010
2-Methylnaphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	**0.0147J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.194**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)pyrene	mg/Kg	**0.0197J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0350**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(b)fluoranthene	mg/Kg	**0.0107J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0290**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(k)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0100J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Chrysene	mg/Kg	**0.0349**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0690**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Indeno(1,2,3-cd)pyrene	mg/Kg	**0.0591**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0300**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
B(a)P Equivalent	mg/Kg	**0.034**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.067**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**
CAM Metals By Method 6010B/7000																					
Arsenic	mg/Kg	**2.75J**	**3.85J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.40J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**4.00J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Barium	mg/Kg	**118**	**83.2**	**98.2**	**131**	**53.8**	**131**	**106**	**185**	**116**	**108**	**98.6**	**146**	**112**	**114**	**94.2**	**152**	**52.6**	**181**	**79.2**	**83.1**
Chromium	mg/Kg	**11.1**	**30.8**	**18.5**	**12.2**	**14.2**	**18.0**	**17.5**	**22.4**	**11.9**	**14.9**	**16.6**	**14.2**	**15.0**	**15.3**	**18.2**	**12.9**	**15.9**	**12.1**	**9.13**	**11.5**
Cobalt	mg/Kg	**8.63**	**6.77**	**4.16J**	**3.84J**	**3.05J**	**5.20**	**4.03J**	**3.70J**	**5.28**	**3.38J**	**2.82J**	**3.36J**	**3.88J**	**3.03J**	**3.56J**	**6.82**	**4.01J**	**4.00J**	**3.07J**	**2.77J**
Copper	mg/Kg	**12.2**	**13.1**	**12.6**	**8.37**	**7.66**	**11.9**	**12.2**	**8.84**	**13.1**	**13.7**	**7.95**	**9.06**	**9.25**	**10.9**	**13.0**	**13.8**	**10.4**	**10.0**	**5.65**	**8.42**
Lead	mg/Kg	**6.33**	**6.90**	**4.55J**	**3.80J**	ND<2.5	**3.84J**	**4.52J**	**5.41**	**6.59**	**3.85J**	**3.16J**	**3.46J**	**3.63J**	**3.59J**	**3.53J**	**6.97**	ND<2.5	**3.28J**	**2.57J**	ND<2.5
Mercury (By EPA 7471)	mg/Kg	ND<0.1	ND<0.1	**0.181J**	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**20.1**	**41.1**	**16.7**	**10.9**	**13.5**	**18.2**	**15.3**	**13.5**	**21.7**	**10.8**	**8.81**	**12.1**	**10.0**	**13.1**	**14.7**	**26.1**	**19.6**	**11.3**	**5.91**	**11.3**
Vanadium	mg/Kg	**27.7**	**28.4**	**20.2**	**22.9**	**16.5**	**27.7**	**20.3**	**22.9**	**24.7**	**20.7**	**16.7**	**20.2**	**20.9**	**21.3**	**20.6**	**26.5**	**22.1**	**24.1**	**20.5**	**18.2**
Zinc	mg/Kg	**40.5**	**40.1**	**37.0**	**29.0**	**19.2**	**42.0**	**34.7**	**38.4**	**37.3**	**34.6**	**25.8**	**29.2**	**30.4**	**31.9**	**33.8**	**39.3**	**33.6**	**35.2**	**21.7**	**27.1**

NOTES:
PAHs - Polynuclear Aromatic Hydrocarbons (SW-846) analyzed using Method 8310
mg/Kg - milligrams per kilogram or parts per million
ND<0.010 - indicates constituent(s) not detected at or above method detection limit
331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).
1.134 - positive detections shown in bold
CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B8		B9								B10								B11	
Sample ID:		B8-30	B8-35	B9-2	B9-5	B9-10	B9-15	B9-20	B9-25	B9-30	B9-35	B10-2	B10-5	B10-10	B10-15	B10-20	B10-25	B10-30	B10-35	B11-2	B11-5
Sample Date:	Units	2/24/2020	2/24/2020	2/19/2020	2/19/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/21/2020	2/21/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/13/2020	2/13/2020
Laboratory Job Number:		103686	103686	103617	103617	103707	103707	103707	103707	103707	103707	103665	103665	103737	103737	103737	103737	103737	103737	103559	103581
PAHs By Method 8310																					
Acenaphthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(g,h,i)perylene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0191J**
Fluorene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Naphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0123J**
2-Methylnaphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(b)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(k)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Chrysene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Indeno(1,2,3-cd)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
B(a)P Equivalent	mg/Kg	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**
CAM Metals By Method 6010B/7000																					
Arsenic	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.67J**	**3.45J**
Barium	mg/Kg	**114**	**180**	**103**	**234**	**139**	**95.9**	**156**	**125**	**69.1**	**138**	**137**	**134**	**46.0**	**71.1**	**51.9**	**92.1**	**98.3**	**126**	**114**	**105**
Chromium	mg/Kg	**14.2**	**15.7**	**17.9**	**15.9**	**14.8**	**13.7**	**13.9**	**14.8**	**18.6**	**17.6**	**13.3**	**23.5**	**10.9**	**14.5**	**13.3**	**14.1**	**13.0**	**15.1**	**13.2**	**11.7**
Cobalt	mg/Kg	**3.14J**	**3.20J**	**6.02**	**3.42J**	**4.26J**	**3.39J**	**3.88J**	**4.02J**	**3.25J**	**4.22J**	**4.84J**	**7.46**	**3.07J**	**3.93J**	**3.58J**	ND<2.5	**4.26J**	**3.38J**	**5.3**	**4.95J**
Copper	mg/Kg	**9.13**	**7.42**	**13.8**	**9.57**	**11.8**	**8.18**	**9.21**	**9.14**	**7.57**	**9.89**	**12.1**	**15.5**	**6.65**	**9.82**	**10.3**	**4.82J**	**11.1**	**8.96**	**11.7**	**10.9**
Lead	mg/Kg	ND<2.5	ND<2.5	**6.17**	**2.96J**	**3.34J**	**3.06J**	**3.01J**	**3.14J**	**4.12J**	**3.93J**	**5.43**	**5.16**	ND<2.5	**3.06J**	**3.13J**	ND<2.5	**4.73J**	**2.67J**	**5.39**	**6.07**
Mercury (By EPA 7471)	mg/Kg	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	**1.76**	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	**3.76J**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**11.8**	**12.8**	**21.3**	**16.0**	**20.6**	**11.4**	**12.3**	**15.2**	**9.33**	**11.8**	**15.0**	**27.7**	**11.3**	**18.5**	**12.9**	**11.4**	**14.9**	**12.5**	**22.6**	**21.2**
Vanadium	mg/Kg	**27.2**	**19.6**	**26.1**	**22.2**	**20.8**	**19.6**	**23.5**	**20.9**	**20.9**	**25.8**	**21.0**	**28.7**	**17.8**	**21.7**	**20.2**	**12.5**	**25.7**	**20.4**	**32.1**	**28.9**
Zinc	mg/Kg	**32.9**	**30.2**	**48.9**	**33.8**	**34.9**	**31.4**	**36.4**	**30.8**	**30.4**	**32.9**	**39.0**	**50.4**	**23.3**	**33.2**	**33.5**	**19.7**	**37.4**	**31.5**	**37.7**	**36.0**

NOTES:

PAHs - Polynuclear Aromatic Hydrocarbons (SW-846) analyzed using Method 8310

mg/Kg - milligrams per kilogram or parts per million

ND<0.010 - indicates constituent(s) not detected at or above method detection limit

331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).

1.134 - positive detections shown in bold

CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B11						B12							B13						
Sample ID:	Units	B11-10	B11-15	B11-20	B11-25	B11-30	B11-35	B12-4.5	B12-10	B12-15	B12-20	B12-25	B12-30	B12-35	B13-5	B13-10	B13-15	B13-20	B13-25	B13-30	B13-35
Sample Date:		2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/13/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/25/2020	2/26/2020	2/13/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020	2/24/2020
Laboratory Job Number:		103736	103736	103736	103736	103736	103736	103581	103736	103736	103736	103736	103736	103736	103581	103686	103686	103686	103686	103686	103686
PAHs By Method 8310																					
Acenaphthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(g,h,i)perylene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0604**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluorene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Naphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0396**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0592**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
2-Methylnaphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0173J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0250**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(b)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0167J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(k)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0124J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Chrysene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0279**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Indeno(1,2,3-cd)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
B(a)P Equivalent	mg/Kg	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.035**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**
CAM Metals By Method 6010B/7000																					
Arsenic	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**3.07J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**5.88**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Barium	mg/Kg	**96.0**	**122**	**165**	**139**	**410**	**154**	**91.8**	**122**	**123**	**152**	**106**	**161**	**69.5**	**91.8**	**447**	**116**	**74.1**	**124**	**104**	**88.3**
Chromium	mg/Kg	**13.4**	**18.7**	**12.5**	**11.9**	**16.6**	**12.4**	**10.6**	**14.4**	**12.5**	**12.5**	**12.6**	**16.7**	**16.9**	**9.52**	**15.7**	**10.3**	**9.62**	**13.6**	**16.4**	**15.1**
Cobalt	mg/Kg	**4.23J**	**6.19**	**5.18**	**3.34J**	**3.00J**	**3.56J**	**5.28**	**3.86J**	**3.53J**	**3.62J**	**4.56J**	**3.82J**	**3.22J**	**4.06J**	**3.64J**	**3.75J**	**3.43J**	**3.48J**	**2.94J**	**3.82J**
Copper	mg/Kg	**11.4**	**17.0**	**10.3**	**7.64**	**7.65**	**8.52**	**12.9**	**10.3**	**10.2**	**7.43**	**10.3**	**10.6**	**5.05**	**11.2**	**9.23**	**7.10**	**8.97**	**8.30**	**8.77**	**9.53**
Lead	mg/Kg	**4.16J**	**5.54**	**4.29J**	**3.36J**	ND<2.5	**3.01J**	**5.72**	**4.53J**	**3.74J**	**2.99J**	**3.35J**	**4.34J**	ND<2.5	**5.12**	**2.74J**	**2.73J**	**2.90J**	ND<2.5	ND<2.5	ND<2.5
Mercury (By EPA 7471)	mg/Kg	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	**0.152J**	ND<0.1
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	**2.74J**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**12.6**	**21.8**	**16.0**	**11.0**	**10.1**	**11.1**	**20.1**	**11.8**	**12.2**	**11.9**	**10.3**	**13.8**	**6.05**	**20.2**	**10.2**	**10.4**	**10.6**	**11.8**	**10.1**	**11.6**
Vanadium	mg/Kg	**22.6**	**29.7**	**21.8**	**21.7**	**19.7**	**22.7**	**27.6**	**24.7**	**24.3**	**18.9**	**24.4**	**26.3**	**16.0**	**22.4**	**22.1**	**21.0**	**19.1**	**20.1**	**21.3**	**24.9**
Zinc	mg/Kg	**39.2**	**49.4**	**37.3**	**29.7**	**27.9**	**33.0**	**37.7**	**40.7**	**37.0**	**29.8**	**40.3**	**36.2**	**19.0**	**31.8**	**36.6**	**28.9**	**31.5**	**34.3**	**45.3**	**35.3**

NOTES:
PAHs - Polynuclear Aromatic Hydrocarbons (SW-846) analyzed using Method 8310
mg/Kg - milligrams per kilogram or parts per million
ND<0.010 - indicates constituent(s) not detected at or above method detection limit
331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).
1.134 - positive detections shown in bold
CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B14								B15								B16			
Sample ID:	Units	B14-2	B14-5	B14-10	B14-15	B14-20	B14-25	B14-30	B14-35	B15S-2	B15S-5	B15S-10	B15S-15	B15S-20	B15S-25	B15S-30	B15S-35	B16-2	B16-5	B16-10	B16-15
Sample Date:		2/20/2020	2/20/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/26/2020	2/13/2020	2/13/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/19/2020	2/20/2020	2/20/2020	2/21/2020	2/21/2020
Laboratory Job Number:		103641	103641	103736	103736	103736	103737	103737	103737	103559	103559	103617	103617	103617	103617	103617	103617	103641	103641	103665	103665
PAHs By Method 8310																					
Acenaphthene	mg/Kg	**0.0161J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.638**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Anthracene	mg/Kg	**0.0596**	**0.0155J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**1.81**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(g,h,i)perylene	mg/Kg	**0.592**	**0.0919**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**2.32**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0299**	ND<0.010	ND<0.010	ND<0.010
Fluoranthene	mg/Kg	**0.609**	**0.137**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**13.80**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0881**	ND<0.010	ND<0.010	ND<0.010
Fluorene	mg/Kg	**0.0153J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.640**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Naphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.020	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	**0.279**	**0.0722**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**9.11**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0548**	ND<0.010	ND<0.010	ND<0.010
Pyrene	mg/Kg	**0.849**	**0.114**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**10.10**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0308**	ND<0.010	ND<0.010	ND<0.010
2-Methylnaphthalene	mg/Kg	**0.0120J**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**1.05**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	**0.238**	**0.0392**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**3.15**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0198J**	ND<0.010	ND<0.010	ND<0.010
Benzo(a)pyrene	mg/Kg	**0.633**	**0.111**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**5.27**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0499**	ND<0.010	ND<0.010	ND<0.010
Benzo(b)fluoranthene	mg/Kg	**0.372**	**0.0906**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**4.67**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0337**	ND<0.010	ND<0.010	ND<0.010
Benzo(k)fluoranthene	mg/Kg	**0.250**	**0.0424**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**2.37**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0228**	ND<0.010	ND<0.010	ND<0.010
Chrysene	mg/Kg	**0.489**	**0.113**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**8.99**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0444**	ND<0.010	ND<0.010	ND<0.010
Indeno(1,2,3-cd)pyrene	mg/Kg	**0.511**	**0.0735**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**2.59**	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	**0.0298**	ND<0.010	ND<0.010	ND<0.010
B(a)P Equivalent	mg/Kg	**0.78**	**0.14**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**6.6**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.066**	**0.012**	**0.012**	**0.012**
CAM Metals By Method 6010B/7000																					
Arsenic	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**29.5**	**3.78J**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Barium	mg/Kg	**90.3**	**76.9**	**50.2**	**110**	**111**	**113**	**60.6**	**95.5**	**181**	**173**	**160**	**181**	**177**	**114**	**94.1**	**109**	**117**	**93.8**	**113**	**95.9**
Chromium	mg/Kg	**19.6**	**14.9**	**9.83**	**13.2**	**11.7**	**15.2**	**8.76**	**13.6**	**15.6**	**12.2**	**18.5**	**17.9**	**13.7**	**21.2**	**11.1**	**17.1**	**17.9**	**14.8**	**17.7**	**18.2**
Cobalt	mg/Kg	**4.37J**	**4.12J**	**3.88J**	**3.57J**	**3.83J**	**3.76J**	ND<2.5	**3.20J**	**7.34**	**5.76**	**4.44J**	**4.73J**	**3.86J**	**4.58J**	**3.95J**	**4.50J**	**5.78**	**4.70J**	**4.16J**	**4.88J**
Copper	mg/Kg	**15.8**	**11.5**	**7.58**	**8.72**	**10.1**	**10.0**	**4.41J**	**8.29**	**16.7**	**11.4**	**12.1**	**12.9**	**9.94**	**11.2**	**12.2**	**11.6**	**13.4**	**10.8**	**9.66**	**14.6**
Lead	mg/Kg	**33.9**	**12.1**	**3.57J**	**3.27J**	**3.68J**	**3.29J**	ND<2.5	**2.67J**	**16.6**	**5.50**	**4.54J**	**3.61J**	**3.93J**	**3.53J**	**5.29**	**4.23J**	**5.33**	**5.13**	**3.57J**	**4.13J**
Mercury (By EPA 7471)	mg/Kg	**0.439**	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	**0.299**	ND<0.1
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**15.5**	**15.3**	**10.5**	**14.5**	**11.1**	**14.9**	**5.19**	**14.5**	**24.6**	**23.6**	**22.0**	**16.8**	**13.3**	**17.3**	**12.6**	**14.1**	**19.4**	**15.2**	**17.2**	**18.2**
Vanadium	mg/Kg	**19.8**	**21.5**	**16.2**	**20.1**	**20.6**	**23.9**	**11.5**	**17.1**	**29.6**	**28.7**	**26.8**	**37.6**	**24.8**	**28.5**	**18.2**	**25.9**	**24.6**	**19.6**	**22.3**	**30.2**
Zinc	mg/Kg	**66.3**	**39.2**	**25.3**	**31.3**	**35.4**	**33.8**	**16.0**	**26.4**	**57.6**	**36.4**	**42.8**	**42.1**	**36.1**	**38.3**	**37.4**	**39.5**	**43.3**	**36.0**	**33.8**	**42.5**

NOTES:

PAHs - Polynuclear Aromatic Hydrocarbons (SW-846) analyzed using Method 8310

mg/Kg - milligrams per kilogram or parts per million

ND<0.010 - indicates constituent(s) not detected at or above method detection limit

331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).

1.134 - positive detections shown in bold

CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

TABLE 2
Summary of Soil Analytical Results for PAHs and CAM Metals
Former Ventura Manufactured Gas Plant
1555 North Olive Street Ventura, California

Boring ID:		B16				B17		
Sample ID:	Units	B16-20	B16-25	B16-30	B16-35	B17-5	B17-10	B17-15
Sample Date:		2/21/2020	2/21/2020	2/21/2020	2/21/2020	2/19/2020	2/26/2020	2/26/2020
Laboratory Job Number:		103665	103665	103665	103665	103617	103737	103737
PAHs By Method 8310								
Acenaphthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(g,h,i)perylene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Fluorene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Naphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Phenanthrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
2-Methylnaphthalene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)anthracene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(a)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(b)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Benzo(k)fluoranthene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Chrysene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
Indeno(1,2,3-cd)pyrene	mg/Kg	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010	ND<0.010
B(a)P Equivalent	mg/Kg	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**	**0.012**
CAM Metals By Method 6010B/7000								
Arsenic	mg/Kg	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
Barium	mg/Kg	**107**	**126**	**147**	**98.1**	**85.2**	**117**	**76.1**
Chromium	mg/Kg	**25.3**	**17.2**	**17.8**	**12.4**	**15.1**	**14.2**	**28.1**
Cobalt	mg/Kg	**4.31J**	**4.65J**	**4.52J**	**3.46J**	**5.84**	**3.90J**	**7.99**
Copper	mg/Kg	**11.4**	**9.54**	**11.0**	**9.76**	**11.1**	**11.0**	**17.6**
Lead	mg/Kg	**3.79J**	**3.62J**	**3.69J**	**3.33J**	**10.2**	**4.24J**	**5.62**
Mercury (By EPA 7471)	mg/Kg	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
Molybdenum	mg/Kg	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
Nickel	mg/Kg	**17.5**	**15.4**	**16.1**	**13.5**	**17.3**	**14.5**	**30.7**
Vanadium	mg/Kg	**23.6**	**23.0**	**26.7**	**18.9**	**27.3**	**25.3**	**38.6**
Zinc	mg/Kg	**35.9**	**35.2**	**40.4**	**32.4**	**38.8**	**39.1**	**61.9**

NOTES:

PAHs - Polynuclear Aromatic Hydrocarbons (SW-846) analyzed using Method 8310
mg/Kg - milligrams per kilogram or parts per million
ND<0.010 - indicates constituent(s) not detected at or above method detection limit
331 J - indicates analyte was detected. however, analyte concentration is an estimated value which is between the method detection limit (MDL) and the practical quantitation limit (PQL).
1.134 - positive detections shown in bold
CAM Metals - Title 22 Metals (SW-846) analyzed using Method 6010B/7000

Table 3
Summary of Soil Vapor Analytical Results Using Methods TO-3 and TO-15
Southern California California Gas Company - 1555 N Olive St. Ventura, CA 93001

Vapor Monitoring Probe ID:		B1			B2			B3			B4			B5			B6	
Sample ID	Units	B1-5	B1-15	B1-25	B2-5	B2-15	B2-25	B3-5	B3-15	B3-25	B4-5	B4-15	B4-24	B5-5	B5-15	B5-25	B6-5	B6-15
Sample Date		3/3/2020	3/3/2020	3/3/2020	3/3/2020	3/3/2020	3/3/2020	3/3/2020	3/3/2020	3/3/2020	3/5/2020	3/5/2020	3/5/2020	3/3/2020	3/3/2020	3/3/2020	3/5/2020	3/5/2020
Laboratory Job Number		103830	103830	103830	103830	103830	103830	103830	103830	103830	103882	103882	103882	103830	103830	103830	103882	103882
TPH-g by Method TO-3																		
TPH as Gasoline and Light HC. (C4-C12)	µg/m^3	**1,790,000**	**1,940,000**	**1,970,000**	**595,000**	**423,000**	**1,100,000**	**1,450,000**	**1,460,000**	**1,800,000**	**687,000**	**695,000**	**1,120,000**	**1,720,000**	**1,910,000**	**1,660,000**	**717,000**	**758,000**
VOCs by Method TO-15																		
4-Ethyltoluene	µg/m^3	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<50	ND<50	ND<50	ND<100	ND<100	ND<100	ND<50	ND<50
Benzene	µg/m^3	**199**	**309**	**99.8**	ND<8	ND<8	**41.6**	**82.3**	**133**	**172**	ND<4.200	ND<4.200	**258**	**195**	**192**	**248**	**41.8**	**41.8**
Bromodichloromethane	µg/m^3	ND<6	ND<6	ND<6	ND<6	ND<6	ND<6	ND<6	ND<6	ND<6	ND<3.300	ND<3.300	ND<3.300	ND<6	ND<6	ND<6	ND<3.300	ND<3.300
Carbon disulfide	µg/m^3	**1,730**	**93.6**	**75.6**	ND<30	ND<30	**63.4**	ND<30	ND<30	ND<30	ND<15	ND<15	**17.0**	**71.9**	ND<30	ND<30	ND<15	ND<15
Chlorobenzene	µg/m^3	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<10	ND<10	ND<10	ND<20	ND<20	ND<20	ND<10	ND<10
Chloroform (Trichloromethane)	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<15	ND<15	ND<15	ND<30	ND<30	ND<30	ND<15	ND<15
Cyclohexane	µg/m^3	**25,500**	**21,700**	**9,950**	**4,060**	**2,270**	**533**	**7,440**	**2,820**	**2,480**	**1,970**	**1,180**	**1,180**	**9,420**	**13,600**	**5,810**	**1,120**	**612**
1,2-Dichlorobenzene	µg/m^3	**49.2**	**55.5**	**96.3**	ND<40	ND<40	ND<40	ND<40	ND<40	**72.4**	ND<20	ND<20	ND<20	ND<40	ND<40	ND<40	ND<20	ND<20
1,4-Dichlorobenzene	µg/m^3	**396**	**739**	**1,030**	ND<40	ND<40	**80.9**	ND<40	ND<40	**95.6**	ND<20	ND<20	**100**	**72**	**68.2**	**172**	ND<20	ND<20
cis-1,2-Dichloroethene	µg/m^3	ND<30	**126**	**53.8**	**217**	**523**	**131**	ND<30	ND<30	**44.3**	**21.1**	**60.2**	**28.8**	ND<30	ND<30	ND<30	ND<15	**22.4**
trans-1,2-Dichloroethene	µg/m^3	ND<30	**94.6**	**60.4**	**126**	**137**	ND<30	ND<30	ND<30	ND<30	ND<15	ND<15	ND<15	ND<30	ND<30	ND<30	ND<15	ND<15
Ethylbenzene	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	**70.3**	**40.4**	**10,500**	ND<15	ND<15	ND<15	ND<30	ND<30	ND<30	ND<15	ND<15
n-Hexane	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	**188**	**183**	**213**	ND<30	ND<30	ND<30	**105**	**69.0**
Methyl-tert-butyl ether (MTBE)	µg/m^3	**1,730**	**6,870**	**3,840**	**364**	**659**	**194**	**714**	**628**	**722**	**744**	**4,570**	**1,940**	**20,500**	**18,500**	**5,710**	**4,910**	**11,400**
Naphthalene	µg/m^3	**283**	**475**	**600**	ND<30	**223**	**165**	ND<30	ND<30	**2,970**	**116**	**103**	**120**	ND<30	ND<30	ND<30	ND<15	**48.7**
Propene	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	**1,440**	**1,010**	**459**	ND<30	ND<30	ND<30	**746**	**733**
Tetrachloroethene	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<15	ND<15	ND<15	ND<30	ND<30	ND<30	ND<15	ND<15
Toluene (Methyl benzene)	µg/m^3	**82.2**	**103**	**147**	ND<20	**89.3**	**126**	ND<20	**40.9**	**535**	ND<10	**37.3**	**411**	**110**	**79.2**	**259**	**40.3**	**200**
Trichloroethene	µg/m^3	ND<30	ND<30	ND<30	ND<30	**75.6**	ND<30	ND<30	ND<30	ND<30	ND<15	ND<15	ND<15	ND<30	ND<30	ND<30	ND<15	ND<15
1,2,4-Trimethylbenzene	µg/m^3	**65.1**	**72.8**	**344**	ND<30	ND<30	**188**	**374**	**683**	**42,400**	ND<15	**26.3**	**266**	**73.6**	**63.9**	**285**	**30.2**	ND<15
1,3,5-Trimethylbenzene	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	**836**	ND<15	ND<15	ND<15	ND<30	ND<30	ND<30	ND<15	ND<15
Vinyl chloride (Chloroethene)	µg/m^3	**771**	**1,460**	**1,640**	**299**	**330**	**64.7**	**124**	**100**	**95.7**	**66.0**	**22.7**	**16.0**	**58.1**	**52.7**	ND<3.200	ND<1,600	ND<1,600
o-Xylene	µg/m^3	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	**1,630**	ND<10	ND<10	ND<10	ND<20	ND<20	ND<20	ND<10	ND<10
m,p-Xylenes	µg/m^3	ND<40	ND<40	ND<40	ND<40	ND<40	ND<40	ND<40	ND<40	**4,770**	ND<20	ND<20	ND<20	ND<40	ND<40	ND<40	ND<20	ND<20
n-Heptane	µg/m^3	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<30	ND<15	ND<15	**166**	ND<30	ND<30	ND<30	**22.7**	**20.7**
Ethyl alcohol (Ethanol)	µg/m^3	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<100	ND<50	ND<50	ND<50	ND<100	ND<100	ND<100	ND<50	ND<50
Other VOCs (see lab reports for analytes)	µg/m^3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES

