Southern California Gas Company

Proposed Hydrogen Pipeline

Systems Study – Rev. 1

Prepared by

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Executive Summary

Southern California Gas Company commissioned a high level feasibility study to be conducted to determine both suitable production sites for the potential development of renewable energy, either wind or solar and routing for a pipeline to connect into delivery points within the Los Angeles Basin (LA Basin). [redacted]
Paragon was engaged to provide a high level evaluation of the right of way requirements for a proposed hydrogen (H2) pipeline system for the following route scenarios:

- Intrastate Pipeline from California Central Valley (Five Points) to the LA Basin delivery points
- Intrastate Pipeline from Mojave to the LA Basin delivery points
- Intrastate Pipeline from Blythe/Whitewater to the LA Basin delivery points
- Interstate Pipeline from the Intermountain Power Project and the Advanced Clean Energy Storage project near Delta, Utah to the LA Basin delivery points

The primary delivery points in the LA Basin include Los Angeles Department of Water and Power's Valley, Scattergood, Harbor and Haynes Electric Generating Stations, the Ports of Los Angeles and Long Beach and other takeoff points for hydrogen fueling stations.

The scope of the right of way study included evaluation of the right of way (ROW) requirements by type of ROW, rough order of magnitude cost (+/- 50%) for acquisition of the right of way and any associated annual fees, schedule to acquire and major risks or project showstoppers for each of the pipeline systems noted above. In addition, acreage assemblages to accommodate the development of a solar farm were identified and analyzed for suitability for production, land and ownership types and associated land acquisition and/or annual costs. For background, a commencement point for each pipeline system was provided to Paragon along with the route alignment for each. The commencement point of each of the pipeline systems provided the search area parameters to identify the required amount of acreage for each potential production site.

Paragon was provided the acreages required for each production site by the project team. Although the possibility of acreage for a High, Medium and Low case for solar development was reviewed, this land and right of way study focuses upon the acreage required for the Low Case for solar only development. Five potential production and pipeline systems were studied at locations identified above and referenced as Five Points, Mojave, Whitewater, Blythe and Delta. This Executive Summary has been provided to highlight the most salient information about each of the potential production sites and pipeline routes that have been analyzed and studied to determine feasibility, estimated costs for land and right of way acquisition, schedule for acquisition and any "showstoppers" or major issues associated with each of them.

In addition, Paragon has provided a summary discussion of the effects and ramifications of the H2 project being regulated and having the power of eminent domain or being an unregulated private utility.
[redacted]

The land and right of way required for the production sites and for the H2 pipeline are summarized in the following sections.

1.0 Five Points

The Five Points acreage assemblage is located in the central valley of California and is primarily agricultural land as summarized below and in more detail within Section 3.0 of the Land and Right of Way Study (Study)

1.1 Production Site

The acreage requirement for the Five Points production site for solar only development is [redacted] acres. [redacted] The overall estimated cost to acquire this site, as assembled was is estimated at over [redacted]. A table showing the breakdown of the estimated costs for this site is included in Section 3.1.1 of the Study.

1.2 Pipeline

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from southern Fresno County through Kings and Kern counties to the Ports in southern Los Angeles County, shown in Figure 3.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type. There will be [redacted] installed in the right of way from 5 Points to the proposed hydrogen storage facility in Santa Clarita in Los Angeles County. From Santa Clarita to the Ports [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe. The pipeline route traverses mostly rural agricultural or undeveloped land in Fresno, Kings, Kern and northern Los Angeles Counties. The remainder of the route is in urban Los Angeles County [redacted] to the Ports. [redacted] or the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted] As detailed below the estimated right of way project cost for the route is [redacted] with a

recurring annual cost of [redacted]

2.0 Mojave

The Mojave acreage assemblage is located in the high desert of California in eastern Kern County. The [redacted] acres is primarily desert land but also includes existing solar development as summarized below and in more detail within Section 4.0 of the Land and Right of Way Study.

2.1 Production Site

The acreage requirement for the Mojave site for solar only development is [redacted] acres. [redacted] The overall estimated cost to acquire this site, as assembled was is estimated at just over [redacted]. A table showing the breakdown of the estimated costs for this site is included in Section 4.1.1 of the Study. [redacted]

2.2 Pipeline

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from northern Los Angeles County to the Ports in southern Los Angeles County, shown in Figure 4.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type. There will be [redacted] installed in the right of way from Mojave to the proposed hydrogen storage facility in Santa Clarita in Los Angeles County. From Santa Clarita to the Ports [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe. The pipeline route traverses some rural undeveloped land in the northern portion of the route and some developed property in the middle segment. [redacted] the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]

[redacted]. As detailed below the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

3.0 Whitewater

The Whitewater acreage assemblage is located in the eastern desert of southern California in Riverside County. It is primarily desert land but also includes existing wind and residential development as summarized below and in more detail within Section 4.0 of the Land and Right of Way Study. The pipeline routing from Blythe into the LA Basin is the same for Whitewater into the LA Basin as Blythe is east of Whitewater.

3.1 Production Site

The acreage requirement for the Whitewater site for solar only development was not provided to Paragon. [redacted] This area is near Palm Springs and Cabazon and other small local developed areas. [redacted]

3.2 Pipeline

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Whitewater through Riverside and Orange Counties to the Ports in southern Los Angeles County, then north to the proposed hydrogen storage site in Santa Clarita, shown in Figure 5.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type. There will be [redacted] installed in the right of way from Whitewater to the Ports. From the Ports to Santa [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe. [redacted]. For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted] As detailed below, the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted].

4.0 Blythe

The Blythe acreage assemblage is located in the desert of California in eastern Riverside County just west of the town of Blythe. It is primarily desert land which includes land set aside by the BLM for

solar development as summarized below and in more detail within Section 6.0 of the Land and Right of Way Study.

