SDG&E 5/24/11 Response
A. 10-06-007 South Bay Substation Relocation Project PTC
Energy Division Data Request 05 Dated May 4, 2011
SDGE-ED-005: Q

Project Alternatives

Background: San Diego Gas & Electric (SDG&E) provided several system alternatives and substation site alternatives in the South Bay Substation Relocation Project Proponent's Environmental Assessment (PEA) in accordance with the checklist that was issued by the California Public Utilities Commission (CPUC) in November 2008. Since the CPUC deemed the application complete on September 8, 2010, the California Coastal Commission (CCC) has requested that the CPUC provide a range of feasible project alternatives in the California Environmental Quality Act (CEQA) document that would reduce and minimize impacts to wetland habitats that have been identified within the Proposed Project footprint.

The CCC will be issuing a Coastal Development Permit (CDP) for the South Bay Relocation Project. In order for a CDP to be issued for the Proposed Project, the CCC will need to make a determination as to whether the project footprint contains areas that are considered to meet the definition of "environmentally sensitive habitat areas (ESHA)". ESHA lands are defined by the CCC as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

Based on the environmental review completed to date, it has been determined that the environmentally sensitive lands on site would primarily consist of wetland habitats located within the former liquefied natural gas (LNG) secondary containment earthen berm and wetlands located just outside of the southwest corner of the earthen berm. The wetland features are included on Figure 4.4-3 of the PEA (see water features 2, 3, 4, 5, 6, 7, and 8).

Per the CPUC's understanding, SDG&E and CCC are completing further biological studies at this time to determine whether areas within the proposed development footprint could be designated as ESHA lands. In the event ESHA lands are identified within the project limits, the CCC will need to evaluate a wide range of feasible alternatives that would minimize and reduce potential impacts to sensitive habitat lands on site. The following data request is intended to provide the CPUC and CCC with project alternatives that reduce and minimize potential impacts to sensitive habitat lands in accordance with CEQA requirements.

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Question 1:

CPUC requests that further evaluation be completed by SDG&E to address whether the following project alternatives would be feasible:

Reduced Project Footprint Alternative – Please indicate whether there is a project alternative that would reduce the project footprint and minimize impacts to wetland areas within the currently proposed development footprint. At a minimum, reduced project footprint alternatives should consider whether an alternative technology is feasible, such as a Gas Insulated Substation (GIS). In the event a reduced project footprint alternative is not feasible, please provide rationale as to why the project alternatives are not feasible.

In the event a reduced footprint alternative is feasible, please provide the following data in order for the CPUC to evaluate the project alternative for purposes of CEQA:

- Project Description – Provide a comprehensive project description and site plan that identifies at a minimum the development footprint, height of the proposed structures, interconnections to existing and proposed utilities, access, and building materials. In addition, please provide an overview of the construction schedule and indicate how it would differ from that of the Proposed Project.

- Aesthetics – Provide a comparison of the bulk, scale, and height of the proposed alternatives in relation to the existing structures in the area. Indicate how views would change for nearby public viewers. Provide a visual simulation(s) from vantage points presented in the PEA and those requested through the data request process.

- Air Quality – Provide criteria pollutant and greenhouse gas emissions inventory and impact evaluation for both construction and operational emissions that would result from implementation of the project alternatives.

- Biological Resources – Provide the acreage and associated impacts to vegetation communities within the project footprint, which includes project access and utility connections that may differ from those under the Proposed Project.

- Hydrology/Drainage – Provide an overview of how drainage on site would differ from that under the Proposed Project and whether detention basins would need to be constructed to accommodate post-development runoff. The location and sizing of detention basins should be provided.

- Noise – Provide a letter report from an acoustician indicating whether the substation equipment would result in potential impacts to sensitive receptors. An overview of the construction noise levels should also be provided in the event construction equipment differs from that under the Proposed Project.

- Transportation/Traffic – Provide an overview of the change in both operational and construction trips that would result from the project alternatives in comparison to the Proposed Project.

Please provide a discussion as to whether any additional off-site alternatives have been considered by SDG&E since submittal of the PEA in June 2010. In the event additional off-site alternatives were evaluated, please provide an overview of these locations and whether the alternatives would be feasible; indicate how the potential change in environmental impacts that would result differs from those of the Proposed Project.

CPUC requests clarification on the following project alternatives that were presented in the June 2010 PEA:

SDG&E Response:

Under both CEQA and the Coastal Act, the term "feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. Alternatives that are certain to cause substantial additional delays in meeting the Proposed Project's in-service date would not be accomplished within a reasonable period of time and therefore are not considered "feasible". Accordingly, SDG&E has only considered alternatives that at this point in time appear capable of commencing construction by March 2012 in order to achieve the in-service date not later than December 2013.

Based on preliminary engineering and design data, SDG&E has determined that a 230/69 kilovolt (kV) gas-insulated switchgear (GIS) substation design (GIS Substation Alternative) may be a technologically feasible alternative to the originally-proposed air-insulated switchgear (AIS) substation design for the South Bay Substation Relocation Project (Proposed Project). However, the costs of a GIS Substation Alternative are estimated to be substantially higher than the Proposed Project (approximately 30 percent higher based on initial estimates), and SDG&E questions the economic feasibility of the GIS Substation Alternative. Setting aside these concerns momentarily, the GIS Substation Alternative would avoid approximately 2.4 acres of

impacts to on-site wetlands by reducing the substation footprint by approximately half of what would be required for the AIS substation design. Attachment A: GIS Substation Alternative Description and Preliminary Impact Analysis provides a description for the GIS design and identifies the potential impacts to each of the aforementioned resources for evaluation by the CPUC.

No additional off-site alternatives have been considered by SDG&E since the Proponent's Environmental Assessment (PEA) was submitted in June of 2010. However, in an effort to address the concerns about economic feasibility of a GIS Substation Alternative, SDG&E has identified an additional potential alternative—the Bay Boulevard Substation with Bayfront Enhancement Alternative. The Bayfront Enhancement Alternative would provide additional environmental benefits to the Chula Vista Bayfront community, which, if approved in a timely manner, could render it the "environmentally superior" and "least environmentally damaging" alternative under CEQA and the Coastal Act, respectively. The Bayfront Enhancement Alternative would entail construction of the same components as the original Proposed Project and mitigation for the wetland impacts to the containment basin, but would additionally establish a Bayfront Enhancement Fund that would be used to fund projects that provide direct environmental benefits within the Bayfront. Specific projects would be identified by a group of agency and community stakeholders and could be coordinated with on-going efforts to finalize the Bayfront Master Plan. SDG&E's commitment to establish the Bayfront Enhancement Fund would be in addition to mitigation required for the impacts that would occur to the wetlands located at the Bay Boulevard Substation site. Under this alternative, the Project would contribute five million ($5,000,000) dollars to fund Bayfront enhancement projects that would be identified and selected by a committee of agency and community stakeholders to provide direct environmental benefits to the Chula Vista Bayfront. Possible projects could include: projects involving the creation, restoration, and/or enhancement of wetlands that are of much higher quality and function than those located within the containment berm; projects to enhance coastal resources, including coastal access enhancements, such as walkway, path, park, overlook, and traffic improvements as well as educational signage and events; biological resources, such as habitat management and protection efforts, including predator management, vegetation management, and security signage; water quality improvements; and aesthetics enhancements, such as landscaping and lighting improvements. Projects could be coordinated with the Chula Vista Nature Center and U.S. Fish and Wildlife Service.