199 - positive detections shown in bold.
ND<50 - Indicates Constituent(s) Not Detected At Or Above Method Detection Limit (MDL)
J - Indicates Analyte Was Detected. However, Analyte Concentration Is An Estimated Value Which Is Between The MDL And The Practical Quantitation Limit (PQL)
µg/m^3 - micrograms per cubic meter

Table 3
Summary of Soil Vapor Analytical Results Using Methods TO-3 and TO-15
Southern California California Gas Company - 1555 N Olive St. Ventura, CA 93001

Vapor Monitoring Probe ID:		B8			B9			B11			B12			B15		VMP1		
Sample ID	Units	B8-5	B8-14	B8-25	B9-5	B9-15	B9-15DUP	B11-5	B11-16	B11-16DUP	B12-6	B12-15	B12-25	B15-5	B15-15	VMP1-5	VMP1-15	VMP1-25
Sample Date		3/5/2020	3/5/2020	3/5/2020	3/5/2020	3/5/2020	3/5/2020	3/5/2020	3/5/2020	3/5/2020	3/6/2020	3/6/2020	3/6/2020	3/3/2020	3/3/2020	3/6/2020	3/6/2020	3/6/2020
Laboratory Job Number		103882	103882	103882	103882	103882	103882	103882	103882	103882	103898	103898	103898	103830	103830	103898	103898	103898
TPH-g by Method TO-3																		
TPH as Gasoline and Light HC. (C4-C12)	µg/m^3	**2,550**	**4,520**	**5,100**	**8,290**	**18,500**	**17,800**	**2,250**	**2,970**	**3,670**	**2,030**	**1,560**	**3,140**	**13,900**	**10,100**	**970**	**1,280**	**1,590**
VOCs by Method TO-15																		
4-Ethyltoluene	µg/m^3	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**20.4**	**21.2**	ND<5.0	**6.08**	**6.70**	ND<5.0	ND<5.0	**14.6**	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Benzene	µg/m^3	**11.5**	**24.8**	**14.9**	ND<0.420	**77.8**	**76.9**	ND<0.420	**8.71**	**9.51**	ND<0.420	**2.97**	**26.6**	**1.97**	**2.68**	ND<0.420	**6.90**	**16.4**
Bromodichloromethane	µg/m^3	ND<6	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	ND<0.330	**7.17**	ND<0.330	ND<0.330	ND<0.330	ND<0.330
Carbon disulfide	µg/m^3	**15.3**	**41.1**	**24.6**	**3.20**	**15.5**	**15.4**	ND<1.5	**8.55**	**7.12**	**3.71**	**2.10**	**17.0**	**42.0**	**35.8**	ND<1.5	**5.00**	**9.95**
Chlorobenzene	µg/m^3	**4.39**	**9.20**	**19.0**	ND<1.0	**270**	**265**	ND<1.0	**2.99**	**3.38**	ND<1.0	ND<1.0	**42.3**	ND<1.0	ND<1.0	ND<1.0	**4.55**	**22.7**
Chloroform (Trichloromethane)	µg/m^3	ND<1.5	**3.05**	ND<1.5	**42.5**	**29.3**	**29.0**	**85.4**	**25.0**	**27.2**	**32.3**	**3.19**	ND<1.5	**16.8**	**18.3**	**2.69**	**3.92**	ND<1.5
Cyclohexane	µg/m^3	**5.37**	**11.7**	**16.7**	ND<1.0	**48.2**	**47.1**	ND<1.0	**4.06**	**3.54**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**19.7**	ND<1.0	ND<1.0	ND<1.0
1,2-Dichlorobenzene	µg/m^3	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	**3.22**	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0
1,4-Dichlorobenzene	µg/m^3	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<2.0	**5.32**	**3.66**	ND<2.0	ND<2.0	ND<2.0
cis-1,2-Dichloroethene	µg/m^3	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5
trans-1,2-Dichloroethene	µg/m^3	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5
Ethylbenzene	µg/m^3	**8.81**	**19.1**	**19.4**	**2.86**	**38.9**	**38.7**	ND<1.5	**19.5**	**21.7**	**2.33**	**3.35**	**33.0**	**6.34**	**3.37**	ND<1.5	**10.3**	**9.94**
n-Hexane	µg/m^3	**5.49**	**6.72**	**15.4**	ND<1.5	**173**	**171**	ND<1.5	**20.8**	**15.6**	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5
Methyl-tert-butyl ether (MTBE)	µg/m^3	**3.07**	ND<1.0	ND<1.0	**1.96**	**3.56**	**2.35**	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	**75.4**	ND<1.0	ND<1.0	ND<1.0
Naphthalene	µg/m^3	**27.4**	**85.7**	**89.6**	**106**	**20.0**	**19.9**	**10.6**	**24.6**	**41.9**	**53.7**	**52.0**	**79.2**	**419**	**308**	**11.7**	**9.28**	**13.6**
Propene	µg/m^3	**9.39**	**16.0**	**43.00**	**8.58**	**346**	**525**	**2.73**	**4.99**	**5.06**	**2.36**	**1.50**	**18.9**	ND<1.5	ND<1.5	ND<1.5	**3.15**	**6.88**
Tetrachloroethene	µg/m^3	**35.4**	**76.6**	**85.4**	**5.03**	**13.9**	**13.6**	**120**	**198**	**219**	**26.3**	**33.3**	**21.4**	**68.4**	**24.6**	**395**	**111**	**57.6**
Toluene (Methyl benzene)	µg/m^3	**68.2**	**155**	**107**	**41.1**	**167**	**165**	**2.38**	**66.0**	**72.0**	**43.7**	**15.5**	**154**	**48.6**	**17.4**	**94.3**	**117**	**39.6**
Trichloroethene	µg/m^3	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5	ND<1.5
1,2,4-Trimethylbenzene	µg/m^3	**21.7**	**21.9**	**27.1**	**4.75**	**55.5**	**54.0**	**5.91**	**20.8**	**22.9**	**2.83**	**6.800**	**45.0**	**15.7**	**7.79**	**5.7**	**12.8**	**17.1**
1,3,5-Trimethylbenzene	µg/m^3	**3.39**	**7.76**	**8.05**	ND<1.5	**15.3**	**15.1**	ND<1.5	**4.74**	**4.74**	ND<1.5	ND<1.5	**8.98**	ND<1.5	ND<1.5	ND<1.5	**2.63**	**2.54**
Vinyl chloride (Chloroethene)	µg/m^3	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160	ND<0.160
o-Xylene	µg/m^3	**10.9**	**23.9**	**28.0**	**3.75**	**62.9**	**62.5**	ND<1.0	**22.2**	**24.6**	**2.42**	**5.16**	**37.5**	**8.50**	**3.01**	**2.74**	**12.2**	**14.5**
m,p-Xylenes	µg/m^3	**39.1**	**88.9**	**80.7**	**8.67**	**189**	**187**	ND<2.0	**59.0**	**65.0**	**3.71**	**15.1**	**129**	**16.9**	**7.75**	**6.73**	**35.9**	**38.8**
n-Heptane	µg/m^3	**2.08**	**5.46**	**6.31**	ND<1.5	**17.0**	**16.9**	ND<1.5	**2.15**	**2.67**	ND<1.5	ND<1.5	**6.31**	ND<1.5	ND<1.5	ND<1.5	**2.20**	**3.26**
Ethyl alcohol (Ethanol)	µg/m^3	**129**	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	**53.0**	**33.0**	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0	ND<5.0
Other VOCs (see lab reports for analytes)	µg/m^3	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTES

199 - positive detections shown in bold.
ND<50 - Indicates Constituent(s) Not Detected At Or Above Method Detection Limit (MDL)
J - Indicates Analyte Was Detected. However, Analyte Concentration Is An Estimated Value Which Is Between The MDL And The Practical Quantitation Limit (PQL)
µg/m^3 - micrograms per cubic meter

Table 4
Summary of Chemicals of Potential Concern

Soil	Soil Gas
Polycyclic Aromatice Hydrocarbons	TPH as Gasoline and Light HC. (C4-C12)
Acenaphthene	4-Ethyltoluene
Acenaphthylene	Benzene
Anthracene	Bromodichloromethane
Benzo(g,h,i)perylene	Carbon disulfide
Fluoranthene	Chlorobenzene
Fluorene	Chloroform (Trichloromethane)
Naphthalene(PAH)	Cyclohexane
Phenanthrene	1,2-Dichlorobenzene
Pyrene	1,4-Dichlorobenzene
2-Methylnaphthalene	cis-1,2-Dichloroethene
Benzo(a)anthracene	trans-1,2-Dichloroethene
Benzo(a)pyrene	Ethylbenzene
Benzo(b)fluoranthene	n-Hexane
Benzo(k)fluoranthene	Methyl-tert-butyl ether (MTBE)
Chrysene	Naphthalene
Dibenzo(a,h)anthracene	Tetrachloroethene
Indeno(1,2,3-cd)pyrene	1,3,5-Trimethylbenzene
	m,p-Xylenes
Metals	
Arsenic	
Lead	
Cobalt	
Mercury	
Vanadium	
Total Petroleum Hydrocarbons	
TPH as Gasoline and Light HC (C4-C12)	
TPH as Diesel (C13-C22)	
TPH as Heavy Hydrocarbons (C23-C40)	
Volatile Organic Compounds	
Benzene	
n-Butylbenzene	
sec-Butylbenzene	
tert-Butylbenzene	
1,4-Dichlorobenzene	
Ethylbenzene	
Methyl-tert-butyl ether (MTBE)	
Naphthalene	
n-Propylbenzene	
Toluene (Methyl benzene)	
1,2,4-Trimethylbenzene	
o-Xylene	
m,p-Xylenes	

Table 5
Soil Health Based Goals

COPC in Soil	Compressor Room Soil Concentrations (EPCs)	Calculated Risks and Hazards							Calculation of Health Based Goals (HBG)*					
		Residential		Industrial		Construction			Residential		Industrial		Construction	
		Risk	Hazard	Risk	Hazard	Risk	Hazard		Risk Target:	Hazard Target:	Risk Target:	Hazard Target:	Risk Target:	Hazard Target:
									1.00E-06	1.00E+00	1.00E-06	1.00E+00	1.00E-06	1.00E+00
Polycyclic Aromatice Hydrocarbons (mg/kg)														
Acenaphthene	9.3E-02	--	2.3E-05	--	2.6E-06	--	1.3E-05			4.1E+03		3.6E+04		7.3E+03
Acenaphthylene	2.3E-01	--	--	--	--	--	--							
Anthracene	2.0E-01	--	9.7E-06	--	1.1E-06	--	5.4E-06			2.0E+04		1.8E+05		3.7E+04
Benzo(g,h,i)perylene	7.9E-01	--	--	--	--	--	--							
Fluoranthene	2.9E+00	--	1.1E-03	--	1.2E-04	--	5.8E-04			2.7E+03		2.4E+04		4.9E+03
Fluorene	8.3E-02	--	3.0E-05	--	3.4E-06	--	1.7E-05			2.7E+03		2.4E+04		4.8E+03
Naphthalene(PAH)	7.7E-02	--	4.9E-05	--	6.4E-06	--	3.7E-05							
Phenanthrene	2.3E+00	--	--	--	--	--	--							
Pyrene	2.3E+00	--	1.1E-03	--	1.3E-04	--	6.3E-04			2.0E+03		1.8E+04		3.6E+03
2-Methylnaphthalene	2.2E+00	--	8.0E-03	--	9.0E-04	--	4.5E-03			2.7E+02		2.4E+03		4.8E+02
Benzo(a)anthracene	6.2E-01	--	--	--	--	--	--							
Benzo(a)pyrene	1.2E+00	--	5.8E-02	--	6.7E-03	--	1.7E-01			2.0E+01		1.8E+02		7.1E+00
Benzo(b)fluoranthene	9.8E-01	--	--	--	--	--	--							
Benzo(k)fluoranthene	9.1E-01	--	--	--	--	--	--							
Chrysene	1.9E+00	--	--	--	--	--	--							
Dibenzo(a,h)anthracene	1.9E+00	--	--	--	--	--	--							
Indeno(1,2,3-cd)pyrene	5.1E-01	--	--	--	--	--	--							
Metals (mg/kg)														
Cobalt	5.1E+00	3.7E-09	2.2E-01	2.8E-09	1.5E-02	1.5E-07	2.4E-01		1.4E+03	2.3E+01	1.9E+03	3.5E+02	3.4E+01	2.1E+01
Lead**	9.7E+01	--	--	--	--	--	--			8.0E+01		3.2E+02		3.2E+02
Mercury(ByEPA7471)	1.2E-01	--	4.3E-02	--	2.7E-02	--	2.9E-02			2.8E+00		4.5E+00		4.1E+00
Vanadium	2.6E+01	--	6.6E-02	--	4.4E-03	--	7.3E-02			3.9E+02		5.8E+03		3.5E+02
Total Petroleum Hydrocarbons (mg/kg)														
TPH as Gasoline and Light HC (C4-C12)	4.9E+02	--	2.9E-01	--	2.2E-01	--	2.3E-01			1.7E+03		2.2E+03		2.2E+03
TPH as Diesel (C13-C22)	1.8E+02	--	7.5E-01	--	4.2E-01	--	4.6E-01			2.5E+02		4.4E+02		4.0E+02
TPH as Heavy Hydrocarbons (C23-C40)	1.6E+03	--	6.1E-01	--	6.8E-02	--	3.4E-01			2.7E+03		2.4E+04		4.9E+03
Volatile Organic Compounds (µg/kg)														
Benzene	1.2E-01	1.2E-07	3.6E-03	8.2E-08	2.6E-03	3.6E-09	2.6E-03		9.7E-01	3.2E+01	1.4E+00	4.6E+01	3.2E+01	4.4E+01
tert-Butylbenzene	1.8E-02	--	4.0E-06	--	1.5E-06	--	1.9E-06			4.4E+03		1.2E+04		9.4E+03
1,4-Dichlorobenzene	1.3E-02	1.7E-09	2.9E-06	1.2E-09	5.4E-07	5.1E-11	9.2E-07		7.9E+00	4.6E+03	1.1E+01	2.5E+04	2.6E+02	1.4E+04
Ethylbenzene	3.4E+00	2.1E-07	6.1E-04	1.3E-07	1.7E-04	6.4E-09	2.3E-04		1.6E+01	5.6E+03	2.6E+01	2.1E+04	5.3E+02	1.5E+04
Methyl-tert-butyl ether (MTBE)	9.9E-03	8.2E-11	2.0E-07	4.8E-11	1.5E-07	2.4E-12	1.6E-07		1.2E+02	5.1E+04	2.1E+02	6.4E+04	4.1E+03	6.4E+04
Toluene (Methyl benzene)	3.5E-03	--	1.3E-06	--	6.6E-07	--	7.5E-07			2.6E+03		5.3E+03		4.7E+03
o-Xylene	2.6E-01	--	1.3E-04	--	9.4E-05	--	9.7E-05			2.0E+03		2.8E+03		2.7E+03
m,p-Xylenes	7.0E-01	--	4.1E-04	--	2.9E-04	--	3.0E-04			1.7E+03		2.4E+03		2.3E+03

*HBG_i = (Target Risk/$Risk_i$) x EPC_i

** HBG for lead are based on DTSC risk based concentrations predictive of blood lead levels (DTSC, 2020).

HBG Health Based Goal for $COPC_i$

Target Risk $1x10^{-6}$ for carcinogenic risk, and unity (1) for noncarcinogenic hazard

$Risk_i$ Calculated risk or hazard of $COPC_i$

EPC_i Exposure Point Concentration of $COPC_i$

Table 6
Soil Vapor Health Based Goals

COPC In Soil Gas	Compressor Room Soil Gas Concentrations (µg/m3)	Calculated Risks and Hazards				Calculation of Health Based Goals (HBG)*			
		Residential		Industrial		Residential		Industrial	
		Risk	Hazard	Risk	Hazard	Risk Target: 1.00E-06	Hazard Target: 1.00E+00	Risk Target: 1.00E-06	Hazard Target: 1.00E+00
TPH as Gasoline and Light HC. (C4-C12)	1.9E+06	--	3.0E+00	--	7.3E-01		6.3E+05		2.6E+06
4-Ethyltoluene	N/A	--	--	--	--				
Benzene	2.6E+02	2.7E-06	8.3E-02	6.1E-07	2.0E-02	9.7E+01	3.1E+03	4.2E+02	1.3E+04
Bromodichloromethane	N/A	--	0.0E+00	--	--				
Carbon disulfide	7.2E+01	--	9.8E-05	--	2.3E-05		7.3E+05		3.1E+06
Chlorobenzene	2.3E+01	--	4.4E-04	--	1.0E-04		5.2E+04		2.2E+05
Chloroform (Trichloromethane)	3.9E+00	3.3E-08	3.9E-05	7.4E-09	9.1E-06	1.2E+02	1.0E+05	5.3E+02	4.3E+05
Cyclohexane	1.4E+04	--	2.2E-03	--	3.1E-03		6.3E+06		4.4E+06
1,2-Dichlorobenzene	7.2E+01	--	3.4E-04	--	8.2E-05		2.1E+05		8.8E+05
1,4-Dichlorobenzene	1.7E+02	6.6E-07	2.1E-04	1.6E-07	4.9E-05	2.6E+02	8.3E+05	1.1E+03	3.5E+06
cis-1,2-Dichloroethene	5.2E+02	--	6.3E-02	--	1.5E-02		8.3E+03		3.5E+04
trans-1,2-Dichloroethene	1.4E+02	--	1.7E-03	--	3.9E-04		8.3E+04		3.5E+05
Ethylbenzene	1.1E+04	9.5E-06	1.1E-02	2.1E-06	2.4E-03	1.1E+03	1.0E+06	4.9E+03	4.4E+06
n-Hexane	2.1E+02	--	2.9E-04	--	6.9E-05		7.3E+05		3.1E+06
Methyl-tert-butyl ether (MTBE)	2.1E+04	1.9E-06	6.6E-04	4.4E-07	1.6E-03	1.1E+04	3.1E+07	4.7E+04	1.3E+07
Naphthalene	3.0E+03	3.6E-05	9.6E-01	8.3E-06	2.3E-01	8.3E+01	3.1E+03	3.6E+02	1.3E+04
Propene	1.4E+03	--	4.6E-04	--	1.1E-04		3.1E+06		1.3E+07
Tetrachloroethene	4.0E+02	8.6E-07	9.4E-03	2.0E-07	2.2E-03	4.6E+02	4.2E+04	2.0E+03	1.8E+05
Toluene (Methyl benzene)	5.4E+02	--	1.7E-03	--	4.1E-04		3.1E+05		1.3E+06
Trichloroethene	7.6E+01	1.6E-07	3.6E-02	2.5E-08	8.6E-03	4.8E+02	2.1E+03	3.0E+03	8.8E+03
1,2,4-Trimethylbenzene	4.2E+04	--	6.7E-01	--	1.6E-01		6.3E+04		2.6E+05
1,3,5-Trimethylbenzene	8.4E+02	--	1.3E-02	--	3.2E-03		6.3E+04		2.6E+05
Vinyl chloride (Chloroethene)	3.3E+02	3.5E-05	3.3E-03	2.1E-06	7.5E-04	9.5E+00	1.0E+05	1.6E+02	4.4E+05
o-Xylene	1.6E+03	--	1.6E-02	--	3.7E-03		1.0E+05		4.4E+05
m,p-Xylenes	4.8E+03	--	4.8E-02	--	1.1E-02		1.0E+05		4.4E+05
n-Heptane	1.7E+02	--	4.0E-04	--	9.2E-05		4.2E+05		1.8E+06
Ethyl alcohol (Ethanol)	N/A			--	--				

Red type indicates data from Control Room dataset.