4.1 Production Site

The acreage requirement for the Blythe site for solar only development is [redacted] acres. [redacted] The overall estimated cost to acquire this site, as assembled, is estimated at just over [redacted]. A table showing the breakdown of the estimated costs for this site is included in Section 6.1.1 of the Study. [redacted]

4.2 Pipeline

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Blythe through Riverside and Orange Counties to the Ports in southern Los Angeles County, then north to the proposed hydrogen storage site in Santa Clarita, shown in Figure 6.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type. There will be [redacted] installed in the right of way from Blythe to Whitewater. There will be [redacted] installed in the right of way from Whitewater to the Ports. From the Ports to Santa Clarita [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe. [redacted] For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]. As detailed below, the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

5.0 Delta

The Delta acreage assemblage is located in Millard and Juab counties in Utah just east of the town of Delta and the Advanced Clean Energy Storage project as summarized below and in more detail within Section 7.0 of the Land and Right of Way Study.

5.1 Production Site

The production site at Delta is [redacted] acres. [redacted] The overall cost of this site is nearly [redacted] in one time initial costs with another nearly [redacted] in annual costs for a total of nearly [redacted] for a [redacted]

5.2 Pipeline

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Delta, Utah through Utah and Nevada into California to the Ports in southern Los Angeles County, shown in Figure 7.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type. There will be [redacted] installed in the right of way for the entire route from Delta to the Ports. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe. [redacted]. For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]. As detailed below the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

6.0 Summary of Land and Pipeline Costs

COST SUMMARY PER SYSTEM FOR LOW CASE				
SYSTEM	PRODUCTION SITE	PIPELINE	TOTAL PER SYSTEM	ANNUAL COSTS
FIVE POINTS	[redacted]			
MOJAVE				
WHITEWATER				
BLYTHE				
DELTA				

2.0 Introduction

Southern California Gas Company commissioned a high level feasibility study to be conducted to determine both suitable production sites for the potential development of renewable energy, either wind or solar and routing for a pipeline to connect into delivery points within the Los Angeles Basin (LA Basin). [redacted].
Paragon was engaged to provide a high level evaluation of the right of way requirements for a proposed hydrogen (H2) pipeline system for the following route scenarios:

- Intrastate Pipeline from California Central Valley (Five Points) to the LA Basin delivery points
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The primary delivery points in the LA Basin include Los Angeles Department of Water and Power's Valley, Scattergood, Harbor and Haynes Electric Generating Stations, the Ports of Los Angeles and Long Beach and other takeoff points for hydrogen fueling stations.

The scope of the right of way study included evaluation of the right of way (ROW) requirements by type of ROW, rough order of magnitude cost (+/- 50%) for acquisition of the right of way and any associated annual fees, schedule to acquire and major risks or project showstoppers for each of the pipeline systems noted above. In addition, acreage assemblages to accommodate the development of a solar farm were identified and analyzed for suitability for production, land and ownership types and associated land acquisition and/or annual costs. For background, a commencement point for each pipeline system was provided to Paragon along with the route alignment for each. The commencement point of each of the pipeline systems provided the search area parameters to identify the required amount of acreage for each potential production site.

Paragon was provided the acreages required for each production site by the project team. Although the possibility of acreage for a High, Medium and Low case for solar development was reviewed, this land and right of way study focuses upon the acreage required for the Low Case for solar only development. Five potential production and pipeline systems were studied at locations identified above and referenced as Five Points, Mojave, Whitewater, Blythe and Delta. This report addresses each system, the associated land and right of way issues, estimated costs and schedule for both and any significant or "showstopper" issues.

In addition, Paragon has provided a summary discussion of the effects and ramifications of the H2 project being regulated and having the power of eminent domain or being an unregulated private utility which is further discussed in this section of the report.

2.1 Use of Eminent Domain Discussion

The possibility of utilizing eminent domain for a hydrogen pipeline is an issue for discussion and ultimately, for review and decisions by both SoCal Gas (SCG) and the regulatory authorities. For California, this would be the California Public Utilities Commission (CPUC) which regulates intrastate public utilities in California. As for an interstate pipeline from Delta, Utah crossing through Utah, Nevada and into California, this would be a question for the federal agencies which regulate utilities. Whether the hydrogen pipeline can, or cannot, be regulated as a utility, and consequently having the power of acquiring property and rights of way through eminent domain is a question for the legal and regulatory team at SoCal Gas and the regulatory authorities. Therefore, this discussion is focused on the implications as they relate to land and right of way acquisition with or without the use of eminent domain.

2.1.1 Co-location within Existing SoCal Gas Company Rights of Way

One question that has been asked is could the hydrogen pipeline co-locate in SoCal Gas Company's (SCG) existing natural gas pipeline rights of way which, as a regulated public utility, were acquired under the threat of eminent domain whether it was utilized or not for the acquisition of the rights of way. If the hydrogen pipeline is a regulated utility then, assuming space in the existing right of way is available, then it could co-locate within the footprint of the existing easements on private properties. For public properties under federal or state jurisdiction, Right of Way Grants/Leases are specific to each pipeline so this would not apply in that circumstance. However, this would not necessarily preclude co-location within the same right of way footprint although a new Grant of Right of Way (federal) or Lease (state) would be required. The issue of additional line rights, if any, on private properties would also need to be explored. [redacted] This assumes the width of the existing easement could accommodate an additional pipeline(s) [redacted] in diameter. Regardless of co-location, additional work space out of the existing right of way for construction would be necessary. If the hydrogen pipeline is not a regulated utility and has no rights of eminent domain, it could not occupy the existing right of way of a public utility as it was acquired under the threat of eminent domain and the cost of acquisition is included in SCG's rate base for its customers. The CPUC would have to approve use of regulated utility right of way for use with an unregulated pipeline.

2.1.2 Right of Way Acquisition with Eminent Domain

Right of way acquisition with the right of eminent domain would proceed in the same manner that SCG operates today in acquiring rights of way. [redacted]

2.1.3 Right of Way Acquisition without the use of Eminent Domain

The bigger issue is if the pipeline is to be a private unregulated pipeline. This could create issues for use of public properties such as Federal or State land and in the acquisition of private property for both the production site and the pipeline. Paragon has experience in assembling land for private developments and in acquiring right of way for private, unregulated pipelines and for high voltage electric transmission lines. [redacted]

3.0 Proposed SoCal Gas H2 System 1: Five Points – Low Case

This section of the Study Report discusses both the land needed for the production site at Five Points and the routing of the hydrogen pipeline to delivery points in the LA Basin. The land requirement for the production site is discussed first followed by a discussion of the land types, issues, cost and schedule for the acquisition for the land and the right of way for the hydrogen pipeline. The acreage needed for production was provided to Paragon Partners and assumes a 100% Solar only case. For Five Points, the acreage required for the Low Case is listed as [redacted] acres. Our analysis and assemblage is based upon this assumption. Pipeline routing was provided to Paragon. Our review and analysis of the land and pipeline right of way routing is discussed below.