As with any alternative, construction of the substation would need to commence by March 2012 in order for the Bay Boulevard Substation with Bayfront Enhancement Alternative to be considered capable of being accomplished within a reasonable amount of time and therefore

"feasible". Consequently, this alternative would require that all project approvals (including jurisdictional waters-related permits) are obtained such that the commencement of substation construction would occur no later than March of 2012. To maximize the potential environmental benefits and allow for stakeholder input, this alternative would not require that projects funded by the Bayfront Enhancement Fund be completed concurrent with or prior to construction of the substation. Although the impacts to resources located on the Bay Boulevard Substation site would not change from those identified in the Proposed Project, this alternative would provide direct environmental benefits above and beyond the anticipated 4:1 wetland mitigation that would be required by the jurisdictional agencies to compensate for wetland impacts. This alternative would also provide for direct environmental benefits that could be coordinated with on-going master planning efforts to substantially enhance coastal resources in the Bayfront community.

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Question 2:

Sites located to the North of J Street – In the data request letter provided by SDG&E on August 16, 2010, areas north of J Street were not considered to be a potential Project alternative due to parcel size, hazardous substance contamination, and direction provided by the Port of San Diego and City of Chula Vista that the South Bay Substation Relocation should be located toward the southern portion of the Master Plan, south of J Street.

Please clarify the location of sites that were considered but rejected from further evaluation as a feasible Project alternative. The response should include a map identifying the wetland buffer areas proposed by the master plan, as well as areas known to contain serious subsurface and groundwater hazardous substance contamination in relation to sites that were considered but rejected for further evaluation. Include a discussion as to why groundwater levels would result in a Project site being potentially infeasible from a design and operation perspective.

SDG&E Response:

Because a primary objective of the South Bay Substation Relocation Project is to move the substation south of its existing location, SDG&E never considered and/or rejected any specific locations north of J Street. SDG&E only considered the specific parcels identified in the PEA, none of which were located north of J Street. The statements contained in the August 16, 2010 data response explain why no specific sites North of J Street were considered. This is because, as stated in the above question, the San Diego Unified Port District and City of Chula Vista had directed SDG&E toward the southern portion of the Master Plan area. In response to CPUC Data Request Number 1, SDG&E conducted a cursory review of the area north of J Street and identified some general characteristics that appeared to make the area additionally infeasible for the relocation of the substation. Figure 1: North of J Street General Constraints illustrates the issues that were identified for this area after the CPUC asked SDG&E about these locations.

With regard to the hazardous materials contamination areas, the Silvergate Substation Project (A.05-03-024) Environmental Impact Report (EIR) prepared by the CPUC highlighted the potential issues for this area. An excerpt from this document is included as Attachment B: Silvergate Substation EIR Excerpt.

Additional and updated information regarding hazardous substances in this area can be found at the Regional Water Quality Control Board GeoTracker site with specific information regarding

the Rohr/Goodrich Site.[1] Figure 2: GeoTracker Database Results provides a screenshot of the GeoTracker database results.

Information regarding the Master Plan Land Use Designations and Wetlands Buffers are illustrated in Figure 3: Master Plan Land Use Designations and Wetlands Buffers as derived from the Chula Vista Bayfront Master Plan EIR.

[1] https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL209294204

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Figure 1: North of J Street General Constraints

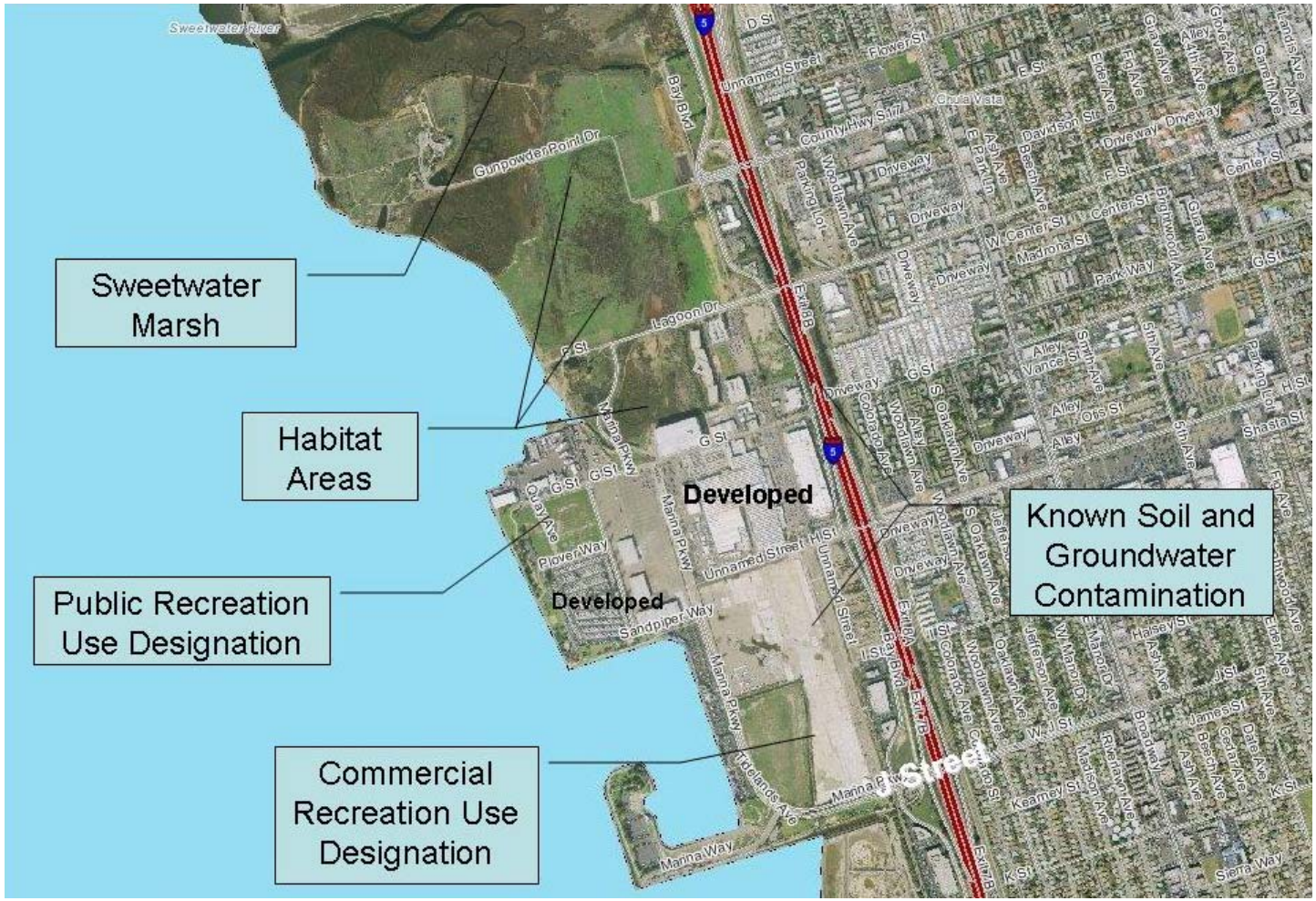

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Figure 2: GeoTracker Database Results