Totals

*HBG_i = (Target Risk/$Risk_i$) x EPC_i

HBG	Health Based Goal for $COPC_i$
Target Risk	$1x10^{-6}$ for carcinogenic risk, and unity (1) for noncarcinogenic hazard
$Risk_i$	Calculated risk or hazard of $COPC_i$
EPC_i	Exposure Point Concentration of $COPC_i$

Table 7

Locations Where Soil Vapor Concentrations Exceed Health Based Goals

Concentrations in µ/m^3

Total Petroleum Hydrocarbons - Gasoline		Benzene		1,4-Dichlorobenzene		Ethylbenzene		MTBE		Naphthalene		Vinyl Chloride	
Residential Soil Gas Health based Goal													
630000		97		260		1100		11000		83		9.5	
Industrial Soil Gas Health Based Goal													
2600000		420		1100		4900		47000		360		160	
B1-25	**1,970,000**	B1-15	**309**	B1-25	**1030.00**	B3-25*	**10500.00**	B5-5	**20500.00**	B3-25*	**2970.00**	B1-25*	**1640.00**
B1-15	**1,940,000**	B4-24	**258**	B1-15	**739.00**			B5-15	**18500.00**	B1-25*	**600.00**	B1-15*	**1460.00**
B5-15	**1,910,000**	B5-25	**248**	B1-5	**396.00**			B6-15	**11400.00**	B1-15*	**475.00**	B1-5*	**771.00**
B3-25	**1,800,000**	B1-5	**199**							B15-5*	**419.00**	B2-15*	**330.00**
B1-5	**1,790,000**	B5-5	**195**							B15-15	**308.00**	B2-5*	**299.00**
B5-5	**1,720,000**	B5-15	**192**							B1-5	**283.00**	B3-5	**124.00**
B5-25	**1,660,000**	B3-25	**172**							B2-15	**223.00**	B3-15	**100.00**
B3-15	**1,460,000**	B3-15	**133**							B2-25	**165.00**	B3-25	**95.70**
B3-5	**1,450,000**	B1-25	**99.8**							B4-24	**120.00**	B4-5	**66.00**
B4-24	**1,120,000**									B4-5	**116.00**	B2-25	**64.70**
B2-25	**1,100,000**									B9-5	**106.00**	B5-5	**58.10**
B6-15	**758,000**									B4-15	**103.00**	B5-15	**52.70**
B6-5	**717,000**									B8-25	**89.60**	B4-15	**22.70**
B4-15	**695,000**									B8-14	**85.70**	B4-24	**16.00**
B4-5	**687,000**												

*Concentration above residential and industrial HBG

TABLE 8
Summary of Technology Type and Process Options Screening for Soil
Former Ventura Manufactured Gas Plant
1555 North Olive Street
Ventura, California

General Response Actions	Technology Type	Process Options	Technology / Process Option Description	Effectiveness	Implementability	Cost	Remarks
No Further Action	Not applicable.	Not applicable.	No Action	Low: Shallow impacted soil is present near the surface and to depths of approximately 3.5 feet.	Easily implemented: No additional remedial activities would be conducted.	Minimal: There would be no additional soil remediation costs	Retained: As required under NCP
Land Use Covenant (LUC)	(Use Restrictions/ Notifications)	(Use Restrictions/ Notifications)	LUC includes administrative and legal controls that restrict use of the site in a manner that may result in unacceptable risk to human health. The site use restrictions would be to prevent potential exposure to impacted soil. Access restrictions are primarily incorporated through the implementation of LUC.	LUC does not directly reduce volume, toxicity, or mobility of contaminants in soil. However, LUC would minimize the potential for exposure to contaminants by restricting land use. No adverse impacts occur during the implementation of LUC since no construction activities are associated with this option.	LUC is relatively easy to implement. However, it may be difficult to obtain regulatory approval as a stand-alone strategy for remediation. A cap may be required at part of LUC.	Low	Retained: LUC may be used as an interim action to prevent disturbance of impacted soil at the Site.
Containment	Capping	Capping	This technology involves construction of a impermeable cap over source areas and soil contamination to prevent exposure. This technology often includes use of concrete pavement, inspections and monitoring.	This technology minimizes exposure to contaminated soils but it does not directly reduce volume or toxicity of COCs in soil. A cap or cover system is normally maintained to ensure effectiveness of LUCs. Construction and maintenance of a cap will interfere with teh planned construction a the Site. Therefore, this technology may not be effective in achieving the RAOs.	A major portion of the source areas where this technology would be applied is planned for upcoming construction. Therefore, construction of an effective cap in impacted soil area would be impractical.	High	Eliminated due to implementability and cost considerations.

TABLE 8
Summary of Technology Type and Process Options Screening for Soil
Former Ventura Manufactured Gas Plant
1555 North Olive Street
Ventura, California

General Response Actions	Technology Type	Process Options	Technology / Process Option Description	Effectiveness	Implementability	Cost	Remarks
Active remediation	Soil Excavation and onsite treatment	Excavation and onsite treatment	This technology involves excavation of contaminated soil and onsite treatment using technologies such as bio-remediation or thermal desorption.	Low: This technology is not effective for PAHs and metals such as arsenic and lead.	Difficult: Although removal of impact soil is relatively easy, application of above-ground treatment technologies such as bio-remediation or thermal desorption will be difficult to implement.	High: Above-ground soil treatment technologies such as bio-remediation or thermal desorption will take time.	Eliminated: High costs of excavation and onsite treatment in addition to the uncertainty of achieving cleanup levels do not support retaining this option.
Active remediation	In situ chemical treatment.	Chemical oxidation: Introduce a chemical oxidant into the vadose zone to either destroy or degrade contaminants.	This technology involves injection of oxidizing agents into the contaminated soil zone for destruction of organic contaminants. This technology is not effective for metal contaminants such as arsenic or lead.	Low: Where implementable, this technology has been shown to remediate some hydrocarbons in soils. The oxidants used are readily available. However, contact between contaminated soil and oxidants cannot be effectively controlled in vadose zone, resulting in significant remnants of untreated contaminated soil. within the vadose zone. This technology is not effective for metals such as arsenic and lead.	Difficult: May not achieve treatment of the entire contaminated soil in vadose zone.	High: Potentially extensive drilling for injection of chemicals into the vadose zone and monitoring activities would increase costs.	Eliminated: Due to high cost and leaving significant untreated soil in vadose zone.
Active remediation	Soil Excavation and offsite treatment/ disposal	Excavation and offsite transportation/treatment/ disposal.	This technology involves excavation of contaminated soil and transportation to offsite facilities for treatment and/or disposal.	High: Provides long-term effectiveness and permanence. Provides protection of human health and the environment by reducing the amount of contamination in soil.	Moderate: Removal of the impacted soil will require a relatively large footprint. However, excavation technology and transportation to offsite facilities are common and routinely implemented. Treatment and/or disposal facilities are readily available in Southern California.	High: To excavate the impacted soil requires removal of a significant amount of impacted soil. In addition, transportation, treatment, and disposal are costly.	Retained: Excavation is expected to be limited to the top 3.5 feet in impacted areas to eliminate direct exposure pathways.

TABLE 9
Summary of Technology Type and Process Options Screening for Soil Vapor
Former Ventura Manufactured Gas Plant
1555 North Olive Street
Ventura, California

General Response Actions	Technology Type	Process Options	Technology / Process Option Description	Effectiveness	Implementability	Cost	Screening/Evaluation Comments
No-Action	None	None Available	No Action	No remedial action would be implemented to reduce volume, toxicity or mobility of VOCs in soil vapor. Any reduction in VOC concentrations, toxicity, or mobility would occur only through natural attenuation mechanisms such as dilution, dispersion, and biodegradation.	Easily implementable since no action needs to be taken.	There are no costs associated with this technology.	Selected as a stand-alone alternative in compliance with the NCP.
Land Use Covenant	Use Restrictions/ Notifications	Use Restrictions/ Notifications	LUC includes administrative and legal controls that restrict use of the site in a manner that may result in unacceptable risk to human health. The site use restrictions would be to prevent potential vapor intrusion exposure risk. Access restrictions are primarily incorporated through the implementation of LUC.	LUC does not directly reduce volume, toxicity, or mobility of VOCs in soil and soil vapor. No adverse impacts occur during the implementation of LUC since no construction activities are associated with this process option.	LUC is relatively easy to implement. However, it may be difficult to get regulatory approval for LUC as a stand-alone strategy for remediation.	Low	Selected. To be used in conjunction with other active remediation technologies for alternative development.
Soil Vapor Mitigation	Engineered Controls	Building design considerations	The engineered controls include vapor mitigation through the specific design of the Compressor Building, which will included ventilation of the building at a minimum rate of 6 air changes per hour during normal operation.	Engineered controls mitigate exposure to COCs in indoor air and subslab vapor. However, they do not reduce volume, toxicity or mobility of COCs in the subsurface.	Engineered controls are relatively easy to implement. However, it may be difficult to get regulatory approval for institutional controls (ICs) as a stand-alone strategy for remediation.	Low	Selected. To be used in conjunction with other active remediation technologies for alternative development.
In-Situ Treatment	Soil vapor extraction (SVE)	SVE	This technology reduces concentrations of volatile compounds in vadose zone soil by applying a vacuum to a network of vertical or horizontal wells. Compounds volatilized from the soil are collected in the extraction system and are often treated with carbon adsorption before being released. The increased air flow through the subsurface can stimulate biodegradation of some contaminants. SVE can be applied with heat (e.g., by injecting heated air) to enhance the removal of compounds that are less volatile.	SVE is a proven technology for removing volatile and semi-volatile contaminants in vadose soils but concentration reductions greater than about 90% are difficult to achieve. However, this technology is not deemed useful for the site because the source of VOCs in soil vapor is believed to be volatilization from groundwater, which is impacted at upgradient sites. Therefore, SVE will not be able to achieve soil vapor clean up at the Site.	SVE systems are constructed from readily available equipment but installation of SVE wells in the at the Site may lead to significant disruption of operations. An air emission permit may be required.	High	Eliminated. Due to presence of offsite sources, SVE will be impractical

TABLE 10
Preliminary Cost Estimates
Former Ventura Manufactured Gas Plant
1555 North Olive Street
Ventura, California

Alternative	Quantity	Unit	Rate ($)	Subtotal ($)	Total ($)
1. No Action	1	1	0	0	**0**
2. Land Use Covenant					
Land Use Covenant Preparation and Implementation	1	Est.	10,000	10,000	
DTSC Oversight Cost (assumed at 20% of cost)	1	Est.		2,000	
Annual Inspections (see table 11 for details)				114,424	**126,424**
3. Excavation and Offsite Treatment/Disposal					
Mob/Demob/Permitting/Demolition	1	Est.	50,000	50,000	
Removal & Loading of Soil	2,500	ton	30	75,000	
Transportation and Offsite Treatment	2,500	ton	70	175,000	
Backfilling with Clean Soil	3,000	ton	25	75,000	
Design/Oversight/Management	1	Est.	60,000	60,000	
Geotech/Testing/Closure Report	1	Est.	55,000	55,000	
Land Use Covenant Preparation and Implementation	1	Est.	10,000	10,000	
DTSC Oversight Cost (assumed at 10% of cost)	1	Est.		50,000	
Annual Inspections (see table 11 for details)				114,424	**664,424**
4. Indoor Air Sampling and Analysis at Compressor Building					
Workplan and O&M Plan Preparation	1	Est.	10,000	10,000	
Sampling and Analysis	1	Est.	15,000	15,000	
Report	1	Est.	10,000	10,000	
DTSC Oversight Cost (assumed at 20% of cost)	1	Est.		7,000	**42,000**
Annual Inspections (included as part of Alternative 3)					

PARSONS

TABLE 11
30-Year Operation and Maintenance Cost
(Present Value)
Former Ventura Manufactures Gas Plant Site
1555 North Olive Street
Ventura, CA

Fiscal Year[1]	Actual Year[1]	Activity 1	Activity 2	Estimated DTSC Oversight[2]	Total Estimated Cost by Year	Discount Factor	Cumulative Present Value[3]
		Annual Site Inspection	5-year Review Reporting				
1	2022	$3,000		$600	$3,600	0.98522	$3,547
2	2023	$3,000		$600	$3,600	0.97066	$3,494
3	2024	$3,000		$600	$3,600	0.95632	$3,443
4	2025	$3,000		$600	$3,600	0.94218	$3,392
5	2026	$3,000	$5,000	$1,600	$9,600	0.92826	$8,911
6	2027	$3,000		$600	$3,600	0.91454	$3,292
7	2028	$3,000		$600	$3,600	0.90103	$3,244
8	2029	$3,000		$600	$3,600	0.88771	$3,196
9	2030	$3,000		$600	$3,600	0.87459	$3,149
10	2031	$3,000	$5,000	$1,600	$9,600	0.86167	$8,272
11	2032	$3,000		$600	$3,600	0.84893	$3,056
12	2033	$3,000		$600	$3,600	0.83639	$3,011
13	2034	$3,000		$600	$3,600	0.82403	$2,966
14	2035	$3,000		$600	$3,600	0.81185	$2,923
15	2036	$3,000	$5,000	$1,600	$9,600	0.79985	$7,679
16	2037	$3,000		$600	$3,600	0.78803	$2,837
17	2038	$3,000		$600	$3,600	0.77639	$2,795
18	2039	$3,000		$600	$3,600	0.76491	$2,754
19	2040	$3,000		$600	$3,600	0.75361	$2,713
20	2041	$3,000	$5,000	$1,600	$9,600	0.74247	$7,128
21	2042	$3,000		$600	$3,600	0.73150	$2,633
22	2043	$3,000		$600	$3,600	0.72069	$2,594
23	2044	$3,000		$600	$3,600	0.71004	$2,556
24	2045	$3,000		$600	$3,600	0.69954	$2,518
25	2046	$3,000	$5,000	$1,600	$9,600	0.68921	$6,616
26	2047	$3,000		$600	$3,600	0.67902	$2,444
27	2048	$3,000		$600	$3,600	0.66899	$2,408
28	2049	$3,000		$600	$3,600	0.65910	$2,373
29	2050	$3,000		$600	$3,600	0.64936	$2,338
30	2051	$3,000	$5,000	$1,600	$9,600	0.63976	$6,142
TOTALS:		**$90,000**	**$30,000**	**$24,000**	**$144,000**		**$114,424**

Present Value = $114,424

Notes/Assumptions:
1) Assumes remediation will be completed in 2021 and annual inspection will start in 2022
2) DTSC oversight cost is estimated at 20% of the total cost
3) Present Value is based on 1.5% Rate. No escalation cost is assumed

FIGURES

X:\GIS_CAD_GIN\Figures\SCG\Ventura\Updated RAW\Figure 1 Site Location Map.mxd

LEGEND

Site Boundary

N

0 0.25 0.5 1 Miles

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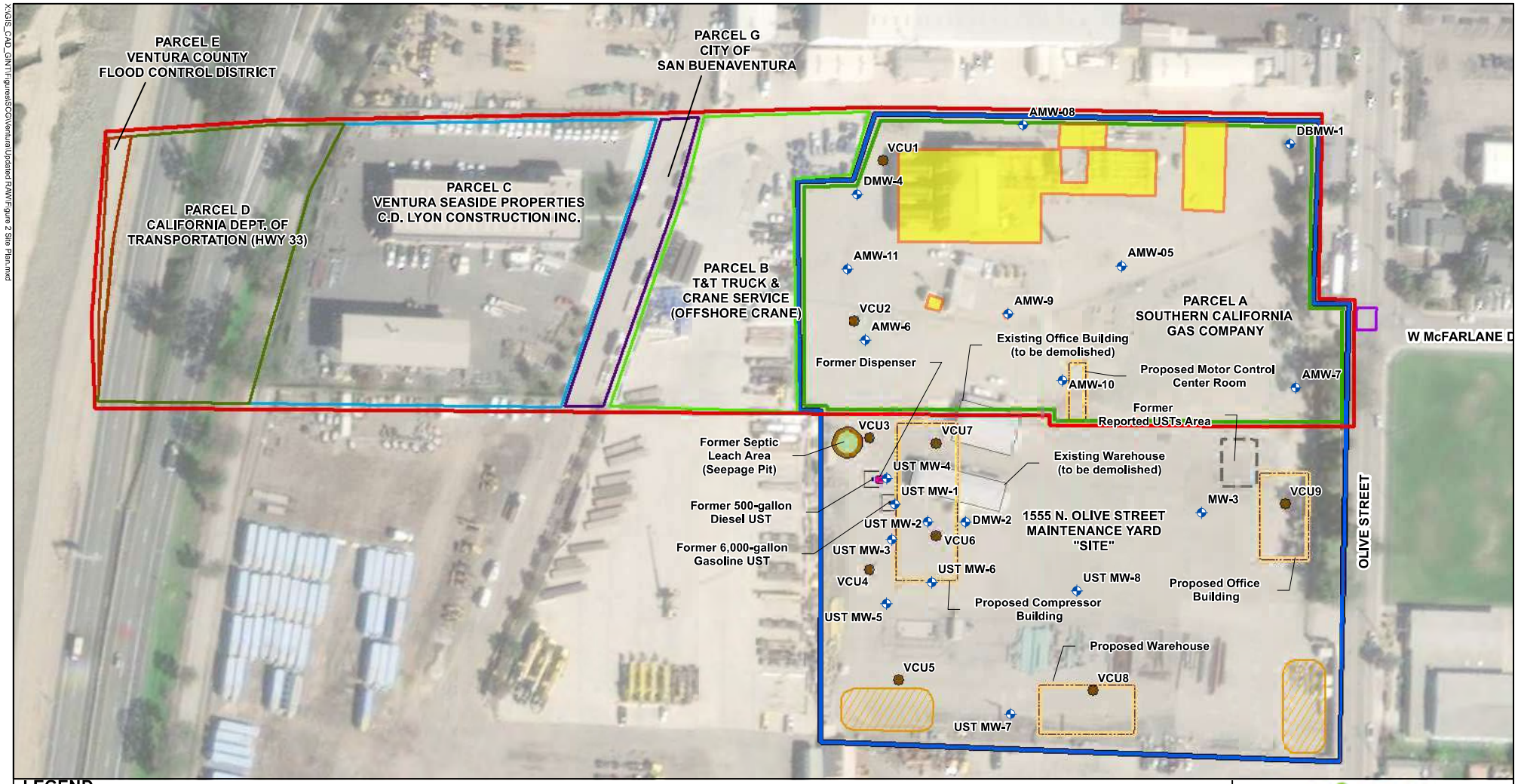
FIGURE 1
SITE LOCATION MAP

1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: JUNE 2020



LEGEND

- FormerMGPBoundary
- Parcel A
- Parcel B
- Parcel C
- Parcel D
- Parcel E
- Parcel F
- Parcel G
- SoCalGas Compressor Station (Site)
- Proposed Buildings
- Proposed Storm Water Infiltration Area
- Buildings
- Former Underground Storage Tanks (USTs)
- Inaccessible Areas During Remediation of Parcel A (2011)*
- Former Monitoring Wells
- Borings (Wood 2019)

Note:
*Areas inaccessible during remedial action, as reported in Removal Action Completion Report (Tetra Tech, 2011)

N

0 50 100 200 Feet

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FIGURE 2
SITE PLAN

1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: JUNE 2020

X:\GIS_CAD_GIN\TFigures\SCG\Ventura\Updated R2\WF\Figure 2 Site Plan.mxd

X:\GIS_CAD_GIN\Figures\SCG\Ventura\Updated RAW\Figure 3 Archiitural Rendering New Buildings.mxd

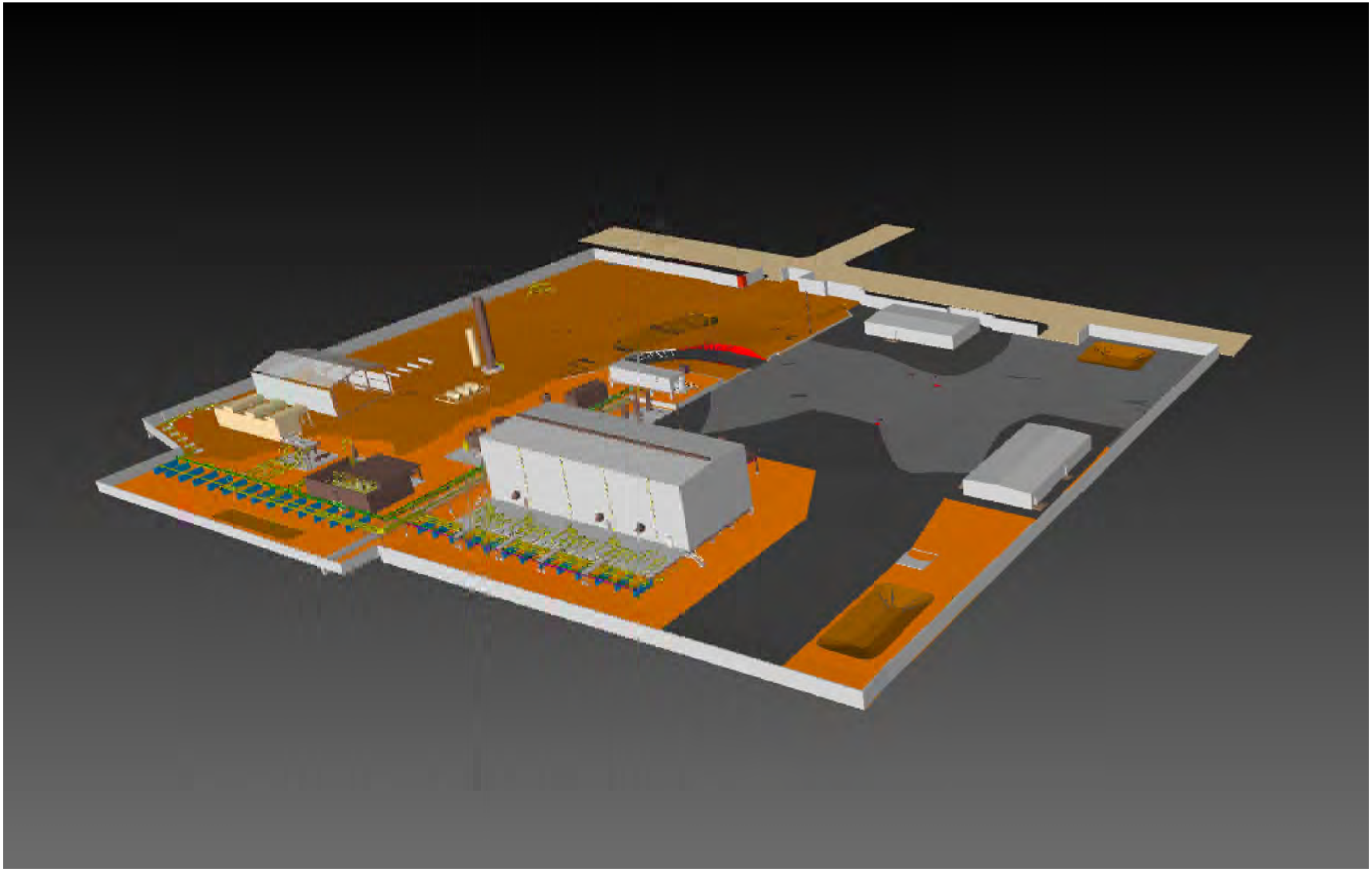

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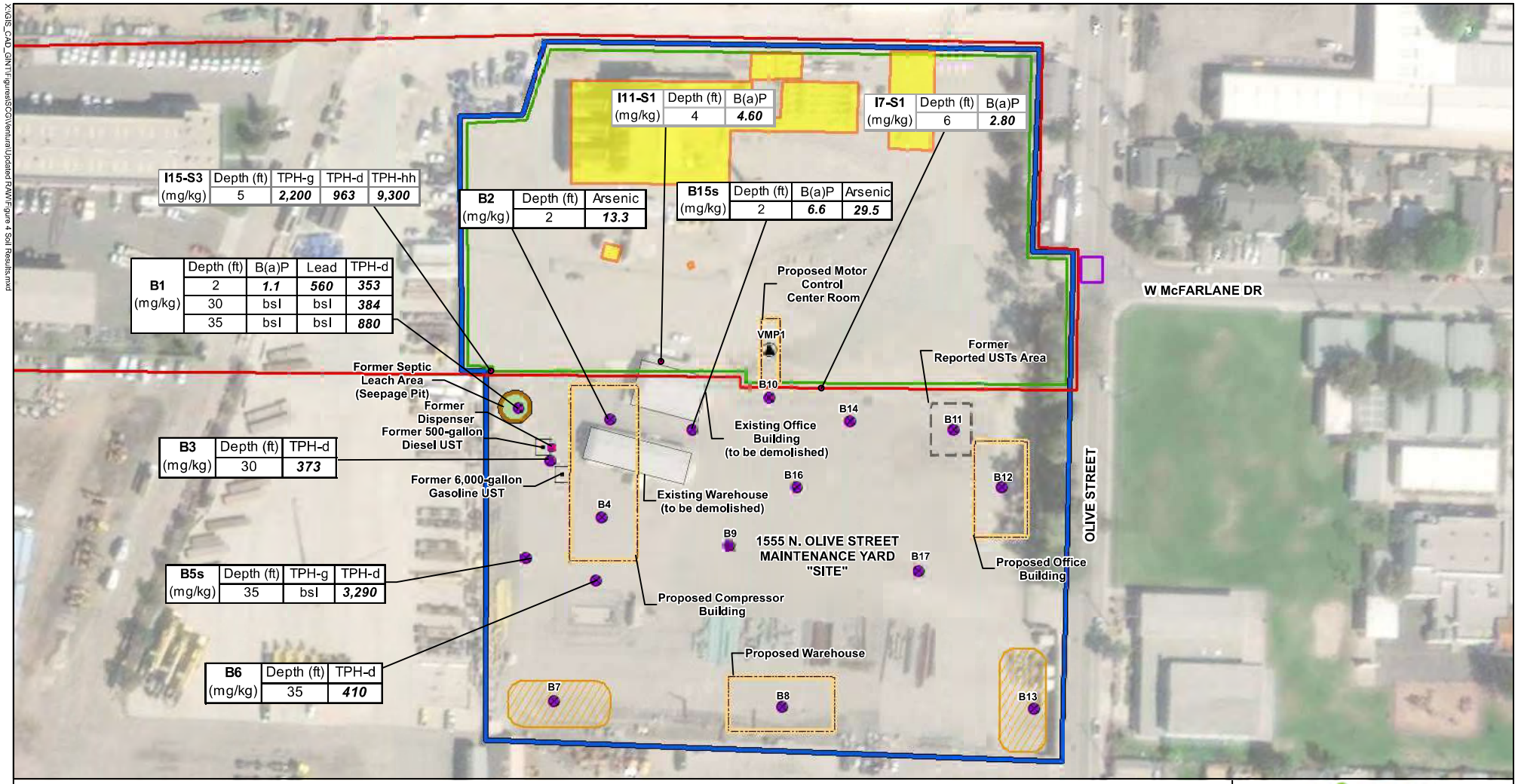
FIGURE 3
ARCHITURAL RENDERING OF
THE NEW COMPRESSOR STATION
1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: JUNE 2020