3.1 Production Site

As noted above, the production site acreage that would be required for the Low Case at Five Points assumes Solar only for a total of [redacted]. Paragon has reviewed the available land in the area and assembled the required acreage as shown in Figure 3.1 below.

[redacted]

[redacted] The land value for irrigated agricultural lands in this area ranges from [redacted] to [redacted] per acre on average. This does not include crop loss and other damages.

[redacted]. Kings County solar farm mitigation requirements were set forth in a Study Session of the Planning Department in 2012 and are quoted as follows:

"3. AGRICULTURAL MITIGATION: Varying suggestions have been made in terms of the agricultural mitigation requirements for commercial solar projects. Currently, the County requires a 1:1 ratio of agricultural land to be preserved for every acre of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance converted for a commercial solar facility. A reduction allowance has been accepted when projects propose to locate mitigation sites in either the Exclusive Agricultural Zone District or areas designated in Figure RC-14 of the 2035 Kings County General Plan for preservation priority. Options for Agricultural Mitigation include: A. Maintain a uniform standard of requiring a ratio of 1:1 to preserve an equivalent amount of agricultural land to coincide with the life of the project. The agricultural land preserved shall be of equal or greater quality to the land that is converted to solar. (i.e., if Farmland of Statewide Importance is converted to solar then the agricultural land preserved must not be in a lower classification than Farmland of Statewide Importance.) B. Allow reduced mitigation with a ratio of 0.5:1 when land is preserved in either the Exclusive Agricultural Zone District or areas designated in Figure RC-14 of the 2035 Kings County General Plan for preservation priority. The agricultural land preserved shall be of equal or greater quality to the land that is converted to solar and shall coincide with the life of the project. C. Require increased mitigation with a ratio of 2:1 for areas identified as "Medium Priority" and mitigation with a ratio of 4:1 in areas identified "Medium-High Priority" or greater as defined in Figure RC-13 of the 2035 Kings County General Plan. The agricultural land preserved shall be of equal or greater quality to the land that is converted to solar and shall coincide with the life of the project. Mitigation for the loss of agricultural land is not applied when projects are sited on land not classified as either "Prime Farmland," "Statewide Important Farmland," or "Unique Farmland" according to the State Important Farmland Mapping and Monitoring Program."

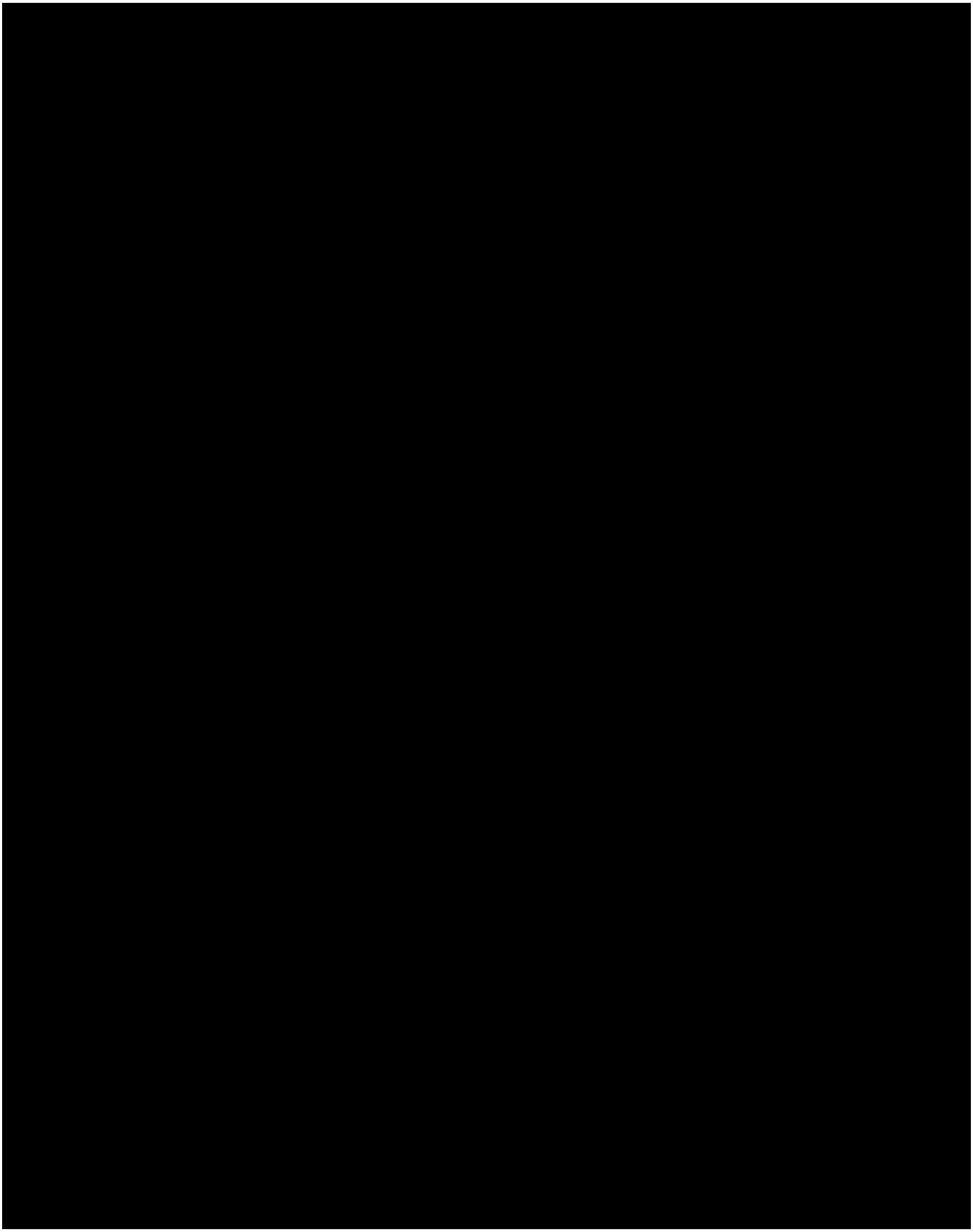
[redacted]

[redacted]

Another consideration is whether or not the mineral interests have been severed. If they are, research will need to be conducted to identify the mineral interest owner(s) [redacted] For the purpose of the study, it has been assumed that the mineral interests have not been severed from the surface.