SITE NAME	GLOBAL ID	CLEANUP STATUS	ADDRESS	CITY
ARCO AM/PM MINI MARKET #1914	T0607301869	OPEN - REMEDIATION	720 H ST	CHULA VISTA
ARCO AM/PM MINI MARKET #1914	19197		720 H ST	CHULA VISTA
BAY BLVD. AND F STREET	SL163904227	OPEN - INACTIVE	BAY BLVD. AND F STREET	CHULA VISTA
BIG O TIRES #629	T0607303207	COMPLETED - CASE CLOSED	399 BROADWAY	CHULA VISTA
CAPE COD BLUES PROPERTY	T0608148378	OPEN - SITE ASSESSMENT	NONE BROADWAY	CHULA VISTA
CHEVRON #9-6056	T0607301886	COMPLETED - CASE CLOSED	695 H ST	CHULA VISTA
CHEVRON #9-6056	19024		695 H ST	CHULA

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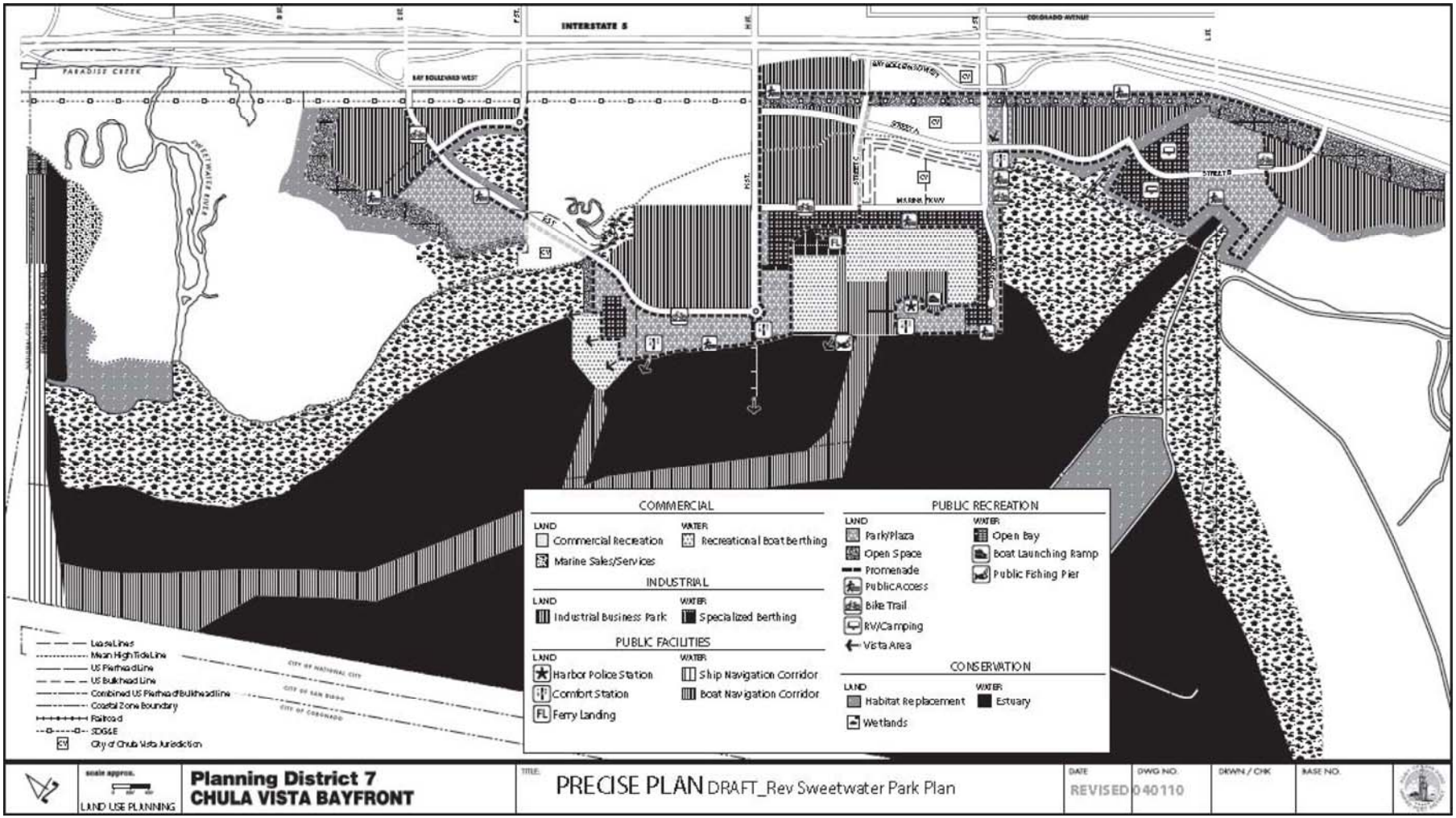
Figure 3: Master Plan Land Use Designations and Wetlands Buffers



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Question 3:

Sites located to the East of Broadway and South of Main Street – Please indicate whether alternative sites were considered east of Broadway and south of Main Street. In the event additional off-site alternatives were evaluated, please provide an overview of these locations and whether the alternatives would be feasible; indicate how the potential change in environmental impacts that would result differs from those of the Proposed Project.

SDG&E Response:

Alternative sites east of Broadway and south of Main Street were not considered. The boundaries of the study area were determined jointly between SDG&E, the City of Chula Vista, and the San Diego Unified Port District for the following reasons:

- Substations are spread out over the service territory in order to improve efficiency. The boundaries ensured spacing between the new substation and existing substations south of Broadway.
- The boundaries minimized the impacts associated with extending the transmission corridors farther than required.
- New distribution substations are located as close to the load center as possible, the study area was centered near the load center.
- A large portion of the area located east of Broadway and between Main Street and Palm Avenue to the south lies within the 100-year flood plain.

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Question 4:

Alternative Utility Connections – In the data request letter provided by SDG&E on August 16, 2010, a discussion of the general location for utility tie-in's required for each substation site alternative presented in the PEA was provided.

For each of the alternatives presented above and for any additional sites that may have been identified by SDG&E, please provide a map indicating the location of utility tie-in's required for each site, based on a desktop-level review of a potential interconnection to the existing utilities. Please provide a summary regarding the distance for each interconnection from the existing utility lines to the alternative site location. The summary should identify the total linear feet for 69-kilovolt (kV), 138 kV, and 230 kV improvements that would be required for Project alternatives.

SDG&E Response:

SDG&E provided information regarding the Proposed Project and seven additional substation site alternatives in the PEA. For each of these alternatives, interconnections would be required for the 230 kV transmission line (TL)23042, 138 kV lines TL13823/24, and 69 kV lines TL641, TL642, TL644, TL645, TL646, and TL647. With the exception of the Power Plant and Toy Storage sites, the interconnections are depicted in Attachment C: Alternative Substation Site Interconnections. In addition, SDG&E has identified two new alternatives—the GIS Substation Alternative and the Bay Boulevard Substation with Bayfront Enhancement Alternative—which are addressed more thoroughly in the response to Question 1. A description of the interconnections required for each of these alternatives follows.

