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CHAPTER 5 – DISCUSSION OF SIGNIFICANT IMPACTS AND PROJECT ALTERNATIVES

5.0 INTRODUCTION

This chapter identifies the potentially significant impacts that would result from the construction, operation, or maintenance of the Pipeline Safety & Reliability Project (Proposed Project) proposed by San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (SoCalGas)—hereinafter referred to as “the Applicants”—as well as alternatives to the Proposed Project. More specifically, this chapter describes the following:

- significant impacts that may result from the Proposed Project;
- alternatives that were considered in lieu of the Proposed Project and other potential routes evaluated prior to identifying the Proposed Route (which is further defined in Section 5.2.0 Methodology);
- the No Project Alternative; and
- the Proposed Project’s potential to induce growth in the area.

5.1 SIGNIFICANT IMPACTS OF THE PROPOSED PROJECT

Where feasible, Applicants-Proposed Measures (APMs) will be implemented to reduce potential impacts to a less-than-significant level and are discussed in detail in their relevant sections. The APMs have been identified by applicability to each Proposed Project component and are described in Table 3-8: Applicants-Proposed Measures of Chapter 3 – Project Description. No permanent significant impacts are anticipated to result from the Proposed Project. However, potentially significant impacts to the following three resource areas are likely to result on a temporary basis during the construction phase of the Proposed Project even after implementation of APMs:

- Air Quality – Potentially significant impacts include the following:
 - temporary conflicts with applicable air quality plans,
 - temporary air quality standard violations, and
 - temporary criteria pollutant increases.
- Noise – Potentially significant impacts include the following:
 - temporary noise levels in excess of standards, and
 - substantial temporary or periodic increase in ambient noise levels.
- Transportation and Traffic – Potentially significant impacts include the following:
 - temporary conflict with Level of Service standards.

5.2 DESCRIPTION OF PROJECT ALTERNATIVES AND IMPACT ANALYSIS

This section summarizes and compares the environmental advantages and disadvantages of the Proposed Project and the alternatives considered. In accordance with California Public Utilities Commission (CPUC) requirements, the Applicants evaluated a reasonable range of alternatives that meet most of the Proposed Project objectives. Under the California Environmental Quality Act (CEQA), the intent of analyzing project alternatives is to identify ways to mitigate or avoid the significant effects of a project on the environment (California Public Resources Code [PRC] § 21002.1). The discussion of alternatives is required to focus only on the alternatives to the Proposed Project or the locations that are capable of avoiding or substantially decreasing the significant impacts of the Proposed Project.

5.2.0 Methodology

For this analysis, each alternative was evaluated against the Proposed Project objectives and analyzed considering the potential environmental impacts of the alternative. Long-term impacts to resources (e.g., visual impacts, permanent loss of habitat, or land use conflicts) are generally considered more detrimental when comparing alternatives. Short-term or temporary impacts (e.g., impacts associated with construction) are generally considered less detrimental when comparing alternatives because they are short term.

The Applicants evaluated alternatives using an iterative process, using steps such as the following:

- Identification and assessment of initial alternatives to the Proposed Project at a high level. The initial alternatives considered were not carried forward due to their inability to meet the Proposed Project objectives or potential infeasibility, including economic, environmental, social, technological, and legal factors.¹
- Identification and evaluation of alternative locations for the Proposed Project against multiple criteria that were developed for the purposes of this analysis. These criteria are presented in a screening matrix and include feasibility criteria, the Proposed Project objectives, potential environmental impacts, cultural sensitivity, the approximate length of the lines, land ownership crossed, and the number of potential roadway and river crossings. From this analysis, a preferred alternative was selected.
- Identification and evaluation of the environmental impacts of potential route segment alternatives for the preferred alternative.

¹ CEQA defines “feasible” as capable of being accomplished in a successful manner within a reasonable period of time, and taking into account economic, environmental, social, technological, and legal factors (California PRC § 21061.1; 14 California Code of Regulations § 15364). Section 15126(f)(1) of the CEQA Guidelines lists the factors that may be taken into account when addressing the feasibility of alternatives. These factors are as follows: site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries (projects with a regionally significant impact should consider the regional context); and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent).

Section 15126(f)(1) of the CEQA Guidelines lists the factors that may be taken into account when addressing the feasibility of alternatives. These factors are as follows: site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries (projects with a regionally significant impact should consider the regional context); and whether the proponent can reasonably acquire, control, or otherwise have access to the alternative site (or the site is already owned by the proponent). In an effort to replace Line 1600 as soon as practicable and to minimize the delays commonly encountered during the review of large infrastructure projects, the Applicants have set out to include in the Application a well-reasoned proposal that meets the Proposed Project’s purpose and need while balancing a number of economic, environmental, legal, social, and technological factors, consistent with the CEQA Guidelines. These factors are embodied in the following “routing criteria” developed by the Applicants:

- implement new pipeline safety requirements for the existing Line 1600 as expeditiously as possible;
- follow generally accepted principles for siting infrastructure;
- avoid unnecessary impacts to the environment;
- avoid unnecessary acquisition of private property;
- avoid impacts to mission-critical operations at Marine Corps Air Station (MCAS) Miramar; and
- meet current and near-term energy needs in a cost-effective and efficient manner.

In developing the Proposed Route, the Applicants also considered the goals of the 2002 Infrastructure Planning Act (Assembly Bill [AB] 857) and applied the principles stated in Senate Bill (SB) 2431, also referred to as the “Garamendi Principles,” to natural gas transmission line routing. The goals of AB 857 include the following:

- promote infill development and equity by rehabilitating, maintaining, and improving existing infrastructure, and reusing previously developed underutilized land, particularly in underserved areas;
- protect environmental and agricultural resources;
- encourage efficient development patterns by locating new infrastructure in an area appropriately planned for growth and served by adequate transportation and services; and
- minimize the ongoing costs to taxpayers.

The Garamendi Principles are as follows:

- encourage the use of existing rights-of-way (ROWs) by upgrading existing transmission facilities where technically and economically justifiable;
- when construction of new transmission lines is required, encourage expansion of existing ROWs, when technically and economically feasible;
- provide for the creation of new ROWs when justified by environmental, technical, or economic reasons, as determined by the appropriate licensing agency; and

- where there is a need to construct additional transmission, seek agreement among all interested utilities.

In March 2014, the Applicants—along with a team of engineers, pipeline construction contractors, and environmental resources specialists—began exploring the potential routes between the SDG&E and SoCalGas service territories. Due to the location of Line 1600, the design of the integrated system, and a desire to avoid unnecessary environmental impacts and costs, the routing effort was focused on potential routes originating at the Rainbow Metering Station and terminating approximately 50 miles south. As part of this process, an initial potential route was identified from Rainbow Metering Station to the City of Santee.

In addition, the Applicants identified a range of potential alternatives to the Proposed Project that should be considered. These alternatives included not constructing a new pipeline, constructing a new pipeline in other areas of the service territory, multiple routes in the general vicinity of the existing Line 1600, co-locating a new pipeline near other existing infrastructure, and potential modifications along the initial route referred to as the route segment alternatives.

After considering the alternatives and applying the routing criteria, the Applicants reduced the scope of the initial route and identified a “Proposed Route” from the Rainbow Metering Station to the existing Line 2010. This Proposed Route accomplishes the following:

- satisfies the Proposed Project objectives within a reasonable period of time;
- is located predominately within developed areas, including roadways that serve as utility ROWs;
- minimizes impacts to cultural resources, natural habitats, sensitive species, water resources, and other environmental resources;
- avoids unnecessary acquisition of private properties and relocation of residents;
- reflects preliminary input from MCAS Miramar on routing alternatives; and
- avoids unnecessary costs.

The Proposed Route meets the fundamental objectives of the Proposed Project in a manner that the Applicants believe reasonably balances the routing criteria and is “feasible” as defined by CEQA. In addition, the Proposed Route is consistent with the goals of AB 857 and the Garamendi Principles as the majority of the Proposed Project was routed within existing transportation and utility corridors, minimizing the creation of new ROWs and associated impacts. The Applicants acknowledge, however, that the CPUC will independently address the potential environmental impacts of the Proposed Project in the course of its review of the Application, and the Applicants are open to route modifications that the CPUC determines to be feasible and environmentally superior to the Proposed Project.

5.2.1 Proposed Project Objectives

As described in Chapter 2 – Project Purpose and Need/Project Objectives, the Proposed Project will advance three fundamental objectives for the natural gas transmission system: implementing natural gas pipeline safety requirements for the existing Line 1600 as soon as practicable, improving system reliability and resiliency, and enhancing operational flexibility to manage

stress conditions by increasing system capacity. Of these, timely implementation of natural gas pipeline safety requirements for the existing Line 1600 is paramount.

Under Public Utilities Code Section 958 and CPUC Decision 11-06-017, California’s natural gas utilities were legally required to develop implementation plans to test or replace transmission lines that were not pressure tested or that lack sufficient documentation of a pressure test record. The implementation plans were required to start with the high-priority pipelines (i.e., those located in populated areas), followed by pipelines located in non-populated areas. Line 1600 is located in populated areas and, therefore, is a high-priority pipeline included in Phase 1 of the Applicants’ Pipeline Safety Enhancement Plan (PSEP), which was approved by the CPUC in June 2014. The Proposed Project is scheduled to be completed by the second half of Phase 1, which has a 10-year implementation timeframe. The Applicants believe that replacement of Line 1600 during the Phase 1 timeframe (which was approved by the CPUC) constitutes a reasonable period of time for meeting the CPUC and the Applicants’ mutual objective of enhancing pipeline safety. As is explained in greater detail in Chapter 2 – Project Purpose and Need/Project Objectives, the Proposed Project will also advance the objectives of improving system reliability and resiliency and enhancing operational flexibility by increasing the system capacity. The CPUC will review the need for the Proposed Project and advancing these objectives outside of the CEQA process.

Details regarding the Proposed Project’s objectives are included in Chapter 2 – Project Purpose and Need/Project Objectives. The objectives of the Proposed Project are as follows:

- **Implement Pipeline Safety Requirements for Existing Line 1600 and Modernize the System with State-of-the-Art Materials:** Enable the Applicants to comply with the CPUC-approved PSEP by replacing Line 1600 with a new gas transmission pipeline as soon as is practicable. Construction of the new line will enable the use of Line 1600 for distribution while operating at a lower pressure. This replacement will not only comply with the PSEP, but it will also add a greater margin of safety by replacing Line 1600’s transmission function with a new pipeline by using modern, state-of-the-art materials. In addition, replacement would avoid any potential customer impacts associated with pressure testing Line 1600.
- **Improve System Reliability and Resiliency by Minimizing Dependence on a Single Pipeline:** Simultaneously improve the reliability and resiliency of the integrated SDG&E and SoCalGas natural gas transmission system (Gas System) by replacing Line 1600 with a 36-inch-diameter gas transmission pipeline so that core and noncore customers will continue to receive gas service in San Diego in the event of a planned or unplanned service reduction or outage of the existing 30-inch-diameter Line 3010 or the Moreno Compressor Station. San Diego County is essentially completely reliant on the compressor station in the City of Moreno Valley and Line 3010, which together provide approximately 90 percent of SDG&E’s capacity. The Applicants are not aware of any other major metropolitan area that is so dependent on a single pipeline. A system outage on Line 3010 or the Moreno Compressor Station would constrain available capacity in San Diego, which may lead to gas curtailments. This would be alleviated with the new 36-inch-diameter line providing resiliency for both Line 3010 and the Moreno Compressor Station.

- Enhance Operational Flexibility to Manage Stress Conditions by Increasing System Capacity: Simultaneously increase the transmission capacity of the Gas System in San Diego County by approximately 200 million cubic feet per day (MMcfd) as a result of the PSEP replacement line being 36 inches in diameter so that the Applicants can reliably manage the fluctuating peak demand of core and noncore customers, including electric generation and clean transportation. The new line would provide incremental pipeline capacity that would give flexibility to operate the SDG&E system by expanding the options available to handle stress conditions on a daily and hourly basis that put system integrity and customer service at risk.

Each of these objectives is more thoroughly described in Chapter 2 – Project Purpose and Need/Project Objectives.

5.2.2 Initial Alternatives Considered, But Not Carried Forward

The following list of criteria was developed from Section 15126.6(f)(1) of the CEQA Guidelines to address the feasibility of alternatives:

- site suitability;
- economic viability;
- availability of infrastructure;
- other plans or regulatory limitations;
- jurisdictional boundaries (projects with a regionally significant impact should consider the regional context); and
- whether a proposed project can reasonably acquire, control, or otherwise have access to the alternative locations or route.

The following subsections discuss alternatives that were considered and not carried forward as they do not meet the definition of feasibility under CEQA, as described previously, particularly due to site suitability and economic viability.

Offshore Route Alternative

The Offshore Route Alternative would consist of a 36-inch-diameter underwater pipeline off of the shore of Southern California. This alternative would transition from offshore to onshore, traveling to a point where it would interconnect with Line 3010/3011, as Line 3010/3011 is a receiving point for supplying gas to other pipelines in the San Diego region.

The Applicants determined that it is not feasible to construct the Offshore Route Alternative. Permits with multiple federal, state, and local agencies and jurisdictions—most notably a Coastal Development Permit from the California Coastal Commission—needed to construct an offshore pipeline are unlikely to be obtainable in a reasonably timely manner, if at all. Significant impacts to marine resources could result from the construction of this pipeline in the sensitive coastal environments. In addition, the pipeline would potentially cross several California Marine Protected Areas managed by the California Department of Fish and Wildlife (CDFW), depending on the distance of the pipeline from the shore, and would likely be located within the coastal zone.

The Offshore Route Alternative would also likely result in impacts to commercial fishing and recreational fishing, boating, and diving. Construction may also impact ingress and egress to ports and marinas, potentially requiring the reroute of ocean-bound vessels. Furthermore, existing pipelines in the coastal region would result in siting limitations, and deep underwater canyons would pose constructability challenges. The pipeline would likely cross multiple offshore platform product pipelines that transport crude oil to onshore refineries. These crossings would likely require lengthy hazard mitigation measures and would be required to comply with hazard mitigation plans associated with the interruption of crude pipelines to offshore oil production platforms.

The Applicants are not sufficiently experienced with the requirements for pipeline construction practices in the ocean, which includes specialized welding requirements, pipe and weld coating, and non-destructive examination. The Applicants do not have the equipment required to construct pipelines in the ocean, such as specialized ships, hyperbaric welding chambers, specialized welding, and pipe coating equipment. No offshore transmission pipelines currently exist in the Applicants' natural gas transmission system. While SDG&E operates two smaller-diameter natural gas distribution pipelines offshore in the San Diego Bay, these distribution pipelines are only six inches and eight inches in diameter, covering the short distance of the bay. The complexity of installing and operating an Offshore Route Alternative transmission pipeline would be much greater.

The Offshore Route Alternative would be much longer in length than would be required by an onshore pipeline. Even if permitting and construction was feasible, operation and maintenance would be difficult at the depths that may be required. Constraints associated with maintenance and repair of a pipeline in these conditions would be much greater than those associated with that of an onshore pipeline. In addition, operation of facilities offshore could adversely affect sensitive marine environments in the event of a construction defect or third-party contact. The Applicants are not experts on the operation and maintenance of large-diameter natural gas pipelines in the ocean, and are not experienced with the ongoing operation and maintenance requirements associated with that type of pipeline. There would be additional challenges regarding corrosion resistance and cathodic protection of a pipeline in the ocean.

Permitting and constructing this alternative would likely result in a lengthy delay in pressure testing Line 1600 under the PSEP, which would not meet the first objective of the PSEP. Once the offshore pipeline is in operation, Line 1600 could be converted to distribution. The Offshore Route Alternative would partially meet the reliability objective, making gas service to San Diego customers more resilient by providing redundancy to Line 3010. However, as the Offshore Route Alternative would not cross any existing natural gas transmission facilities, it would not provide the same benefit and increased system flexibility as a pipeline with multiple cross-ties within the existing system. If constructed, the Offshore Route Alternative would increase capacity of the existing system and would therefore meet the operational flexibility objective, ensuring capacity to serve all gas customers.

As discussed previously, it is unlikely that the Offshore Route Alternative would ultimately meet the Proposed Project's need and objectives due to permitting and constructability constraints that would preclude it from being completed within a reasonable period of time. Further, this alternative would create long-term operation and maintenance issues that do not exist with the

Proposed Project. Moreover, operation of facilities offshore could adversely affect sensitive marine environments. As a result, the Offshore Route Alternative was eliminated from further consideration.