Another consideration is land under the Williamson Act or Farmland Security Zone, [redacted] Per the Kings County Planning Study Group in 2012 "Approximately 84 percent of all agricultural land in Kings County is under Williamson Act (10 yr.) or Farmland Security Zone (20 yr.) contract. There are about 675,000 acres of contracted land in Kings County with about half under Williamson Act, and half under Farmland Security Zone contract." This is a consideration to be explored more thoroughly in future, more detailed studies of this area.

As more solar developers enter the market in California, the demand for land suitable for solar farm development will put upward pressure on land value in the area. For example, first phase development of the 20,000 acre, 2.7 GW Westlands Solar Park in western Fresno/Kings counties just a bit southeasterly of the selected location was approved in 2020 with additional phase planned for the future. The map included below as Figure 3.2 [redacted]



[redacted]

3.1.1 Land Cost Summary

LAND TYPE	ESTIMATED ACREAGE	ESTIMATED COST
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
	TOTAL ESTIMATED COST	[redacted]

3.1.2 Impacts and Issues

[redacted]

3.2 Pipeline Route Analysis

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from southern Fresno County through Kings and Kern counties to the Ports in southern Los Angeles County, shown in Figure 3.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type.

There will be [redacted] installed in the right of way from 5 Points to the proposed hydrogen storage facility in Santa Clarita in Los Angeles County. From Santa Clarita to the Ports [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe.

The pipeline route traverses mostly rural agricultural or undeveloped land in Fresno, Kings, Kern and northern Los Angeles Counties. The remainder of the route is in urban Los Angeles County using public roads to the Ports. [redacted]

3.2.1 Right of Way Costs

For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]

As detailed below the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

SYSTEM 1 - FIVE POINTS

PROPERTY TYPE	MILES	% of Route	PROJECT COST	ANNUAL COST
[redacted]				
MILEAGE TOTAL		TOTAL COST		

3.2.2 Impacts and Issues

[redacted]

3.3 Right of Way Schedule

[redacted]

Figure 3.3 **System 1 - Five Points Pipeline Route**

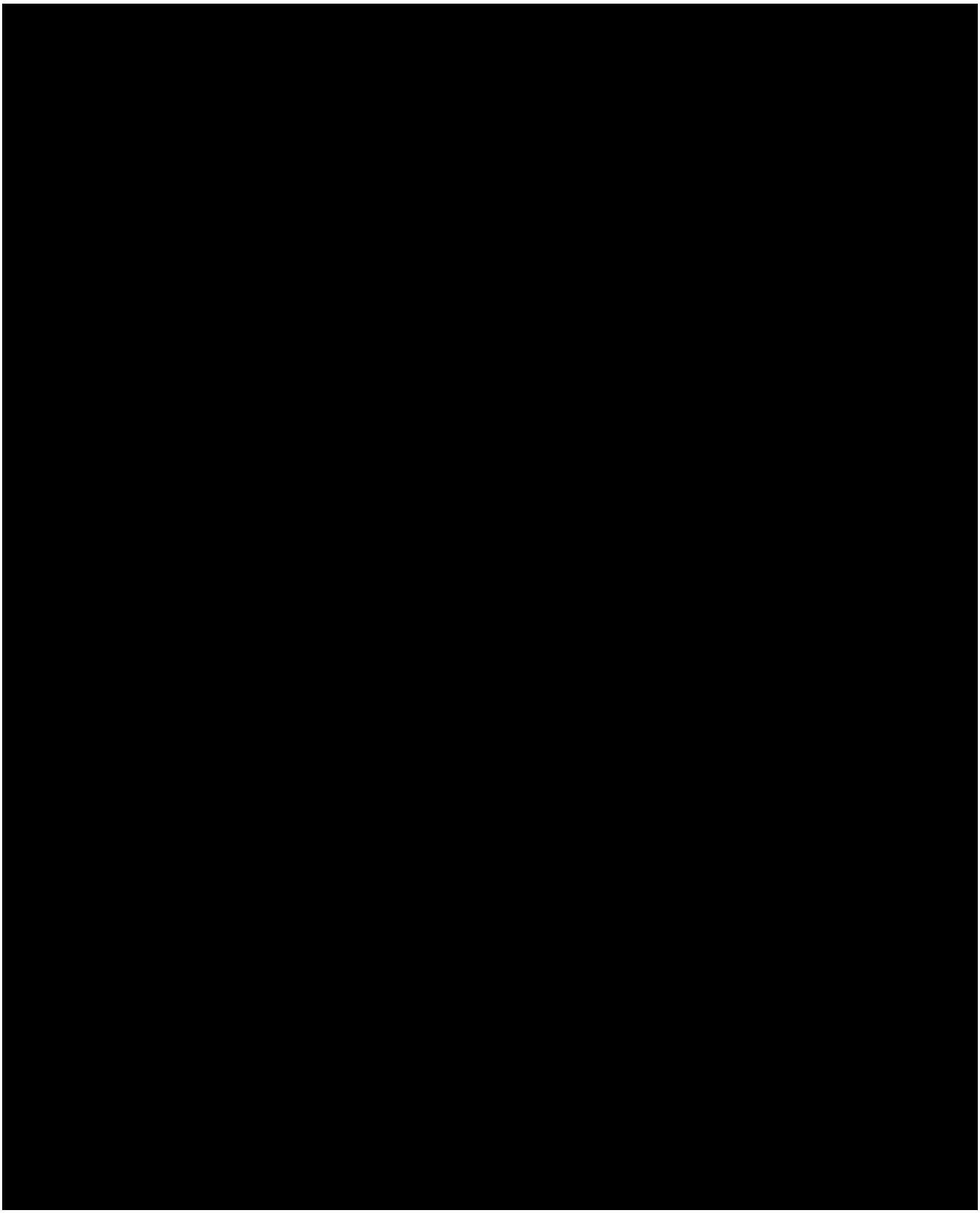
4.0 Proposed SoCal Gas H2 System 2: Mojave – Low Case