Tank Farm Site

The site is adjacent to the west side of the SDG&E 230 kV, 138 kV, and 69 kV transmission line right-of-way (ROW) and directly south of Marina View Park. Accordingly, each TL is located adjacent to this alternative site; therefore, these circuits would require realignment similar to that described for the Proposed Project.

Existing South Bay Substation Site

The site is located in the same location as the existing South Bay Substation, adjacent to the west side of the SDG&E 230 kV, 138 kV, and 69 kV transmission line ROW. The six 69 kV transmission lines currently connect to this location; therefore, the only change that would be required would involve relocating TL644 approximately 100 feet west to occupy the position that would be vacated by TL13823 and TL13824. The remaining 138 kV and 230 kV transmission lines would require realignment similar to that described for the Proposed Project.

Power Plant Site

The site is located adjacent to the west side of the 230 kV, 138 kV, and 69 kV transmission line ROW and directly north of the existing LNG site. Accordingly, each TL is located adjacent to this alternative site; therefore, these circuits would require realignment similar to that described for the Proposed Project.

LNG Site

The LNG site is located adjacent to the west side of the 230 kV, 138 kV, and 69 kV transmission line ROW and directly south of the Power Plant Site. This site was selected for the Proposed Project; therefore, the required interconnections are described in detail in the Proponent's Environmental Assessment.

South Bay Boulevard Site

This site is located approximately 1,500 feet southeast of the SDG&E 230 kV, 138 kV, and 69 kV transmission line ROW and adjacent to the east side of Bay Boulevard. The transmission lines would be accessed from the south and west sides of the SDG&E transmission corridor and extended along various city streets to the alternative site. Each of the transmission lines, with the exception of TL647, would require the installation of overhead and/or underground transmission facilities along city streets. TL647 is located adjacent to this site and would be tied into the site directly. The approximate distance of all other associated transmission tie-ins would vary—TL23042, TL13823, TL13824, and TL645 would require an extension of approximately 2,500 feet to interconnect each transmission line to its associated tie-in; TL646 is located approximately 2,000 feet from its associated tie-in; and TL641, TL642, and TL644 are each located approximately 7,000 feet from their associated tie-ins.

Toy Storage Site

This site is currently owned by SDG&E and is located within an existing 230 kV, 138 kV, and 69 kV transmission ROW. Selection of this alternative site would require the extension and loop-in of either one 230 kV or two 138 kV transmission lines and six 69 kV transmission lines from the existing SDG&E corridors and TL645 ROW that are adjacent and to the west of the alternative site. If the site was utilized and widened through the displacement of businesses and homes to accommodate a 230/ 69 kV or 138/69 kV substation, TL646, TL645, TL13823, TL13824 and TL23042 would have to be looped in and extended at approximately 3,500 feet from the corridors to the alternative site, via either overhead or underground transmission facilities along city streets. In addition, TL647, TL644, TL642 and TL641 would also have to be extended and looped in from the west corridor at approximately 7,000 feet, via either overhead or underground transmission facilities along city streets. Furthermore, this installation would require a horizontal directional drill (HDD) to allow the four 69 kV circuits (TL647, TL644, TL642 and TL641) from the west to cross Interstate 5 (I-5).

A full detailed engineering and survey analysis needs to be performed to determine feasibility and constructability on the transmission routes described above. Preliminary analysis suggest that constructability would be unlikely due to the high congestion of other utilities along city streets where SDG&E anticipates the routes and the utilization of a HDD that would be required to cross I-5. Furthermore, it was determined that the site is too narrow for a 230/69 kV substation, which will limit capabilities on delivery of the substation equipment, safe access for maintenance, and replacement and repairs; hence, this site was rejected by SDG&E as infeasible.

Cima NV Site

This site is located approximately 300 feet south of an existing 230 kV, 138 kV, and 69 kV transmission ROW. The transmission lines would be accessed from the southwest side of the SDG&E ROW and would extend along Industrial Boulevard and Palomar Street to the site. The interconnections for TL23042, TL13823, TL13824, and TL646 are each located approximately 1,500 feet from associated tie-ins, and would require the installation of overhead and/or underground transmission structures along city streets. Interconnection work for TL645 would be similar, but the tie-in is located approximately 3,000 feet away. TL647 is located approximately 2,500 feet from its associated tie-in and, in addition to the installation of transmission structures along city streets, would also require the use of horizontal directional drilling (HDD) to cross I-5. TL641, TL642, and TL644 are each located approximately 7,500 feet from their associated tie-ins, and would also require both the installation of transmission structures along city streets and the use of HDD to cross I-5.

Broadway and Palomar Site

This site is currently owned by SDG&E and is within an existing 230 kV, 138 kV, and 69 kV transmission ROW. Utility interconnections for TL23042, TL13823, TL13824, and TL645, would be located adjacent to the site and would require circuit alignment and tie-ins similar to what would be required for the Proposed Project. Interconnections necessary for the remaining five 69 kV lines would vary. TL641, TL642, and TL644 are each located approximately 10,500 feet from tie-ins, and would require the installation of overhead and/or underground transmission structures along city streets. HDD would also be required for these lines to cross I-5. Similarly, TL647 is located approximately 5,000 feet from 69 kV tie-ins and would also require the installation of transmission structures along city streets and the use of HDD to cross I-5. TL645 is located approximately 3,500 feet from 69 kV tie-ins and would require the installation of overhead and/or underground transmission structures along city streets, but would not require the use of HDD.

ATTACHMENT A: GIS SUBSTATION ALTERNATIVE DESCRIPTION AND PRELIMINARY IMPACT ANALYSIS

GIS Substation Alternative Description and Preliminary Impact Analysis

for the

South Bay Substation Relocation Project

Prepared for:

SDGE

A Sempra Energy utility℠

Prepared by:

INSIGNIA ENVIRONMENTAL

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1 – INTRODUCTION

San Diego Gas & Electric Company (SDG&E) submitted an application for a Permit to Construct, along with its Proponent's Environmental Assessment (PEA), for the South Bay Substation Relocation Project (Proposed Project), to the California Public Utilities Commission (CPUC) on June 16, 2010. The application was deemed complete on September 8, 2010.

Prior to and since the filing of the application, SDG&E has been consulting with applicable regulatory agencies regarding the Proposed Project and its anticipated impacts to jurisdictional resources. Through consultation with the California Coastal Commission, which has strongly encouraged SDG&E to evaluate alternatives that avoid impacts to on-site wetlands, SDG&E developed a new design alternative for the proposed 230/69 kilovolt (kV) Bay Boulevard Substation. This new substation design would utilize gas-insulated switchgear (GIS) technology to reduce the overall footprint of the substation, thereby reducing impacts to resources. The GIS Bay Boulevard Substation design (GIS Substation Alternative) would meet all of the stated objectives. However, the GIS Substation Alternative would not provide the same level of flexibility for future transmission growth for the South Bay region as the originally proposed air-insulated switchgear (AIS) substation design. The GIS Substation Alternative also introduces additional engineering, procurement, and construction challenges that would affect the in-service date and overall cost of the Proposed Project. This document provides a description of the GIS Substation Alternative preliminary design, as well as the anticipated impacts to on-site resources resulting from construction of the GIS substation.