Existing Alignment Alternatives

Line 1600 is an approximately 50-mile, 16-inch-diameter, high-pressure natural gas transmission pipeline that begins at the Rainbow Metering Station south of the City of Temecula and terminates at Mission Station in the City of San Diego. The northernmost approximately eight miles of Line 1600 traverse open space that parallels Rice Canyon and cross several dense riparian corridors and oak woodlands before entering the more urban areas of the community of Valley Center and the City of Escondido. The route continues south through the City of Poway and the City of San Diego where it terminates in Mission Valley. Line 1600 is one of two sources of natural gas serving the San Diego area from the north, the other being 30-inch Line 3010. The following alternatives involve the replacement or utilization of the existing infrastructure (i.e., Line 1600), and include an in-kind replacement of Line 1600, construction of a new 16-inch-diameter pipeline parallel to Line 1600, or construction of a new 36-inch-diameter pipeline parallel to Line 1600.

Though each of these alternatives has unique constraints, generally all are likely infeasible due to the environmental, social, and economic impacts associated with the acquisition of an additional temporary ROW. Regardless of which of the alternatives within the existing alignment is considered, construction or installation of new pipe that utilizes the existing Line 1600 ROW would require acquisition of additional temporary ROW to establish a safe work area during construction and provide enough room for equipment to maneuver. Generally, a minimum width of 40 to 50 feet of temporary workspace is required to install a 16-inch natural gas pipeline; however, the width can increase to up to 100 feet in areas with side slopes, bedrock, sandy soils, and/or topsoil salvage requirements.

Adequate space for new construction does not exist along the Line 1600 centerline because the area surrounding the existing approximately 20-foot-wide ROW has been heavily developed in many locations since the line was originally constructed in 1949. Approximately 500 parcels would be affected in order to obtain the minimum amount of temporary workspace required² during construction, including public, private, commercial, and residential properties.³ Of the parcels anticipated to be affected, approximately 125 homes and other structures would be permanently displaced or acquired due to impacts to primary structures. Further, acquiring the additional ROW would affect 11 public and governmental agencies, including local municipal agencies, municipalities, and state agencies. Approximately 24 commercial buildings, seven apartment buildings, and possibly two commercial pools may require total acquisitions for the additional ROW needed. Ranch and ranchette properties along the existing route would also be affected. The total severance damage is estimated to run as high as \$87 million and total costs

² Based on the conservative assumption of a 40-foot-wide ROW, and this determination does not consider where the ROW width would need to be increased to account for side slopes, bedrock, or sandy soils.

³ A Feasibility Report was conducted to evaluate the feasibility of acquiring a 20-foot ROW adjacent to the existing alignment for the installation of a 36-inch pipeline parallel to Line 1600. The information determined in this report regarding cost and displacement was applied to each of the existing alignment alternatives in this chapter.

for ROW acquisition are estimated to range from \$92 million to \$93 million. However, the actual costs associated with acquiring the additional ROW would be even higher, as this estimate does not include costs such as those associated with the interruption of business activities or acquisitions through eminent domain, which could result in substantial legal fees. Furthermore, because the estimate is based on the minimum ROW width, additional businesses and residences would likely be displaced when site-specific workspace needs are determined during the design phase. The three alternatives associated with the existing Line 1600 are described in more detail in the subsections that follow.

Line 1600 In-Kind Replacement Alternative

The Line 1600 In-Kind Replacement Alternative would remove and replace the existing Line 1600 with a new 16-inch-diameter pipeline, which is located in the center of its approximately 20-foot-wide ROW, according to easement documents. The replacement pipeline would be installed within the existing 20-foot-wide ROW. As previously discussed, to accommodate the construction equipment for the pipeline in a reasonably safe manner, a minimum of 40 to 50 feet would be required and between 50 and 100 feet in some areas.

Three construction options were considered for this alternative, including the following:

- removing and replacing the entire existing line one segment at a time,
- removing the entire existing line first and then reconstructing it as a whole, and
- constructing a new line adjacent to the existing line and then removing the existing line.

Constraints and benefits unique to each construction option are further described in the following subsections.

Removal and Replacement by Segments

One option for construction of the Line 1600 In-Kind Replacement Alternative would be to remove and replace portions of the existing pipeline in segments. Replacement segments would range from 2,000 feet to 4.6 miles in length depending on the location of existing taps and mainline valves (MLVs) and contingency plans to minimize disruption of service to customers. It is estimated that the average segment length would be approximately 1.5 miles long. Approximately 3.8 miles (7.7 percent) of the existing Line 1600 have been replaced since 1949. Twenty-four segments totaling approximately 46.2 miles would require replacement.

Because Line 1600 serves over 175,000 existing customers through 58 taps, the construction process would require the installation of local improvements to avoid service interruptions to the customers served by each segment. In general, there are no other transmission lines near Line 1600 to continue service to the area, so the supplemental natural gas would have to come from Line 3010 or the Otay Mesa facility to ensure adequate capacity to existing larger customers during the replacement; the capacity of the alternative sources would need to be assessed to address reliability. Because there would be a loss in gas while each section of the pipeline is out of service, the Applicants would need to contract gas through Otay Mesa to make up for the loss in capacity. It is unknown whether the Otay Mesa facility would have the capacity to serve this purpose when needed. In addition, constructing temporary pipelines to maintain service would result in the same types of temporary impacts (e.g., air pollutant emissions, noise, and traffic) as

the Proposed Project at specific, limited locations and would potentially require temporary easements. Further, a substantial number of oak trees would require removal, and temporary impacts to riparian corridors would occur.

The construction process for installation of the new 16-inch-diameter pipeline would include trenching, installation, welding, hydrostatic testing, odorization, and purging. Though construction of the replacement pipeline through segments may potentially avoid service interruptions to customers along the entire length of Line 1600 at any one time, service would not be guaranteed given technological constraints (e.g., outdated taps), and would be costly and inefficient due to the need for additional distribution facilities.

Remove then Replace Pipeline as a Whole

A second option for construction of the Line 1600 In-Kind Replacement Alternative is to remove the entire pipeline and then construct the replacement pipeline in its place. Service to customers along the existing pipeline would not be feasible to maintain during the removal and reconstruction of the pipeline, leaving all customers served by Line 1600 without natural gas service from the system for at least one year. The entire line would be out of service during the pipeline removal and construction of the new pipeline. Further, if Line 1600 were taken out of service during the pipeline removal and construction of the new pipeline, the SDG&E natural gas system would be entirely dependent on Line 3010, with virtually no redundancy to Line 3010 in the event of an outage, whether planned or unplanned.

Construct then Remove Pipeline as a Whole

A third option for construction of the Line 1600 In-Kind Replacement Alternative is to first construct the replacement pipeline adjacent to the existing Line 1600 and then remove the existing pipeline. As with the other Line 1600 In-Kind Replacement Alternatives, this construction option would require additional land acquisition as previously discussed, but because the existing Line 1600 would remain in service during construction, additional ROW would be required to ensure that heavy equipment maintained a safe distance from the hot line during construction. Therefore, the total number of residential and commercial property acquisitions, and the total costs associated with acquiring the properties, would be substantially higher than the previously stated estimates for an additional 20 feet of ROW.

With this construction option, service to customers of the existing pipeline would be maintained during construction of the new pipeline. However, as with the Remove then Replace Pipeline as a Whole option, this construction option for the alternative would not benefit from recent segment repairs made to Line 1600, and the entire pipeline (approximately 50 miles) would be reconstructed.

Line 1600 In-Kind Replacement Alternatives Conclusion

Based on the preceding discussions, the ROW constraints and the limits associated with reconstruction of the Line 1600 In-Kind Replacement Alternatives—either by segment or as a whole—would likely make construction of any of these alternatives infeasible from an environmental, social, economic, and site suitability perspective. Though these alternatives would meet the PSEP objective (all Line 1600 In-Kind Replacement Alternatives involve

constructing a replacement pipeline that allows for implementation of the PSEP), they would not meet the resiliency or operational flexibility objective of the Proposed Project, because the new pipeline would only be 16 inches in diameter, which does not meet the capacity and reliability needed by the Proposed Project.

The construction timelines for the Line 1600 In-Kind Replacement Alternatives are dependent on a number of factors, including contingency plans to minimize service disruptions to customers and available workspace required for conventional construction practices. The land acquisition process preceding construction could be lengthy and dictate the overall in-service schedule. In addition, the Line 1600 In-Kind Replacement Alternatives do not reduce significant impacts associated with the Proposed Project resulting from temporary traffic, noise, and air emissions during construction. Conversely, these alternatives would create impacts to riparian corridors and oak woodlands and have greater impacts to biological and water resources where the line travels through open space that parallels Couser Canyon and Rice Canyon and crosses several dense riparian corridors. In addition, the ROW acquisitions required to construct these alternatives would result in substantial residential and commercial displacement.

As a result of the Line 1600 In-Kind Replacement Alternatives not meeting the Proposed Project objectives and potentially having greater environmental and social impacts than the Proposed Project, they were eliminated from further consideration.

Installation of a New 16-Inch Pipeline Parallel to Line 1600 Alternative

The Installation of a New 16-Inch Pipeline Parallel to Line 1600 Alternative would install a new 16-inch-diameter pipeline parallel to the existing Line 1600 and leave the existing Line 1600 in place. The replacement pipeline would be installed parallel and immediately adjacent to the existing approximately 20-foot-wide ROW. Construction of the new 16-inch-diameter pipeline would require a minimum of 40 to 50 feet of temporary ROW, with some areas requiring up to 100 feet, depending on the topography.

Construction of the 16-inch-diameter pipeline parallel to the existing Line 1600 would present a number of construction challenges, similar to those discussed for the Line 1600 In-Kind Replacement Alternatives. However, because this alternative includes new ROW adjacent to the existing ROW, additional permanent land acquisition would be required beyond what was previously described. The construction equipment required to install the new pipeline may be too wide to fit within the majority of the existing developed corridor given the constraints. Furthermore, the replacement pipeline would require the crossing of private yards and driveways in high-density residential areas, and would interfere with septic leach fields and other structures or facilities on private land.

As previously discussed for the Line 1600 In-Kind Replacement Alternatives, the ROW constraints would likely result in acquisition of private property. In addition, there is the potential for impacts to open space, riparian corridors and oak woodlands, recreation, and hydrological and biological resources along the route. Therefore, construction of this alternative is likely infeasible from an environmental, social, economic, and site suitability perspective due to the unavailable ROW and/or required displacement of residential and commercial properties. This alternative does not reduce significant impacts associated with the Proposed Project

resulting from temporary traffic, noise, and air emissions during construction. Conversely, this alternative would create impacts to oak woodlands and would have greater impacts to biological and water resources similar to the Line 1600 In-Kind Replacement Alternatives.

Though this alternative would meet the PSEP objective (as it involves constructing a replacement pipeline that allows for the implementation of the PSEP as soon as practicable), it would not meet the objectives of resiliency and enhancing operational flexibility to manage stress conditions by increasing system capacity, as the new pipeline would only be 16 inches in diameter, which does not meet the capacity and reliability needed by the Proposed Project. Thus, the Installation of a New 16-Inch Pipeline Parallel to Line 1600 Alternative was eliminated from further consideration.

Installation of a New 36-Inch Pipeline Parallel to Line 1600 Alternative

The Installation of a New 36-Inch Pipeline Parallel to Line 1600 Alternative would install a new 36-inch-diameter pipeline parallel to the existing Line 1600. The replacement pipeline would be installed parallel and immediately adjacent to the existing approximately 20-foot-wide ROW. The new 36-inch line would require a minimum of 40 to 50 feet of ROW during construction and more than 100 feet in areas with side slopes, bedrock, sandy soils, and/or topsoil salvage requirements.

Construction of the 36-inch-diameter pipeline parallel to Line 1600 would present a number of construction challenges, all of which would be similar to those described previously for the Line 1600 In-Kind Replacement Alternatives. These challenges include the displacement of residences and interference with existing facilities to acquire adequate ROW.. The potential to impact open space, riparian corridors and oak woodlands, recreation, and hydrological and biological resources along the route where the ROW extends through segments of non-urbanized area would also increase. In addition, the Installation of a New 36-Inch Pipeline Parallel to Line 1600 Alternative does not reduce significant impacts associated with the Proposed Project resulting from temporary traffic, noise, and air emissions during construction. Conversely, this alternative would create impacts to oak woodlands and have greater impacts to biological and water resources similar to the Line 1600 In-Kind Replacement Alternatives.

This alternative would meet the pipeline safety, resiliency, and operational flexibility objectives as it involves constructing a new, replacement 36-inch-diameter pipeline. However, the ROW constraints and likely acquisition of private property and potential ROW expansion to other land uses make construction of this alternative infeasible from a social, economic, environmental, and site suitability perspective. Therefore, the Installation of a New 36-Inch Pipeline Parallel to Line 1600 Alternative was eliminated from further consideration.

Energía Costa Azul to Otay Mesa Liquefied Natural Gas Alternative

The Energía Costa Azul (ECA) to Otay Mesa Liquefied Natural Gas (LNG) Alternative would rely on customers and their suppliers utilizing the existing Transportadora de Gas Natural (TGN) Otay Mesa receipt point to access gas supply transported on the TGN system that was purchased from Sempra Energy's existing ECA LNG facility, which is an LNG receipt, storage, and regasification terminal located near Baja California, Mexico. This option assumes that there is LNG supply at ECA that is competitive with domestic supply currently available via Lines 3010

and 1600. This condition has not been demonstrated since ECA went into service in 2008. Speculation surrounding the future of ECA casts doubt that it will ever become a viable alternative to the Proposed Project. In March of 2014, Sempra Energy announced plans to convert ECA to an export terminal, and in February of 2015, Sempra Energy signed an agreement with a subsidiary of PEMEX⁴ to pursue this project. An import facility might be a potential source of LNG supplies, but its conversion to an export facility strongly indicates that domestic supply is expected to remain much less expensive than LNG supply for the foreseeable future. As a result, customers are not expected to purchase LNG supply at Otay Mesa in sufficient quantity to provide the reliability of supply or deliverability that would be provided by the Proposed Project. This alternative is therefore likely infeasible for economic, social, and technological reasons and it does not meet the Proposed Project objectives of system reliability and resiliency or operational flexibility. As a result, the ECA to Otay Mesa LNG Alternative was eliminated from further consideration.

United States – LNG Alternative

Under this alternative, the Applicants would construct an LNG facility in San Diego County, which would serve as a storage facility. The LNG facility would require a storage capacity in excess of one billion standard cubic feet in order to meet the Proposed Project objectives, and would result in a permanent footprint that would likely exceed 40 acres. The facility would be connected to the existing pipeline system and would include equipment for the liquefaction, storage, and regasification for distribution. Two general locations were considered for this alternative: within the existing system in the vicinity of Line 3010, and in an unidentified location outside of the existing system.

To connect to the existing pipeline system, the United States (U.S.) – LNG Alternative would need to be constructed in the vicinity of the existing Line 3010 pipeline. The LNG facility could be placed either adjacent to the existing West Miramar Pressure-Limiting Station or at an existing MLV along Line 3010. At these locations, the LNG facility would utilize the existing pipeline system to deliver natural gas to and from the storage site. However, placing an industrial aboveground facility of this size (i.e., likely in excess of 40 acres) in a highly urbanized area would result in substantial construction-related noise and dust impacts—as well as operational noise impacts—to nearby residences. If placed outside of the existing pipeline network, the U.S. – LNG Alternative would require the construction of new pipeline infrastructure either to deliver natural gas to the storage site, or to deliver LNG to the storage site to be gasified and distributed. Due to the requirement of additional infrastructure construction for the facility, the environmental impacts associated with this U.S. – LNG Alternative option would be greater than that of the Proposed Project. The time required to identify and secure land for the facility and ROW for the connecting pipeline and the cost and impact of property acquisition would likely make this alternative infeasible to complete in a reasonable timeframe.

The storage capacity of the U.S. – LNG Alternative would provide natural gas from on-site storage for a limited duration (i.e., until the storage capacity is exhausted). Such a facility would be expensive to construct and operate; would be limited in capacity; and the required liquefaction, cooling, and regasification would result in incremental energy use and greenhouse

⁴ PEMEX is Mexico's state-owned oil and gas monopoly and controls exploration, processing and sales.

gas emissions that pipeline alternatives would avoid. In terms of the Proposed Project objectives, this alternative would facilitate the PSEP, but may not be accomplished in a reasonable timeframe. It would also provide limited redundancy (i.e., the use of on-site storage). Construction of this alternative would not provide the resiliency benefits of the Proposed Project as no loops (alternatives to the existing Line 3010) would be added that connect the system. Further, this alternative would not provide sustained capacity to support the system. The Applicants would also need to build a new operation and maintenance organization to operate and maintain an LNG facility. As a result, this alternative was eliminated from further consideration.