LEGEND

- Proposed Buildings
- Proposed Storm Water Infiltration Area
- Parcel F
- Parcel A
- Existing Buildings
- SoCalGas Compressor Station
- FormerMGPBoundary
- Inaccessible Areas During Remediation of Parcel A (2011)[1]
- Former Underground Storage Tanks (USTs)
- Soil Boring[2]
- Soil Gas Probe
- Side Wall Confirmation Sample[3]

Notes:

1. Areas inaccessible during remedial action, as reported in Removal Action Completion Report (Tetra Tech, 2011).
2. Concentrations shown exceeded residential Health Based Goals (HBGs), or background, or DTSC residential exposure level for lead (80 mg/kg).
3. Confirmation sample data from Removal Action Completion Report (TetraTech, 2011)

Soil concentration reported in milligrams per kilogram (mg/kg).

bsl - below screening levels
DTSC - Department of Toxic Substances and Control
ft - feet
B(a)P - benzo(a)pyrene
TPH - total petroleum hydrocarbons
TPH-d - TPH-diesel
TPH-g - TPH-gasoline

N

0 45 90 180 Feet

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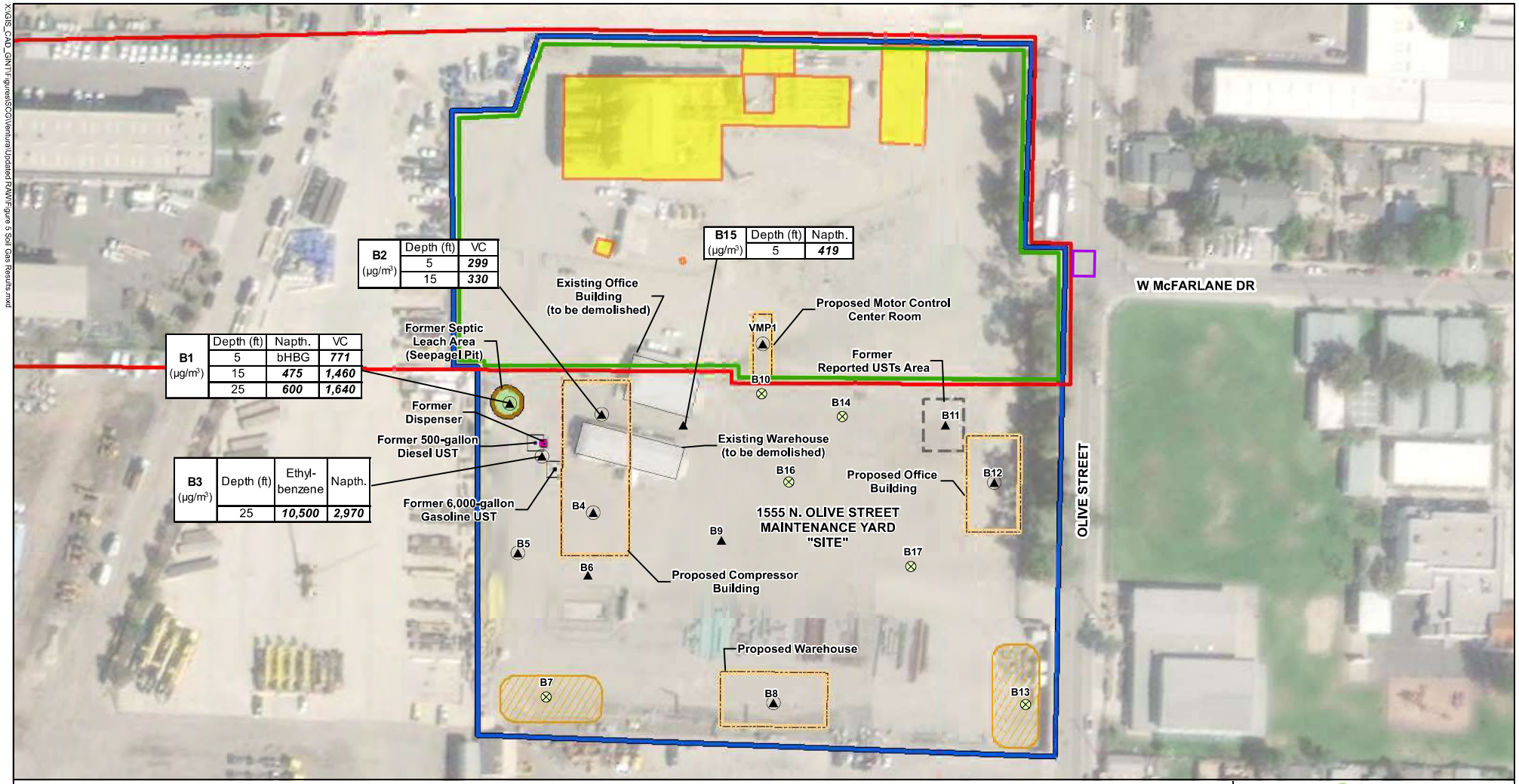
FIGURE 4
SOIL SAMPLING RESULTS
1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: OCTOBER 2020



LEGEND

- SoCalGas Compressor Station (Site)
- FormerMGPBoundary
- Proposed Buildings
- Proposed Storm Water Infiltration
- Parcel F
- Parcel A
- Existing Buildings
- Inaccessible Areas During Remediation of Parcel A (2011)[1]
- ▲ Two Soil Vapor Probes Installed[2]
- ⊛ Three Soil Vapor Probes Installed[2]
- ⊗ Soil Boring
- ▪ Former Underground Storage Tanks (USTs)

Notes:
1. Areas inaccessible during remedial action, as reported in Removal Action Completion Report (Tetra Tech, 2011).
2. Concentrations shown exceeded the industrial Health Based Goals (HBG).
3. Soil vapor probe concentrations reported in micrograms per cubic meter (µg/m³).

bsl - below screening levels
ft - feet
Napth. - naphthalene
VC - Vinyl Chloride

N

0 45 90 180 Feet

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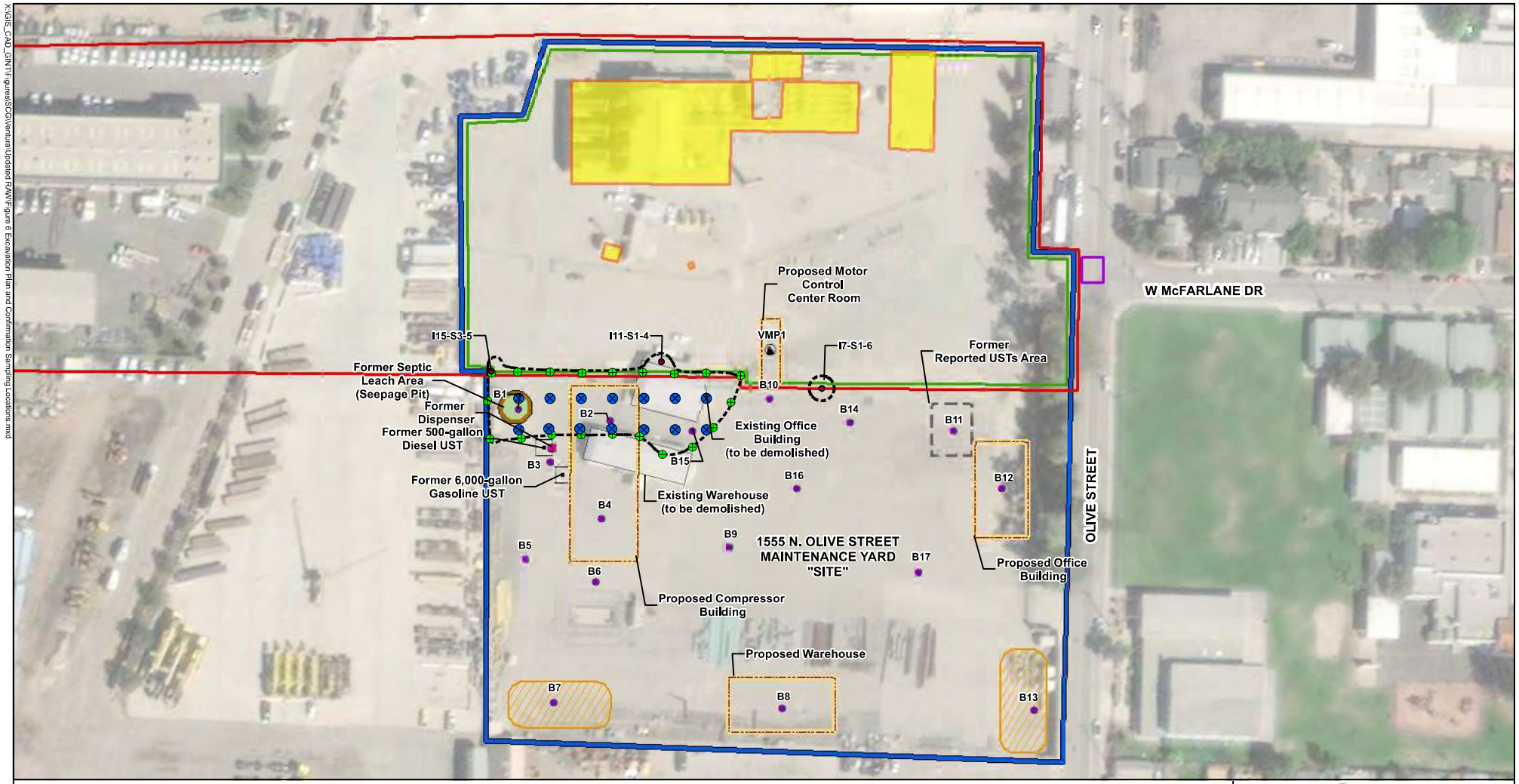
FIGURE 5
SOIL GAS SAMPLING RESULTS
1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: JUNE 2020

X:\GIS_CAD_GIN\TiFigures\SCG\Ventura\Updated R2\WFigure 5 Soil Gas Results.mxd



LEGEND

- FormerMGPBoundary
- SoCalGas Compressor Station
- Parcel F
- Parcel A
- Existing Buildings
- Proposed Buildings
- Proposed Storm Water Infiltration Area
- Proposed Excavation Area South of Parcel A
- Inaccessible Areas During Remediation of Parcel A (2011)[1]
- Former Underground Storage Tanks (USTs)
- Soil Boring
- Soil Gas Probe
- Confirmation Samples (2011)[3]

Confirmation Samples[2]

- Floor
- Sidewall

Notes:

1. Areas inaccessible during remedial action, as reported in Removal Action Completion Report (Tetra Tech, 2011).
2. Side Wall confirmation sample data from Removal Action Completion Report (TetraTech, 2011).
3. Excavation floor confirmation samples will be collected at a spacing of 30 feet. Sidewall samples will be collected at 30-foot intervals, in the midpoint (vertically) of the sidewall.

0 45 90 180 Feet

N

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FIGURE 6
EXCAVATION PLAN AND CONFIRMATION SAMPLING LOCATIONS
1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: OCTOBER 2020

X:\GIS_CAD_GIN\TiFigures\SCG\Ventura\Updated R4W\Figure 6 Excavation Plan and Confirmation Sampling Locations.mxd

X:\GIS_CAD_GIN\Figures\SCG\Ventura\Updated RAW\Figure 7 Transportation Route Map.mxd

Directions:

1. Head toward W McFarlane Dr on N Olive St
2. Turn left onto Stanley Ave
3. Take ramp onto CA-33 S (Ojai Fwy) toward Ventura
4. Take the left exit toward Los Angeles onto US-101 S (Ventura Fwy)
5. Continue on CA-134 E, and I-210 E
6. Take I-15 North.
7. From I-15 North, exit to US-395 North.
8. From US-395 North, keep right onto Adelanto Rd.
9. From Adelanto Rd, turn right onto Hibiscus Rd.

N

0 3 6 12
Miles

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FIGURE 7
TRANSPORTATION ROUTE MAP

1555 N. Olive Street
Ventura, California

PROJECT: SCG 024 DATE: JUNE 2020

ATTACHMENT A

DTSC APPROVAL LETTER FOR REMOVAL ACTION WORKPLAN (TETRA TECH, MAY 2009)

Department of Toxic Substances Control

Linda S. Adams
Secretary for
Environmental Protection

Maziar Movassaghi
Acting Director
1515 Tollhouse Road
Clovis, California 93611

Arnold Schwarzenegger
Governor

October 7, 2009

Masood Hosseini, Ph.D.
Senior Project Manager
Site Assessment & Mitigation
Southern California Gas Company
555 West Fifth Street, GT16G2
Los Angeles, California 90013-1036

Dear Dr. Hosseini:

APPROVAL OF REMOVAL ACTION WORKPLAN FOR THE FORMER VENTURA MANUFACTURED GAS PLANT (PARCELS A AND F)

A Public Comment Period on the draft Removal Action Workplan (RAW) for the Former Ventura Manufactured Gas Plant (Parcels A and F) Site was conducted between May 22, 2009 and June 22, 2009. Comments received during the public comment period and Department of Toxic Substances Control (DTSC) responses to those comments are provided in the enclosed Responsiveness Summary dated August 18, 2009. Based upon review of the comments received, DTSC has determined that revisions to the content of the draft RAW are not required. On that basis, DTSC is hereby approving the draft RAW as final subject to the actions described below:

1. The enclosed Responsiveness Summary and CEQA - Notice of Exemption shall be added to the final RAW as appendices. Within five days of the date of this letter, two copies of the Final RAW shall be sent to DTSC (Kevin Shaddy), and one copy shall be placed in the project repository at the Ventura County Library. A portable document format (pdf) version of the Final RAW shall also be provided to DTSC.

2. In the event that excavation activities conducted during the project encroach on the LUFT project area or the associated monitoring wells, Southern California Gas Company (SCG) shall notify and coordinate with the Ventura County Environmental Health Division, LUFT Program to minimize any impact on the LUFT project.

3. All project construction activities shall comply with applicable rules and requirements of the Ventura County Air Pollution Control District (VCAPCD). Subsequent to the public comment period and prior to commencement of soil

KS:cm
KS02.109

excavation or grading activities, the applicable rules and requirements shall be confirmed with the VCAPCD.

4. An appropriate sign shall be posted at the Site prior to the initiation of significance soil disturbances at the Site which lists contact numbers for DTSC and the VCAPCD. This will allow community members an avenue to express concerns regarding unreasonable odors or dust originating from the Site. DTSC will coordinate with Tetra Tech on the content of this sign.

If you should have any questions or concerns, please contact me at (559) 297-3929 or by email at kshaddy@dtsc.ca.gov.

Sincerely,

Kevin L. Shaddy, P.E.
Supervising Hazardous Substances Engineer I
Brownfields and Environmental Restoration Program

Enclosures

cc: Mr. Eric Hodder, PG., CHg
Corporate Environment, Health and Safety Division
Southern California Edison
P.O. Box 800
2244 Walnut Grove Avenue
Rosemead, California 91770

Mr. Salar D. Niku, Ph.D.
Project Manager
Tetra Tech, Inc.
3475 E. Foothill Boulevard
Pasadena, California 91107

Ms. Mona Arteaga Bontty
Public Participation Supervisor
Dept. of Toxic Substances Control
5796 Corporate Avenue
Cypress, California 90630

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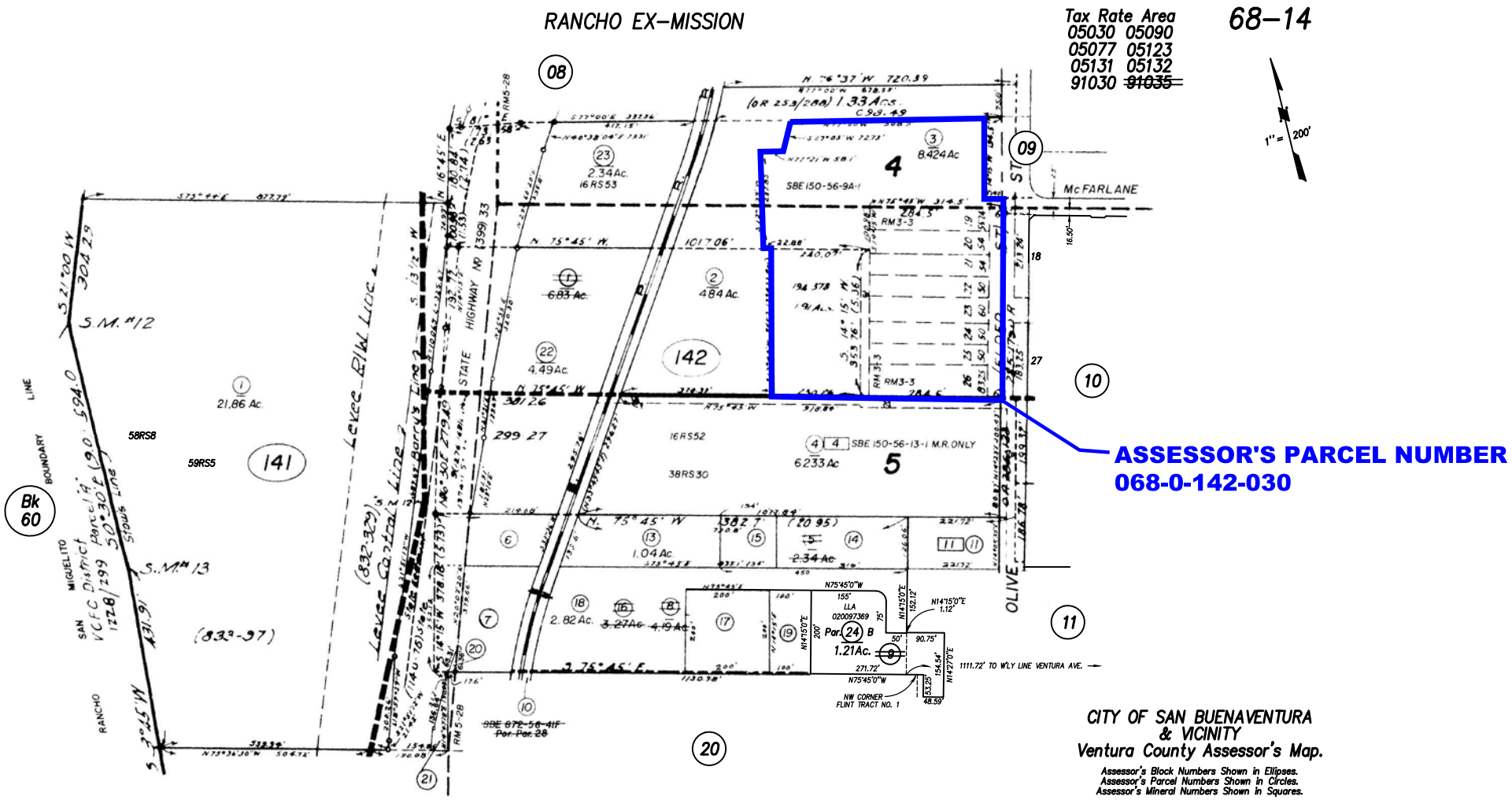
ATTACHMENT B

PARCEL MAP



CITY OF SAN BUENAVENTURA
& VICINITY
Ventura County Assessor's Map.

Assessor's Block Numbers Shown in Ellipses.
Assessor's Parcel Numbers Shown in Circles.
Assessor's Mineral Numbers Shown in Squares.

Leighton Survey, M.R. Bk.5, Pg.28, & Bk.5, Pg.43
Portion McMenemin Tract, M.R. Bk.3, Pg.3
Rancho Ex-Mission, Tract No.1, M.R. Bk.2, Pg.103

NOTE: ASSESSOR PARCELS SHOWN ON THIS PAGE DO NOT NECESSARILY CONSTITUTE LEGAL LOTS. CHECK WITH COUNTY SURVEYOR'S OFFICE OR PLANNING DIVISION TO VERIFY.