2 – DESCRIPTION

2.0 SUBSTATION

The GIS Substation Alternative would be located within the same 12.42-acre parcel as the originally proposed AIS design, which is depicted in Figure 1: GIS Substation Boundary Map. The use of GIS technology for the 230 kV and 69 kV switchyards would result in a more compact design and would reduce the amount of open steel equipment, support, switch rack, and A-frame structures required. Large metal buildings would be required to house the GIS equipment. The gas employed for insulation in the GIS design—sulfur hexafluoride (SF_6)—is currently used by SDG&E in circuit breakers and switching gear. SF_6 is a potent greenhouse gas (GHG), but is considered non-toxic and inert from a hazardous materials perspective.

The two buildings used to house the GIS equipment would measure approximately 40 to 50 feet in height. The total footprint of the GIS substation would measure approximately 4.4 acres within an approximately 10-foot-tall concrete masonry wall installed around the perimeter of the substation.

The completed substation would include permanent cut and fill slopes in the area surrounding the enclosed portion of the substation. Remedial overexcavation and recompaction of the proposed site would constitute approximately 70,000 cubic yards (CY) of cut and fill. Cut from existing surface would be approximately 5,000 CY and approximately 60,000 CY of import fill material

would be required. Approximately 6.6 acres of permanent impacts[1] and an additional 2.1 acres of temporary impacts would result from construction of the GIS Substation Alternative, as depicted in Figure 1: GIS Substation Boundary Map. A single water quality basin would be constructed along the western boundary of the substation, and would receive runoff from the substation pad area prior to discharging at the southwest corner. The basin would measure approximately three feet deep with a volume of approximately 1.2 acre-feet, as depicted in Figure 1: GIS Substation Boundary Map. Figure 1: GIS Substation Boundary Map also depicts the temporary area of disturbance that would occur on the 12.42-acre parcel as a result of installation of underground getaways. All other transmission line interconnections and routing would occur within the transmission line right-of-way, as is the case for the AIS design.

2.0.0 Initial Arrangement

The following list of components would be included in the proposed initial arrangement:

- Two large metal storage buildings—one for the 230 kV GIS equipment and one for the 69 kV GIS equipment—painted beige or treated with a similar non-reflective neutral color/coating. The buildings would measure up to 80 feet wide by 250 feet long by 50 feet high
- Up to seven 69 kV and 230 kV dead-end structures, including six for the transmission banks and one for the 230 kV getaways
- One 75-foot telecommunications tower with an eight-foot diameter disc to be installed in the southwest corner of the substation
- Six 69 kV circuits
- Two 230 kV circuits
- Two 230/69 kV, 224 megavolt ampere (MVA) transformers
- Two 69 kV grounding transformers
- Two 69 kV capacitor banks
- Two 69 kV Station Light and Power (SL&P) transformers
- Two control shelters measuring approximately 30 feet wide by 60 feet long by 20 feet high constructed of masonry block
- One telecommunication building measuring approximately 12 feet wide by 20 feet long by 10 to 12 feet high

[1] The walled area of the GIS substation would occupy approximately 4.4 acres. Additional permanent impacts would stem from the construction of the adjacent water quality basin, substation driveway, and the graded areas surrounding the substation.

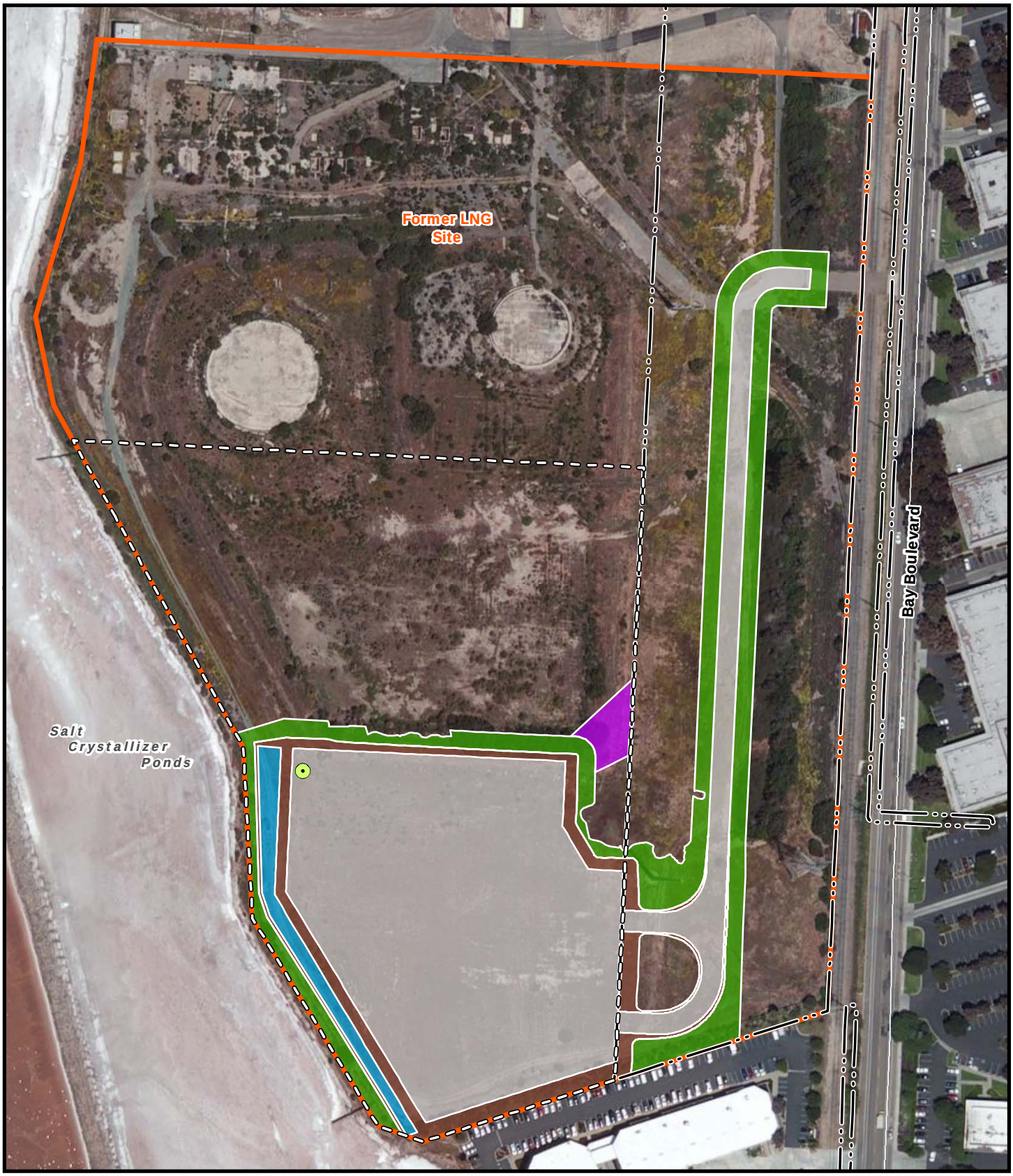

Figure 1: GIS Substation Boundary Map

South Bay Substation Relocation Project

- Substation Wall
- 12.42-Acre Parcel Boundary
- SDG&E Easement
- Decumbent goldenbush individual
- Permanent Substation and Driveway
- Water Quality Basin
- Permanent Cut and Fill
- Temporary Distrubance
- Underground Getaway Temporary Disturbance*

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INSIGNIA ENVIRONMENTAL

N W E S

1:2,300

0 125 250 500 Feet

* All other transmission line interconnections and routing would occur within the transmission line right-of-way.