Infrastructure Corridor Alternative

The Infrastructure Corridor Alternative would involve installing a new 36-inch-diameter pipeline in segments of the Interstate (I-) 15 corridor south of the City of Escondido and along State Route (SR-) 52 to consolidate transportation and pipeline infrastructure ROWs along one route. This alternative presents a notable advantage in that it is located entirely along the California Department of Transportation (Caltrans) I-15 corridor; therefore, easements, encroachment permits, and/or fees would be coordinated with just one agency. However, Caltrans's policy generally prohibits parallel encroachments in the Caltrans ROW, and this alternative might also interfere with future potential transportation initiatives, such as the high-speed rail.

Constructability options for this alternative would include construction along the highway road shoulders only due to the difficulty in accessing the median. Nonetheless, construction of this alternative is considered infeasible due to the following:

- substantial constraints along the corridor, including steep slopes;
- inadequate ROW space for construction, including the transportation of large pieces of equipment and materials to and from the job site;
- existing retaining walls, bridge foundations, and other infrastructure;
- substantial grading requirements;
- the need to construct new retaining walls; and
- substantial traffic impacts, which would result from partial freeway closures during construction.

The Infrastructure Corridor Alternative includes aboveground infrastructure (i.e., valves and pressure-limiting stations) that cannot safely be sited within a freeway ROW. In addition, operation and maintenance activities of the Infrastructure Corridor Alternative (e.g., annual cathodic protection surveys, semi-annual valve inspections, annual instrument calibrations, and internal inspection [pigging] activities) in close proximity to highway traffic could compromise public and employee safety. Because the Infrastructure Corridor Alternative would be located within the shoulder of I-15, lane closures would be required during operation and maintenance activities. By contrast, as the Proposed Project only occasionally crosses I-15, its impacts will be minimal.

In terms of the Proposed Project objectives, this alternative would address the PSEP and provide resiliency and operational flexibility, but could pose public safety risks due to necessary freeway closures during construction and routine operation and maintenance activities. The value of the

resiliency may also be limited by threats to aboveground infrastructure sited near a freeway ROW that could lead to increased risks to the pipeline system. In addition, the aforementioned potential Caltrans policy conflicts and future transportation initiatives are social and legal factors that cast doubt on the feasibility of this alternative. As a result, the Infrastructure Corridor Alternative was eliminated from further consideration.

Northern Baja Alternative

The Northern Baja Alternative offers a possible limited construction alternative to the Proposed Project. The existing North Baja pipeline includes an existing capacity for natural gas transmission to the Baja Norte/Gasoducto Rosarito/TGN pipelines, which can in turn transport and deliver natural gas to the Otay Mesa receipt point. No customers or suppliers on the SoCalGas/SDG&E system have delivered gas via this path due to higher delivery costs unless required by maintenance outage or in support of maintenance activities. The existing North Baja pipeline includes an available daily capacity of 185 MMcfd, which is approximately the same net quantity of additional capacity that the Proposed Project would provide. However, all of the existing capacity on the Gasoducto Rosarito pipeline appears to be under contract until at least 2022. Because the Northern Baja Alternative would rely on the Baja Norte/Gasoducto Rosarito/TGN pipelines that are outside of the Applicant's system, and because most of these lines are fully subscribed and the available capacity on the North Baja pipeline does not necessarily ensure that a contract would be granted to the Applicant or its customers, the capacity needed to meet the Proposed Project objectives without the construction of an expansion to another pipeline is unknown.

Should capacity become available to the Applicant, the Northern Baja Alternative may be able to utilize existing infrastructure without requiring the construction of additional facilities and pipeline, and consequently without the associated environmental and social impacts and site suitability issue. While the Northern Baja Alternative could allow for the implementation of PSEP, it would be based on speculation of available capacity and infrastructure, and would not present a long-term solution to increasing system capacity unless capacity on all three pipeline systems could be contracted on a long-term basis by SDG&E or its customers. Therefore, this alternative is likely infeasible for economic, social, and technological reasons and it does not meet the Proposed Project objectives of system reliability and resiliency or operational flexibility. As a result, the Northern Baja Alternative was eliminated from further consideration.

5.2.3 Alternatives Fully Evaluated

Once it was determined that the Applicants needed to construct a natural gas pipeline within the San Diego system in order to meet the three primary objectives (i.e., pipeline safety, system reliability and resiliency, and operational flexibility and capacity), the Applicants proceeded to evaluate various potential pipeline routes. The Applicants fully evaluated alternative routes that based on an initial, high-level screening meet most or all of the feasibility criteria and the Proposed Project objectives.⁵ Alternatives that have been identified as potentially feasible and

⁵ The Proposed Project has been fully evaluated in Chapter 4 – Environmental Impact Assessment. However, for the purposes of this chapter, the Proposed Project has been evaluated at a desktop level using the criteria described for this assessment; therefore, results in Table 5-1: Alternatives Screening Matrix may differ somewhat from results in the resource analysis in Chapter 4 – Environmental Impact Assessment.

that were carried forward and fully evaluated are depicted in Figure 5-1: Alternatives Map. Table 5-1: Alternatives Screening Matrix compares each alternative based on identified criteria, such as environmental compatibility, constructability, and ability to meet the Proposed Project objectives. The matrix also evaluated the dimensions and locations of the alternatives; how many miles of undeveloped or urban areas would be crossed; federal, state, and private land ownership crossed; and infrastructure crossings. The feasibility criteria listed in Section 15126.6(f)(1) of the CEQA Guidelines were also taken into account for analysis of each alternative included. Each alternative is fully evaluated and described in the following subsections. Table 5-2: Summary of Alternatives Fully Evaluated provides a summary of each of the alternatives that are fully evaluated, and lists whether the temporary potentially significant environmental impacts identified for the Proposed Project would be reduced by each alternative.

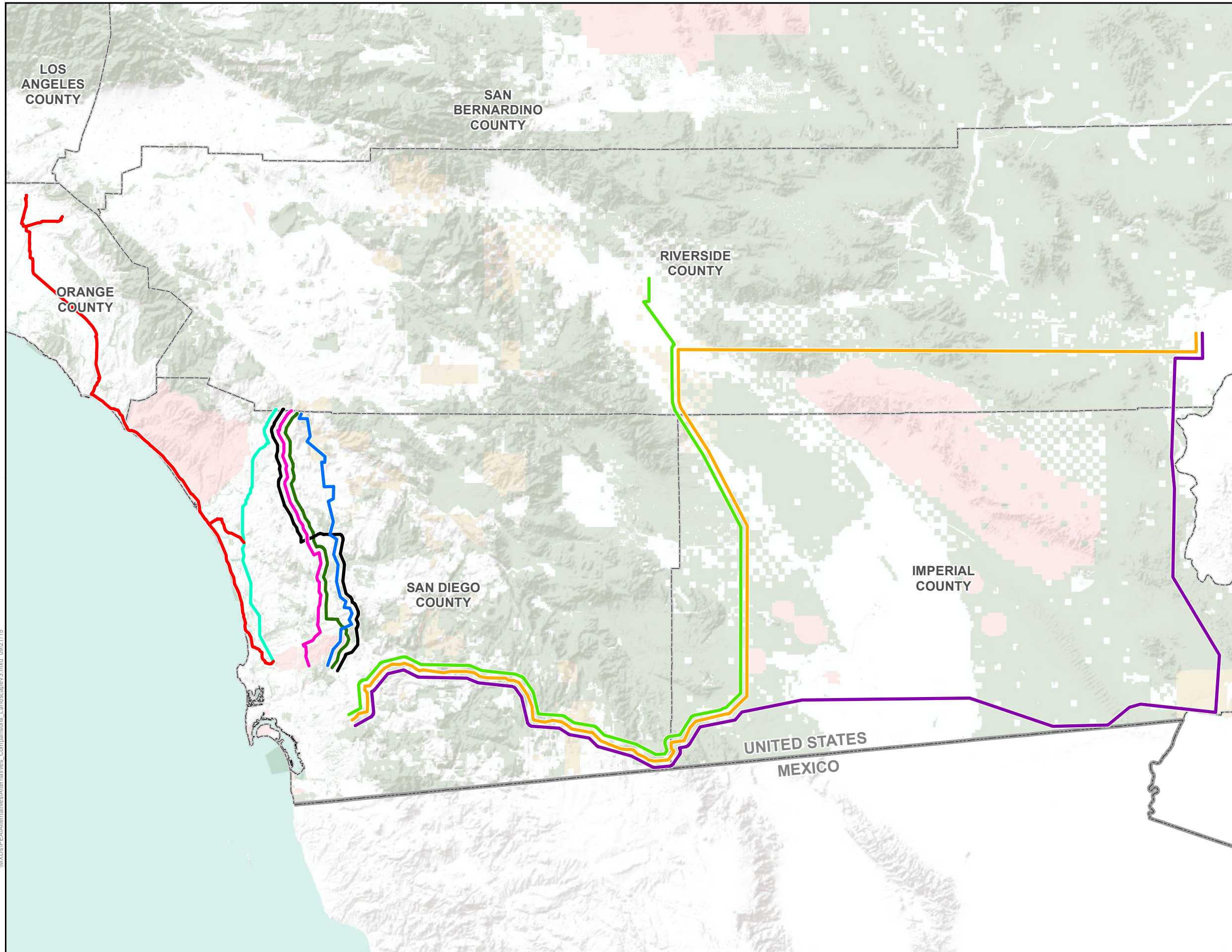
Proposed Project (Rainbow to Line 2010 Route)

The Proposed Project involves construction, operation, and maintenance of an approximately 47-mile-long, 36-inch-diameter natural gas transmission pipeline that will carry natural gas from SDG&E's existing Rainbow Metering Station to the pipeline's terminus on MCAS Miramar. The Proposed Project will be located in San Diego County, California, and will cross the cities of San Diego, Escondido, and Poway; unincorporated communities in San Diego County; and federal land. The Proposed Project route is described in its entirety in Chapter 3 – Project Description. It will cross approximately 2.6 miles of DOD land and approximately 44.3 miles of private property. The Proposed Project will not cross any state-administered land.

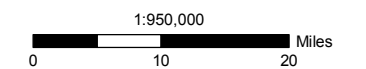
The Proposed Project will not cross any known conservation easements or any BLM Areas of Critical Environmental Concern (ACEC). The Proposed Project will cross 41 rivers and streams, six man-made waterways, five major highways, and no railroads. It will also cross approximately 16 miles of USFWS critical habitat. A total of 172 California Natural Diversity Database (CNDDDB) records, including 74 unique species, were reported within one mile of the Proposed Project. Cultural resource sensitivity for the Proposed Project is low. The potential for encountering hazardous material based on known hazardous contamination within 0.25 mile is moderate. Approximately 1.1 miles of protected parks and forests will be crossed by the Proposed Project. Further, the Proposed Project is consistent with generally accepted land use principles for siting infrastructure, such as the Garamendi Principles regarding the use or expansion of an existing utility ROW while siting electric transmission infrastructure.

Figure 5-1: Alternatives Map

Pipeline Safety & Reliability Project



- Proposed Project
- Valley Center Alternative
- Rainbow – El Norte Parkway – Santee Alternative
- Rainbow to Santee Non-Miramar Alternative
- Cactus City to San Diego Alternative
- South Orange County Coastal Alternative
- Blythe to Santee Alternative 1
- Blythe to Santee Alternative 2
- Second Pipeline along Line 3010
- County Boundary
- Country Boundary
- Land Administration**
 - Parks
 - Military
 - Bureau of Indian Affairs



Source: SDG&E; Insignia, 2015

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Table 5-1: Alternatives Screening Matrix

Criteria	Proposed Project (Rainbow to Line 2010 Route)	Rainbow – El Norte Parkway – Santee Alternative	Rainbow to Santee Non-Miramar Alternative	Valley Center Alternative	South Orange County Coastal Alternative	Blythe to Santee Alternative 1	Blythe to Santee Alternative 2	Cactus City to San Diego Alternative	Second Pipeline along Line 3010 Alternative	No Project Alternative
SITE SUITABILITY										
Dimensions/Location (miles)										
Length of line	47	54	50	55	108	222	223	160	45	49.7
Undeveloped/cross-country crossed	16.7	34.9	20.6	45.4	5.5	202.1	198.8	119.6	5.8	19.5
Urban areas crossed ⁶	30.2	18.8	29.3	9.6	102.5	20.3	23.8	40.5	39.4	30.2
JURISDICTIONAL BOUNDARIES										
Land Ownership (miles)										
Federal	2.6	3.3	0	8.5	14.6	124.9	111.3	60.4	1.6	2.7
U.S. Bureau of Indian Affairs (BIA)	0	0	0	5.2	0	10.0	15.3	12.5	0	0
U.S. Department of Defense (DOD)	2.6	3.3	0	3.3	14.6	4.0	0	4.0	1.6	2.7
U.S. Bureau of Land Management (BLM)	0	0	0	0	0	93.8	73.5	28.6	0	0
U.S. Fish and Wildlife Service (USFWS)	0	0	0	0	0	0.6	0.4	1.8	0	0
U.S. Forest Service (USFS)	0	0	0	0	0	16.6	14.2	13.5	0	0
U.S. Bureau of Reclamation	0	0	0	0	0	0	7.9	0	0	0
State	0	0.9	1.0	0.9	1.4	9.9	0.6	5.5	1.3	0
CDFW	0	0.9	1.0	0.9	0.2	2.5	0.1	1.1	1.3	0
California Department of Parks and Recreation (DPR)	0	0	0	0	1.1	5.4	0.3	2.0	0	0
California State Lands Commission (CSLC)	0	0	0	0	0	2.0	0.3	2.5	0	0
University of California	0	0	0	0	0.1	0	0	0	0	0
Private ⁷	44.3	49.5	48.9	45.6	89.2	87.5	110.7	94.2	42.3	41.8
Number of Local Jurisdictions										
Counties	1	1	1	1	2	3	3	3	1	1
Cities	3	3	4	3	22	2	2	2	6	2
Number of Infrastructure Crossings										
Rivers and streams	41	36	40	38	44	243	144	113	38	50

⁶ The urban areas that would be crossed were identified using Caltrans geographic information system data and were not field-verified.

⁷ Mileage does not include where the pipeline would likely be located in franchises and roads, but only where it would cross private property.

Criteria	Proposed Project (Rainbow to Line 2010 Route)	Rainbow – El Norte Parkway – Santee Alternative	Rainbow to Santee Non-Miramar Alternative	Valley Center Alternative	South Orange County Coastal Alternative	Blythe to Santee Alternative 1	Blythe to Santee Alternative 2	Cactus City to San Diego Alternative	Second Pipeline along Line 3010 Alternative	No Project Alternative
Man-made waterways ⁸	6	7	7	6	22	33	117	20	8	9
Major highways	5	5	5	2	18	19	34	28	3	7
Railroads	0	0	0	0	20	4	4	3	3	12
PROJECT OBJECTIVES COMPATIBILITY										
Implement pipeline safety requirements for existing Line 1600 and modernize the system with state-of-the-art materials as soon as practicable	Yes	Yes	Yes	Yes	No	No	Nos	No	Yes	Yes
Improve system reliability and resiliency by minimizing dependence on a single pipeline	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Enhance operational flexibility to manage stress conditions by increasing system capacity	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
FEASIBILITY										
Able to be permitted and constructed in a reasonable period of time ⁹	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Relative cost compared to the Proposed Project ¹⁰	Not Applicable	Slightly Higher	Similar	Higher	Much Higher	Much Higher	Much Higher	Much Higher	Higher	Lower
Avoids lands that have legal protections that may prohibit or substantially limit the feasibility of permitting	Yes	No	No	No	No	No	No	No	No	Yes
Known conservation easements crossed (miles)	0	0.9	1.0	0.9	1.1	2.6	0.1	1.0	1.0	0
BLM Areas of Critical Environmental Concern Crossed (miles)	0	0	0	0	0	54.7	17.3	6.9	0	0
Able to meet technological requirements, considering available technology and the construction, operation, and maintenance or spacing requirements of multiple facilities using common ROWs	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

⁸ Man-made waterways include canals, ditches, water pipelines, and underground conduit.

⁹ This criterion assumes landowner approval and land access requirements can be met.

¹⁰ The following criteria were used to assign the relative cost of alternatives compared to the Proposed Project: Similar (up to 50-percent cost increase); Slightly Higher (50- to 100-percent cost increase); Higher (100- to 200-percent cost increase); and Much Higher (more than 200-percent cost increase).