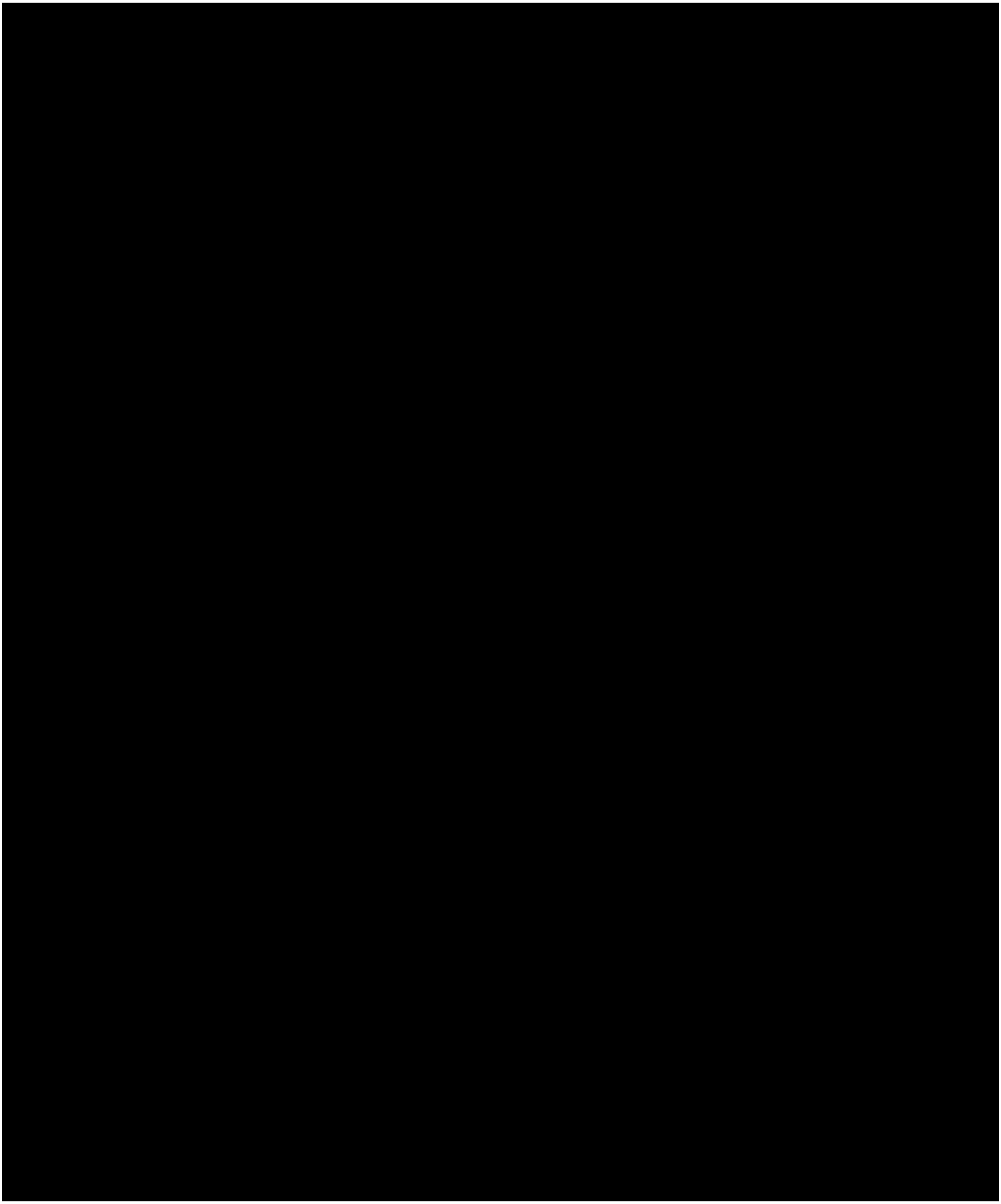
This section of the Study Report discusses both the land needed for the production site at Mojave and the routing of the hydrogen pipeline to delivery points in the LA Basin. The land requirement for the production site is discussed first followed by a discussion of the land types, issues, cost and schedule for the acquisition for the land and the right of way for the hydrogen pipeline. The acreage needed for production was provided to Paragon Partners and assumes a 100% solar only case. For Mojave, the acreage required for the Low Case is listed as [redacted] acres. Our analysis and assemblage is based upon this assumption. Pipeline routing was provided to Paragon. Our review and analysis of the land and pipeline right of way routing is discussed below.

4.1 Production Site

As noted above, the production site acreage that would be required for the Low Case at Mojave assumes Solar only for a total of [redacted] acres. Paragon has reviewed the available land in the area and assembled the required acreage as shown in Figure 4.1 below.

[redacted]





Another consideration is whether or not the mineral interests have been severed from the surface interest. If they are, research will need to be conducted to identify the mineral interest owner(s) [redacted] For the purpose of the study, it has been assumed that the mineral interests have not been severed from the surface.

4.1.1 Land Cost Summary

The costs for various types of land included in the assemblage for Mojave and the associated estimated acquisition cost is presented below.

LAND COST SUMMARY

LAND TYPE	ESTIMATED ACREAGE	ESTIMATED COST
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]
	TOTAL	[redacted]

4.1.2 Impacts and Issues

4.2 Pipeline Route Analysis

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Eastern Kern County to the Ports in southern Los Angeles County, shown in Figure 4.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type.

There will be [redacted] installed in the right of way from Mojave to the proposed hydrogen storage facility in Santa Clarita in Los Angeles County. From Santa Clarita to the Ports [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe.

The pipeline route traverses some rural undeveloped land in the northern portion of the route and some developed property in the middle segment. [redacted] miles of the route uses public roads. [redacted]

4.2.1 Right of Way Costs

For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]

As detailed below the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted].