Z:\Projects\SDGE_SouthBay\MXDs\GIS_PD_Impacts\Fig1_GIS_Sub_Bound_Map_v2.mxd

05/24/2011

2.0.1 Ultimate Arrangement

As with the AIS design, the GIS Bay Substation Alternative would not initially include distribution equipment. Distribution circuits and ancillary equipment to serve the City and the surrounding area would be added to the Bay Boulevard Substation as local distribution load develops. The following list of components would be included in the proposed ultimate arrangement:

- Two large metal storage buildings—one for the 230 kV GIS equipment and one for the 69 kV GIS equipment—painted beige or treated with a similar non-reflective neutral color/coating. The buildings would measure up to 80 feet wide by 250 feet long by 50 feet high
- Up to twenty-nine 69 kV and 230 kV dead-end structures, including 13 for the transmission banks, eight for the distribution banks, two for the 230 kV getaways, and six for the capacitors
- One 75-foot telecommunications tower with an eight-foot diameter disc to be installed in the southwest corner of the substation
- Eight to twelve 69 kV circuits (the AIS design allows for twelve 69 kV circuits)
- Four 230 kV circuits (the AIS design allows for five 230 kV circuits)
- Three 230/69 kV, 224 MVA transformers
- One 230 kV capacitor bank (the AIS design allows for two 230 kV capacitor banks)
- Two 69 kV grounding transformers
- Two 69 kV capacitors
- Two 69 kV SL&P transformers
- Four 69/12 kV, 28 MVA transformers
- Four sections of 12 kV switchgear
- Four 12 kV capacitors
- Sixteen 12 kV circuits
- Two control shelters, adjacent to the GIS enclosures, measuring approximately 30 feet wide by 60 feet long by 20 feet high constructed of masonry block
- One telecommunication building measuring approximately 12 feet wide by 20 feet long by 10 to 12 feet high

The existing driveway provides access from Bay Boulevard and is located north of the site. An approximately 1,250-foot-long by 32-foot-wide asphalt-paved access road would be constructed from the end of the existing driveway to the two substation gates, and would be located east of the site within the existing transmission right-of-way. In addition, two 30-foot-wide sliding gates would be installed in the perimeter wall to permit ingress and egress to the site by authorized personnel.

2.1 TRANSMISSION LINE INTERCONNECTIONS

2.1.0 230 kV Loop-In

The modifications required to loop the existing bundled-circuit transmission line (TL) 23042 into the GIS design would be similar to those for the AIS design. TL23042 currently traverses the Proposed Project site in a generally north-to-south direction, directly adjacent to the east side of the proposed GIS substation. The northern interconnection into the substation would begin by removing an existing approximately 165-foot-tall steel cable riser pole. From this point, the existing underground duct bank would be continued generally south by installing approximately 1,300 feet of new underground duct bank. This duct bank would enter the substation near its northeast corner. The southern interconnection would begin at an existing approximately 121-foot-tall steel pole. From this point, the line would head north for approximately 200 feet to a new self-supporting steel angle structure located near the northeast corner of the substation. From this point, the line would continue approximately 200 feet west to a self-supporting steel pole and would enter the substation.

2.1.1 69 kV Relocation

Similar to the AIS design, six existing 69 kV transmission lines would be relocated to terminate at the GIS substation. The three southern transmission lines—TL645, TL646, and TL647—would be intercepted as they pass by the proposed substation, vacating their existing overhead locations between the proposed Bay Boulevard Substation and the existing South Bay Substation. Two of the northern transmission lines—TL641 and TL642—would use two of these vacant locations to approach the proposed substation. TL644—the third northern transmission line—would be relocated west, and would occupy the location currently used by TL13823 and TL13824.

Southern Transmission Lines

TL645 would be intercepted using a new steel cable riser pole installed adjacent to the east side of Bay Boulevard. From this location, the line would be converted to an underground configuration and would head west under Bay Boulevard and the existing SD&AE railroad tracks. The required conduit would be installed under Bay Boulevard by directly trenching across the roadway or using the jack-and-bore method of construction. A jack-and-bore operation would be used to cross the drainage ditch located adjacent to Bay Boulevard. Similar to the AIS design, the line would continue under the proposed substation's driveway until reaching the substation. TL646 and TL647 would be intercepted using a new double-circuit steel cable riser pole located in the southeast corner of SDG&E's existing transmission line easement. This new pole would convert these two lines from an overhead to underground configuration. From this point, the lines would continue west and enter the proposed substation. Approximately

three underground splice vaults would be installed to facilitate the installation, operation, and maintenance of these lines.

Northern Transmission Lines

TL641 and TL642 would approach the proposed substation from the north along the locations vacated by the relocation of TL646 and TL647. Both lines would intercept new steel cable riser poles where they would be converted from an overhead to underground configuration. The lines would head south for approximately 500 feet before turning west and entering the proposed substation. Using new wood poles located in a corridor vacated by the existing TL13823 and TL13824, TL644 would be relocated west approximately 100 feet. The line would continue overhead until intercepting a steel cable riser pole adjacent to those for TL641 and TL642. From this point, the line would continue underground in a southern direction before turning west and entering the substation. The three northern transmission lines would enter the substation in duct banks installed underneath the proposed driveway. Approximately three underground splice vaults would be installed to facilitate the installation, operation, and maintenance of these lines.

2.1.2 138 kV Extension

The extension of the existing TL13815 to meet TL13823 and TL13824 would occur in the same fashion for both the AIS and GIS designs. Approximately 3,800 feet of underground duct bank would be installed to bring TL13815 south to a new riser pole located just north of existing Tower 188701. At this point, a new steel cable riser pole would be installed to facilitate the conversion from an overhead to underground configuration and to complete the connection of the three 138 kV lines. As part of this process, approximately four existing steel lattice towers would be removed allowing for the relocation of TL644.

3 – POTENTIAL ENVIRONMENTAL IMPACTS

Potential short-term and long-term, but less-than-significant, environmental impacts associated with the Proposed Project would be generally reduced as a result of the smaller total footprint required for the GIS Substation Alternative. The following resource areas—aesthetics, air quality, biological resources, hydrological resources, noise, and transportation and traffic—were determined to differ in terms of impacts for the GIS Substation Alternative compared to the AIS design and are described in more detail in the subsections that follow. Because the transmission line interconnections would be similar for both designs, environmental impacts associated with them are also expected to be similar. As a result, the potential environmental impacts of the transmission line interconnections are not discussed in this document.