Criteria	Proposed Project (Rainbow to Line 2010 Route)	Rainbow – El Norte Parkway – Santee Alternative	Rainbow to Santee Non-Miramar Alternative	Valley Center Alternative	South Orange County Coastal Alternative	Blythe to Santee Alternative 1	Blythe to Santee Alternative 2	Cactus City to San Diego Alternative	Second Pipeline along Line 3010 Alternative	No Project Alternative
ENVIRONMENTAL CONSTRAINTS										
Biological Sensitivity										
USFWS critical habitat crossed ¹¹ (miles)	16.1	18.6	18.3	5.9	13.5	63.6	8.8	13.4	9.1	9.6
Number of CNDDDB records within 1 mile	172	171	182	147	291	247	260	214	192	183
Number of unique species reported in CNDDDB within 1 mile	74	69	67	58	133	158	163	145	95	76
Cultural sensitivity ¹²	Low	Low	Low	Low	High	High	High	Medium	Low	Low ¹³
Protected parks and forests ¹⁴ crossed (miles)	1.1	2.6	1.8	3.9	6.3	22.4	14.2	15.5	6.2	5.3
Designated scenic roads within 0.5 mile	0	0	0	0	0	0	0	0	0	0
Potential for encountering hazardous material based on known hazardous contamination within 0.25 mile ¹⁵	Medium (31)	Low (2)	High (64)	Low (2)	High (139)	Low (6)	Low (9)	Low (10)	Low (15)	Low (20)

Sources: Caltrans 2010 and 2014; California Protected Areas Data Portal 2014; U.S. Geological Survey (USGS) National Hydrography Dataset 1999; USGS/Teale Data GIS Solutions Group 2000; USFWS Critical Habitat 2015; CDFW Biogeographic Data Branch CNDDDB 2015; CDFW Owned and Operated Lands 2013; California Conservation Easement Database 2015.

¹¹ USFWS critical habitat includes all critical habitat designated for various species by the USFWS.

¹² Cultural sensitivity was determined based on the number of known cultural resource sites intersected by the route, taking into account the percentage of the route that was covered by available records.

¹³ Line 1600 is over 50 years old, and could therefore be considered a historic resource; however, it has not been formally evaluated for eligibility for listing on the National Register of Historic Places, the California Register of Historic Resources, the Local Register, or the County of San Diego’s Resource Protection Ordinance.

¹⁴ Protected parks and forests include those managed by federal, state, and local agencies.

¹⁵ Hazard potential was determined by the number of existing hazardous sites within 0.25 mile of each alternative. The following criteria was used: Low (zero to 20); Medium (21 to 40); and High (41 to 60+).

Table 5-2: Summary of Alternatives Fully Evaluated

Alternative	Objectives Met ¹⁶	Potentially Feasible ¹⁷	Potentially Significant Temporary Proposed Project Environmental Effects Likely Reduced to a Less-than-Significant Level by the Alternative ¹⁸			
			Air Quality	Noise	Transportation and Traffic	Cumulative ¹⁹
Rainbow – El Norte Parkway – Santee Alternative	Yes	Yes	No	No	No	No
Rainbow to Santee Non-Miramar Alternative	Yes	Yes	No	No	No	No
Valley Center Alternative	Yes	Yes	No	No	No	No
South Orange County Coastal Alternative	No	No	No	No	No	No
Blythe to Santee Alternative 1	No	No	No	Yes	Yes	Yes
Blythe to Santee Alternative 2	No	No	No	Yes	Yes	Yes
Cactus City to San Diego Alternative	No	No	No	Yes	Yes	Yes
Second Pipeline along Line 3010 Alternative	Yes	Yes	No	No	No	No
No Project Alternative	No	Yes	Yes	Yes	Yes	Yes

¹⁶ While each of the fully evaluated alternatives was initially determined to meet all three of the Proposed Project objectives, further investigation determined some alternatives will not meet the first Proposed Project objective because they cannot be permitted and constructed as soon as practicable.

¹⁷ While each of the fully evaluated alternatives was initially deemed feasible, further investigation determined some alternatives to be infeasible due to inability to be permitted and constructed in a reasonable period of time. Table 5-1: Alternatives Screening Matrix provides additional detail on the feasibility evaluation results for each alternative.

¹⁸ Table 5-2: Summary of Alternatives Fully Evaluated indicates whether each alternative would reduce the potentially significant impacts caused by the Proposed Project to a less-than-significant level. In many cases, while the alternative may reduce potentially significant impacts of the Proposed Project, it will also introduce new potentially significant impacts that are not associated with the Proposed Project. These impacts have not been identified in this table, but are relevant to whether the alternatives in fact reduce the overall impacts to human health and the environment.

¹⁹ The Proposed Project has the potential to result in significant cumulative environmental impacts to air quality, noise, and transportation and traffic during the construction phase of the Proposed Project. Due to their geographic extent, information on past, present, and reasonably foreseeable future projects was not gathered and assessed for each of the alternatives. Therefore, the ability of each alternative to reduce the Proposed Project's cumulative impact was determined based on location.

The Proposed Project will facilitate implementation of the PSEP by providing a replacement for Line 1600 in a timely manner, will provide the resiliency to Line 3010 needed to ensure reliability, and will provide additional operational flexibility on the San Diego system. The Proposed Project will also meet current and near-term needs with system improvements that will accommodate future potential energy patterns and needs, and will meet these needs in a cost-effective and efficient manner. The Proposed Project will also meet these needs in a manner that follows generally accepted principles for siting infrastructure, avoids unnecessary environmental impacts, avoids conflicts with mission-critical operations at MCAS Miramar, and avoids unnecessary acquisition of private property. A more thorough analysis is provided in Chapter 4 – Environmental Impact Analysis.

Rainbow – El Norte Parkway – Santee Alternative

The Rainbow – El Norte Parkway – Santee Alternative would be approximately 54 miles in total length—approximately seven miles longer than the Proposed Project—and would follow the Proposed Project from the Rainbow Metering Station until the intersection of Centre City Parkway and West El Norte Parkway. The Rainbow – El Norte Parkway – Santee Alternative would leave the Proposed Project’s route corridor and travel east through the City of Escondido until the city’s easternmost limits, and would then veer south (following the southern portion of the Valley Center Alternative) and end in the City of Santee. This alternative would cross approximately 18.8 miles of urban area, as opposed to the approximately 30.2 miles of urban area that will be crossed by the Proposed Project. However, the Rainbow – El Norte Parkway – Santee Alternative would cross considerably more cross-country/undeveloped land than the Proposed Project (i.e., approximately 34.9 miles as opposed to the Proposed Project’s approximately 16.7 miles), which would result in greater potential impacts to agricultural lands, biological resources, water quality, slope stability, and visual resources. Further, additional cross-country construction would also likely require a greater water usage and result in greater air quality impacts associated with fugitive dust and water truck trips during construction. Approximately 0.9 mile of land protected under a conservation easement would be crossed by the Rainbow – El Norte Parkway – Santee Alternative, which could make this alternative infeasible depending on the constraints associated with this easement and whether it could be avoided. The Rainbow – El Norte Parkway – Santee Alternative would cross approximately 3.3 miles of DOD land—approximately 0.7 mile more than the Proposed Project—and approximately 0.9 mile of CDFW land, which the Proposed Project does not cross; crossing these lands may make this route infeasible depending on the development restrictions associated with crossing CDFW-owned land. The mileage of private ownership that would be crossed is roughly similar to that of the Proposed Project, as well as the number of jurisdiction and infrastructure crossings.

There is an increased biological sensitivity along the Rainbow – El Norte Parkway – Santee Alternative route. Compared to the Proposed Project, the Rainbow – El Norte Parkway – Santee Alternative would cross approximately 1.5 more miles of protected parks and forests and approximately 2.5 more miles of USFWS critical habitat. In addition, only one more CNDDDB record was identified within one mile of the Rainbow – El Norte Parkway – Santee Alternative than within one mile of the Proposed Project. However, of the CNDDDB records identified, five fewer unique species were reported within one mile of the Rainbow – El Norte Parkway – Santee Alternative than within one mile of the Proposed Project. Finally, cultural sensitivity and the

potential for encountering hazardous materials would be low throughout the Rainbow – El Norte Parkway – Santee Alternative, based off of intersections with known cultural resource sites and hazardous materials sites.

The Rainbow – El Norte Parkway – Santee Alternative would be able to meet all of the Proposed Project objectives—including providing safety, resiliency, and operational flexibility—but would have a slightly higher cost compared to that of the Proposed Project. Additionally, approximately 0.9 mile of a known CDFW-owned conservation easement would be crossed by the Rainbow – El Norte Parkway – Santee Alternative; therefore, this alternative could be infeasible depending on constraints associated with this easement, and potential environmental and/or permitting constraints may preclude the ability to cost-effectively and efficiently meet the objectives.

The Rainbow – El Norte Parkway – Santee Alternative was not selected as the preferred alternative because it would involve crossing more miles of federal and state land, increased biological impacts, and higher costs. In addition, it is potentially infeasible due to crossing a conservation easement, which would result in scheduling, permitting, cost, and environmental constraints.

Rainbow to Santee Non-Miramar Alternative

The Rainbow to Santee Non-Miramar Alternative would follow the northern portion of the Proposed Project from the Rainbow Metering Station until north of MCAS Miramar, where the route would veer to the east, avoiding MCAS Miramar and traveling south until its termination in the City of Santee. The alignment would total approximately 50 miles in length, which is approximately three miles longer than the Proposed Project. Undeveloped/cross-country areas and urban areas crossed by this alternative are similar to the Proposed Project. While this route would avoid entering federal land and open space within MCAS Miramar, approximately one mile of the alignment would cross a known conservation easement—the Goodan Ranch Sycamore Canyon Preserve—where it would travel to the east of MCAS Miramar, which could make this alternative infeasible depending on the constraints associated with this easement and whether it could be avoided. This alternative would also cross approximately six more miles of privately owned land than the Proposed Project, potentially requiring a greater amount of landowner agreements or the potential acquisition of private property.

The number of infrastructure crossings for the Rainbow to Santee Non-Miramar Alternative is similar to the Proposed Project. USFWS critical habitat that would be crossed is approximately 2.3 miles more than that of the Proposed Project and there are 10 more CNDDDB records within one mile of this alternative than the Proposed Project. Cultural sensitivity for the Proposed Project and for this alternative were both low. This alternative would cross an additional approximately 0.7 mile of protected parks and forests than the Proposed Project due to crossing Hilleary Park in the City of Poway and Sycamore Canyon and Goodan Ranch Preserve in San Diego County. The Sycamore Canyon and Goodan Ranch Preserve is managed jointly by the County of San Diego, cities of Poway and Santee, and the CDFW. This alternative would also travel within and parallel to a riparian corridor and dry wash for more than 500 feet, which would pose additional environmental permitting challenges and concerns with exposing the pipeline to long-term scour. In addition, the potential for encountering hazardous materials,

based on the number of existing hazardous sites within 0.25 mile of the route, was determined to be high.

The Rainbow to Santee Non-Miramar Alternative would meet the Proposed Project's objectives, and could be permitted and constructed in a reasonable period of time. It would also have a similar cost to the Proposed Project, and would be able to meet technological requirements considering available technology and the construction, operation, and maintenance or spacing requirements of multiple facilities using common ROWs. However, the Rainbow to Santee Non-Miramar Alternative could potentially be infeasible depending on permitting constraints associated with crossing a known conservation easement and protected parks. Additionally, environmental and permitting constraints could result from the discovery of hazardous materials sites during construction, as the number of existing hazardous sites within 0.25 mile of the route was determined to be higher than the Proposed Project. Therefore, this alternative was not selected as the preferred alternative.

Valley Center Alternative

The Valley Center Alternative would be approximately eight miles longer than the Proposed Project and would measure approximately 55 miles in length. It would run roughly parallel to and to the east of the Proposed Project. This alternative would begin at the Rainbow Metering Station and would generally travel south, ending in the City of Santee. The Valley Center Alternative would include considerably more cross-country construction than the Proposed Project (approximately 45 miles as opposed to the Proposed Project's approximately 17 miles), and therefore, it would result in greater impacts to biological and agricultural resources, as well as severe land scars, soil loss, and water quality concerns. Further, additional cross-country construction would also likely require a greater water usage and result in greater air quality impacts associated with fugitive dust and water truck trips during construction.

Approximately 0.9 mile of a known conservation easement would be crossed, which could impact feasibility. The Valley Center Alternative would also cross approximately 5.2 miles of land under the jurisdiction of the BIA and approximately 3.3 miles of DOD land; crossing land administered by multiple federal agencies could impact the permitting, scheduling, and costs associated with a project. In addition, it is uncertain if the Applicants would be able to obtain property rights within BIA land. This alternative would potentially be infeasible depending on the constraints associated with the conservation easement and whether it could be avoided. The number of infrastructure crossings for this alternative and the Proposed Project are similar.

The Valley Center Alternative would cross approximately 10.1 miles less of USFWS critical habitat than the Proposed Project. This alternative has 25 fewer CNDDDB records within one mile and 16 fewer unique species reported than the Proposed Project. The cultural resources sensitivity for this alternative and the Proposed Project is low. However, this alternative would cross approximately four miles of protected parks and forests, while the Proposed Project will cross approximately one mile. Lastly, the potential for encountering hazardous material is lower than the Proposed Project's.

While the Valley Center Alternative would be able to meet the three objectives of the Proposed Project, this alternative would involve crossing more federal land, thereby resulting in

scheduling, permitting, and cost constraints. It would also potentially be infeasible due to the constraints associated with crossing a conservation easement. This alternative would also potentially result in greater impacts to biological and agricultural resources due to the additional travel through protected and undeveloped areas. Therefore, this alternative was not selected as the preferred alternative.

South Orange County Coastal Alternative

The South Orange County Coastal Alternative would involve constructing a new, approximately 108-mile-long, 36-inch pipeline from Brea to a new compressor station that would be located near San Onofre. From the compressor station, the pipeline would continue south and terminate in La Jolla. The pipeline would also interconnect with Line 2009 near the City of Carlsbad. From the City of Dana Point, the existing Line 1026, which is a 12-inch-diameter distribution line, would be paralleled or replaced with a 36-inch-diameter line. Both Orange and San Diego counties would be crossed by the Proposed Project, as would several cities.

This alternative would cross approximately 5.5 miles of undeveloped/cross-country areas and approximately 102.5 miles of urban areas, whereas the Proposed Project will cross approximately 17 miles and 30 miles of undeveloped/cross-country and urban areas, respectively. The route would also cross approximately 14.6 miles of land owned by the DOD, while the Proposed Project will cross approximately 2.6 miles, which may impact permitting, scheduling, and costs associated with a project crossing federally administered land. The alternative route would cross approximately 1.1 miles of known conserved lands and approximately 1.1 miles of California DPR land, while the Proposed Project will not cross any state land. Additionally, this alternative would cross approximately 44.9 miles of additional private land than the Proposed Project. This alternative would cross 44 rivers and streams, compared to the Proposed Project's 41. Additionally, it would cross 22 man-made waterways and 20 railroads, while the Proposed Project will cross six waterways and no railroads.

This route would cross approximately 13.5 miles of USFWS critical habitat, compared to the Proposed Project, which will cross approximately 16.1 miles; however, there were 119 more CNDDDB records reported within one mile of the alternative and 59 more unique species than the Proposed Project, which could result in potentially increased biological impacts. In addition, a high-level cultural sensitivity of this area was determined, as opposed to the Proposed Project's low sensitivity. This alternative would cross approximately 5.2 miles more of protected parks and forests than the Proposed Project. The potential for encountering hazardous materials for this alternative is higher than the Proposed Project. In addition, the South Orange County Coastal Alternative would be constructed within and adjacent to two highways—Route 1 (SR-1) and Route 5 (I-5)—that are eligible for designation as state scenic highways.

The majority of the route would be installed in the environmentally sensitive coastal zone and would require permitting from the California Coastal Commission, which can be a lengthy process. As a result, this route would pose substantial schedule delays, potential delays in being permitted and constructed in a reasonable amount of time, and increased costs compared to the Proposed Project.

This alternative would also require Line 1026 to be upgraded to transmission service, which includes the replacement of Line 1026 with a larger diameter pipeline, resulting in additional construction-related impacts. Though the South Orange County Coastal Alternative could meet at least two of the Proposed Project's three fundamental objectives—resiliency and operational flexibility—constructing a pipeline along this coastal corridor would not meet the system resiliency objectives to the same extent that the Proposed Route's Rainbow to MCAS Miramar corridor provides. By constructing the Proposed Project within the existing system between the Rainbow Metering Station and MCAS Miramar, core and noncore customers will continue to receive gas available at the Rainbow Metering Station in the event of a planned or unplanned service reduction or outage of the existing Line 3010, as well as sufficient and competitively priced gas delivered to the Rainbow Metering Station. In addition, this alternative would not be capable of being permitted and constructed within a reasonable period of time, making it inconsistent with the PSEP objective and potentially infeasible; would have a higher cost than the Proposed Project; and would cross lands that have legal protections that may substantially limit the feasibility of permitting. Therefore, this alternative was determined to be infeasible and was not selected as the preferred alternative.