SYSTEM 2 - MOJAVE

PROPERTY TYPE	MILES	ROUTE %	ESTIMATED COST	ANNUAL COST
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
MILEAGE TOTAL	[redacted]	TOTAL COST	[redacted]	[redacted]

4.2.2 Impacts and Issues

[redacted]

4.3 Right of Way Schedule

[redacted]

Figure 4.3

System 2 - Mojave Pipeline Route

5.0 Proposed SoCal Gas H2 System 3: Whitewater – Low Case

This section of the Study Report discusses both the land needed for the production site at Whitewater and the routing of the hydrogen pipeline to delivery points in the LA Basin. The land requirement for the production site is discussed first followed by a discussion of the land types, issues, cost and schedule for the acquisition for the land and the right of way for the hydrogen pipeline. The acreage needed for production was provided to Paragon Partners and assumes a 100% solar only case. At Whitewater, the acreage required for the Low Case, Solar only was not provided. Our analysis and assemblage is based upon how much land may be available in this area for solar development. Pipeline routing was provided to Paragon. Our review and analysis of the land and pipeline right of way routing from Whitewater to the LA Basin is discussed below.

5.1 Production Site

As noted above, the production site acreage that could possibly be available for a Low Case at Whitewater assuming solar and existing wind is a total of [redacted] acres. Paragon has reviewed the available land in the area and put together a possible assemblage of acreage as shown in Figure 5.1 below.

[redacted]

[redacted]

[redacted]

5.1.1 Impacts and Issues

[redacted]

5.2 Pipeline Route Analysis

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Whitewater through Riverside and Orange Counties to the Ports in southern Los Angeles County, then north to the proposed hydrogen storage site in Santa Clarita, shown in Figure 5.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type.

There will be [redacted] installed in the right of way from Whitewater to the Ports. From the Ports to Santa Clarita [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe.

[redacted] California [redacted]

5.2.1 Right of Way Costs

For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]

As detailed below, the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

SYSTEM 3 - WHITEWATER

PROPERTY TYPE	MILES	% of ROUTE	ESTIMATED COST	ANNUAL COST
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
MILEAGE TOTAL	[redacted]	TOTAL COST	[redacted]	[redacted]

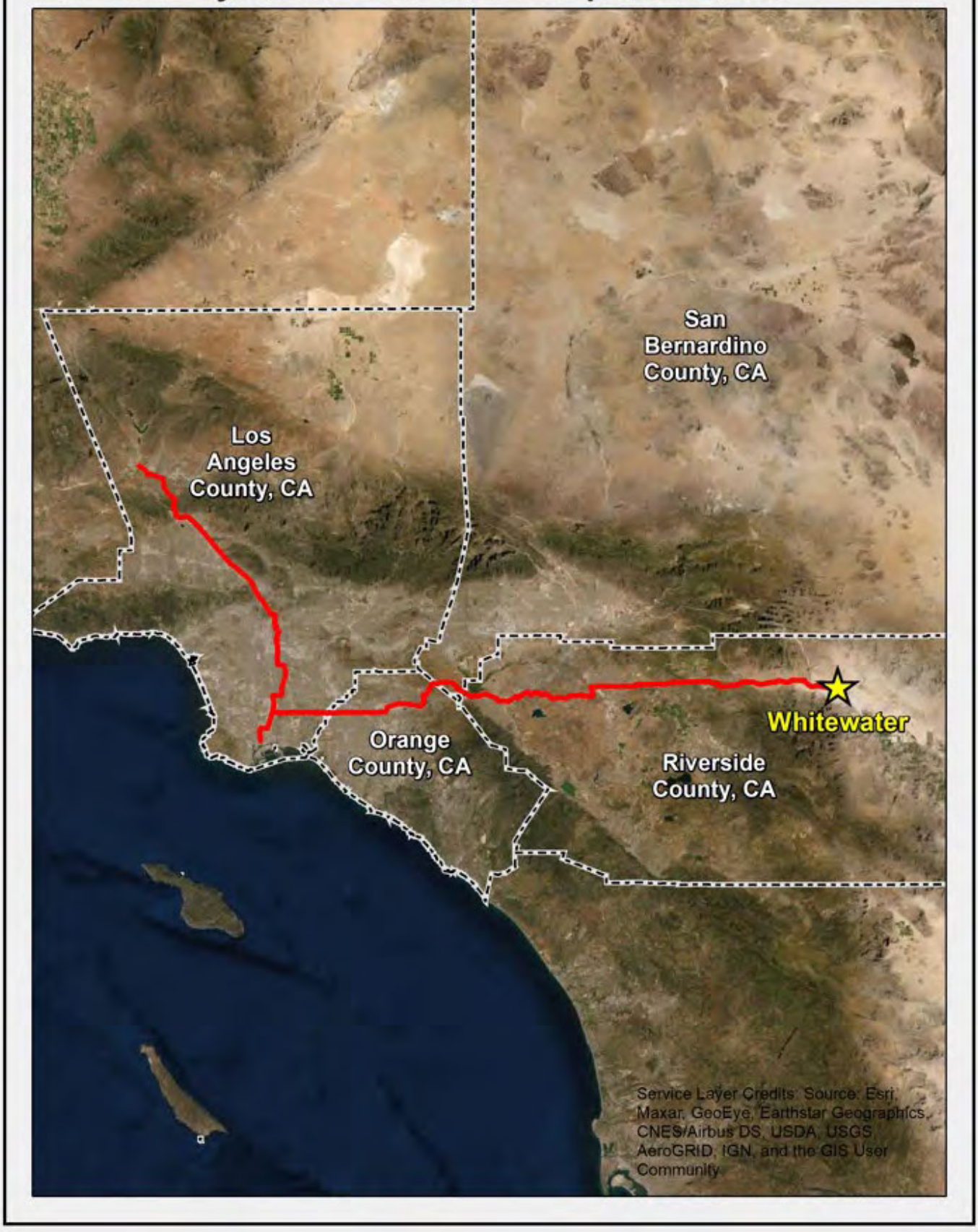
5.2.2 Impacts and Issues

[redacted]

5.3 Right of Way Schedule

[redacted]