3.0 AESTHETICS

The GIS Substation Alternative would result in a more compact design, requiring fewer visible steel equipment structures, but would still require three approximately 65-foot-tall A-frame structures and the addition of two large rectangular steel buildings—painted beige or treated with a similar non-reflective neutral color/coating—measuring up to 50 feet in height. A visual simulation of the buildings proposed for the GIS Substation Alternative is shown in Figure 2: GIS Substation Simulation – Viewpoint Looking West. Figure 3: GIS Substation Simulation – Viewpoint Looking Southwest provides a visual simulation of the GIS Substation Alternative

from the north. Similarly, the AIS design would also include A-frame structures measuring up to approximately 65 feet in height.

The addition of solid buildings for housing the GIS equipment would block a larger section of the vertical viewshed of San Diego Bay, as compared to the AIS design, which would allow greater visibility to the bay, but would encompass a larger area. However, because the GIS substation would be mostly contained within buildings, it would more easily blend with the surrounding land uses. Both the GIS and AIS designs would alter the visual character of the surrounding area along Bay Boulevard by changing it from an area of disturbed vegetation to a masonry wall with buildings and vertical structures. Additionally, both designs would include a wall and landscape screening. Both designs predominately utilize underground configuration for transmission and distribution getaways; however, due to the reduced footprint of the GIS substation, an additional overhead 230 kV transmission getaway would be required, compared to the AIS design. This would result in two additional 230 kV transmission poles necessary for the GIS Substation Alternative.

In conclusion, the GIS Substation Alternative would result in a different visual transformation than the AIS design due to the smaller GIS substation footprint and different impacts from the presence of buildings rather than the fully-visible structures and equipment for the AIS design.

3.1 AIR QUALITY

Approximately 70,000 CY of remedial overexcavation and recompaction would be required for the GIS Substation Alternative. Approximately 5,000 CY of Import Class II fill material and approximately 60,000 CY of structural fill material would be required. Comparatively, approximately 94,250 CY of overexcavation and recompaction, approximately 20,000 CY of Import Class II fill material, and approximately 120,000 CY of structural fill material would be required for construction of the AIS design. Thus, less earthwork would be required for construction of the GIS Substation Alternative than for the AIS design. The GIS design would also reduce the amount of imported fill by approximately 75,000 CY, reducing the number of truck trips from approximately 9,335 to 5,000. Therefore, fewer impacts to air quality resulting from fugitive dust, heavy equipment operation, and on-road traffic are anticipated for the GIS Substation Alternative's site development activities.

Construction of the GIS Substation Alternative is anticipated to take approximately 18 to 24 months to complete, which would be similar to the approximately 21 months of construction time required for the AIS design. The time required to complete the cutovers and demolition of the existing South Bay Substation would also be similar for the two substation designs, and would occur following energization of the new substation.

As previously described, SF_6, which is the gas employed for insulation in the GIS technology, is considered non-toxic and inert from a hazardous materials perspective and is used by SDG&E in circuit breakers and switching gear. However, SF_6 is a GHG that exhibits potent global-warming properties when released to the atmosphere. New SF_6 equipment is described as having a low leak rate of approximately 0.1 percent annually. The GIS Substation Alternative would require the use of approximately 200,000 pounds of SF_6.

Existing Condition (View from Bay Boulevard, looking west)

Visual Simulation of the air-insulated substation at the proposed Bay Boulevard Substation site (View from Bay Boulevard, looking west)

SDGE
A Sempra Energy utility

INSIGNIA ENVIRONMENTAL

Figure 2: GIS Substation Simulation - Viewpoint Looking West
SDG&E South Bay Substation Relocation Project

Existing Condition (View from Bay Boulevard north of Palomar Street, looking southwest)

Visual Simulation of the air-insulated substation at the proposed Bay Boulevard Substation site (View from Bay Boulevard north of Palomar Street, looking southwest)

SDGE A Sempra Energy utility

INSIGNIA ENVIRONMENTAL

Figure 3: GIS Substation Simulation - Viewpoint Looking Southwest
SDG&E South Bay Substation Relocation Project

Regardless of which design is constructed, SDG&E has proposed applicant-proposed measures (APM) as part of the Proposed Project to ensure that SF_6 is properly managed. Therefore, the following measure would be implemented for the GIS Substation Alternative:

- APM-AIR-04: SDG&E would implement its existing SF_6 mitigation strategies during the operation and maintenance of SF_6-containing equipment installed as part of the Proposed Project. These strategies include:
  - Recording company-wide SF_6 purchases for use in reporting annual GHG emissions under the California Climate Action Registry (CCAR) Power Utilities Protocol and as a member of the Environmental Protection Agency's (EPA) SF_6 Partnership
  - Implementing SDG&E's SF_6 leak detection and repair program. This program includes monthly visual inspections of each gas circuit breaker (GCB), which includes checking pressure levels within the breaker and recording these readings in SDG&E's Substation Management System. During the installation or major overhaul of any GCB, the unit is tested over a 24-hour period to ensure no leaks are present. Minor overhauls of each GCB are conducted every 36 to 40 months to check overall equipment health. This process includes checking gas pressure, moisture ingress, and SF_6 decomposition. If the GCB fails any of these checks, the unit is checked for leaks and repaired. In addition, all GCBs are equipped with a gas-monitoring device and alarm that automatically alerts SDG&E's Grid Operations Center. If gas pressure approaches minimum operating levels, an alarm is immediately reported to SDG&E's Substation Construction and Maintenance Department. The GCB is usually inspected for leaks within 24 hours of such an alarm. SDG&E's leak detection practice includes the following three methodologies:
    - Spraying a leak-detection agent onto common leak points—including O-rings, gaskets, and fittings
    - Using a field-monitoring device (sniffer) to detect the presence of SF_6 gas
    - Using a laser-detection camera to detect the presence of SF_6 gas when the above two methods are unsuccessful in finding a leak
  - Implementing a SF_6 recycling program
  - Training employees on the safety and proper handling of SF_6
  - Continuing voluntary reporting of GHG emissions with the CCAR or The Climate Registry

3.2 BIOLOGICAL RESOURCES

Eight vegetation communities—seasonal pond, emergent wetland, non-native grassland, disturbed coastal coyote brush scrub, eucalyptus woodland, ornamental vegetation, disturbed

habitat, and developed land—occur within the Proposed Project area and three vegetation communities—seasonal pond, non-native grassland, and disturbed coastal bush scrub—occur within the 12.42-acre parcel. Impacts to the vegetation communities located within the 12.42-acre parcel that would result from construction of the AIS design are provided in Table 1: AIS Design – Vegetation Community Impacts. Table 2: GIS Substation Alternative – Vegetation Community Impacts provides the impacts to vegetation communities that would result from construction of the GIS Substation Alternative within the 12.42-acre parcel. Impacts outside of this parcel would be similar for both substation designs. Construction of the GIS Substation Alternative would avoid impacts to seasonal wetlands and disturbed coastal coyote brush scrub, a native scrub type. Both of these vegetation communities would be impacted by construction of the AIS design. Thus, the smaller footprint of the GIS Substation Alternative would result in fewer overall impacts to vegetation communities than the larger footprint of the AIS design.