DRAWN		REVISED	3-2-2017
REDRAWN		CREATED	
INKED	PLOTTED	EFFECTIVE	ROLL

Compiled By Ventura County Assessor's Office

ATTACHMENT C

APPLICABLE, RELEVANT, AND APPROPRIATE REQUIREMENTS (ARARS)

Attachment C - Table 1

Federal Chemical-Specific ARARs

Requirement	Prerequisite	Citation	ARAR Determination	Comments
Soil				
Resource Conservation and Recovery Act (RCRA)/HWCA				
Definition of RCRA hazardous waste.	Waste soil	40 CFR 261.3; Title 22 CCR 66261.21, 66261.22(a)(1), 66261.23, 66261.24(a)(1), and 66261.100	Relevant and appropriate to excavation alternative	Hazardous waste not expected to be generated at this site. All waste to be disposed will be profiled prior to disposal.
Toxic Substances Control Act (TSCA)				
Regulates use and manufacture of toxic substances and storage and disposal of polychlorinated biphenyls (PCBs).	Soils, debris, sludge, or dredged materials contaminated with PCBs at concentrations greater than 50 parts per million (ppm).	40 CFR 761.60, excluding 761.60(a)(B) and(D), 761.60(a)(3)(iii)(3), 761.60(e), 761.60(f); 761.65(a) and (b); 761.65(c) except 761.65(c)(9); 761.65(e)(6)(ii and iii); 765.65(e)(7) and (8); 761.79 (15 USC 2601 et seq)	Not an ARAR	Site has no known PCB-contaminated or PCB-containing materials
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)*				
Procedures recommended for all pesticide storage and disposal activities.	Recommendations for the disposal of organic pesticides, metal-organic pesticides, organic mercury, lead, cadmium, arsenic, and all inorganic pesticides	40 CFR 165.8	Not an ARAR	Processes and disposal practices at the site did not include any of the regulated substances under this act
Water				
Clean Water Act (CWA) 33 USC 1251-1376				
Regulates discharges of water from a facility or site including site runoff.	Wastewater discharge to a water body	40 CFR 100-149	Not an ARAR	There is no wastewater to be generated at this site.
Safe Drinking Water Act (SDWA) 42 USC 300f - 300j				
Regulates the quality of drinking water supply and lists maximum contaminant levels.	Drinking water	40 CFR 141-143	Not an ARAR	There is no drinking water source at this site.

Attachment C - Table 1

Federal Chemical-Specific ARARs

Requirement	Prerequisite	Citation	ARAR Determination	Comments
Air				
Clean Air Act (CAA), 40 USC 7401 et.seq.				
National Ambient Air Quality Standards (NAAQS); Primary and secondary standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead).	Contamination of air affecting public health and welfare.	40 CFR 50.4 - 50.13	Not an ARAR	See Table 6 for VCAPCD ARARs
Provisions of State Implementation Plan (SIP) approved by EPA under Section 110 of CAA.	Major sources of air pollutants.	40 USC 7410; portions of 40 CFR 52.220 applicable to VCAPCD	Potentially relevant and appropriate.	See Table 6 for VCAPCD ARARs

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered potential ARARs.

ARARs = Applicable or relevant and appropriate requirements
CAA = Clean Air Act
CCR = California Code of Regulations
CFR = Code of Federal Regulations
EPA = U.S. Environmental Protection
FIFRA = Federal Insecticide, Fungicide, and Rodenticide Act
NAAQS = National Ambient Air Quality Standards (primary and secondary)
RCRA = Resource Conservation and Recovery Act
ppm = Parts per million
PCB = Polychlorinated biphenyls
RI = Remedial Investigation
SIP = State Implementation Plan
TBC = "To Be Considered" Guidance
TSCA = Toxic Substances Control Act
USC = United States Code
VCAPCD = Ventura County Air Pollution Control District

Chemical-specific concentrations used may not be ARARs indicated in this table, but may be concentrations based upon other factors. Such factors may include the following:

. Human health risk-based concentrations (risk-based; PRGs 40 CFR 300.430(e)(A)(1) and (2)).
. Ecological risk-based concentrations (40 CFR 300.430(e)(G)).
. Practical quantitation limits of contaminants (40 CFR 300.430(e)(A)(3)).

Many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables.

Attachment C - Table 2
State Chemical-Specific ARARs

Requirement	Prerequisite	Citation	ARAR Determination	Comments
Soil				
Cal-EPA Department of Toxic Substances Control (DTSC)				
Definition of "Non-RCRA hazardous waste"	Waste	22 CCR 66261.22(a)(3) and (4), 66261.24(a)(2) to (a)(8), 66261.101, 66261.3(a)(2)(C), or 66261.3(a)(2)(F)	Applicable	Hazardous waste not expected to be generated at this site. All waste to be disposed will be profiled prior to disposal.
Water				
State and Regional Water Quality Control Board (RWQCB)*				
Authorizes the State and Regional Water Boards to establish in Water Quality Control Plans beneficial uses and numerical and narrative standards to protect both surface and groundwater quality. Authorizes regional water boards to issue permits for discharges to land or surface or groundwater that could affect water quality, including NPDES permits, and to take enforcement action to protect water quality.	Waste discharge	California Water Code, Division 7, Sections 13241, 13243, 13263(a), and 13360 (Porter-Cologne Water Quality Control Act) and other provisions of the Porter-Cologne Water Quality Control Act	Potentially applicable, if groundwater or surface water are impacted by the site	Specific actions are focused in remediating soil, although, underlying groundwater is expected to be an impacted resource

Attachment C - Table 2
State Chemical-Specific ARARs

Describes the water basins in the Los Angeles Region, establishes beneficial uses of ground and surface waters, establishes water quality objectives, including narrative and numerical standards, establishes implementation plans to meet water quality objectives and protect beneficial uses, and incorporates statewide water quality control plans and policies.	Waste discharge	Water Quality Control Plan (Basin Plan) Los Angeles Region, June 13, 1994	Potentially applicable, if groundwater or surface water are impacted by the site	Substantive provisions in Chapters 2, 3, 4 and 5 include beneficial use designations, water quality objectives, waste discharge requirements, non-point source management requirements, drinking water policy and policies and procedures for investigation and cleanup and abatement of discharges.

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific citations are considered potential ARARs.

ARARs = Applicable or relevant and appropriate requirements
RCRA = Resource Conservation and Recovery Act
Chemical-specific concentrations used for removal action alternative evaluation may not be ARARs indicated in this table, but may be concentrations based upon other factors. Such factors may include the following:

- Human health risk-based concentrations (risk-based; PRGs 40 CFR 300.430(e)(A)(1) and (2))
- Ecological risk-based concentrations (40 CFR 300.430(e)(G))
- Practical quantitation limits of contaminants (40 CFR 300.430(e)(A)(3))

Many potential action-specific ARARs contain chemical-specific limitations and are addressed in the action-specific ARAR tables.

Attachment C - Table 3

Federal Location-Specific ARARs

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Hazardous Waste Control Act (HWCA)*					
Within 100-year floodplain	Facility must be designed, constructed, operated, and maintained to avoid washout.	RCRA hazardous waste, treatment, storage, or disposal of hazardous waste	22 CCR 66264.18(b)	TBC	Hazardous waste not expected to be generated at this site.
Executive Order 11988, Protection of Floodplains*					
Within floodplain	Actions taken should avoid adverse effects, minimize potential harm, and restore and preserve natural and beneficial resources	Action that will occur in a floodplain (i.e., lowlands) and relatively flat areas adjoining inland and coastal waters and other flood-prone areas	44 CFR 9, Appendix A	Relevant and Appropriate	Site is highly urbanized and is adjacent to the Ventura River. The River has been transformed as a flood control channel
Archaeological Resources Protection Act, 16 USC Section 469 at seq*					
Within area where action may cause irreparable harm, loss, or destruction of significant artifacts	Construction on previously undisturbed land would require an archaeological survey of the area	Alteration of terrain that threatens significant scientific, prehistoric, historic, or archaeologic data	Substantive requirements of 36 CFR 65	Relevant and Appropriate	Remedial excavation at Parcel A did not reveal archaeological artifacts.
National Historic Preservation Act, 16 USC Section 470*					
Historic project owned or controlled by Federal agency	Action to preserve historic properties; planning of action to minimize harm to national historic landmarks.	Property included in or eligible for the National Register of Historic Places	Substantive requirements of 36 CFR 800	Not an ARAR	No known historic property that needs to be preserved
Endangered Species Act of 1973*					
Critical habitat upon which endangered species or threatened species depend	Action to conserve endangered species or threatened species, including consultation with the Department of the Interior.	Determination of effect upon endangered or threatened species or their habitat	16 USC 1536(a)	Not an ARAR	No known endangered or listed species at site
Executive Order 11990, Protection of Wetlands*					
Wetland	Action to minimize the destruction, loss, or degradation of wetlands.	Wetland as defined by Executive Order 11990, Section 7	44 CFR 9, Appendix A	Not an ARAR	Site is not within a wetland zone
Clean Water Act, Section 404*					
Wetland	Action to prohibit discharge of dredged or fill material into wetland without permit. Mitigation may be required to avoid net loss of wetlands	Wetland as defined by Executive Order 11990, Section 7	40 CFR 230.10; 40 CFR 231 (excluding 231.1, 231.2, 231.7, and 231.8)	Not an ARAR	Site is not within a wetland zone

Attachment C - Table 3

Federal Location-Specific ARARs

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Wilderness Act*					
Wilderness Area	Area must be administered in a manner that will leave it unimpaired as wilderness and preserve its wilderness character	Federally owned area designated as wilderness area	50 CFR 35.1 et seq.	Not an ARAR	Site is highly urbanized
National Wildlife Refuge System*					
Wildlife refuge	Only actions allowed under the provisions of 16 USC 668 dd(c) may be undertaken in areas that are part of the National Wildlife Refuge System	Area designated as part of the National Wildlife Refuge System	50 CFR 27	Not an ARAR	Site is highly urbanized
Fish and Wildlife Coordination Act, Section 662*					
Area affecting stream or other water body	Action taken should protect fish or wildlife.	Diversion, channeling, or other activity that modifies a stream or other water body and affects fish or wildlife	16 USC 662	Not an ARAR	There will be no physical modification of any water body affecting fish or wildlife
Wild and Scenic Rivers Act*					
Within area affecting national wild, scenic, or recreational river	Avoid taking or assisting in an action that will have direct adverse effect on scenic river.	Activities that affect or may affect any of the rivers specified in 16 USC 1276(a)	16 USC 1271 et seq., Section 7(a)	Not an ARAR	There will be no physical modification of any water body affecting fish or wildlife
Coastal Zone Management Act*					
Within coastal zone	Conduct activities in a manner consistent with approved State management programs.	Activities affecting the coastal zone, including lands thereunder and adjacent shoreland.	Section 307(c) of 16 USC 1456(c); 15 CFR 930 and 923.45	Not an ARAR	Site is inland, at least 20 miles from the ocean
Coastal Barrier Resources Act, Section 3504*					
Within designated coastal barrier	Prohibits any new Federal expenditure within the Coastal Barrier Resource System.	Activity within the Coastal Barrier Resource System	16 USC 3504	Not an ARAR	Site is inland, at least 1.5 miles from the ocean
Historic Sites, Buildings, and Antiquities Act*					
Historic Sites	Avoid undesirable impacts on landmarks.	Areas designated as historic sites	16 USC 461-467	Not an ARAR	There are no historic sites on site

Attachment C - Table 3

Federal Location-Specific ARARs

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Rivers and Harbors Act of 1890*					
Navigable waters	Permits required for structures or work in or affecting navigable waters.	Activities affecting navigable waters	33 USC 403	Not an ARAR	Ventura River is a flood control channel with little or no navigational activities
Migratory Bird Treaty Act of 1972*					
Migratory bird area	Protects almost all species of native birds in the United States from unregulated "take", which can include poisoning at hazardous waste sites	Presence of migratory birds	16 USC 703	Not an ARAR	Site is not a known migratory bird habitat
Marine Mammal Protection Act*					
Marine mammal area	Protects any marine mammal within the United States from unregulated "take" except as provided by international treaties	Presence of marine mammals	16 USC 1372(2)	Not an ARAR	Site is not a marine ecological system
Magnuson Fishery Conservation and Management Act*					
Fishery under management	Provides for conservation and management of specified fisheries within specified fishery conservation zones	Presence of managed fisheries	16 USC 1801 et seq.	Not an ARAR	Site is not a marine ecological system

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs. Specific potential ARARs follow each general heading.

ARARs = Applicable or relevant and appropriate requirements
CCC = California Coastal Commission
CCR = California Code of Regulations
CFR = Code of Federal Regulations
HWCA = Hazardous Waste Control Act
NWS = Naval Weapons Station
RCRA = Resource Conservation and Recovery Act
RWQCB = California Regional Water Quality Control Board
SHPO = State Historical Preservation Officer
USC = United States Code

Attachment C - Table 4

State Location-Specific ARARs

Location	Requirement	Prerequisite	Citation	ARAR Determination	Comments
Fish and Wildlife Game Code*					
Endangered Species Habitat	No persons shall import, export, take, possess, or sell any endangered or threatened species or part or product thereof.	Threatened or endangered species determination on or before 1 January 1985 or a candidate species with proper notification	FGC 2080	Not an ARAR	There is no threatened or endangered species listed for the site.
Endangered Species Habitat	Department policy and legislative findings and definitions for significant natural areas.		FGC 2050-2068	Not an ARAR	There is no threatened or endangered species listed for the site.
Endangered Species Habitat	Procedures for listing endangered species.		FGC 2070	Not an ARAR	There is no threatened or endangered species listed for the site.
Endangered Species Habitat	Ensures that action taken will not jeopardize the survival and reproduction of any threatened or endangered species.		FGC 2090-2096	Not an ARAR	Not effective after January 1, 1994.
California Coast Act of 1976*					
Coastal Zone	Regulates activities associated with development to control direct significant impacts on coastal waters and protect State and national interests in California coastal resources. Requires a consistency determination for federal activities within a coastal		PRC 30000-30900; 14 CCR 13001-136664.4	Not an ARAR	Procedural, not a "cleanup standard," "standard of control," or "other substantive requirement, criteria or limitation." However, the CERCLA process contains the functional equivalent in the feasibility study report.

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs follow each general heading; only substantive requirements of the specific citations are considered potential ARARs.

ARARs = Applicable or relevant and appropriate requirements
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CCR = California Code of Regulations
FGC = Fish and Game Code
NA = Not an ARAR
PRC = Public Resources Code
TBC = To be considered

Attachment C - Table 5

Federal Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Resource Conservation and Recovery Act (RCRA) 42 USC 6901 et seq.*							
On-site waste generation	Person who generates waste shall determine if that waste is hazardous.	Generator of hazardous waste in California	22 CCR 66262.11	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
Hazardous waste accumulation	Generator may accumulate waste on site for 90 days or less or must comply with requirements for operating a storage facility.	Accumulate hazardous waste	22 CCR 66262.34	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
Recordkeeping	Generator must keep manifests, biennial and exception reports and records of waste determination for at least 3 years.	Generate hazardous waste.	22 CCR 66262.40	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
Container storage	Containers of RCRA hazardous waste must be 1) maintained in good condition, 2) compatible with hazardous waste to be stored and 3) closed during storage except to add or remove waste	Storage of hazardous waste in containers for more than 90 days.	22 CCR 66264.171, 172, 173	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	Inspect container storage areas weekly for deterioration.		22 CCR 66264.174	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10 percent of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system		22 CCR 66264.175(a) and (b)	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled.
	Keep containers of ignitable or reactive waste at least 50 feet from the facility property line.		22 CCR 66264.176	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled

Attachment C - Table 5
Federal Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.		22 CCR 66264.177	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers, liners.		22 CCR 66264.178	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
Closure of surface impoundments	General performance standard requires elimination of need for further maintenance and control; elimination of post closure escape of hazardous waste, hazardous constituent, leachate, contaminated runoff, or hazardous waste decomposition products.	Land based unit containing hazardous waste. RCRA hazardous waste placed at site after the effective date of the requirements, or placed into another unit. Cleanup to health-based standards that will not require long-term management. Not applicable to material treated, stored, or disposed only before the effective date of the requirements, or if treated in situ, or consolidated within	22 CCR 66264.111 except as it cross-references procedural requirements such as preparation and submittal of closure plans and other notifications.				No surface impoundments present at the site
Clean closure of surface impoundments (removal)	Removal or decontamination of all waste residues, contaminated containment system components, contaminated subsoils, and structures and equipment contaminated with waste and leachate, and management of them as hazardous waste.	Surface impoundments, container or tank liners and hazardous waste residues, or contaminated soil (including soil from dredging or soil disturbed in the course of drilling or excavation) returned	22 CCR 66264.111 and 66264.228(a)(1)and (c), except as it cross- references procedural requirements such as closure plans and annual reports.				No surface impoundments present at the site

Attachment C - Table 5
Federal Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Closure of surface impoundments with waste in place (capping)	Requirements include eliminating free liquids, stabilizing remaining waste to support a cover and covering the surface impoundment. The cover should be constructed to prevent downward entry of water for 100 years, function with minimum maintenance, promote drainage and eliminate erosion, accommodate settling and shear forces, have a permeability of less than or equal to permeability of	Surface impoundment containing hazardous waste.	22 CCR 66264.228(a)(2), (b) and (d) through (r), except as it cross- references procedural requirements such as closure plans and annual reports				No surface impoundments present at the site
Excavation of soil from vicinity of surface impoundment	Area from which materials are excavated may require cleanup to levels established by closure requirements.	RCRA hazardous waste placed at site after the effective date of the requirements.	22 CCR 66264.228(a), (b), (e) through (k), (m), (o) through (q); 22 CCR 66264.258(a) and (b), except as it cross- references procedural				No surface impoundments present at the site
Groundwater monitoring for surface impoundment	Owners/operators of RCRA surface impoundment, waste pile, land treatment unit, or landfill shall conduct a monitoring and response program for each regulated unit.	Surface impoundment, waste pile, land treatment unit, or landfill for which constituents in or derived from waste in the unit may pose a threat to human health or the	22 CCR 66264. (c), 66264.91(a) and (c), 66264.92-.95, 66264.97-.98 except as it cross- references permit requirements				No surface impoundments present at the site
Excavation	Movement of excavated materials to new location and placement in or on land will trigger land disposal restrictions for the excavated waste or closure requirements for the unit in which the waste is being placed	environment ainingRCRA Materials cont hazardous wastes subject to land disposal restrictions are placed in another unit.	22 CCR 66268.40	3, 4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
Treatment when waste will be land disposed	Treatment of waste subject to ban on land disposal must attain levels achievable by best demonstrated available treatment technologies (BDAT) for each hazardous constituent in each listed waste, if residual is to be land disposed.	Placement of RCRA hazardous waste in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, or underground mine or cave	22 CCR 66268.40 and 42	3, 4			Hazardous waste not expected to be generated at this site. Soil will be treated through thermal desorption prior to disposal.
Placement of waste in land disposal unit	Attain land disposal treatment standards before putting waste into landfill in order to comply with land ban restrictions.		22 CCR 66268.40	3,4			Hazardous waste not expected to be generated at this site. Soil will be treated through thermal desorption prior to disposal.

Attachment C - Table 5

Federal Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Clean Air Act (CAA) 40 USC 7401 et seq.							
Discharge to air	Provisions of State Implementation Plan (SIP) approved by EPA under Section 110 of CAA.	Major sources of air pollutants	VCAPCD Rules		3,4		See Table 6 for VCAPCD ARARs
	National Primary and Secondary Ambient Air Quality Standards (NAAQS) - standards for ambient air quality to protect public health and welfare (including standards for particulate matter and lead)	Contamination of air affecting public health and welfare	40 CFR Sections 50.4 - 50.13		3,4		
U.S. Department of Transportation, 49 USC 1802, et seq.*							
Hazardous Materials Transportation	No person shall represent that a container or package is safe unless it meets the requirements of 49 USC 1802, et seq. or represent that a hazardous material is present in a package or motor vehicle if it is not.	Interstate carriers transporting hazardous waste and substances by motor vehicle. Transportation of hazardous material under contract with any department of the executive branch of the Federal government.	49 CFR 171.2(f)	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled.
	No person shall unlawfully alter or deface labels, placards or descriptions, packages, containers, or motor vehicles used for transportation of hazardous materials		49 CFR 171.2(g)	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
Hazardous Materials Marking, Labeling, and Placarding	Each person who offers hazardous material for transportation or each carrier that transports it shall mark each package, container, and vehicle in the manner required.	Person who offers hazardous material for transportation; carries hazardous material; or packages, labels, or placards hazardous material.	49 CFR 172.300	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled.
	Each person offering nonbulk hazardous materials for transportation shall mark the proper shipping name and identification number (technical name) and consignee's name and address		49 CFR 172.301	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled

Attachment C - Table 5
Federal Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
	Hazardous materials for transportation in bulk packages must be labeled with proper identification (ID) number, specified in 49 CFR 172.101 table, with required size of print. Packages must remain marked until cleaned or refilled with material requiring other marking		49 CFR 172.302	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled.
	No package marked with a proper shipping name or ID number may be offered for transport or transported unless the package contains the identified hazardous material or its residue		49 CFR 172.303	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	The markings must be durable, in English, in contrasting colors, unobscured, and away from other markings.		49 CFR 172.304	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	Labeling of hazardous material packages shall be specified in the list.		49 CFR 172.400	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	Nonbulk combination packages containing liquid hazardous materials must be packed with closures upward, and marked with arrows pointing upward.		49 CFR 172.312	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled
	Each bulk packaging or transport vehicle containing any quantity of hazardous material must be placarded on each side and each end with the type of placards listed in Tables 1 and 2 of 49 CFR 172 504		49 CFR 172.504	3,4			Hazardous waste is not expected to be generated during these activities. Hazardous waste determinations for excavated soil will be made at the time soils are stockpiled

Attachment C - Table 5

Federal Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs. Specific potential ARARs are addressed in the table below each general heading.