Blythe to Santee Alternative 1

Blythe to Santee Alternative 1 would measure approximately 222 miles in length (approximately 175 miles longer than the Proposed Project), and would begin in the City of Blythe and travel directly west, veering south near the northwestern corner of the Salton Sea in Riverside County. The alignment would then travel south through Imperial County until just north of the community of Ocotillo, and would generally travel in a westerly direction until its terminus within the community of Spring Valley. Approximately 202 miles of the alignment would travel cross-country through undeveloped areas. The area that would be crossed includes land managed by the following agencies:

- BIA (approximately 10.0 miles),
- DOD (approximately four miles),
- BLM (approximately 93.8 miles),
- USFWS (approximately 0.6 mile),
- USFS (approximately 16.6 miles),
- CDFW (approximately 2.5 miles),
- California DPR (approximately 5.2 miles), and
- CSLC (approximately two miles).

Of the approximately 93.8 miles of BLM land that would be crossed, approximately 7.2 miles are within the West-wide Energy Corridor.²⁰ Crossing the Energy Corridor could streamline the permitting process for that segment of the route; however, Blythe to Santee Alternative 1 would cross approximately 111 miles of other lands managed by public agencies, whereas the Proposed

²⁰ Section 368 of the Energy Policy Act of 2005 directs the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to designate—under their respective authorities—corridors on federal land in 11 western states (i.e., Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming) for oil, gas, and hydrogen pipelines and electricity transmission and distribution facilities (Energy Corridors).

Project will cross approximately 2.6 miles of DOD land. Crossing these lands could result in substantial schedule delays due to the approvals and permitting associated with each agency. In addition, some of these lands are preserved for environmental, recreation, or military use, and construction within these lands could result in temporary impacts by interfering with the current uses (e.g., recreation and military).

Additionally, approximately 243 rivers and streams and approximately 33 man-made waterways would be crossed by this alternative, which is a substantial increase from the Proposed Project's 41 river and stream crossings and six man-made waterway crossings. The alternative would also include approximately 19 major highway crossings and four railroad crossings, which is also a substantial increase from the Proposed Project, which will have only five major highway crossings and no railroad crossings. Approximately 63.6 miles of USFWS critical habitat would be crossed by this alternative, while the Proposed Project will cross approximately 16.1 miles of USFWS critical habitat, but primarily within existing roadways. Mitigation required for impacts to critical habitat for this alternative is unknown, but could require acquisition of mitigation lands that could be unavailable at such high acreage. Similarly, the process for mitigating such lands could result in substantial schedule delays. Within one mile of the route, 247 CNDDDB records were identified, of which 158 unique species were reported, compared to the 172 CNDDDB records and 74 unique species identified within one mile of the Proposed Project. Compared to the Proposed Project, Blythe to Santee Alternative 1 would cross approximately 21.3 miles more of protected parks and forests. While the Proposed Project will not cross any known conservation easements, this alternative would impact approximately 2.6 miles of conservation easement and approximately 54.7 miles of BLM ACEC. Blythe to Santee Alternative 1 would also cross the Table Mountain Wilderness Study Area, which is included in the proposed California Desert Conservation and Recreation Act (DCRA) of 2015²¹ to be managed in accordance with the provisions of the California Wilderness Act (California PRC § 5093.30-5093.40). Therefore, construction of a pipeline along this route may not be feasible.

In addition to the potential environmental impacts associated with the route as previously described, Blythe to Santee Alternative 1 has been assigned a high cultural resource sensitivity as a result of the known cultural resource sites intersected by the route. Blythe to Santee Alternative 1 is one of only two alternatives that have been assigned this cultural resource sensitivity, which is the highest sensitivity assignment. Additionally, the potential for encountering hazardous material during construction along Blythe to Santee Alternative 1 was determined to be lower than the Proposed Project.

The PSEP objective would not likely be met by this alternative due to the fact that it could not be constructed in a timeframe that would be considered practicable. Though two of the three objectives of the Proposed Project—including resiliency and operational flexibility—would be met by Blythe to Santee Alternative 1, constructing a pipeline along this corridor would not meet the system resiliency objective to the same extent that the Proposed Route's Rainbow to MCAS Miramar corridor provides. By constructing the Proposed Project within the existing system between the Rainbow Metering Station and MCAS Miramar, core and noncore customers will

²¹ The California DCRA of 2015 proposes to provide conservation, enhanced recreation opportunities, and development of renewable energy in the California Desert Conservation Area. The act was still in committee review when this Proponent's Environmental Assessment was drafted.

continue to receive gas available at the Rainbow Metering Station in the event of a planned or unplanned service reduction or outage of the existing Line 3010, as well as sufficient and competitively priced gas delivered to the Rainbow Metering Station. In addition, construction of this alternative would result in substantially increased costs and environmental impacts compared to the Proposed Project due to the greater number of jurisdictions and amount of undeveloped land crossed, as well as the high cultural resource sensitivity of the route. This alternative would also result in a greater amount of exposed soils, increased dust concerns, water quality issues, and increased air emissions. In addition, the objectives would not be met in an efficient timeframe due to the scheduling constraints associated with construction of this alternative. In fact, this alternative was determined to be infeasible due to the inability to permit and construct it in a reasonable period of time. As a result, Blythe to Santee Alternative 1 was not selected as the preferred alternative.

Blythe to Santee Alternative 2

Blythe to Santee Alternative 2 would begin in the City of Blythe and travel in a southward direction until near the City of Yuma, Arizona. At the City of Yuma, the alignment would veer west, following I-8 until its terminus within the community of Spring Valley. Riverside, Imperial, and San Diego counties would be crossed by this alternative. The alignment would measure a total of approximately 223 miles, which is approximately 175 miles longer than the Proposed Project. As with Blythe to Santee Alternative 1, a large amount of cross-country and undeveloped land would be crossed (approximately 199 miles). The area that would be crossed includes land managed by the following agencies:

- BIA (approximately 15.3 miles),
- BLM (approximately 73.5 miles),
- USFWS (approximately 0.4 mile),
- USFS (approximately 14.2 miles),
- U.S. Bureau of Reclamation (approximately 7.9 miles),
- CDFW (approximately 0.1 mile),
- California DPR (approximately 0.3 mile), and
- CSLC (approximately 0.3 mile).

Of the approximately 73.5 miles of BLM land that would be crossed, approximately 31.5 miles are within the West-wide Energy Corridor. While crossing the Energy Corridor could streamline the permitting process for that segment of the route, this alternative would cross approximately 70 miles of other federal lands and could result in substantial schedule delays due to the approvals and permitting associated with each agency. In addition, some of these lands are preserved for environmental, recreation, or military use, and construction within these lands could result in temporary impacts by interfering with the current uses (e.g., recreation and military). Blythe to Santee Alternative 2 would cross more managed lands than the Proposed Project, which will cross approximately 2.6 miles of DOD land.

Additionally, approximately 144 rivers and streams and approximately 117 man-made waterways would be crossed by this alternative, which is a substantial increase from the Proposed Project's 41 river and stream crossings and six man-made waterway crossings. The alternative also would also include approximately 34 major highway crossings and four railroad

crossings, which is also a notable increase from the Proposed Project, which will have only five major highway crossings and no railroad crossings. Approximately 8.8 miles of USFWS critical habitat would be crossed by this alternative, which is almost half of the mileage crossed by the Proposed Project, resulting in a decreased impact to USFWS critical habitat. Nonetheless, because the Proposed Project is located primarily in existing roadways, this alternative is anticipated to require more mitigation to offset impacts to critical habitat, as previously discussed for the Blythe to Santee Alternative 1. However, within one mile of the route, 260 CNDDDB records were identified, of which 163 unique species were reported; 172 CNDDDB records and 74 unique species were identified within one mile of the Proposed Project. Compared to the Proposed Project, Blythe to Santee Alternative 2 would cross approximately 13.1 miles more of protected parks and forests. This alternative would cross approximately 0.1 mile of a known conservation easement; however, approximately 17.3 miles of BLM ACEC would be crossed by this alternative. Additionally, Blythe to Santee Alternative 2 would cross the Vinagre Wash Proposed Special Management Area, which is included in the proposed DCRA to be managed solely for recreation and conservation uses. The alternative would also cross the Table Mountain Wilderness Study Area, which is proposed by the DCRA to be managed in accordance with the provisions of the California Wilderness Act. Therefore, construction of a pipeline along Blythe to Santee Alternative 2 may not be feasible due to the existing and potential conserved lands crossed. By comparison, the Proposed Project will not cross any conservation easements, BLM ACEC, or land proposed to be covered under the DCRA, which eliminates this feasibility concern.

The cross-country travel associated with Blythe to Santee Alternative 2 would pose a potentially significant environmental impact that would result from construction of this alternative due to a greater amount of exposed soils, increased dust concerns, water quality issues, and increased air emissions. In addition, as with Blythe to Santee Alternative 1, the cultural resource sensitivity of the crossed lands is high due to the number of known cultural resource sites intersected by the route. Additionally, a low potential for encountering hazardous material during construction along Blythe to Santee Alternative 2 was determined based on the number of known contaminated sites within 0.25 mile of the route, resulting in a potentially lower impact associated with hazardous materials than the Proposed Project, which was assigned a medium potential.

Though two of the three objectives of the Proposed Project—including providing system resiliency and operational flexibility—would be met by Blythe to Santee Alternative 2, constructing a pipeline along this corridor would not meet the system reliability objective to the same extent as the Proposed Route’s Rainbow to MCAS Miramar corridor. By constructing the Proposed Project within the existing system between the Rainbow Metering Station and MCAS Miramar, core and noncore customers will continue to receive gas available at the Rainbow Metering Station in the event of a planned or unplanned service reduction or outage of the existing Line 3010, as well as sufficient and competitively priced gas delivered to the Rainbow Metering Station. In addition, construction of this alternative would result in substantially increased costs and environmental impacts compared to the Proposed Project due to the considerable number of jurisdictions and amount of undeveloped land crossed, as well as the high cultural resource sensitivity of the route. In addition, this alternative could not be permitted and constructed in a reasonable period of time due to the scheduling constraints associated with crossing more managed lands than the Proposed Project. As a result, Blythe to Santee

Alternative 2 was determined to be unable to meet the PSEP objective and infeasible. Therefore, it was not selected as the preferred alternative.

Cactus City to San Diego Alternative

The Cactus City to San Diego Alternative would begin in Cactus City and travel generally south until just north of the community of Ocotillo, where the alignment would turn west and travel generally in a western direction until its terminus within the community of Spring Valley. The Cactus City to San Diego Alternative would measure approximately 160 miles in length, which is approximately 113 miles longer than the Proposed Project. Approximately 120 miles would be cross-country travel through undeveloped land. This alternative would cross land managed by the following agencies:

- BIA (approximately 12.5 miles),
- DOD (approximately four miles),
- BLM (approximately 28.6 miles),
- USFWS (approximately 1.8 miles),
- USFS (approximately 13.5 miles),
- CDFW (approximately 1.1 miles),
- California DPR (approximately two miles), and
- CSLC (approximately 2.5 miles).

Of the approximately 28.6 miles of BLM land that would be crossed, approximately 9.8 miles are within the West-wide Energy Corridor. While crossing the Energy Corridor could streamline the permitting process for that segment of the route, the Cactus City to San Diego Alternative would cross approximately 40 miles of other federal lands, which could result in substantial schedule delays due to the approvals and permitting associated with each agency. In addition, some of these lands are preserved for environmental, recreation, or military use, and construction within these lands could result in temporary impacts by interfering with the current uses. The managed lands crossed by the Cactus City to San Diego Alternative are much higher than the Proposed Project, which will cross approximately 2.6 miles of DOD land. In addition, the Cactus City to San Diego Alternative would cross approximately one mile of a known conservation easement, which would result in an additional potential feasibility constraint.

Approximately 113 rivers and streams and approximately 20 man-made waterways would be crossed by this alternative, which is a substantial increase from the Proposed Project's 41 river and stream crossings and six man-made waterway crossings. The alternative would also include approximately 28 major highway crossings and three railroad crossings, which is also a substantial increase from the Proposed Project, which will have only five major highway crossings and no railroad crossings. Approximately 13.4 miles of USFWS critical habitat would be crossed by this alternative, which is slightly less than the critical habitat crossed by the Proposed Project (approximately 16.1 miles). Nonetheless, because the Proposed Project is located primarily in existing roadways, this alternative is anticipated to require more mitigation to offset impacts to critical habitat, as previously discussed for Blythe to Santee Alternative 1. However, 214 CNDDDB records were identified within one mile of the route and 145 unique species were reported, which results in a higher biological sensitivity to the Proposed Project, based on CNDDDB records.

Compared to the Proposed Project, the Cactus City to San Diego Alternative would cross approximately 14.4 miles more of protected parks and forests, which would result in additional permitting and agreement requirements. This alternative would cross approximately one mile of a known conservation easement and approximately 6.9 miles of BLM ACEC; this is an increase from the Proposed Project, which will cross neither designation, and these crossings could affect the alternative's feasibility. In addition, the Cactus City to San Diego Alternative would cross the Table Mountain Wilderness Study Area, which is proposed by the DCRA to be managed in accordance with the provisions of the California Wilderness Act. Therefore, construction of a pipeline along the Cactus City to San Diego Alternative route may not be feasible.

In addition to the environmental constraints discussed previously, the Cactus City to San Diego Alternative was assigned a medium cultural resource sensitivity as a result of the known cultural resource sites intersected by the route. This is an increase from the Proposed Project's low cultural resource sensitivity. Additionally, a low potential for encountering hazardous material during construction along the Cactus City to San Diego Alternative was determined based on the number of known contaminated sites within 0.25 mile of the route, which would result in a potentially lower impact associated with hazardous materials compared to the Proposed Project, which was assigned a medium potential. Further, the additional cross-country construction required by this alternative would require greater water usage and would result in potentially greater air quality impacts associated with fugitive dust and water truck trips during construction.

The Cactus City to San Diego Alternative would meet two of the three Proposed Project objectives, including providing reliability and resiliency and operational flexibility, but it would not likely meet the PSEP objective due to its inability to be constructed as soon as practicable. In addition, constructing a pipeline along this corridor would not meet the system resiliency objective to the same extent that the Proposed Route's Rainbow to MCAS Miramar corridor provides. By constructing the Proposed Project within the existing system between the Rainbow Metering Station and MCAS Miramar, core and noncore customers will continue to receive gas available at the Rainbow Metering Station in the event of a planned or unplanned service reduction or outage of the existing Line 3010, as well as sufficient and competitively priced gas delivered to the Rainbow Metering Station. In addition, due to the greater number of jurisdictions and amount of undeveloped land that would be crossed, this alternative could not be permitted and constructed in a reasonable period of time, it would have a higher cost than the Proposed Project, and it would cross lands that have legal protections that may prohibit or substantially limit the feasibility of permitting. As a result, the Cactus City to San Diego Alternative was determined to be infeasible and was not selected as the preferred alternative.

Second Pipeline along Line 3010 Alternative

The Second Pipeline along Line 3010 Alternative would include constructing approximately 45 miles of new pipeline adjacent to the existing Line 3010, beginning at the existing Rainbow Metering Station and ending at Line 3010's interconnect with Line 2010. This alternative would utilize the least amount of travel through undeveloped land of any of the alternatives considered, as only approximately 5.8 miles of the alignment would travel cross-country. Because approximately 42 miles of the alignment would cross privately owned land, construction through these areas would have a potentially significant impact on land use due to either the displacement of residences or noise impacts during construction. However, the Second Pipeline along Line

3010 Alternative would utilize the existing Line 3010 ROW for construction, which would be compatible with the Garamendi Principles regarding the use or expansion of an existing utility ROW while siting transmission infrastructure. This alternative would also decrease the amount of new ROW requirements if the pipeline were to be constructed elsewhere (i.e., not along an existing pipeline corridor). Thus, construction impacts on the surrounding land uses would be fewer than that of a pipeline installed outside of an existing pipeline corridor.

The existing ROW utilized by Line 3010 to the north of the community of La Costa is approximately 30 feet wide. The existing Line 3010 was installed approximately 10 feet from one edge of the ROW with the intent to install a second pipeline approximately 10 feet from the opposite edge—leaving approximately 10 feet of space between the lines. However, a minimum of 40 feet is necessary for the installation of the new pipeline, and some areas along the alignment will likely require much more. A feasibility analysis conducted for acquisition of the additional 10 feet of ROW adjacent to the existing Line 3010 ROW determined that approximately 300 property owners would be affected. In addition, an existing 230 kilovolt electrical transmission line that parallels Line 3010 could pose a safety hazard during construction, depending on how close excavation activities are to the power line. The proximity to power lines also poses a challenge to meet induced current spacing standards within an already tight utility corridor.