Figure 5.3 System 3 - Whitewater Pipeline Route

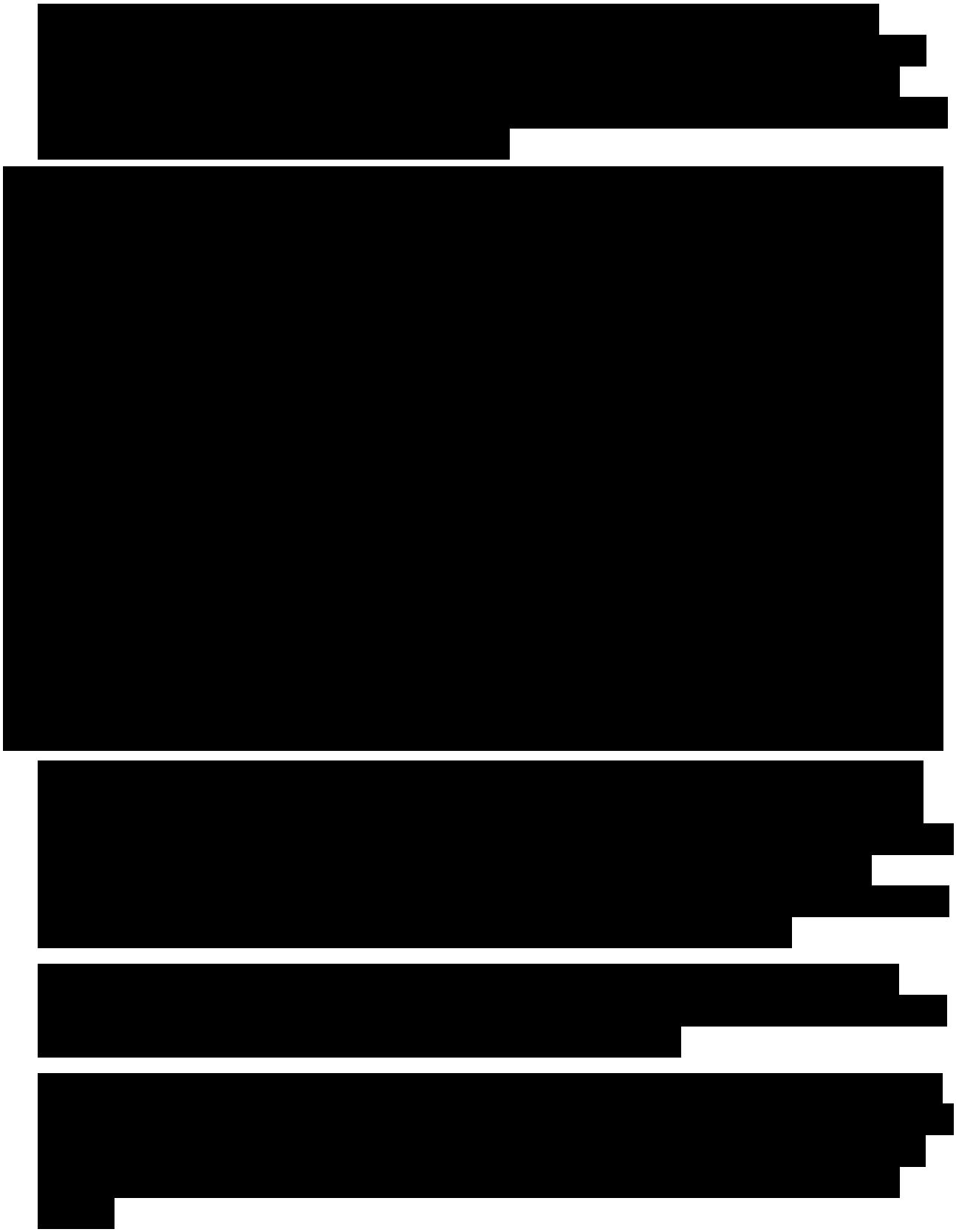


6.0 Proposed SoCal Gas H2 System 4: Blythe – Low Case

This section of the Study Report discusses both the land needed for the production site at Blythe and the routing of the hydrogen pipeline to delivery points in the LA Basin. The land requirement for the production site is discussed first followed by a discussion of the land types, issues, cost and schedule for the acquisition for the land and the right of way for the hydrogen pipeline. The acreage needed for production was provided to Paragon Partners and assumes a 100% solar only case. At Blythe, the acreage required for the Low Case, solar only, is listed as [redacted] acres. Our analysis and assemblage is based upon this assumption. Pipeline routing was provided to Paragon. Our review and analysis of the land and pipeline right of way routing is discussed below.

6.1 Production Site

As noted above, the production site acreage that would be required for the Low Case at Blythe assumes Solar only for a total of [redacted] acres. Paragon has reviewed the available land in the area and assembled the required acreage as shown in Figure 6.1 below.



6.1.1 Land Cost Summary

The costs for various types of land included in the assemblage for Blythe is presented below.

LAND COST SUMMARY

LAND TYPE	ESTIMATED ACREAGE	ESTIMATED COST
[redacted]	[redacted]	[redacted]
	TOTAL	[redacted]

6.1.2 Impacts and Issues

[redacted]

[redacted]

6.2 Pipeline Route Analysis

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Blythe through Riverside and Orange Counties to the Ports in southern Los Angeles County, then north to the proposed hydrogen storage site in Santa Clarita, shown in Figure 6.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type.

There will be [redacted] installed in the right of way from Blythe to Whitewater. There will be [redacted] installed in the right of way from Whitewater to the Ports. From the Ports to Santa Clarita [redacted] will be installed. The permanent right of way easement on private property will be [redacted] feet wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe.