A = Applicable
ACLs = Alternate concentration limits.
ARAR = Applicable or relevant and appropriate requirement
BACT = Best available control technology
BDAT = Best demonstrated available technologies
CAA = Clean Air Act
CAMU = Correction action management unit
CCR = California Code of Regulations
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CFR = Code of Federal Regulations
CWA = Clean Water Act
DOT = U.S. Department of Transportation
EPA = U.S. Environmental Protection Agency
LAER = Lowest achievable emission rate
MCLs = Maximum contaminant levels
MCLGs = Maximum contaminant level goals
NAAQS = National Ambient Air Quality Standards (primary and secondary)
NCP = National Contingency Plan
NESHAPs = National emissions standards for hazardous air pollutants
NPDES = National Pollutant discharge elimination system
ppm = Parts per million
ppmv = Parts per million by weight
RA = Relevant and appropriate
RCRA = Resource Conservation and Recovery Act
RWQCB = California Regional Water Quality Control Board, San Diego Region
SDWA = Safe Drinking Water Act
SIP = State Implementation Plan
SMCLs = Secondary maximum contaminant levels
SWRCB = California State Water Resources Control Board
TBC = "To Be Considered" Guidance
UIC = Underground injection control
USDW = Underground source of drinking water
VCAPCD = Ventura County Air Pollution Control District

Attachment C -Table 6

State Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls							
Action	**Requirement**	**Prerequisite**	**Citation**	**ARAR Determination**			**Comments**
				A	**RA**	**TBC**	
State Water Resources Control Board (SWRCB) and Regional Water Quality Control Board (RWQCB)*							
Discharge affecting water quality	Authorizes the State and Regional Water Boards to establish in Water Quality Control Plans beneficial uses and numerical and narrative standards to protect both surface and ground water quality. Authorizes regional water boards to issue permits for discharges to land or surface or ground water that could affect water quality, including NPDES permits, and to take enforcement action to protect water quality.	Discharge to waters of the State	California Water Code, Division 7, Sections 13241, 13243, 13263(a), and 13360 (Porter-Cologne Water Quality Control Act) and other provisions of the Porter-Cologne Water Quality Control Act				No water discharge is expected from this site
Construction activity that results in 5 or more acres of soil disturbance	Requires discharges from construction sites to 1) submit a Notice of Intent to comply with the General Permit, 2) prepare a Storm Water Pollution Prevention Plan, 3) implement Best Management Practices that prevent construction pollutants from contacting storm water and prevent eroded products from moving off site, 4) eliminate or reduce non-storm water discharges and 5) inspect Best Management Practices to make sure they are in place.	Soil disturbance	State Water Resources Control Board Water Quality Order No. 99-08- DWQ, National Pollutant Discharge Elimination System General Permit No. CAS 000002, Waste Discharge Requirements for Discharges of Storm Water Associated with Construction Activity				Site is less than 5 acres
Remediation of a surface impoundment	Authorizes the RWQCB to regulate surface impoundments containing hazardous waste as defined in 22 CCR, prohibits discharges to such surface impoundments unless they meet specified siting and design requirements. Requires compliance with specific investigation, remediation, and reporting	Surface impoundment containing waste	HSC Section 25208 (Toxic Pits Cleanup Act)				No surface impoundements present at the site

Attachment C -Table 6
State Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
Groundwater monitoring	Monitoring requirements for waste management units; establishes water quality protection standards for corrective action, including concentration limits for constituents of concern at background levels unless infeasible to achieve	Surface impoundment containing waste	HSC Sections 2550.0(a) and (d), 2550.1(a) and (c), 2550.2, 2550.3, 2550.4, 2550.5, 2550.7(c), 2550.8				No surface impoundements present at the site.
Closure of surface impoundments with waste in place (capping)	Closure requirements for landfills and surface impoundments include removing free liquids, computing residual wastes and covering the waste. The cover should be designed to function with minimum maintenance and prevent ponding. The discharger shall maintain the cover, maintain monitoring systems, prevent erosion and protect and	Surface impoundment containing waste	HSC Sections 2581 and 2582				Site is not a landfill or surface impoundment.
Clean closure of surface impoundments (removal of waste)	Clean closure requirements for surface impoundments include removing all free liquid, all residual wastes, and underlying contaminated soil	Surface impoundment containing waste	HSC 2582(a) and (b)(1)				No surface impoundements present at the site
Los Angeles County Department of Public Works (LACDPW)							
Construction activity	Requires dischargers from construction sites to 1) incorporate good housekeeping measures and Best Management Practices into their subdivision improvement plans and grading plans, 2) prepare an Erosion Control Plan for any construction that occurs between October 1 and June 1 and 3) prepare a Storm Water Management Plan for LACDPW approval for construction projects with two or more acres of disturbed soil or 40,000 or more square feet of impervious area.	Soil disturbance	Los Angeles County Department of Public Works NPDES Permit		3, 4		

Attachment C -Table 6
State Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
California Department of Fish and Game Code*							
Waste discharge affecting ecological receptors	Prohibits taking animals with nets, poison, cage, etc.		Fish and Game Code Section 3005				There is no threathened or endangered species listed for the site.
Ventura County Air Pollution Control District (VCAPCD)							
Discharges to air	Limits visible emissions from any point source.	Visible emission to the atmosphere	VCAPCD Rules		3, 4		Dust generated during removal actions will be controlled.
Discharges to air	Requires permit for construction and operation of equipment that can potentially emit VOCs or toxics.	Vapor extraction system and/or water treatment system	VCAPCD Rules				No SVE system or water treatment system is required.
Discharges to air	Prohibits the discharge of any air emissions in quantities that may cause injury, detriment, nuisance, or annoyance to the public.	Dust and/or vapor emissions	VCAPCD Rules		3, 4		Dust and vapors generated during removal actions will be controlled.
Activities capable of generating fugitive dust, such as excavation	Requires actions to prevent, reduce or mitigate fugitive dust emissions such that concentrations of fugitive dust at the property line are not visible and the downwind particulate concentration is not more than 50 micrograms per cubic meter above the upwind particulate concentration. Also requires prevent the track-out of bulk material onto public roadways and remove any visible dust that is tracked out. Large and medium operators are required to prepare a fugitive dust emissions control plan for VCAPCD approval or notify the VCAPCD and maintain daily records of actions taken to prevent, or mitigate fugitive dust emissions.	These requirements do not apply when wind gusts exceed 25 miles per hour, provided that control measures for high wind conditions are implemented.	VCAPCD Rules		3, 4		Dust generated during removal actions will be controlled.

Attachment C -Table 6

State Action-Specific ARARs

Alternatives: 1 - No Action, 2 - Institutional Controls, 3 - Excavation with Off-Site Treatment/Disposal, 4 - Soil Vapor Mitigation with Institutional Controls

Action	Requirement	Prerequisite	Citation	ARAR Determination			Comments
				A	RA	TBC	
California Health and Safety Code							
Recycling of hazardous waste	Prohibits the recycling of non-RCRA hazardous waste if it is used in a "use constituting disposal." Prohibits recycling RCRA-hazardous waste.	RCRA and non-RCRA hazardous waste	HSC 25143.2			3, 4	RCRA and non-RCRA hazardous wastes are not expected to be generated atr this site.

*Statutes and policies, and their citations, are provided as headings to identify general categories of potential ARARs for the convenience of the reader. Listing the statutes and policies does not indicate that the preparer accepts the entire statutes or policies as potential ARARs. Specific potential ARARs are addressed in the table below each general heading; only substantive requirements of the specific actions are considered potential ARARs.

A = Applicable
ACLs = Alternate concentration limits.
ARAR = Applicable or relevant and appropriate requirement
BACT = Best available control technology
BDAT = Best demonstrated available technologies
CAA = Clean Air Act
CAMU = Correction action management unit
CCR = California Code of Regulations
CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act
CFR = Code of Federal Regulations
CWA = Clean Water Act
DOT = U.S. Department of Transportation
EPA = U.S. Environmental Protection Agency
LAER = Lowest achievable emission rate
MCLs = Maximum contaminant levels
MCLGs = Maximum contaminant level goals
NAAQS = National Ambient Air Quality Standards (primary and secondary)
NCP = National Contingency Plan
NESHAPs = National emissions standards for hazardous air pollutants
NPDES = National Pollutant discharge elimination system
ppm = Parts per million
ppmv = Parts per million by weight
RA = Relevant and appropriate
RCRA = Resource Conservation and Recovery Act
RWQCB = California Regional Water Quality Control Board, San Diego Region
SDWA = Safe Drinking Water Act
SIP = State Implementation Plan
SMCLs = Secondary maximum contaminant levels
SWRCB = California State Water Resources Control Board
TBC = "To Be Considered" Guidance
UIC = Underground injection control
USC= United Sdtates Code
USDW = Underground source of drinking water
VCAPCD = Ventura County Air Pollution Control District

ATTACHMENT D

SAMPLING AND ANALYSIS PLAN

ATTACHMENT D
SAMPLING AND ANALYSIS PLAN

The objective of the confirmation sampling program is to characterize the onsite residual levels of PAH, arsenic, lead remaining in-place following excavation in accessible areas. In addition, confirmation samples will be collected for analysis of total petroleum hydrocarbons (TPH) and volatile organic compounds (VOCs). An additional objective of the confirmation sampling program is to ensure that the difference between concentrations detected in the background samples and the concentrations detected at the Site could be discerned with a reasonable level of confidence. The confirmation sampling program consists of collection of soil samples with 30-foot systematic triangular grid spacing for bottom samples and 30-foot spacing for sidewall samples. This spacing was determined to provide more than an adequate level of statistical power necessary to demonstrate attainment of the remedial action goal. However, in order to obtain a better conceptual profile of PAHs, arsenic, and lead remaining onsite, and to account for the resulting irregular geometry of actual excavation, additional samples may be collected.

Confirmation soil samples will be collected from the bottom of the excavation and from the sidewalls. In general, if there is no visible discolored or lampblack layering, the sidewall samples will be taken from the midpoint between the top and the bottom of the sidewall. Photographs of remediation activities will be taken. Prior to sampling, any loose material or soil will gently be cut to clearly observe the soil lithology and to collect a sample from an area unaffected by the excavation. Samples will be collected in laboratory-supplied, 8- ounce, glass jars with Teflon-lined lids. Samples collected for analysis for VOCs will be collected in accordance with USEPA Method 5035. Each sample container will be labeled appropriately, and sealed in plastic bags before being stored on ice at 4 degrees Centigrade (°C) in a cooler. The confirmation soil samples will be transported to the analytical laboratory, generally on the same day as collection, with chain-of-custody documentation by a courier from the analytical laboratory.

5.3 ANALYTICAL PROGRAM

The soil confirmation samples will be analyzed for the following compounds:

- PAH by USEPA Method 8310;
- TPH extended range hydrocarbons in gasoline (TPH-g), diesel range (TPH-d) and as heavy hydrocarbon range (TPH-h) using USEPA Modified Method 8015;
- VOCs by USEPA Method 5035/8260B; and,
- Metals by USEPA Method 6010B/7471A.

ATTACHMENT E

QUALITY ASSURNACE/QUALITY CONTROL PLAN

QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) PLAN

Introduction

Quality Assurance (QA) is an integral part of all projects, particularly those involving collection and analysis of field and laboratory data. QA is not merely a series of requirements and procedures, but is a management discipline which results in validated and verifiable information. Moreover, QA is a discipline which begins with effective and conscientious work planning and ends with a carefully constructed set of checks designed to ensure that uncertainty has been reduced to a known and practical minimum.

QA/QC Objectives

The goal of the QA program is to assure that all environmental data obtained for the Site will be scientifically valid, defensible, of known quality and that reports are correct and accurate. This goal will be achieved by: 1) planning for QA and allocation of adequate resources as part of the initial planning for data collection and analysis efforts, 2) incorporating specific QA procedures into the entire process (from initial planning through data usage), and 3) assigning appropriately trained and experienced staff to perform the tasks. The following sections discuss specific quality assurance/quality control (QA/QC) procedures used for Site investigation or remediation sampling, data analyses, and report preparation. These same procedures will be applied to this project.

QA/QC Procedures for Sampling

For Site investigation or remediation sampling, procedures specified in the USEPA guidance for Superfund investigations (i.e., Scientific and Technical Standards for Hazardous Waste Site, Volume 1: Site Characterization) will be used.

Standard Operating Procedures (SOPs), specified throughout this RAW, will be used for all activities related to remediation. Calibration of equipment and maintenance procedures follow manufacturer's written instructions or accepted standard procedures.

Collection of QA/QC Samples

Additional samples will be collected to quantify potential sources of variability in the field and in the laboratory. The QA/QC samples will be labeled the same as regular samples so that the laboratory staff cannot identify them as QA samples. In addition, the laboratory will prepare the following samples to check internal accuracy and precision:

Matrix spike samples to provide percent recovery; and
Matrix spike duplicates to check precision.

Use of Proper Sample Handing Procedures

Chain of Custody

The possession and handling of samples should be traceable from the time of collection, through analysis, until first disposition. Components of the chain of custody (sample labels and seals, a field log book, chain of custody record, and sample analysis request form) and procedures for their use are described in the following sections. Sample custody procedures will follow USEPA and DTSC guidance procedures.

A sample is considered to be under a person's custody if it is: 1) in a person's physical possession; 2) in view of the persons after he/she has taken possession; 3) secured by the person so that no one can tamper with the sample; and, 4) secured by that person in an area that is restricted to unauthorized personnel. To establish the documentation necessary to trace sample possession from the time of collection, a chain of custody record must be filled out and accompany every sample. Standard forms have been developed for labeling samples and tracing chain of custody. The person who collects the sample initially fills out the chain of custody form. Each person who later receives the samples must sign the form. Samples must not be left unattended unless they are secured and sealed.

Sample Labels

Sample labels are necessary to prevent misidentification of samples. Gummed paper labels will be affixed to sample containers prior to or at the time of sampling. The sample labels will be filled out at the time of sample collection. The sample label will identify each sample with the appropriate sample identification. The exact sample location and type of sample will be recorded in the sample log book.

Documentation

The most important aspect of sample custody is through record keeping. At the time of sampling, the sample identification code will be entered into a field log book along with date and time of sample collection, sample type and depth, and name of person collecting the sample. The types of chemical analyses requested will also be listed.

Shipping

Samples will be packaged and hand delivered or shipped according to the U.S. Department of Transportation and USEPA regulations. Samples will be delivered to the laboratory on a timely basis, preferably on the same day of collection, so that the requested analyses can be performed within the specified allowable holding times. Samples will be accompanied by a completed chain-of-custody record. The chain-of-custody will list the variables to be analyzed by the laboratory and the total number and type of samples shipped for analysis. Authorized laboratory personnel will acknowledge receipt of shipment and condition of samples upon receipt by signing and dating the form and returning a copy to NOREAS, Inc. The laboratory will record the temperature

inside of the cooler on the chain-of-custody form. For hand delivered samples, the chain-of-custody form will be signed by an authorized laboratory staff member and a copy of it given to the person delivering the samples. A copy is also sent with the completed laboratory analysis results.

Use of USEPA-Recommended Laboratory Procedures

Standard USEPA methods will be used for all analyses as listed previously in this report. All analyses will be performed by laboratories certified by the State of California to perform such analyses.

Field Equipment Calibration and Maintenance

Equipment related to health and safety concerns (i.e., OVA, Miniram dust monitor, etc.) are discussed in the Health and Safety Plan.

Laboratory Data Validation

The laboratory data will be evaluated to see that units are correct, detection limits are provided, all analyses of the blanks are below detection, and that holding time requirements have been met. The percent recoveries from the matrix spike analyses will be checked to see that they are within the prescribed limits (± 25 percent). Duplicate samples will be used to determine the relative percent difference. This value should be within ± 20 percent for water and 35 percent for soil/residue samples when values are greater than five times the detection limit. For values below detection limit, the difference should be equal to the detection limit or less. The coefficient of variation for the replicate samples is then determined, and ideally should be low. All the data will be checked to be sure that the desired detection limits, as specified in the report, are achieved. Any questionable values or cases with high detection limits will be rechecked with the laboratory and, if needed, will be rerun.

QA/QC Audits and Correction Actions

Audits of data quality involve assessments of the methods used to collect, interpret, and report information. The assessment entails a detailed review of: 1) the recording and transfer of raw data; 2) data calculations; 3) documentation of procedures, particularly changes from those stated in the workplan; and, 4) verification that all available information has been used in the interpretation. This assessment will be completed prior to preparing report conclusions.

Field audits of sampling and documentation procedures will be conducted by NOREAS, Inc. staff. Any variances between actual procedures and those in the workplan will be brought to the attention of the project manager. Necessary changes to the workplan (i.e., relocating a borehole location) will be noted in the field log book and explained in the final report. Other variances (i.e., incomplete record in sample log book) will be corrected as soon as identified.

Audits of the laboratory will be made if data problems occur such as several samples with blank contamination or high variances among replicate samples. Calibration

procedures including control charts and documentation will be reviewed at this time. Corrective actions such as changing analytical methods will be suggested if necessary, to minimize matrix interference problems.

QA/QC for Review of Documents

As a final step to ensure that project objectives are met, a formal review of draft and final reports will be conducted prior to their release. Draft reports may be reviewed by senior staff familiar with the project objectives but who were not involved in the preparation of the report. This helps identify sections of the report which may not be clearly written or where more detailed substantiation of results is needed. Review of reports involving calculations will include rechecking the computations, review of assumptions used and the rationale for input data, and checking the input data against the original sources to be sure that one of the most common of all problems, transcription errors, has not occurred.

Quality Assurance Objectives for Measurement Data

Data quality objectives (DQOs) are qualitative and quantitative statements developed to specify the quality of data from field and laboratory collection activities to support specific decisions or regulatory actions. The DQOs describe what data are needed, why the data are needed, and how the data will be used to address the problem. DQOs also establish numeric limits for the data to determine whether data collected are of sufficient quality for use in their intended application. Data needs for the remedial effort include both screening measurements and data of sufficient quality to be used in achieving cleanup objectives.

The USEPA has established a hierarchy of DQOs that specify the quality of data required to support regulatory decisions during remedial response (USEPA, 1987). Table 1 provides a summary of analytical levels appropriate to data uses during the work effort. For data collected, the main analytical program will be performed at Level III protocol at a stationary laboratory. Site specific health and safety screening and measurement of parameters during environmental sample collection will be at Level I protocol. Quality criteria to be employed at the Site address the following data characteristics: accuracy, precision, completeness, representativeness, and comparability. These criteria are discussed below.

Definition of Criteria

Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value, and is a measure of bias in the system. For this project, accuracy of the measured data will be assessed and controlled. Field instruments have a potential accuracy which is specified by the manufacturer. The ability to obtain this level of accuracy depends on proper calibration. For the laboratory, results of method blank analysis, as well as reagent, matrix, and surrogate

QC sample results will be the primary indicators of accuracy. These results will be used to control accuracy within acceptable limits by requiring that specific criteria be met. As these spiked QC samples are analyzed, spike recoveries will be calculated and compared to pre-established laboratory acceptance limits.

The calculation formula for percent recovery is:

$$\%\ Spike\ Recovery = \frac{(\text{Value of Sample Plus Spike Added}) - (\text{Value of Unspiked Sample})}{(\text{Value of Spike Added})} \times 100$$

Acceptance criteria, also termed "control limits," will be based on previously established (i.e., historical) laboratory capabilities for similar samples using control chart techniques. In this approach, the control limits reflect the minimum and maximum recoveries expected for individual measurements to establish that the system was in control. Recoveries outside the established control limits indicate some assignable cause, other than normal measurement error, and the possible need for corrective action. Corrective action could include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problem cannot be resolved. These results will be reported to the Project Manager.

Resampling may be performed if samples exceed their specific holding time requirements or are not preserved properly. If second column analysis, where appropriate, is not performed within the specified holding time, resampling may be undertaken.

Precision

Precision is a measure of mutual agreement among individual measurements of the same property under prescribed similar conditions.

Precision is defined as a measure of mutual agreement of a measurement or average of measurements with an accepted reference of "true" value. Based on these results, a measure of bias within the system can be estimated. Precision of the measurement data gathered during the work effort at the Site will be based on QC sample analyses (repeatability), replicate analyses (replicability), and results obtained from duplicate/replicate field samples (sample replicability).

Precision is independent of the error (accuracy) of the analyses and reflects only the degree to which the measurements agree with one another, not the degree to which they agree with the "true" value for the parameter measured.

Precision is calculated in terms of relative percent difference (RPD), which is expressed as follows:

$$RPD = \frac{(X_1 - X2)}{[(X_1 + X_2)/2]} \quad x\ 100$$

where:

X_1 and $X2$ represent the individual values for the target analyte in the two replicate analyses.

RPDs must be compared to the laboratory established RPD for the analysis. For concentrations less than 10 times the detection limit, RPD criteria are not valid, and variations may be as great as 100 percent. Precision of duplicates may again depend on sample homogeneity. Initial spike concentrations will be greater than the detection limits and will have a range comparable to those stated in pertinent USEPA guidelines.

When RPDs exceed previously established control limits, the analyst or his/her supervisor must investigate why the data exceed stated acceptance limits and report these findings to the Project Manager. RPDs outside the established control limits can indicate some assignable cause, other than normal measurements errors, and the need for corrective action. Follow-up action can include recalibration, reanalysis of the matrix spike/matrix spike duplicates (MS/MSD) or duplicate QC sample, environmental sample reanalysis, or flagging the data as suspect if problems cannot be resolved.

Replicate analysis of control samples will be obtained when QC samples specific to the environmental samples are analyzed. Analytical precision will be evaluated from MS/MSD RPD analyses. Use of duplicate samples during analysis can also allow a measure of precision to be determined.

Field duplicates normally apply to water samples and are defined as two samples collected independently at a single sampling location during a single act of sampling. Field duplicates will be acquired at a rate of 1 per 20 environmental samples, or 5 percent of the total number.

A field replicate is defined as a single sample that is collected, then divided into two equal parts for the purpose of analysis or two samples representative of one soil. Field replicates will be acquired at a rate of 1 per 20 environmental samples, or 5 percent of the total number. Field replicates will be collected for soil/sediment samples and analyzed for the same parameters. Discretely sampled field duplicates/replicates are useful in determining sampling variability. However, differences greater than expected between replicates may occur because of variability in the sample material. In these instances, a visual examination of the sample material will be performed to document the reason for the difference. Field sample duplicates/replicates shall be used as a QC measure to monitor precision relative to sample collection activities. Analytical precision shall be evaluated using RPDs for MS/MSD, or duplicate samples.

Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected under correct, normal conditions. The target value for completeness of all parameters is 100 percent. Measurement data completeness is a measure of the extent that the database resulting from a specific measurement effort fulfills the objectives for the amount of data required. For this program, completeness will be defined as the valid data percentage of the total test requested as follows:

$$\text{Completeness (\%)} = \frac{\text{No. of Successful Analyses}}{\text{No. of Requested Analyses}} x100$$

Successful analyses are defined as those in which the sample arrived at the laboratory intact, properly preserved, in sufficient quantity to perform the requested analyses, and accompanied by a completed chain-of-custody form. Furthermore, the sample must be analyzed within the specified holding time and according to QC acceptance criteria.

Completeness for the entire project also involves elements specific to field and laboratory documentation of sample collection. This includes documentation detailing whether samples and analyses specified in the Workplan have been processed using the procedures as specified, and whether laboratory SOPs have been implemented.

Representativeness

Representativeness expresses the degree to which data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition.

Representativeness describes how well the data reflect site conditions in the vicinity of the data point at the time of collection. Representativeness may be maintained or attained by careful documentation of data collection procedures and adherence to standard data collection procedures.

The characteristics of representativeness are usually not quantifiable. Subjective factors to be taken into account are as follows:

- Degree of homogeneity of a site;
- Degree of homogeneity of a sample taken from one point in a site; and,
- Available information on which a sample plan is based.

Field duplicates (for water) and field replicates (for soil), as defined under precision, are also used to assess representativeness. Two samples that are collected at the same location and at the same time are considered to be equally representative of the Site at a given point in space and time. Soil borings will be chosen to represent the areas of interest at the Site. To maximize representativeness of results, sampling techniques, sample size, sample locations, and depths will be carefully selected so they provide laboratory samples that are representative of the Site and specific area. Samples exhibiting obvious stratification or lithologic changes should not be used as replicates. The analytical laboratory will take precautions to extract from the sample an

aliquot representative of the whole sample. The soil sample is mixed and foreign objects are removed; then the sample is passed through a 1-millimeter sieve. An aliquot is

removed for analysis. For samples requiring volatile analysis, premixing or homogenizing samples will be avoided.

Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured through the use of established and approved sample collection techniques and analytical methods, consistency in the basis of analytes (wet weight, volume, etc.), consistency in reporting units, and analysis of standard reference materials.

Comparability is the degree to which data from separate, data sets may be compared. For instance, sample data may be compared to data from background locations to established criteria or to data from earlier sampling events. Comparability is attained by careful adherence to standardized sampling procedures and rigorous documentation of sample locations (including depth, time, and date).

Data comparability will be achieved by using standard units of measure as specified for metals, inorganics, and organics in soil samples.

The use of standardized methods to collect and analyze samples (i.e., American Society for Testing and Materials [ASTM] and USEPA methods), along with instruments calibrated against National Institute for Standards and Technology (NIST) and USEPA-traceable standards, will also ensure comparability.

Comparability also depends on other data quality characteristics. Data sets can be compared with confidence only when data are judged to be representative of the environmental conditions, and when precision and accuracy are known.

Goals for Assessment Criteria

Project quality objectives for various measurement parameters associated with the remediation effort cannot be quantified for representativeness and comparability. The following elements delineate assessment criteria discussed in detail elsewhere in this QA/QC plan:

Laboratory accuracy limits and analytical precision criteria will be assessed to the current Contract Laboratory Program (CLP) Statement of Work (SOW) for each method;

Overall precision for the work effort at the Site, which includes both sampling and analytical factors, can be expected to show RPDs up to 40 percent for soil samples; and,

A completeness factor of 90 percent is acceptable for the work effort at the Site.