The additional ROW would cross through 11 public and governmental agencies, including state agencies, regional agencies, municipalities, and local municipal agencies. Approximately 40 residences and 260 businesses may require full acquisitions due to structural impacts and/or proximity to the ROW. Further, there would be impacts to existing ranch and rancho properties along the existing route. Severance damage could cost from \$30 million to \$40 million, and the total cost for ROW acquisition would range from \$33 million to over \$46 million. Calculations for acquisitions through eminent domain were not evaluated, but could result in substantial legal fees, further increasing the actual cost of the additional ROW required. South of La Costa, however, an existing approximately 150-foot-wide ROW travels to the end of the existing Line 3010, which may leave room for construction of a new pipeline; however, this must be confirmed because there are multiple utilities in the ROW, including overhead power lines, underground pipelines, active and abandoned fuel lines, and Line 3010.

The Second Pipeline along Line 3010 Alternative would cross approximately 1.6 miles of land managed by the DOD and approximately 1.3 miles of land managed by the CDFW, which is relatively similar to the public agency land crossed by the Proposed Project. In addition, this alternative avoids some waterway crossings (approximately 38 river and stream crossings compared to the Proposed Project's approximately 41 river and stream crossings). Infrastructure crossings that would result from this alternative include eight man-made waterways, three major highways, and three railroads; while two more man-made waterways and three more railroads would be crossed, the Second Pipeline along Line 3010 Alternative would avoid two major highway crossings when compared to the Proposed Project. Approximately seven miles of USFWS critical habitat would be avoided with the Second Pipeline along Line 3010 Alternative compared to the Proposed Project. A slightly higher count of CNDDDB records was reported within one mile of this alternative compared to the Proposed Project (192 compared to 172), including 95 unique species compared to the Proposed Project's count of 74 unique species.

The cultural sensitivity of the Second Pipeline along Line 3010 Alternative was determined to be low based on the number of known cultural resource sites intersected by the route, which is the same as the sensitivity determined for the Proposed Project. Also, the potential for encountering hazardous materials based on the known hazardous contamination within 0.25 mile of the alternative was determined to be low, which is a lower sensitivity rating than that of the Proposed Project (medium).

Installing a second pipeline along Line 3010 would be feasible from a construction standpoint if additional ROW could be acquired and it would meet the Proposed Project objectives of safety, resiliency, and operational flexibility. However, this alternative does not provide geographic separation of a redundant pipeline, which would be beneficial. In addition, it would not provide overall system reliability because the alternative would place a substantial amount of the San Diego region's natural gas supply within one north-south corridor. Further, greater impacts to biological resources may result from this alternative, as more CNDDDB records and unique species were identified within one mile of the alternative and it is unknown whether space exists along the ROW for an additional pipeline. Therefore, the Second Pipeline along Line 3010 Alternative was not selected as the preferred alternative.

No Project Alternative

CEQA requires an evaluation of the No Project Alternative so that decision-makers can compare the impacts of approving the Proposed Project with the impacts of not approving the Proposed Project (CEQA Guidelines § 15126.6[e]). In Decision 11-06-017, the CPUC ordered that all natural gas transmission pipelines that were not pressure tested or that lack sufficient documentation of a pressure test under its jurisdiction must either be pressure tested after construction or replaced to comply with Section 958 of the Public Utilities Code. Line 1600 falls under the Applicants' PSEP that requires documentation of strength-testing by hydrostatic test to validate the Maximum Allowable Operating Pressure of 800 pounds per square inch. In light of this legal and regulatory framework, the No Project Alternative would include hydrostatic testing of the existing Line 1600, but would not include the replacement or installation of any new pipeline.

Line 1600 is an approximately 49.7-mile, 16-inch-diameter, high-pressure natural gas transmission pipeline that begins at the Rainbow Metering Station south of the City of Temecula and terminates at Mission Station in the City of San Diego. Line 1600 is one of two sources of natural gas serving the San Diego area, and the other is the 30-inch-diameter Line 3010. The No Project Alternative would involve the hydrostatic testing of Line 1600, which is approximately 50 miles long. Line 1600 supplies approximately 10 percent of the market demand for natural gas in San Diego County. In addition to supplying the service territory, approximately 175,000 distribution customers and three large customers are supplied by Line 1600.

Hydrotesting Line 1600 would be challenging because there are 58 taps, or connections to customers and private land ownership along the line, and adjacent land uses pose physical constraints on how test breaks can be sited. Hydrostatic test breaks have been preliminarily determined based on elevation limitations, MLV locations, large tap sites, workspace accessibility, and environmental impacts. Test segments would range from 2,000 feet to 4.6 miles in length, and the average segment would measure approximately 1.5 miles long. Only

one test could be conducted at a time, as gas flow must be maintained either from the south or the north. The No Project Alternative would require 42 bypasses to be constructed to maintain service to customers during the testing. It is anticipated that the pipeline would be tested in 24 segments; each test segment would take four to six weeks to conduct. Therefore, the total testing would take 18 months to two years to complete, including time for permitting and procurement. However, if any particular test segment fails the test and repairs need to be made, additional time ranging from a few days to a few months for each repair would be added to the construction schedule. Repairs to the pipeline would require a minimum of 20 feet of additional ROW at each repair location. Obtaining the additional ROW could result in similar social, economic, and site suitability constraints to that of the existing alignment alternatives—as discussed previously—due to the potential acquisition of residential and commercial properties that would be required along portions of the existing route.

During hydrostatic testing, service would need to be maintained, and this would prove challenging due to the lack of redundant pipelines in the vicinity of the affected customers. In general, there are no other transmission lines near Line 1600 to continue service to the area, so the required natural gas would have to come from Line 3010 or Otay Mesa to ensure adequate capacity to existing larger customers while the testing is conducted; the capacity of the alternative sources would need to be assessed to address reliability during testing. In addition, constructing temporary pipelines to maintain service would result in the same types of temporary impacts (e.g., air pollutant emissions, noise, and traffic) as the Proposed Project at specific, limited locations along the alignment. Depending on where workspaces are sited and whether a rupture occurs during hydrostatic testing, areas and resources present along Line 1600 could be impacted.

If a rupture occurs, the location of the failure could generally be identified to within a few hundred feet relatively quickly because test water would show on the surface or soil displacement would indicate where the failure occurred. The pipe segment that failed would then be excavated and replaced. Impacts to sensitive resources could be minor if the repair occurs within a roadway, road shoulder, or urban area, but it could have potentially significant impacts to biological and hydrological resources if the repair is within a riparian area or sensitive species habitat. If the failure is small and does not rupture the pipe (i.e., a pinhole failure), the location of the failure could be difficult to locate. In order to locate the failure, the test segment would be divided in half and retested to isolate the failure. This process is repeated over and over until the test segment is small enough to justify exposing the pipe. Identifying the leak could take several attempts and require multiple workspaces to install and weld test heads. The process can take several months, depending on how many times the pipeline needs to be tested to locate the failure. The potential for impacting sensitive resources in this scenario is likely greater than a rupture, but ultimately, the location of impacts would not be known until the rupture occurs.

Line 1600 crosses approximately 19.5 miles of undeveloped areas and approximately 30.2 miles of urban areas, while the Proposed Project will cross approximately 16.7 miles and approximately 30.2 miles of undeveloped and urban areas, respectively. Additionally, Line 1600 crosses approximately 2.7 miles of DOD land and approximately 41.8 miles of private property, which also is similar to the Proposed Project. Line 1600 crosses approximately 6.5 miles less of USFWS critical habitat than the Proposed Project, and there were 11 more CNDDDB records and

two more unique species reported within one mile than the Proposed Project. Line 1600 also traverses riparian corridors, oak woodlands, approximately 50 rivers and streams, and nine man-made waterways. Cultural sensitivity and potential for encountering hazardous materials are low along Line 1600, as determined by the number of intersections with known cultural resource sites and hazardous materials sites.

Hydrotesting Line 1600 would eliminate all gas supplies from the north, which must be supplemented by Line 3010/1601 or Line 3600/2010 by means of the Otay Mesa receipt point. Under the No Project Alternative, supplemental natural gas service to core customers would not be guaranteed, and because Line 1600 provides 10 percent of the system capacity, there would be a loss in approximately 10-percent capacity of the transmission lines used for the supplemental source. In addition, the No Project Alternative would not meet the Proposed Project objective of providing resiliency, as it would leave the system vulnerable during the hydrostatic testing of Line 1600 and other planned or unplanned service reduction and outages. An increased capacity to the existing natural gas system would also not be met by the No Project Alternative, it would not involve the installation of a second pipeline, and it would not increase the current capacity of the existing Line 1600. In light of the potential for unmanageable customer impacts and risks to the overall natural gas system during hydrostatic testing, and because the No Project Alternative does not meet the objectives (i.e., implementation of the PSEP as soon as practicable, improving system reliability and resiliency and enhancing operational flexibility by increasing system capacity) of the Proposed Project, the No Project Alternative was not selected as the preferred alternative.

5.2.4 Route Segment Alternatives Considered

Once the proposed alignment was determined, environmental impacts of potential route and segment variations were analyzed to identify a proposed route to include in the Application for the Proposed Project. The route segment alternatives considered are depicted in Figure 5-2: Proposed Project Route Segment Alternatives and are described in the following subsections.

Rainbow Route Segment Alternative

The Rainbow Route Segment Alternative would be approximately 4.5 miles in length, beginning at the northern portion of the Proposed Project near the Rainbow Pressure-Limiting Station. The Rainbow Route Segment Alternative would leave the Proposed Project near milepost (MP) 0.3 of the Proposed Project, traveling west along Rainbow Valley Boulevard and then traversing cross-country in a southwesterly direction along mostly undeveloped land. The route would continue south, briefly traveling to the east of the Proposed Project, until it rejoins with the Proposed Project alignment at MP 4.1 at the intersection of Old Highway 395 and East Mission Road.

The Rainbow Route Segment Alternative was considered to avoid construction along busy roads; however, the route segment alternative was not selected due to extremely steep and rocky terrain that may require blasting within close proximity to residents and directly above I-15. The benefit of avoiding the traffic impacts would not justify the risk and difficulty associated with constructing the route. Because the Rainbow Route Segment Alternative would require an additional approximately 3.6 miles of construction within undeveloped land, additional potential impacts to biological resources and soils would result. Construction water usage and air quality impacts would also increase with this route segment alternative, as cross-country construction

requires more water and associated water truck trips for compaction and dust control purposes. The corresponding portion of the Proposed Project avoids most of these impacts, as it is located almost entirely within the road and road shoulder of Old Highway 395 and Rainbow Hills Road. Therefore, the Rainbow Route Segment Alternative was not selected as part of the Proposed Route.

Rocking Horse Road Route Segment Alternative

The Rocking Horse Road Route Segment Alternative would be approximately 2.1 miles and would begin south of MP 10.7 at the intersection of Via Urner Road. It would travel west of the Proposed Project and then south through agricultural land. It would then travel east for approximately 0.61 mile along an access road and along Rocking Horse Road east and south through residential and recreational land uses. The Rocking Horse Road Route Segment Alternative would travel west and south along Palos Verdes Drive until it would reconnect with the Proposed Project at the I-15 intersection at MP 11.9. The Rocking Horse Road Route Segment Alternative was considered as an alternative horizontal direction drill (HDD) crossing perpendicular to I-15 in the event that Caltrans would not permit the Proposed Route; however, upon further investigation and field review, each side of the I-15 crossing required by the route would include steep slopes where HDD operations would be infeasible. Due to the likely infeasibility of the I-15 crossing, the Rocking Horse Road Route Segment Alternative was not selected as part of the Proposed Route.

West Lilac Road Route Segment Alternative

The West Lilac Road Route Segment Alternative would be approximately 3.7 miles and would begin near MP 10.5. The West Lilac Road Route Segment Alternative would follow West Lilac Road, travel south along Mount Ararat Lane and Rancho Amigos Road—and cross-country or along access roads through residential, agricultural, and recreation land uses—until the route intersects with Camino Del Rey and travels east to reconnect with the Proposed Project south of MP 13. The West Lilac Road Route Segment Alternative was considered an alternative to performing an HDD/bore across I-15 in the event Caltrans does not permit the Proposed Route. However, as discussed for the Rocking Horse Road Route Segment Alternative, each side of the I-15 crossing of the West Lilac Road Route Segment Alternative is a steep slope, which precludes the use of HDD methods. In addition, this route would result in increased impacts to agricultural and residential land uses. Therefore, the West Lilac Road Route Segment Alternative was not selected as part of the Proposed Route.

Bear Valley Parkway Route Segment Alternative

The Bear Valley Parkway Route Segment Alternative would be approximately 1.9 miles and would begin north of MP 26.5 at the intersection of East 17th Avenue and Encino Drive. The Bear Valley Parkway Route Segment Alternative would continue east along East 17th Avenue, along San Pasqual Valley Road, and southwest along Bear Valley Parkway South until it intersects with the Proposed Project alignment at the intersection of Encino Drive and Bear Valley Parkway South, south of MP 27.2.

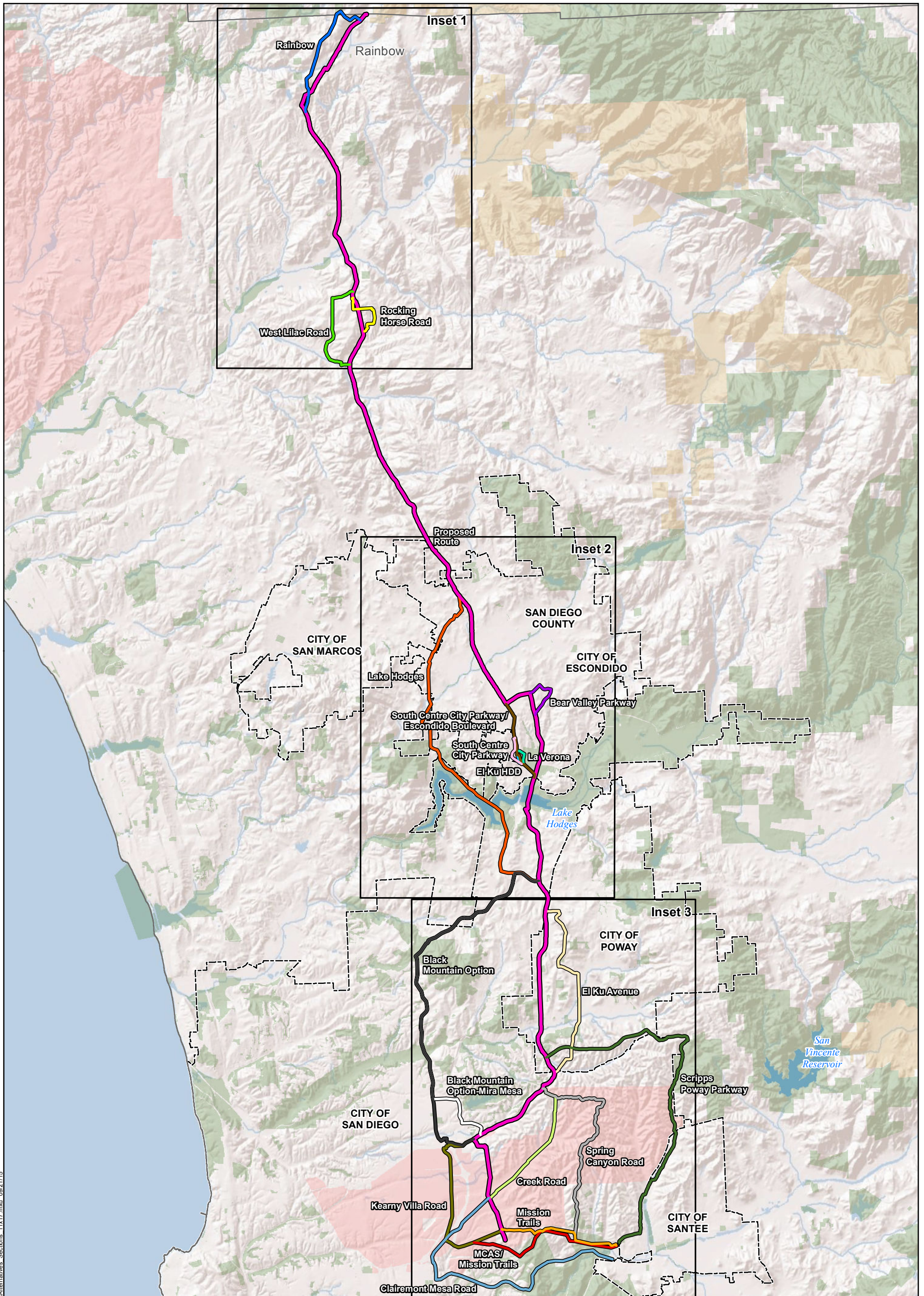
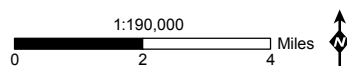