[redacted]

6.2.1 Right of Way Costs

For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]

As detailed below, the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

SYSTEM 4 -
BLYTHE

[redacted]

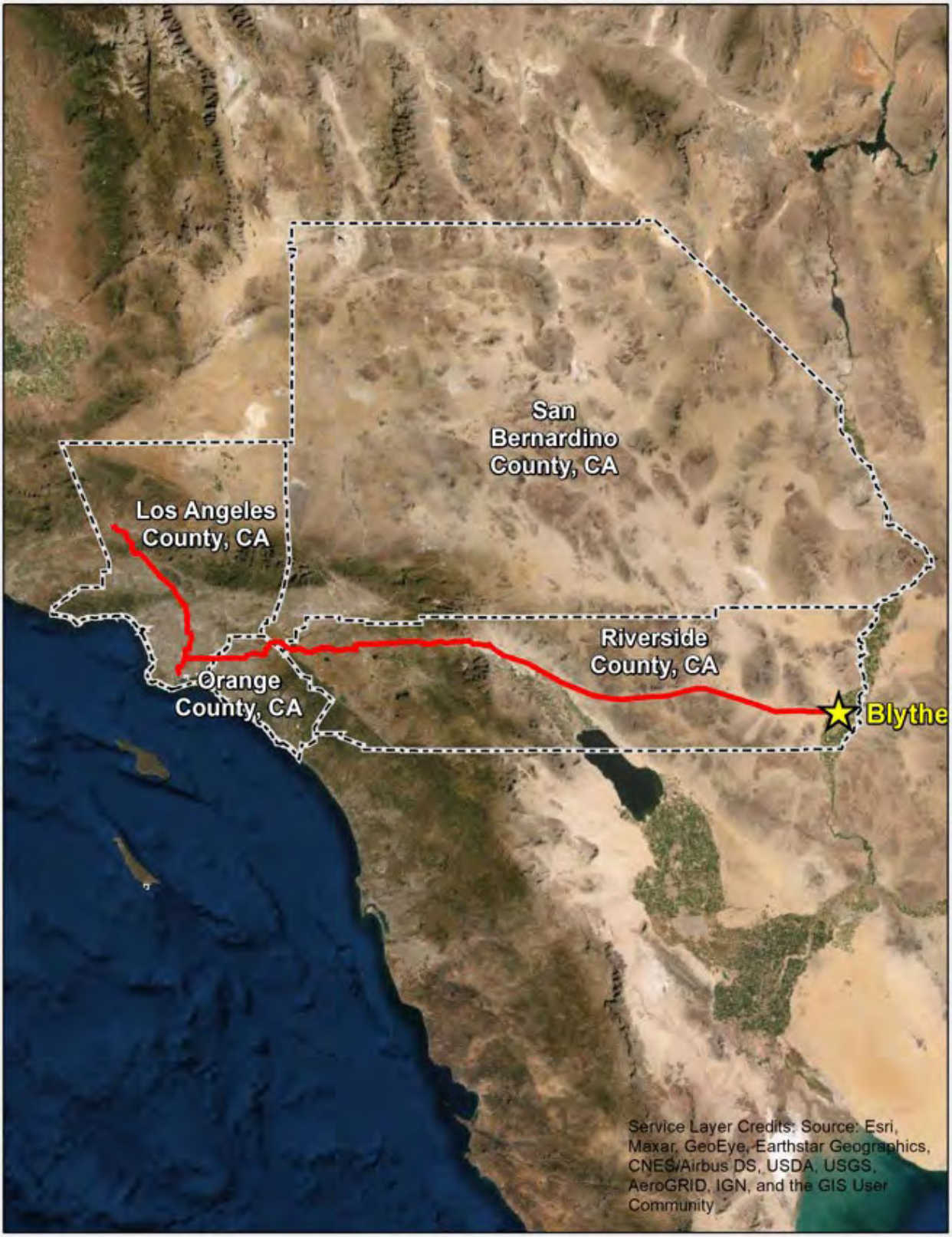
6.2.2 Impacts and Issues

[redacted]

6.3 Right of Way Schedule

[redacted]

Figure 6.3 **System 4 - Blythe Pipeline Route**



7.0 Proposed SoCal Gas H2 System 5: Delta – Low Case

This section of the Study Report discusses both the land needed for the production site at Delta and the routing of the hydrogen pipeline to delivery points in the LA Basin. The land requirement for the production site is discussed first followed by a discussion of the land types, issues, cost and schedule for the acquisition for the land and the right of way for the hydrogen pipeline. The acreage needed for production was provided to Paragon Partners and assumes a 100% solar only case. At Delta, the acreage required for the Low Case, solar only, is listed as [redacted] acres. Our analysis and assemblage is based upon this assumption. Pipeline routing was provided to Paragon. Our review and analysis of the land and pipeline right of way routing is discussed below.

7.1 Production Site

As noted above, the production site acreage that would be required for the Low Case at Delta assumes Solar only for a total of [redacted] acres. Paragon has reviewed the available land in the area and assembled the required acreage as shown in Figure 7.1 below.

[redacted]

The land is in both Millard and Juab Counties. [redacted]

[redacted]

[redacted]

7.1.1 Land Cost Summary

The costs for various types of land included in the assemblage for Delta is presented below.

LAND COST SUMMARY

LAND TYPE	ESTIMATED ACREAGE	ESTIMATED COST
[redacted]		

7.1.2 Impacts and Issues

[redacted]

[redacted]

[redacted]

7.2 Pipeline Route Analysis

The pipeline routing information provided to Paragon for this System is for a [redacted] mile route from Delta, Utah through Utah and Nevada into California to the Ports in southern Los Angeles County, shown in Figure 7.3. Paragon has reviewed the route and categorized the various types of property impacted and calculated the distance covered for each property type.

There will be [redacted] installed in the right of way for the entire route from Delta to the Ports. The permanent right of way easement on private property will be [redacted] wide with a [redacted] foot wide temporary construction easement for a [redacted] timeframe.

[redacted]

7.2.1 Right of Way Costs

For the right of way cost estimate Paragon has analyzed available information on land values for the [redacted] miles of developed and undeveloped property types. [redacted]

As detailed below the estimated right of way project cost for the route is [redacted] with a recurring annual cost of [redacted]

SYSTEM 5 -
DELTA

PROPERTY TYPE	MILES	ROUTE %	ESTIMATED COST	ANNUAL COST
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
MILEAGE TOTAL	[redacted]	TOTAL COST	[redacted]	[redacted]

7.2.2 Impacts and Issues

[redacted]

7.3 Right of Way Schedule

[redacted]

[redacted]

Figure 7.3

System 5 - Delta Pipeline Route