TABLE 1
SUMMARY OF ANALYTICAL LEVELS APPROPRIATE TO DATA USES
(According to USEPA Guidelines 1987)

DATA USES	ANALYTICAL LEVEL	TYPE OF ANALYSES	LIMITATION	DATA QUALITY OBJECTIVE
Site Characterization; Monitoring During Implementation	Level I	Total organic/inorganic vapor detection using portable instruments, field determination of pH, conductivity Field test kits	Instruments respond to naturally occurring compounds	Can provide indication of contamination if instruments are calibrated and data are interpreted correctly
Site Characterization; Evaluation of Alternatives; Engineering Design; Monitoring During Implementation	Level II	Variety of organics by gas chromatography during soil gas survey, geophysical survey to determine depth to bedrock; buried landfill materials; point counting of asbestos fibers using plane polarized microscopy. Detection limits vary from low parts per million to low parts per billion	Tentative identification	Dependent on QA/QC steps employed
Risk Assessment; Site Characterization; Evaluation of Alternatives; Engineering Design; Monitoring During Implementation	Level III	Organics/inorganics using USEPA procedures other than CLP; can be analyte specific RCRA characteristics tests	Tentative identification in some cases Can provide data of same quality as Level IV	Similar detection limits to CLP Less rigorous QA/QC
Risk Assessment; Evaluation of Alternatives; Engineering Design	Level IV	Hazardous Substance List; organics/inorganics by gas chromatography/mass spectroscopy; atomic absorption; inductively coupled plasma. Low parts per billion detection limits.	Tentative identification of non-hazardous substance list parameters. Some time may be required for validation of packages.	Goal is data of known quality Rigorous QA/QC
Risk Assessment	Level V	Nonconventional parameters. Method-specific detection limits. Modification of existing methods Appendix 8 parameters	May require method development/modification. Mechanism to obtain services requires special lead time.	Method-specific

Source: Environmental Protection Agency, 1987

ATTACHMENT F

RESPONSE TO COMMENTS

RESPONSE TO DTSC OCTOBER 19, 2020, HERO COMMENTS ON REMOVAL ACTION WORKPLAN FORMER VENTURA MANUFACTURED GAS PLANT SITE VENTURA, CALIFORNIA		
Comment Number	**Comment**	**Response**
1	**Section 3.1, Soil Impacts**: HERO requests that the soil confirmation sampling results from the Removal Action for Parcel A (e.g., I7-S1, I11-S1, and I15-S3 on Figure 4) be added to Tables 1 and 2 and discussed in this section. Because PAH and TPH levels exceeding the screening levels were detected at these locations and did not appear to be removed due to lack of access previously, these sample locations should be addressed in the RAW (see Comment 2a).	Noted. Section 3.1 has been revised accordingly. Data from I7-S1, I11-S1, and I15-S3 have been added to Tables 1 and 2. The excavation areas have been expanded to cover these sampling points. The RAW has been revised accordingly. Please note the first and third paragraphs of Section 3.1.
2	**Section 4.0, Human Health Risk Assessment**: a) As noted in Comment 1, several confirmation samples along the southern boundary of Parcel A have elevated PAH and TPH levels, and these locations should also be included in the removal action plan described in Section 8. b) Besides elevated soil vapor concentrations in the area of the proposed Compressor Building, naphthalene concentrations at B8-14 and B8-24 located in the proposed Warehouse also exceed the corresponding residential Health Based Goal (see Table 7-3 of the Revised HHRA) and should also be noted in the last paragraph. c) HERO notes that some of the estimated health risks (e.g., direct soil contact at the Compressor Building) do not match those in the Revised HHRA. Please	2a: Noted. Please note response to Comment 1. Also, please note the second paragraphs of Section 5.1 and first paragraph of Section 8.1.1. 2b Noted. The RAW has been revised accordingly. Please note the fourth, fifth, and tenth paragraphs of Section 4.0. 2c: Noted. The RAW has been revised accordingly. Please note the fourth paragraph of Section 4.0.

	update this section following DTSC approval of the final HHRA Report (see HERO's 10/19/2020 memorandum on Revised HHRA).	
3	**Section 5.1, RAOs for Shallow Soil**: The remedial action objectives (RAOs) proposed for shallow soil are based on residential land use, and HERO notes the following issues that need to be addressed: (a) For soil in the Compressor Building area, the noncancer hazards exceed the threshold of one for the residential and construction scenarios (2.1 and 1.6, respectively), primarily attributed to TPH fractions according to Tables 6-11 and 6-13 of the Revised HHRA; thus, TPHs should be listed as COCs here and in Section 8.1 for the proposed removal action. (b) A land use covenant (LUC) is still required at the southern portion due to deeper soil impacts exceeding residential and/or industrial screening levels (e.g., B1, B3, B5, and B6 on Figure 4) left in place after the proposed development. Specifically, the LUC should stipulate that a soil management plan will be required if the impacted soils are to be disturbed in the future	Noted. 3a: Noted: The HIs exceeding 1 are mainly due to TPHs at I15-S3-5 and B1-2. Both locations are included in the areas targeted for soil excavated. The second paragraphs of Section 5.1 and first paragraph of Section 8.1.1 have been revised accordingly. 3b: Agreed. Section 10.4 has been revised accordingly to mention that a LUC will be required to prevent the potential use of the southern portion of the Site for future residential uses, and the LUC will stipulate that a soil management plan will be required if the impacted soils are to be disturbed in the future.
4	**Section 5.2, RAOs for Vapor Intrusion**: For clarity, HERO recommends expanding the RAOs for vapor intrusion pathway to note that mitigation measures to protect human receptors (onsite workers and/or hypothetical residents) may also be required for future buildings proposed outside the planned Compressor Building (i.e., Locations B1, B3, B5, B6, B8, B9, and B15 on Table 7-3 of the Revised HHRA).	Noted. The RAW has been revised accordingly. Please note the first paragraph of Section 5.2.

5	**Section 7.3.4, Conclusion on Alternative 2**: HERO recommends revising the discussion to indicate that a LUC is needed for (a) shallow soil if the unrestricted land use criteria cannot be met due to physical constraints as discussed in Section 5.1, and (b) deeper soil impacts exceeding residential and/or industrial screening levels (see Comment 3b). Please revise Section 10.4 accordingly.	Noted: 5a: Clarification has been added Section 10.4. 5b: Clarification has been added Section 10.4.
6	**Section 7.5, Alternative 4 for Soil Vapor**: This Alternative proposes soil vapor mitigation for the new Compressor Building only. Please clarify that mitigation measures may also be required for other future buildings (see Comment 4).	Noted: Section 7.5 has been revised accordingly.
7	**Section 8.1.2, Mitigation Measures for Vapor Intrusion**: While HERO does not object to reliance of adequate ventilation and post-construction indoor air sampling to verify that the proposed mitigation measures will be protective of future occupants, a long-term operation and maintenance (O&M) plan should be prepared for DTSC approval to ensure that the building ventilation system be operated and maintained as designed. Section 10.2 should be revised accordingly.	Following the design of the compressor building, an O&M Plan will be prepared for review by DTSC. Section 10.2 is revised accordingly.

8	**Section 9.2.4, Additional Investigation**: HERO recommends adding TPH fractions to the analyte list as they are also considered COCs for shallow soil (see Comment 3a). Please also clarify whether these sampling results may be used to supplement the confirmation soil sampling results (Section 9.4.1) in the post-remediation risk assessment discussed in Section 10.1.	TPH fractions have been added to list of the analytes in Section 9.2.4 for the samples that will be collected during the additional investigation and also confirmation samples. Please note that the additional investigation is meant to more accurately define the area of excavation prior to the start of the excavation. The results should also help to segregate the excavated soil for profiling purposes. Some of the results that represent the soil that ultimately will remain in place will be used in post-remediation risk assessment. The most important point that needs to be emphasized is that all the soil exceeding the cleanup levels will be targeted for removal based on field observations and/or confirmation sampling (see Sections 8.1.1, 9.0, and 9.4.1). If impacted soil has to remain in place due to physical constraints, samples will be collected and analyzed and the remaining impacted soil will be documented.
9	**Section 9.3.2, VCAPCD Rules Implementation**: Besides pertinent Ventura County Air Pollution Control District (VCAPCD) Rules, HERO recommends real-time air/dust monitoring along the eastern and southern property boundary to ensure protection of adjacent offsite receptors during soil excavation.	Noted. Please note the revised Section 9.3.2.
10	**Section 9.4.1, Confirmation Sampling**: If the soil excavation extends beyond four feet bgs, additional sidewall samples should be collected from deeper intervals (e.g., every two feet) to ensure the excavation boundary is properly defined vertically.	Noted: Additional notes are included in Section 9.4.1.

11	**Section 9.4.2, Backfill Placement**: Please follow the DTSC Clean Fill Advisory (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/SMP_FS_Cleanfill-Schools.pdf) for sampling and analysis of candidate borrow sources and providing this information for DTSC review prior to importing.	Noted: Additional notes are included in Section 9.4.2.
12	**Figure 6, Excavation Plan**: HERO recommends also depicting soil boring locations on this figure to demonstrate that the proposed excavation area includes the locations targeted for soil excavation, including B1, B2, B15, I7-S1, I11-S1, and I15-S3 (see Comment 1).	Noted: Figure 6 has been revised accordingly.
13	**Attachment B, Human Health Risk Assessment (HHRA)**: HERO recommends removing this attachment, as the HHRA Report is still under review and will be approved as a standalone document by DTSC	Noted: This attachment has been removed.

NOREAS
Environmental Engineering and Science

RESPONSE TO DTSC OCTOBER 23, 2020, COMMENTS FROM ENGINEERING AND SPECIAL PROJECTS OFFICE ON REMOVAL ACTION WORKPLAN FORMER VENTURA MANUFACTURED GAS PLANT SITE VENTURA, CALIFORNIA		
Comment Number	**Comment**	**Response**
1	A Table listing Chemical of Potential Concerns and Quantitative Remedial Objectives for different environmental media should be included.	Section 4.0 of the revised RAW has been revised to include a discussion of the chemicals of the potential concern (see Table 4). The Health Based Goals (HBGs) for soil and soil vapor (i.e., Quantitative Remedial Objectives) for different environmental media are presented as Tables 5 through 7 of the revised RAW.
2	The RAW indicates that the soil vapor and groundwater impacts are from upgradient sources and not related to past MGP operations (crude oil used in gas production process). Note that onsite features such as the former seepage pit, former USTs and the Parcel A MGP process likely would have contributed to onsite releases and potentially impacted soil vapor and groundwater. In addition, the degradation of the TPHs in soil would have resulted in VOCs in soil vapor. Therefore, active remediation/monitoring for soil vapor and groundwater (at least soil vapor and groundwater monitoring with	The first sentence in this review comment is not accurate. Section 2.2 and Section 7.0 of the RAW do specifically quote DTSC's March 18, 2016, statement regarding groundwater contamination: "*All of the accessible manufactured gas plant (MGP) related contaminants have been removed from the Site and the remaining groundwater contaminants are from petroleum fuel releases unrelated to former MGP operations.*" However, Section 2.2 of the RAW also cites the previous consultant's opinions regarding groundwater contamination and reads "*some of the above contaminants…are not related to MGP operations, and* ***some may be related to multiple***

	contingency) with vapor intrusion mitigation should be considered.	***sources, including MGP operations***." Sections 4.0 and 10.2 of the RAW present professional opinions based collectively on previous and recent data and include: "*...VOCs in deep soil are related to residual groundwater impact,* ***mainly*** *originating from upgradient non-MGP sources in Parcels B and C.*" The seepage pit was used for the disposal of sewage wastes, not industrial wastes, before sanitary sewer service became available in the northwest portion of the City. Based on data generated as part of the supplemental remedial investigation, sewage effluent from the seepage pit has not appreciably contributed to soil vapor or groundwater contamination. Similarly, analytical data generated at former UST locations suggest a negligible contribution to soil vapor or groundwater contamination. As acknowledged in the RAW and as outlined in the HHRA, elevated VOCs concentrations occur in soil vapor within the western portion of the site where the new compressor building will be constructed. As it's neither reasonable nor technically feasible to remediate soil vapor or groundwater largely emanating from offsite, upgradient sources, mitigation of soil vapor risks is the only viable alternative. That is precisely why that approach is outlined in the RAW and why DTSC's Human and Ecological Risk Office (HERO) and Site Mitigation and Restoration Program (SMRP) have accepted this approach.

3	Upgradient groundwater source (former bulk storage tank farm which was part of the MGP site prior) related information should be presented. Upgradient and onsite groundwater well concentrations, groundwater flow direction, supporting hydrogeological information and trends should be presented and discussed to substantiate the claim of an offsite source.	Please refer to the preceding response to Comment 2. Groundwater contamination has already been extensively assessed and the remedial investigation has already been completed to DTSC's satisfaction. In keeping with standard practice, previous groundwater assessment data are merely summarized in the RAW and the pertinent previous documents detailing offsite groundwater sources are cited therein. Rather than incorporating extensive details that have already been addressed to DTSC's satisfaction, we instead refer the reviewer to previous technical submittals and the associated DSTC correspondence that are readily available on Envirostor.
4	Section 7.1 Remedial Technology Screening Alternatives considered are listed based on the different impacted environmental media. For example, Alternative 2 addresses soil and soil vapor while Alternative 3 addresses soil only. Each remedial alternative should address all environmental media for consistency. Please make appropriate changes. A land use covenant should be part of all the Alternatives	Please note that this is an RAW for a relatively small and simple project and it was designed to be as streamlined as possible. The screening process in Section 7.0 of the RAW addressed both soil and soil vapor together where it was reasonably feasible to do so. For example, both soil and soil vapor were evaluated together in Alternative 1 (no action) and Alternative 2 (land use covenant) as both mediums could be effectively evaluated together. However, Alternative 3 only included the excavation of shallow soil (and not soil vapor), mainly impacted with PAHs, arsenic and lead since excavation of deep, saturated, contaminated soil to address soil vapor issues would not be a practical or feasible scenario. Similarly, Alternative 4 only included mitigation of soil vapor, as ventilation of indoor air would have little effect on lead. arsenic or PAH-impacted soil. A land use covenant has been evaluated as Alternative 2 and was selected in combination with Alternatives 3 and

		4 (see Section 10.4. Addressing a land use covenant with the no action alternative wasn't considered as institutional controls are, in fact, action.
5	A land use covenant (LUC) will be required at the southern portion due to deeper soil/groundwater impacts exceeding residential and/or industrial screening levels	The reviewer is referred to Section 10.4 of the RAW.
6	Section 9.3.4 Soil Stockpile Area Construction and 3.14 Waste Transportation and Disposal. These sections should elaborate on the soil profiling procedure based on TTLC, TCLP, and STCL for RCRA and Cal-Hazardous Waste.	Section 9.3.4 of the RAW has not been modified, as this section is intended to address onsite soil stockpile management – not analytical test methods and waste classification procedures. As the RAW does not include a section number of 3.14 and there is no section entitled "Waste Transportation and Disposal," the spirit of the reviewer's comments has been addressed in Section 9.5 (Transportation and Offsite Disposal) (see Section 9.5.1 Waste Stream). Please also note that not a single sample collected as part of the supplemental remedial investigation contained an analyte concentration that exceeded the respective Total Threshold Limit Concentration. As such, the potential for Resource Conservation and Recovery Act (RCRA) or non-RCRA hazardous waste is remote.

7	Section 7.5 S (sic) Alternative 4 for Soil Vapor: Soil Vapor Mitigation at New Compressor Building and Section 10.2 Vapor Intrusion Mitigation Measure These sections propose soil vapor mitigation measures at the New Compressor Building. This includes roof-ridge ventilator and air supply fans to achieve a minimum rate of 6 air exchanges. Following are comments pertaining to vapor mitigation. - Provide discussion on the design basis or screening vapor intrusion mitigation alternatives. Note that no subslab components such as membrane and passive/active venting are proposed for one proposed building. For more information please refer to https://dtsc.ca.gov/wp- content/uploads/sites/31/2016/01/VIMA_Final_Oct_20111.pdf - Utility Trench dams and conduit seals should be included to eliminate any potential utility related preferential pathways - Sublsab and soil vapor monitoring points should be included as part of the mitigation measures.	The design basis for the compressor building, as noted in the RAW, includes a ventilation system that will provide for a *minimum* of six air exchanges per hour to minimize the potential for combustible vapor from the gas compression equipment to accumulate within the building. The minimum air exchange rate is based on criteria set forth in the American Petroleum Institute's (API's) Recommended Practice for Classification of Locations for Electrical Installations at Petroleum Facilities (aka RP 500). Considering building design requirements, including the minimum air exchange rate, the installation of trench dams, conduit seals, subslab monitoring points, and soil vapor monitoring points are unwarranted. Post-construction indoor air sampling data will be used to demonstrate that the ventilation system adequately serves to mitigate vapor intrusion risks. The reviewer is reminded that DTSC's HERO and SMRP have acknowledged and accepted this approach. Preliminary design drawings remain conceptual in nature (30 percent design submittal) and are currently insufficient for the purposes of operation and maintenance (O&M) plan preparation (see Section 10.2).

	- Engineering controls that ensure continuous operation of the air supply fans should be discussed. - Note that a design of the proposed vapor mitigation measures and operation and maintenance plan will be required. The design can be submitted under a separate cover. - Once the mitigation measures are in place, a full operation and maintenance plan can be developed with as-built drawings. The RAW should at least have a conceptual operation and maintenance plan including verification of desired air exchange, subslab, soil vapor and indoor air monitoring requirements	

RESPONSE TO DTSC NOVEMBER 2, 2020, PROJECT MANAGER COMMENTS ON REMOVAL ACTION WORKPLAN FORMER VENTURA MANUFACTURED GAS PLANT SITE VENTURA, CALIFORNIA		
Comment Number	**Comment**	**Response**
1	**Title Page:** • Title should be changed to Removal Action Workplan - Southern Portion of Parcel A - Former Ventura Manufactured Gas Plant. • Revised date should be provided every time the document is revised. • The document should be signed and stamped by a professional license holder.	• Parcel A only covers the northern part of the Site. The southern portion is a not part of Parcel A. The title has been changed as follows: **Removal Action Workplan** **Property South of Parcel A** **Former Ventura Manufactured Gas Plant** • The revision date has been added to the title page. • The document has been signed and stamped as requested.
2	**Table of Content:** • Revise Table of Content according to the changes asked in this memorandum.	• The table of contents has been regenerated as requested.

3	**Section 2.0: Background** • Provide EPA Identification Number and Cal Sites Database Number • Assessor's Parcel Number(s) and Maps • Ownership • Contact Person, Mailing Address and Telephone Number	The requested background information has been added to Section 2.1. Parcel map is added as Attachment B.
4	**Section 3:0: Nature, Source, And Extent of Soil and Soil Vapor Impacts** • This section should include the past and present chemicals of concern (COCs) and chemicals of potential concern in the southern area of Parcel A. • Include maximum concentrations and depths of the contaminants found in soil, soil gas and ground water. • Figures should be included in the RAW showing concentrations of past and present COCs in the soil and soil gas.	• Section 4.0 of the RAW has been revised to include a discussion of the chemicals of the potential concern and health-based goals. • The maximum concentrations detected in soil are listed in Tables 1 and 2 and are graphically depicted on Figure 4. The maximum concentrations detected in soil vapor are listed in Table 3 and are graphically depicted on Figure 5. Groundwater contamination is not subject to removal action but is described in Section 3.2, where reference is made to Section 2.3 where additional background information pertaining to groundwater is presented. • Figures depicting COCs in soil and soil gas are included as Figures 4 and 5, respectively.

5	**Section 7: Feasibility Study, Identification and Analysis of Removal Action Alternatives** • Conclusion for each four of the Alternatives are provided. Add a conclusive paragraph about all the chosen Alternatives and the reason at the end of the section.	Section 7.6 has been added in the revised RAW to provide conclusions and the bases for the alternatives.
6	**Section 9:0: Shallow Soil Removal Action Implementation** Add following sub sections: • Noise Monitoring and Control Plan • Dust Control Plan • Odor Control Plan • Stormwater Management Plan • Quality Assurance Project Plan	Section 9.6 has been added to address the following: • Noise Monitoring and Control Plan • Dust Control Plan • Odor Control Plan • Stormwater Management Plan Please see Attachment E for Quality Assurance/Quality Control Plan.

7	**Attachments** • Remove Attachment A, Removal Action Workplan Former Ventura Manufactured Gas Plant Site (Parcels A And F) dated May 2009 as it was not signed and not required to enclose the whole document with the current RAW. DTSC's Approval Letter can be left in the Attachment A. • Revise Attachment D, Health and Safety Plan for COVID-19 safety guidelines and submit as a standalone document. Add following as Attachments: • Quality Assurance Project Plan (QAPP)	Attachment A now only includes the DTSC approval letter. The HASP has been revised to include Health and Safety guidelines for COVID-19. The HASP will be submitted separately as a standalone document. A QA/QC Plan is included as Attachment E in the revised RAW

NOREAS
Environmental Engineering and Science

RESPONSE TO ADDITIONAL DTSC COMMENTS FROM
HEALTH AND ECOLOGICAL RISK ASSESSMENT
AND
ENGINEERING AND SPECIAL PROJECTS

REMOVAL ACTION WORKPLAN
FORMER VENTURA MANUFACTURED GAS PLANT SITE
VENTURA, CALIFORNIA

ADDITIONAL COMMENTS FROM HEALTH AND ECOLOGICAL RISK ASSESSMENT, DATED NOVEMBER 30, 2020 (Via Email)

Comment Number	Comment	Response
1	Section 5.1, RAOs for Shallow Soil: The HERO notes that the proposed removal target levels for TPHs (1700, 250, and 2700 mg/kg for TPH-g, TPH-d, and TPH-hh, respectively) do not agree with regulatory screening levels (e.g., USEPA Regional Screening Levels [RSLs] and SFBRWQCB Environmental Screening Levels [ESLs]) commonly used for TPH cleanup. Specifically, these target levels correspond to the health-based goals (HBGs) derived from the toxicity values based on aliphatic fractions only (e.g., no oral reference dose value for TPH-g) in the Human Health Risk Assessment. Because no speciated TPH data (aromatics vs. aliphatics) will be collected during confirmation soil sampling, HERO recommends using the SFBRWQCB ESLs for residential shallow soil (430, 260, and 12,000 mg/kg for TPH-g, TPH-d, and TPH-hh,	Section 5.1 has been modified to incorporate the use of initial removal target levels for TPH-g, TPH-d, and TPH-hh that are based on Environmental Screening Levels established by the San Francisco Bay Regional Water Quality Control Board.

	respectively) as initial removal target levels in this RAW for consistency with other DTSC projects.	
2	Arsenic and lead should also be listed as metals of potential concern on Table 4 for completeness.	Table 4 has been modified to include arsenic and lead as metals of potential concern.
3	The boring location B2 is shown outside the proposed excavation area on Figure 6, which contradicts with the recommendation that arsenic-impacted soil around B2 (13.3 mg/kg at 2-feet bgs) should be removed to meet the soil removal target of 12 mg/kg listed in Section 5.1.	Figure 6 has been modified to incorporate the removal of shallow soil in the B2 area.
ADDITIONAL COMMENTS FROM ENGINEERING AND SPECIAL PROJECTS, DATED DECMBER 2, 2020 (Via Email)		
Comment Number	**Comment**	**Response**
1	Some of the Responses indicate that DTSC's HERO and SMRP have acknowledged and accepted this approach. Those comments were previous ESPO comments (comment 2, 3 , 7). In this case, ESPO does not have any additional comments. The Responses provided make references to the impact in soil vapor and groundwater from the offsite sources and therefore negate the need for source removal/active remediation approach for the soil gas and groundwater and changes to the RAW.	Acknowledged.