Figure 5-2: Proposed Project Route Segment Alternatives - Overview Map

Pipeline Safety & Reliability Project

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|---------------------|---|-----------------------|---------------------------------|--------------------------|
| Proposed Route | South Centre City Parkway/Escondido Boulevard | El Ku Avenue | Mission Trails | City/County Boundary |
| Rainbow | South Centre City Parkway | Scripps Poway Parkway | MCAS/Mission Trails | Parks |
| Rocking Horse Road | La Verona | Spring Canyon Road | Clairemont Mesa Road | Military |
| West Lilac Road | Lake Hodges | Creek Road | Black Mountain Option-Mira Mesa | Bureau of Indian Affairs |
| Bear Valley Parkway | El Ku HDD | Kearny Villa Road | Black Mountain Option | |



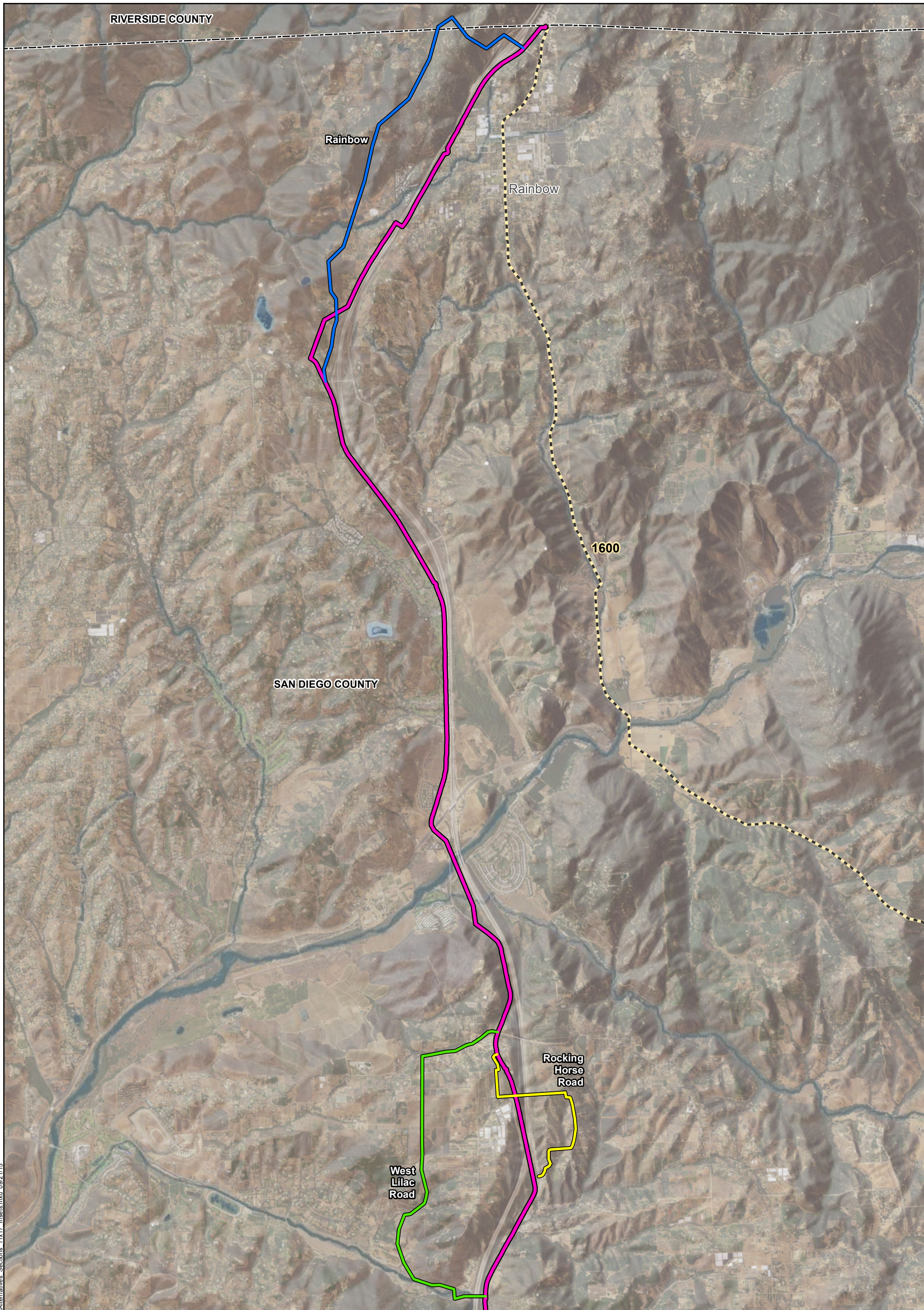
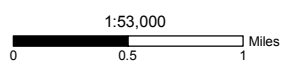


Figure 5-2: Proposed Project Route Segment Alternatives - Inset Map 1 of 3

Pipeline Safety & Reliability Project

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|---|--|--|---|--|
| — Proposed Route | — South Centre City Parkway/Escondido Boulevard | — El Ku Avenue | — Mission Trails | — Existing Transmission Line |
| — Rainbow | — South Centre City Parkway | — Scripps Poway Parkway | — MCAS/Mission Trails | City/County Boundary |
| — Rocking Horse Road | — La Verona | — Spring Canyon Road | — Clairemont Mesa Road | |
| — West Lilac Road | — Lake Hodges | — Creek Road | — Black Mountain Option-Mira Mesa | |
| — Bear Valley Parkway | — El Ku HDD | — Kearny Villa Road | — Black Mountain Option | |



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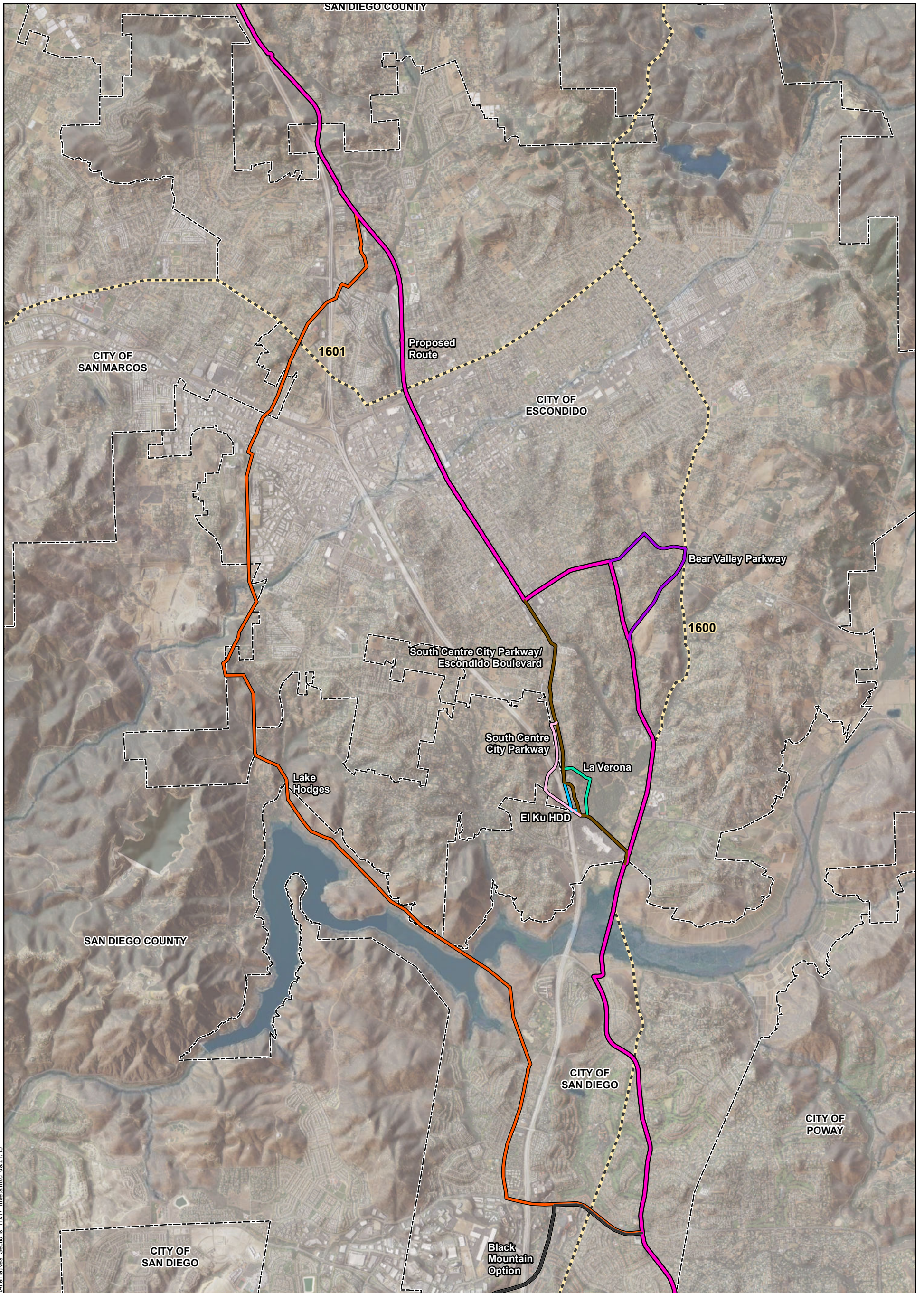


Figure 5-2: Proposed Project Route Segment Alternatives - Inset Map 2 of 3

Pipeline Safety & Reliability Project

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|---------------------|---|-----------------------|---------------------------------|----------------------------|
| Proposed Route | South Centre City Parkway/Escondido Boulevard | El Ku Avenue | Mission Trails | Existing Transmission Line |
| Rainbow | South Centre City Parkway | Scripps Poway Parkway | MCAS/Mission Trails | City/County Boundary |
| Rocking Horse Road | La Verona | Spring Canyon Road | Clairemont Mesa Road | |
| West Lilac Road | Lake Hodges | Creek Road | Black Mountain Option-Mira Mesa | |
| Bear Valley Parkway | El Ku HDD | Kearny Villa Road | Black Mountain Option | |

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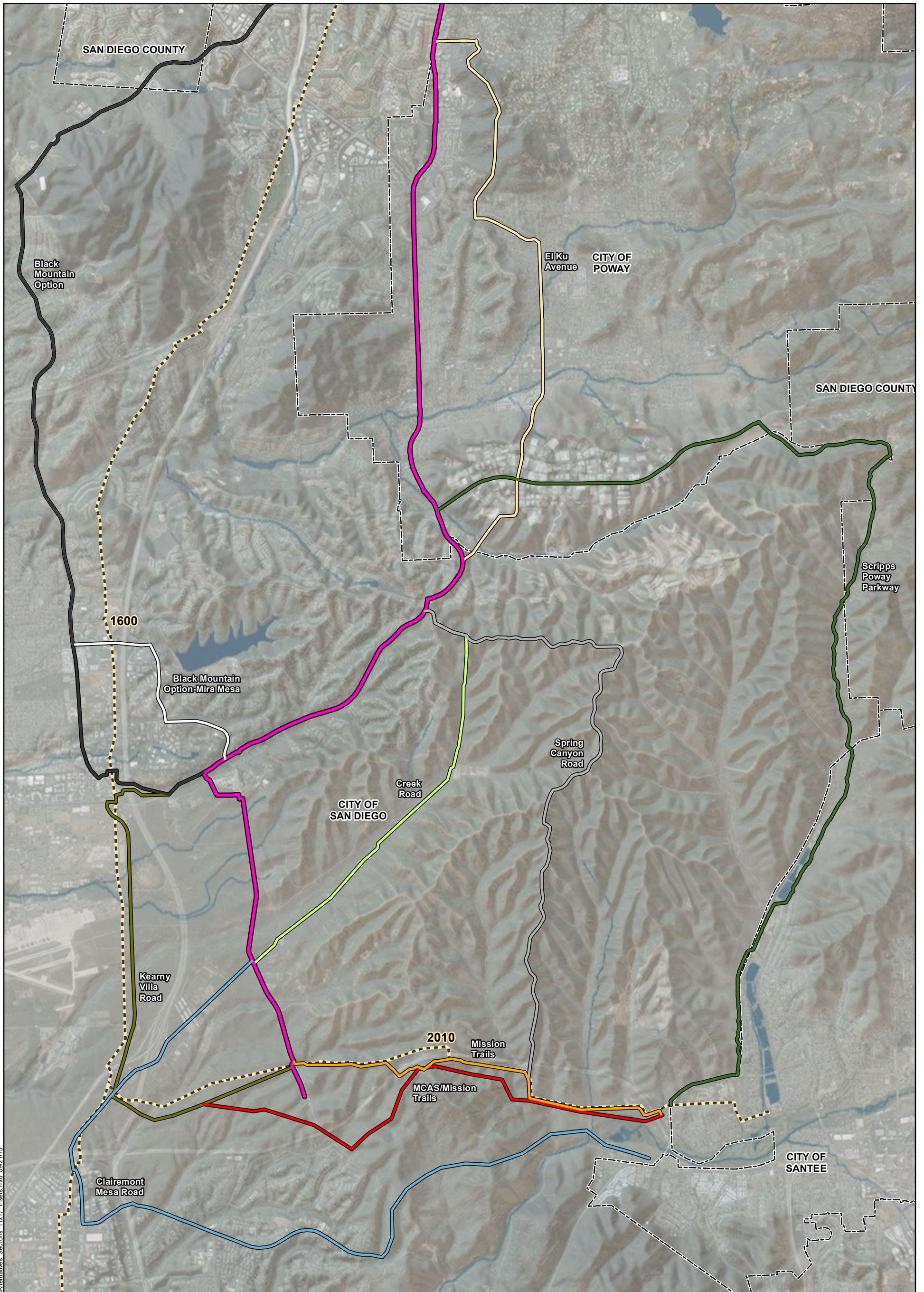
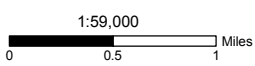


Figure 5-2: Proposed Project Route Segment Alternatives - Inset Map 3 of 3

Pipeline Safety & Reliability Project

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|---------------------|---|-----------------------|---------------------------------|----------------------------|
| Proposed Route | South Centre City Parkway/Escondido Boulevard | El Ku Avenue | Mission Trails | Existing Transmission Line |
| Rainbow | South Centre City Parkway | Scripps Poway Parkway | MCAS/Mission Trails | City/County Boundary |
| Rocking Horse Road | La Verona | Spring Canyon Road | Clairemont Mesa Road | |
| West Lilac Road | Lake Hodges | Creek Road | Black Mountain Option-Mira Mesa | |
| Bear Valley Parkway | El Ku HDD | Kearny Villa Road | Black Mountain Option | |



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The Bear Valley Parkway Route Segment Alternative was considered as a potential route to avoid El Ku Avenue; however, this route travels down narrow residential roads, resulting in potential risk of property damage from construction and trenching equipment operating in narrow workspaces. In addition, construction along El Ku Avenue would likely impact residents' access to and from their homes, as workspace would require the entire road space available. The Proposed Project will utilize a route that avoids El Ku Avenue and avoids the constructability constraints posed by the Bear Valley Parkway Route Segment Alternative. Therefore, this route was not selected as part of the Proposed Route.

South Centre City Parkway/Escondido Boulevard Route Segment Alternative

The South Centre City Parkway/Escondido Boulevard Route Segment Alternative would be approximately 2.8 miles, and would begin at the intersection of West Felicita Avenue and Centre City Parkway south of MP 25.6. The route would continue south along Centre City Parkway, South Escondido Boulevard, and along El Ku Avenue. The South Centre City Parkway/Escondido Boulevard Route Segment Alternative would travel cross-country at the end of El Ku Avenue through recreation land uses to Beethoven Drive and would travel in a southeasterly direction until reconnecting with the Proposed Project alignment near MLV 7. El Ku Avenue is a narrow street and construction would require the entire street width, thus blocking access to residences in the El Ku Avenue neighborhood. Therefore, the South Centre City Parkway/Escondido Boulevard Route Segment Alternative would result in the temporary displacement of up to 34 residences during construction. While the Proposed Project will extend approximately 1.2 miles to avoid impacting this neighborhood, no residences will be displaced and access to homes will be maintained during construction of the Proposed Project. Though the South Centre City Parkway/Escondido Boulevard Route Segment Alternative was initially considered, its narrow street, existing utilities, and the close proximity to residents rendered the route infeasible. In order to avoid displacing residences during construction along El Ku Avenue and potential impacts to landowners, this route was not selected as part of the Proposed Route.