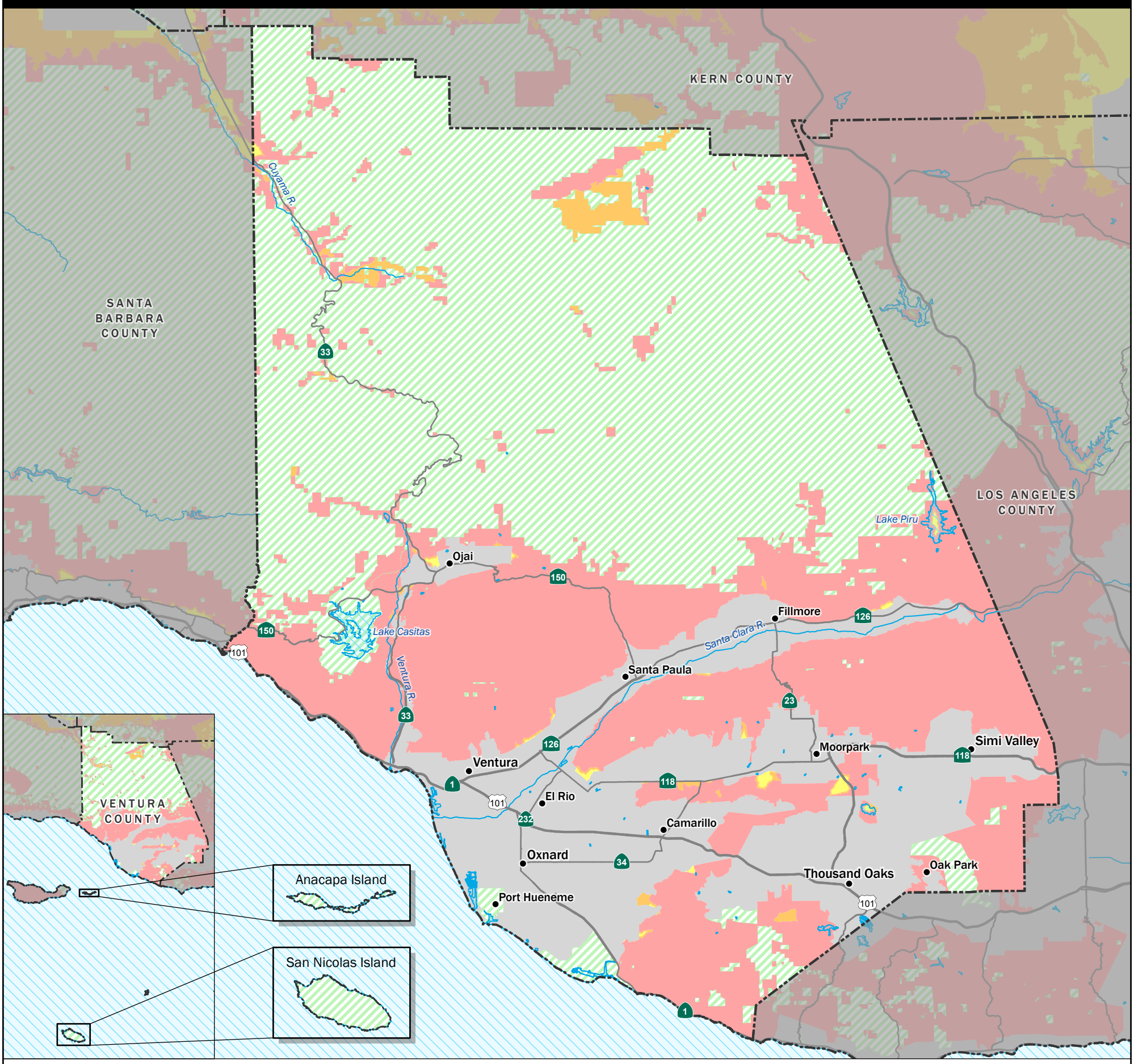
2	All other responses and changes to the RAW are adequate. However, ESPO recommends including a contingency (such as increased air exchange rate etc.) to the selected mitigation measures during development of operation and maintenance plan. ESPO also suggests installing a few soil vapor and groundwater monitoring points. Monitoring frequency can be reduced or terminated over period of time. This will document trend in soil vapor and groundwater in light of potential off site sources.	The Operation and Maintenance Plan will incorporate contingencies for alternate mitigative scenarios. We do note, however, that an increased air exchange rate is probably an unlikely scenario since design criteria already include a full air exchange at intervals not exceeding ten minutes. The minimum air exchange rate will make indoor air essentially equivalent to ambient outdoor air. Soil vapor was assessed as part of the supplemental remedial investigation. As outlined in the human health risk assessment report and in the subject removal action workplan, soil vapor risks are isolated in the western portion of the property where the proposed compressor building will be constructed. Given the unique and complicated foundation design, indoor air quality will be assessed within the building once it is constructed. As such, further soil vapor assessment would not serve a beneficial purpose. We acknowledge, however, that additional soil vapor assessment may be necessary in the future, should additional buildings be proposed in the western portion of the site. A requirement for additional assessment of vapor risks for any other buildings will be addressed as part of the pending land use covenant. Regarding the suggestion that groundwater monitoring wells should be installed to document water quality trends, we again note that 36 groundwater monitoring wells were previously installed and monitored to assess groundwater quality in and around the site. Based on an extensive dataset and thorough analysis, DTSC determined that no further action related to groundwater would be necessary and authorized destruction of all groundwater monitoring wells. The proposed plan to remove residual wastes by excavation of shallow soil has

		no direct relation to groundwater quality. Moreover, the supplemental remedial investigation completed earlier this year did not reveal any evidence that conflicted with earlier assessment data. In sum, there's no technical basis to support reinstallation of wells that DTSC previously determined were unnecessary.
3	Table 10 cost estimate for Alternative 4 should be revised to include capital and long term operation/maintenance/monitoring and reporting cost (30 year present worth).	Table 11 is added to the RAW that includes long term operation/maintenance/monitoring and reporting cost (30 year present worth).

VENTURA COUNTY

State Responsibility Area Fire Hazard Severity Zones

November 21, 2022



Fire Hazard Severity Zones in State Responsibility Area (SRA)

Very High	340,936 Acres	
High	12,493 Acres	
Moderate	1,908 Acres	

Fire Protection Responsibility Areas (non-SRA)

- Federal Responsibility Area (FRA)
- Local Responsibility Area (LRA)

0 5 10 Miles

0 5 10 15 20 Kilometers

Projection: NAD 83 California Teale Albers
Scale: 1:400,000 at 11" x 17"

Public Resources Code 4201-4204 directs the California Department of Forestry and Fire Protection (CAL FIRE) to map fire hazard within State Responsibility Areas (SRA) based on fuel loading, slope, fire weather, and other relevant factors present, including areas where winds have been identified by the department as a major cause of wildfire spread. These zones, referred to as Fire Hazard Severity Zones (FHSZ), classify a wildland zone as Moderate, High, or Very High fire hazard based on the average hazard across the area included in the zone.

Access PDF versions of the maps at **https://osfm.fire.ca.gov/fhsz-maps**. For more information, please visit the Frequently Asked Questions document for the 2023 Fire Hazard Severity Zones at **https://osfm.fire.ca.gov/fhsz** or scan the QR code at right. If you have further questions, please call 916-633-7655 or email **FHSZcomments@fire.ca.gov**.

Scan or click the QR code for more information and to visit the interactive FHSZ viewer.

Obtain FRAP maps, data, metadata, and publications at https://frap.fire.ca.gov.
For more information, please call 916-633-7655 or email FHSZcomments@fire.ca.gov.

Gavin Newsom, Governor, State of California

Wade Crowfoot, Secretary for Natural Resources, California Natural Resources Agency

Mike Richwine, State Fire Marshal, California Department of Forestry and Fire Protection

Data Sources:

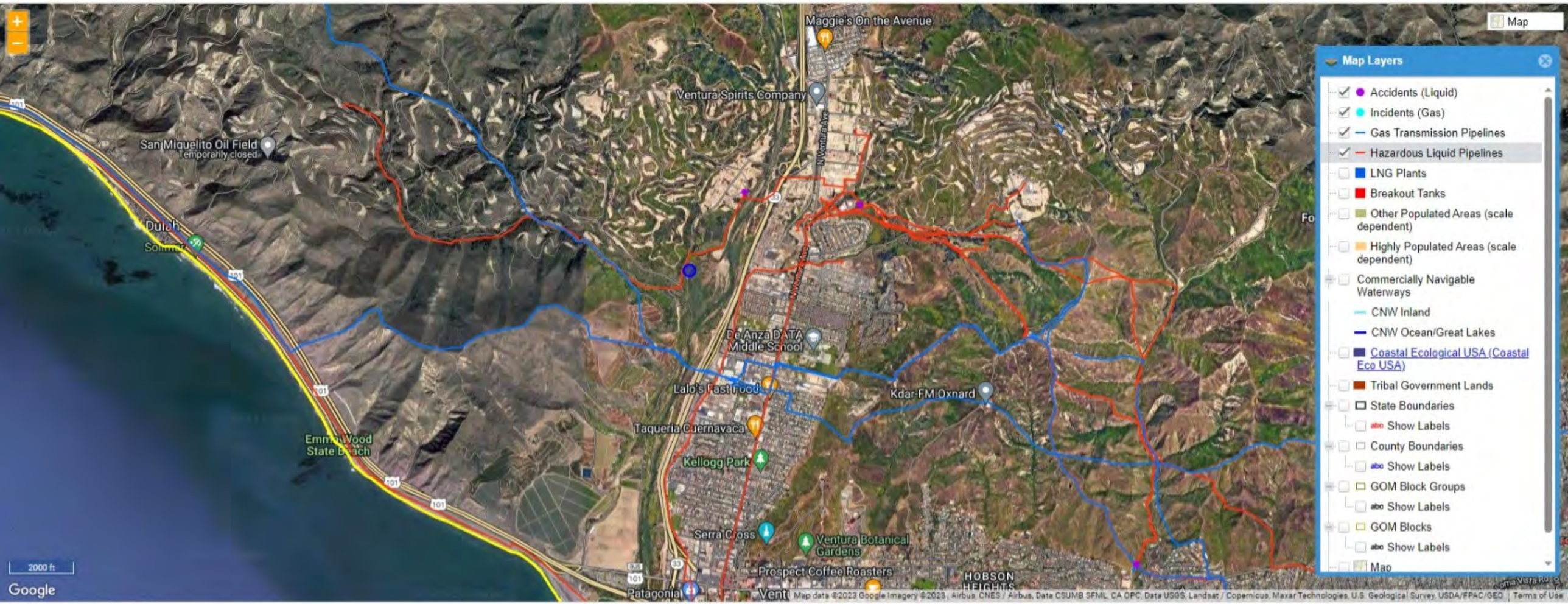
CAL FIRE Fire Hazard Severity Zones (FHSZSRA_DRAFT_23_1)

CAL FIRE State Responsibility Areas (SRA22_2)

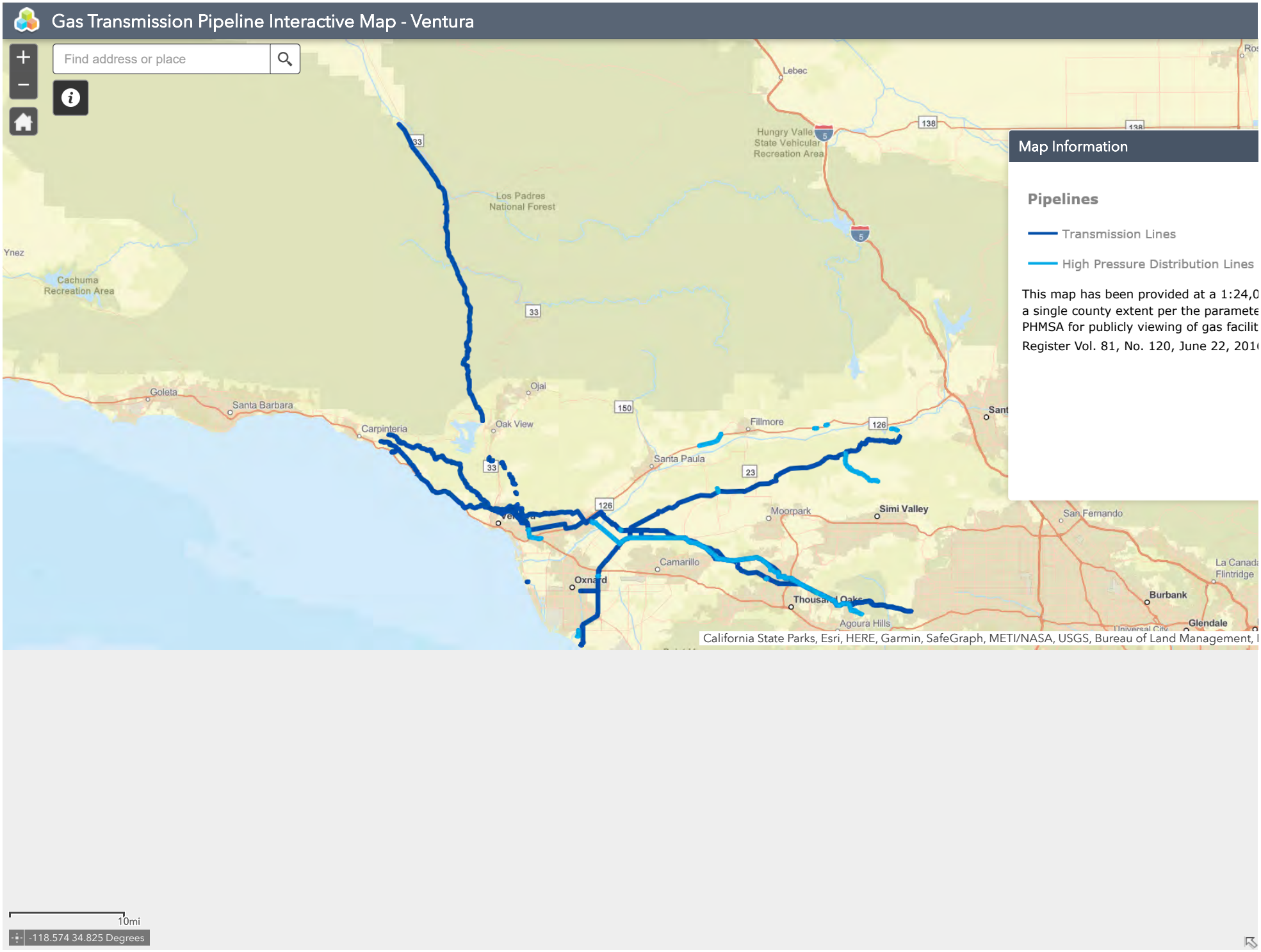
Public Viewer

Change County | Close Public Viewer

Map Layers | Query Tools | Enter search term (min 4 chars) | Help



Ready | Zoom Level: 14 of 19 (1:24,000) Closest Zoom for Pipelines | (lat,long): 34.329539, -119.228023 | Map Showing Pipelines in: Ventura, CA


Gas Transmission Pipeline Interactive Map - Ventura
Find address or place
Map Information
Pipelines
Transmission Lines
High Pressure Distribution Lines
This map has been provided at a 1:24,0
a single county extent per the paramete
PHMSA for publicly viewing of gas facilit
Register Vol. 81, No. 120, June 22, 201
Lebec
Hungry Valley State Vehicular Recreation Area
Los Padres National Forest
Ynez
Cachuma Recreation Area
Goleta
Santa Barbara
Carpinteria
Ojai
Oak View
Fillmore
Santa Paula
Moorpark
Simi Valley
San Fernando
Camarillo
Oxnard
Burbank
Glendale
Agoura Hills
La Canada Flintridge
California State Parks, Esri, HERE, Garmin, SafeGraph, METI/NASA, USGS, Bureau of Land Management,
10mi
-118.574 34.825 Degrees

STATE WATER RESOURCES CONTROL BOARD

GeoTracker

PROJECT SEARCH RESULTS

SEARCH CRITERIA: LUFT

42097 RECORDS FOUND | VIEW RESULTS ON MAP | EXPORT TO EXCEL |

		SITE / FACILITY NAME	SITE / FACILITY TYPE	STATUS	ADDRESS (OR PARTIAL ADDRESS)	CITY	ZIP	COUNTY
[REPORT]	[MAP]	PAULEY EQUIPMENT RENTAL INC	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	348 N SANTA FE AV	VISTA	920834959	SAN DIEGO
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[REPORT]	[MAP]	SOUTH COMANCHE SHORE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	5908 PATTISON RD	WALLACE	95254	CALAVERAS
[REPORT]	[MAP]	MARSHALL RESIDENCE	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	10497 CRYSTAL DR	WALLACE	95254	CALAVERAS
[REPORT]	[MAP]	WALLACE STAGE STOP	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	8090 HWY 12 E	WALLACE	95254	CALAVERAS
[REPORT]	[MAP]	SO-CAL PALLET CO	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	20809 CURRIER ROAD	WALNUT	91789	LOS ANGELES
[REPORT]	[MAP]	SOUTHERN CA PALLET COMPANY,INC	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	20809 CURRIER RD	WALNUT	91789	LOS ANGELES
[REPORT]	[MAP]	ALAMO CAR WASH	LUST CLEANUP SITE	COMPLETED - CASE CLOSED	784 NOGALES ST.	WALNUT	91789	LOS ANGELES

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JUMP TO PAGE: 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819

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STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER

SEMPRA ENERGY (T0603790023) - (MAP)

SIGN UP FOR EMAIL ALERTS

1555 OLIVE ST N
VENTURA, CA 93001
VENTURA COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 8/20/2013 - DEFINITION
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
VENTURA COUNTY *(LEAD) - CASE #: 01001*
CASEWORKER: GINA TERESA
LOS ANGELES RWQCB (REGION 4) - *CASE #: C01001*
CASEWORKER: DANIEL PIROTTON

EDF SUMMARY TABLE - BACK TO REPORT

MOST RECENT SAMPLING - SELECT NON-PFAS RELATED CHEMICALS - SELECT PFAS RELATED CHEMICALS

☐ INCLUDE DATA FOR ASSOCIATED CASES

RESULTS TO SHOW: Most Recent Sampling | MATRIX: Groundwater Data | Go

FIELD POINT NAME	VIEW ON MAP TOLUENE	VIEW ON MAP ETHYLBENZENE	VIEW ON MAP XYLENES	VIEW ON MAP METHYL-TERT-BUTYL ETHER (MTBE)	VIEW ON MAP TERT-BUTYL ALCOHOL (TBA)
AMW-10	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
AMW-6	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
BMW-1	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
BMW-3	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
BMW-6	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
CMW-1	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
CMW-9	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
DMW-2	<1 UG/L	<1 UG/L		8.49 UG/L	<50 UG/L
DUP-1	<1 UG/L	<1 UG/L		161 UG/L	2,380 UG/L
DUP-2	<1 UG/L	<1 UG/L		720 UG/L	63 UG/L
MW-1	<1 UG/L	1.6 UG/L		768 UG/L	160 UG/L
MW-1-DUP	<1 UG/L	<1 UG/L		830 UG/L	213 UG/L
MW-3	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
QCEB	<1 UG/L	<1 UG/L		<1 UG/L	
QCTB	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
TB	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
UST-IW-1	<1 UG/L	<1 UG/L		241 UG/L	437 UG/L
UST-MW-1	<1 UG/L	<1 UG/L		95.3 UG/L	177 UG/L
UST-MW-2	<1 UG/L	<1 UG/L		21.8 UG/L	79.8 UG/L
UST-MW-3	<1 UG/L	<1 UG/L		278 UG/L	3,640 UG/L
UST-MW-4	<1 UG/L	<1 UG/L		14.7 UG/L	60.2 UG/L
UST-MW-5	<1 UG/L	<1 UG/L		1,360 UG/L	1,210 UG/L
UST-MW-6	<1 UG/L	<1 UG/L		164 UG/L	2,820 UG/L
UST-MW-7	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L
UST-MW-8	<1 UG/L	<1 UG/L		<1 UG/L	<50 UG/L

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER

SOUTHERN CALIFORNIA GAS CO (T0611101024) - (MAP)

SIGN UP FOR EMAI

1555 OLIVE ST N
VENTURA, CA 93001
VENTURA COUNTY
LUST CLEANUP SITE (INFO)
COMPLETED - CASE CLOSED AS OF 1/27/1997 - DEFINITION
PRINTABLE CASE SUMMARY / CSM REPORT

CLEANUP OVERSIGHT AGENCIES
VENTURA COUNTY *(LEAD)* - *CASE #: 9512*
LOS ANGELES RWQCB (REGION 4) - *CASE*
CASEWORKER: DANIEL PIROTTON

Summary | Cleanup Action Report | Regulatory Activities | *Environmental Data (ESI)* | Site Maps / Documents | Community Involvement | Related Cases

Regulatory Profile

PRINTABLE CASE SUMM

CLEANUP STATUS - DEFINITIONS
COMPLETED - CASE CLOSED AS OF 1/27/1997 - CLEANUP STATUS HISTORY

POTENTIAL CONTAMINANTS OF CONCERN
GASOLINE

POTENTIAL MEDIA OF CONCERN
OTHER GROUNDWATER (USES OTHER THAN DRINKING WATER)

FILE LOCATION

DESIGNATED GROUNDWATER BENEFICIAL USE(S) - DEFINITIONS
MUN, AGR, IND, PROC

DWR GROUNDWATER SUB-BASIN NAME
Ventura River Valley - Lower Ventura River (4-003.02)

CALWATER WATERSHED NAME
Ventura River - Lower Ventura River (402.10)

Site History

No site history available

What is the Wildland Urban Interface (WUI)?

WUI is an area within or adjacent to an "at-risk community" (see below for the definition of an "at risk community") that is identified in recommendations to the Secretary of Agriculture in a ***Community Wildfire Protection Plan,*** or
A WUI is **any area** for which a ***Community Wildfire Protection Plan*** is not in effect, but is within ½ mile of the boundary of an "at risk community".
A WUI is also any area that is within 1 ½ miles of an "at risk community" **AND** has sustained steep slopes that may affect wildfire behavior, **or** has a geographic feature that aids in creating an effective fuel break, **or** is in fuel condition class 3. (An area classified as fuel condition class 3 implies that the current condition of the vegetation within the area would not be sustainable due to the absence of two or more natural fire cycles. In other words, an excess of vegetation and fuels has occurred due to the exclusion of fire which naturally reduces the level of forest fuels.)
An area adjacent to evacuation routes for an "at risk community" is another example of a WUI.

What is an "At Risk Community"?

An "at risk community" is defined as a community within the wildland urban interface listed in the Federal Register notice, ***"Wildland Urban Interface Communities within the Vicinity of Federal Lands that are at High Risk from Wildfire".*** OR
A group of home and other structures with basic infrastructure and services within or adjacent to federal land is defined as an "at risk community".
"At risk communities" are areas where conditions are conducive to a large scale wildland fire disturbance event, thereby posing a significant threat to human life or property.