South Centre City Parkway Route Segment Alternative

The South Centre City Parkway Route Segment Alternative would be approximately 1.1 miles, and would begin at the South Centre City Parkway/Escondido Boulevard Route Segment Alternative near the intersection of Cranston Drive and South Escondido Boulevard, traveling along South Centre City Parkway and Clarence Lane. The South Centre City Parkway Route Segment Alternative would then travel cross-country in a southeasterly direction to Beethoven Drive. This segment was considered as an alternative to crossing through the El Ku Avenue neighborhood and would involve diagonal HDD to install the pipeline. However, the elevation differences and angle of the HDD make the constructability of the South Centre City Parkway Route Segment Alternative infeasible. In addition, this route segment alternative would include a lateral encroachment on a Caltrans ROW, which is unlikely to be permitted by Caltrans. Therefore, it was not selected as part of the Proposed Route.

La Verona Route Segment Alternative

The La Verona Route Segment Alternative would be approximately 0.6 mile in length, and would extend east from the South Centre City Parkway/Escondido Boulevard Route Segment Alternative, traveling along La Varona Place and then south in undeveloped areas along the

residential fringe to Beethoven Drive. The La Verona Route Segment Alternative was considered as an eastern alternative to avoid impacts to the El Ku Avenue neighborhood; however, due to this alternative having the same constraints as El Ku Avenue (e.g., a narrow street, existing utilities, and a close proximity to residents), this route was not selected as part of the Proposed Route.

Lake Hodges Route Segment Alternative

The Lake Hodges Route Segment Alternative would be approximately 12.3 miles, and would begin between MP 21.6 and MP 21.7. This route would travel southwesterly until North Shore Lake Hodges Trail and southeasterly adjacent to Lake Hodges, then south along West Bernardo Drive and east along Rancho Bernardo Road to MP 33 of the Proposed Project alignment. The Lake Hodges Route Segment Alternative was considered to reduce traffic impacts along busy streets. However, crossing Lake Hodges using HDD techniques is not feasible due to the alignment and workspace restrictions. Because the impacts associated with utilizing conventional open-cut methods to cross Lake Hodges—a source for drinking water—would be unavoidable, the Lake Hodges Route Segment Alternative was not selected as part of the Proposed Route.

El Ku Avenue Route Segment Alternative

The El Ku Avenue Route Segment Alternative would be approximately 0.34 mile in length and would travel south of South Escondido Boulevard, parallel to I-15. The route would continue from the South Centre City Parkway/Escondido Boulevard Route Segment Alternative in a southerly direction, rather than turning east into El Ku Avenue. The El Ku Avenue Route Segment Alternative was considered as another alternative to avoid construction within El Ku Avenue by utilizing HDD methods along the edge of private properties and the adjacent Caltrans ROW. However, because it is not possible to construct this route without resulting in physical damage to properties and/or encroachment into the backyards, this route was not selected as part of the Proposed Route.

Community Road Route Segment Alternative

The Community Road Route Segment Alternative would be approximately 6.8 miles in length and would be located entirely within the City of Poway. The Community Road Route Segment Alternative would begin at MP 34.1 and would travel east along Stone Canyon Road for approximately 0.4 mile until it turns south, traveling cross-country over Twin Peaks, open space and hiking trails, and an area designated by the City of Poway for residential use where residences are currently being built. The route would exit the Twin Peaks open space near Silverset Park along Shadowline Street, which turns into Silverset Street, until it veers to the east at Twin Peaks Road. The Community Road Route Segment Alternative would travel along Twin Peaks Road for approximately 0.7 mile until it turns south and travels along Community Road for approximately three miles until the end of the road. The route would then travel cross-country for approximately 0.6 mile, meeting with the Proposed Project near MP 39.6. The Community Road Route Segment Alternative would result in additional cross-country travel, potentially impacting recreational space and residences during construction. The Proposed Project will avoid these impacts at this location by traveling entirely within Pomerado Road and

its road shoulder. Therefore, the Community Road Route Segment Alternative was not selected as part of the Proposed Route.

Scripps Poway Parkway Route Segment Alternative

The Scripps Poway Parkway Route Segment Alternative would be approximately 13.0 miles in length, and would enter the boundaries of the cities of Poway, San Diego, and Santee, as well as unincorporated areas of San Diego County. The route segment alternative would begin near MP 39.0 of the Proposed Project and would propose a new pipeline terminus location. The Scripps Poway Parkway Route Segment Alternative would turn east from the Proposed Project route along Scripps Poway Parkway for approximately 3.5 miles until Sycamore Canyon Road. It would then travel along or parallel to Sycamore Canyon Road—which contains both paved and unpaved road—for the majority of the route, until it meets the Santee Lakes. At this point, the route would travel just west of the Santee Lakes until Mast Boulevard, where it veers west and ends at a new pipeline terminus in the City of Santee. The Scripps Poway Parkway Route Segment Alternative was considered as an option to avoid impacts to MCAS Miramar and along Pomerado Road. However, the route was not selected as part of the preferred alignment because it would result in additional environmental impacts and potential permitting constraints due to the approximately 4.2 miles of travel within and adjacent to the unpaved, narrow portion of Sycamore Canyon Road, and it would travel within the Goodan Ranch Sycamore Canyon Preserve. In addition, road closures would be necessary during construction, as the paved portion of Sycamore Canyon Road is limited to a 20-foot road width. Therefore, the Scripps Poway Parkway Route Segment Alternative was not selected as part of the Proposed Route.

Spring Canyon Road Route Segment Alternative

The Spring Canyon Road Route Segment Alternative would be approximately 7.3 miles in length, and would begin near MP 40.3 of the Proposed Project within the City of San Diego. The route would travel west along Spring Canyon Road—an unpaved trail—for approximately 2.2 miles, heading south along an unnamed, unpaved road, crossing over SR-52, and ending the pipeline within Mission Trails Regional Park. While the Spring Canyon Road Route Segment Alternative would avoid impacts to MCAS Miramar, the route would travel entirely along or adjacent to unpaved roads or trails and through undeveloped land, which would result in additional environmental impacts. In addition, the Proposed Project avoids construction within Mission Trails Regional Park, while the Spring Canyon Road Route Segment Alternative would result in the construction of facilities associated with the pipeline terminus within the park. Therefore, the Spring Canyon Road Route Segment Alternative was not selected as part of the Proposed Route.

Creek Road Route Segment Alternative

The Creek Road Route Segment Alternative would be approximately 4.8 miles in length within the City of San Diego, and would begin near MP 40.3 of the Proposed Project, traveling along Sycamore Canyon Road until it meets Creek Road. The route would travel in a southerly direction along Creek Road—which turns into Rifle Range Road—until it meets again with the Proposed Project alignment near MP 45.5. The route would travel through approximately one mile of open space within Scripps Miramar Ranch and approximately 3.3 miles within the boundaries of MCAS Miramar. The Creek Road Route Segment Alternative was originally

considered as a direct route that would avoid impacts along Pomerado Road. Although impacts along the approximately 2.8-mile segment that parallels Pomerado Road would be avoided, this Route Segment Alternative resulted in additional impacts to open space and MCAS Miramar land. Therefore, the Creek Road Route Segment Alternative was not selected as part of the Proposed Route.

Kearny Villa Road Route Segment Alternative

The Kearny Villa Road Route Segment Alternative would be approximately 6.28 miles in length, and would cross the boundaries of the City of San Diego and San Diego County. The route segment alternative would leave the Proposed Project near MP 43.2, generally following Pomerado Road until its intersection with Kearny Villa Road, where it travels south along Kearny Villa Road until the I-15 and SR-52 interchange. The route would then travel to the east to meet with the Proposed Project near MP 46.6, near the Proposed Project's terminus. The Kearny Villa Road Route Segment Alternative was considered to avoid travel within MCAS Miramar and to constrain construction to roadways (i.e., Pomerado Road and Kearny Villa Road). However, the route cannot avoid crossing I-15 and Miramar Road without entering open space with a high potential for vernal pools to occur. In addition, the Kearny Villa Road Route Segment Alternative would result in greater traffic impacts on Miramar Road. Due to the potential impacts to vernal pools and to traffic along Miramar Road, the Kearny Villa Road Route Segment Alternative was not selected as part of the Proposed Route.

Mission Trails Route Segment Alternative

The Mission Trails Route Segment Alternative would extend the Proposed Project by approximately 4.2 miles, beginning near MP 46.6 of the Proposed Project and traveling in a southeasterly direction. The route would cross SR-52 and would travel within Mission Trails Regional Park, ending at a vacant lot near the intersection of Mast Boulevard and Mount Soledad Freeway. This route was originally considered to bring the Proposed Project's terminus to the City of Santee and included a new pressure-limiting station. However, this route was not selected as part of the preferred alignment because construction of the route would result in impacts to Mission Trails Regional Park, including impacts to its biological resources and recreational use, as the route travels through heavily used hiking trails in the undeveloped park. To reduce additional potential impacts to environmental and recreational resources that would result from construction within the preserved land, the Mission Trails Route Segment Alternative was not selected as part of the Proposed Route.

MCAS/Mission Trails Route Segment Alternative

The MCAS/Mission Trails Route Segment Alternative would measure approximately 5.4 miles in length, and would extend from the Kearny Villa Road Route Segment Alternative (near its terminus), traveling east through the southern end of MCAS Miramar, crossing SR-52, and traveling through Mission Trails Regional Park to a new pipeline terminus within the City of Santee. This route was also considered to bring the Proposed Project's terminus to the City of Santee and included a new pressure-limiting station. However, this route was not selected as part of the preferred alignment because construction of the route would result in impacts to Mission Trails Regional Park, including impacts to its biological resources and recreational use, as the route travels through heavily used hiking trails in the undeveloped park. To reduce

additional potential impacts to environmental and recreational resources that would result from construction within the preserved land, the MCAS/Mission Trails Route Segment Alternative was not selected as part of the Proposed Route.

Clairemont Mesa Road Route Segment Alternative

The Clairemont Mesa Road Route Segment Alternative would measure approximately 10.3 miles, extending from near MP 45.5 of the Proposed Project and ending at a new pipeline terminus within the City of Santee. From near MP 45.5 of the Proposed Project, the route would travel southwest along H Avenue, meeting up with Kearny Villa Road until it crosses SR-52 and begins traveling south along Ruffin Road. At Clairemont Mesa Boulevard, the Clairemont Mesa Road Route Segment Alternative would veer east and follow Clairemont Mesa Boulevard until the road's end. From there, the route would travel cross-country through Mission Trails Regional Park until it ends in a vacant lot at the intersection of West Hills Parkway and Mission Gorge Road. The route segment alternative was considered to avoid cross-country travel within MCAS Miramar. However, the Clairemont Mesa Road Route Segment Alternative would result in additional impacts to residences during construction as much of the route travels within residential areas. In addition, the route would travel approximately three miles within Mission Trails Regional Park, and construction would result in greater impacts to recreational and biological resources. Therefore, to reduce additional potential impacts to residences and recreational and biological resources, the Clairemont Mesa Road Route Segment Alternative was not selected as part of the Proposed Route.

Black Mountain Option – Mira Mesa Route Segment Alternative

The Black Mountain Option – Mira Mesa Route Segment Alternative would measure approximately 12.9 miles in length. The route begins near MP 33.0, traveling west along Rancho Bernardo Road and generally southwest along Bernardo Center Drive, which turns into Carmel Valley Road. The Black Mountain Option – Mira Mesa Route Segment Alternative would leave Carmel Valley Road at its intersection with Black Mountain Road, traveling south until it meets with Mira Mesa Boulevard and continues to the east and southeast along Scripps Ranch Boulevard, ending near MP 43.0 of the Proposed Project. This route was considered as an option to avoid traffic and residential impacts along Pomerado Road, as well as to avoid construction impacts adjacent to Pomerado Hospital. However, the majority of the route is located within Black Mountain Road, a busy arterial, and the route crosses a substantial number of major intersections, including three freeway crossings. This would result in greater traffic impacts during construction, as well as construction-related impacts to the residences. Therefore, the Black Mountain Option – Mira Mesa Route Segment Alternative was not selected as part of the Proposed Route.

Black Mountain Option Route Segment Alternative

The Black Mountain Option Route Segment Alternative S would measure approximately 13.1 miles in length, beginning near MP 33.0 of the Proposed Project and following the same route as the Black Mountain Option – Mira Mesa Route Segment Alternative R until the intersection of Black Mountain Road and Mira Mesa Boulevard. Instead of turning to the east, the Black Mountain Option Route Segment Alternative would continue south along Black Mountain Road until Candida Street, where the route turns to the east and travels along Via Pasar and Via Excelencia. The route would cross commercial properties and I-15 until it meets Pomerado Road, where it briefly travels to

the east before meeting MP 43.2 of the Proposed Project. As with the Black Mountain Option – Mira Mesa Route Segment Alternative, the Black Mountain Option Route Alternative was also considered as an option to avoid traffic and residential impacts along Pomerado Road, as well as to avoid construction adjacent to Pomerado Hospital. However, as described for the Black Mountain Option – Mira Mesa Route Segment Alternative, increased impacts to traffic and residences would result during construction. In addition to these impacts, the Black Mountain Option Route Segment Alternative travels through a busy commercial area and off-road through a single commercial property. Additional cross-country travel through undeveloped space would also result from the use of this route segment alternative. Therefore, the Black Mountain Option Route Segment Alternative was not selected as part of the Proposed Route.

5.2.5 Conclusion

As discussed previously, the primary purpose of the Proposed Project is to construct a new natural gas pipeline and associated facilities that would address three primary objectives for the San Diego system: implementation of the PSEP as soon as is practicable, system reliability and resiliency, and operational flexibility to address capacity constraints. The Applicants fully evaluated alternatives that meet most or all of the feasibility criteria and the Proposed Project objectives. Each alignment was evaluated in detail and the Applicants determined that the Proposed Project best met all of the objectives and simultaneously resulted in the least environmental impacts. Once the Proposed Project was determined as the preferred alternative, the Applicants analyzed the environmental impacts of potential route segment alternatives for the proposed alignment and determined that the Proposed Route reflected the most reasonable balance of the following routing objectives:

- implement new pipeline safety requirements for the existing Line 1600 as expeditiously as possible;
- follow generally accepted principles for siting infrastructure;
- avoid unnecessary impacts to the environment;
- avoid unnecessary acquisition of private property;
- avoid impacts to mission-critical operations at MCAS Miramar; and
- meet current and near-term needs in a cost-effective and efficient manner.

Ultimately, the Proposed Project was selected as the preferred alternative due to its ability to meet each of the Proposed Project objectives, as well as its consideration of the following additional criteria:

- environmental impacts and constraints,
- impacts to property owners,
- site suitability,
- economic viability,
- regulatory limitations, and
- jurisdictional boundaries.

5.3 GROWTH-INDUCING IMPACTS

5.3.0 Growth-Inducing Impacts

CEQA requires a lead agency to review and discuss ways in which a project could induce growth. The CEQA Guidelines (§15126.2d) considers a project to be growth-inducing if it fosters economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding area. New employees hired for proposed commercial and industrial development projects and population growth resulting from residential development projects represent direct forms of growth. Other examples of growth-inducing projects are the expansion of urban services into previously undeveloped areas or the removal of major obstacles to growth, such as transportation corridors and potable water supply.

The growth-inducing potential of the Proposed Project could be considered significant if it were to stimulate human population growth or a population concentration in San Diego County or other surrounding communities above what is assumed in local and regional land use plans, or in projections made by regional planning authorities. Significant growth impacts could also occur if the Proposed Project were to provide infrastructure or service capacity to accommodate growth levels beyond those permitted by local or regional plans and policies. Because the Proposed Project will not increase housing, bring in new services, or improve the existing infrastructure system (with the exception of making the existing natural gas service more reliable and adding additional capacity to accommodate planned growth), it will not stimulate population growth or result in a new concentration of residents, businesses, or industries. Further, because temporary increases in population associated with Proposed Project construction will be negligible and because lodging establishments are available, a less-than-significant impact to population growth and housing will result from construction of the Proposed Project. In addition, the additional capacity that will be provided by the Proposed Project will not induce growth; rather, it is necessary to meet the forecasted natural gas demand of San Diego County and to improve the existing system's reliability. Therefore, the Proposed Project will have no growth-inducing impacts.

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