Table 1: AIS Design – Vegetation Community Impacts

Impact Type	Seasonal Pond	Non-native Grassland	Disturbed Coastal Coyote Brush Scrub
Permanent Impacts (acres)	2.31	5.93	3.68
Temporary Impacts (acres)	0.00	0.41	0.09
Total	**2.31**	**6.34**	**3.77**

Table 2: GIS Substation Alternative – Vegetation Community Impacts

Impact Type	Seasonal Pond	Non-native Grassland	Disturbed Coastal Coyote Brush Scrub
Permanent Impacts (acres)	0.00	5.39	0.00
Temporary Impacts (acres)	0.00	0.59	0.00
Total	**0.00**	**5.98**	**0.00**

Additionally, one individual of a rare plant species—Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)—was identified during the May 2011 rare plant survey for the Proposed Project site. The decumbent goldenbush individual was documented in the non-native annual grassland habitat southwest of the bermed area within the 12.42-acre parcel of the former LNG site, as depicted in Figure 1: GIS Substation Boundary Map. It is anticipated that the construction of either the AIS design or GIS Substation Alternative would impact this decumbent goldenbush individual. Although both the AIS design and GIS Substation Alternative would impact one rare plant individual, the overall impacts to biological resources would be reduced as a result of the smaller footprint of the GIS Substation Alternative.

3.3 HYDROLOGICAL RESOURCES

As previously described, construction of the GIS Substation Alternative would result in an overall footprint of approximately 4.4 acres within the substation's perimeter walls. In

comparison, the AIS design would have a total footprint of approximately 9.7 acres within the perimeter walls. Due to the smaller substation footprint associated with the GIS Substation Alternative, it would avoid permanent impacts to all of the 2.43 acres of potentially jurisdictional wetlands that would be impacted by construction of the proposed AIS design, as depicted in Figure 1: GIS Substation Boundary Map.

Like the AIS design, the GIS Substation Alternative would require the construction of one water quality basin, which would be located along the western site boundary. The basin would measure approximately three-feet deep, with approximately 1.2 acre-feet of storage volume. The drainage tributary to the southwest corner discharge location is from the eastern side of the site and the proposed water quality basin, like the AIS design. This discharge location would serve as a point of comparison for pre-project and post-project peak flow rates. However, in contrast to the AIS design, the basin for the GIS design would not require a second discharge point of comparison at the northwest corner of the substation because the GIS design would not impact drainage characteristics within the LNG containment area. Therefore, only one discharge location would be required for hydrologic analysis for the GIS Substation Alternative. Thus, fewer potential impacts to hydrological resources would result from construction of the GIS Substation Alternative than from the AIS design.

3.4 NOISE

Noise impacts resulting from construction of the GIS Substation Alternative are anticipated to be approximately equal to or potentially slightly less than those identified for the AIS design. The construction equipment used for above-grade construction for both designs is similar and would not change the noise generated during construction; the potential change would result from the reduction in site development activities.

During normal operation, the main components contributing to noise generation are the transformers. Both the GIS Substation Alternative and the proposed AIS design include identical transformers. However, these noise-generating components would be located in slightly different locations for the two designs. The design location of the transmission transformers and the distribution transformers would be altered approximately 200 feet southward from what was described for the AIS design. Additional changes to noise generation during construction and during normal operation may result from the buildings used to house the GIS equipment, as they may temper or redirect the noise to some extent. A letter from an acoustician describing the similarities between the two designs has been included as Attachment A-1: Acoustician Noise Letter.

3.5 TRANSPORTATION AND TRAFFIC

As previously described in Section 3.1 Air Quality, the GIS design would reduce the amount of imported fill required for construction of the substation by approximately 75,000 CY. As a result, the number of truck trips related to earthwork would be reduced from approximately 9,335 for the AIS design to approximately 5,000 for the GIS Substation Alternative. However, the number of truck trips required to deliver concrete and other items, including the GIS equipment, GIS piping, and general building materials—such as steel, wall and roof metal panels, cranes, doors, and louvers—would increase. GIS design would require a similar number

of daily vehicle trips for the delivery of materials and construction crew commutes as the AIS design. Therefore, the GIS Substation Alternative would result in fewer impacts to transportation and traffic resulting from the reduction in vehicle trips associated with earthwork activities.

4 – CONCLUSION

The GIS Substation Alternative is a technologically feasible means of implementing the Proposed Project, while reducing some of the potential impacts for several resource areas. Potential impacts to aesthetics would differ between designs because a GIS substation would encompass a smaller area, but would include tall, enclosed buildings, but less visible substation equipment and structures than the AIS design. Impacts to air quality associated with construction of the GIS Substation Alternative would be less than those anticipated for the AIS design, but the amount of SF_6 emitted during operations for the GIS Substation Alternative would be greater than that emitted for the AIS design. Impacts to biological resources would be reduced as a result of the smaller GIS substation footprint. Additionally, 2.43 acres of permanent impacts to potentially-jurisdictional on-site wetlands would be avoided as a result of the smaller footprint required for the GIS Substation Alternative, in contrast to the originally proposed AIS design. Noise impacts would not substantially differ between the two designs, as described in Attachment A-1: Acoustician Noise Letter. Likewise, the construction transportation impacts are expected to be reduced as a result of the GIS design. Although the cost required for procurement and installation of the GIS equipment would be appreciably greater than the cost for the AIS design, the avoidance of impacts to sensitive resources and need for the critical infrastructure in the area renders the GIS Substation Alternative a feasible option from a technological and environmental perspective.

5 – REFERENCES

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ATTACHMENT A-1: ACOUSTICIAN NOISE LETTER

Acentech Incorporated
250 N. Westlake Blvd., Suite 150
Westlake Village, CA 91362

Telephone: 805-379-5774
Facsimile: 805-379-1797
E-mail: rnugent@acentech.com

Acentech

19 May, 2011

Robert Curley, Director
Insignia Environmental
258 High Street
Palo Alto, CA 94301

Subject: South Bay Substation Relocation Project – Noise Level Changes of AIS Design to GIS Design

Dear Robert:

In June 2010, San Diego Gas & Electric Company (SDG&E) filed a Proponent's Environmental Assessment (PEA) for the South Bay Substation Relocation Project (Proposed Project) with the California Public Utilities Commission (CPUC). The Proposed Project involves the removal of the existing South Bay Substation and construction of a replacement substation that would be named the Bay Boulevard Substation at a location approximately 0.5 mile south of the existing South Bay Substation. The Proposed Project also includes the modification of existing 230, 138, and 69 kilovolt (kV) transmission lines to interconnect into the proposed substation.

In response to the CPUC's Data Request #5 (SDGE-ED-005) dated May 4, 2011, SDG&E has requested that Acentech, Inc. (Acentech) evaluate the potential changes in operational noise that would result from the construction of a gas-insulated switchgear (GIS) substation in place of the proposed air-insulated switchgear (AIS) design.

Acentech began this evaluation by reviewing Section 4.10 Noise of the original PEA, which included Attachment 4.10-B: Noise Study for the South Bay Relocated 230/69/12 kV Substation. Acentech also reviewed substation layouts for the proposed AIS and GIS designs. In review of these layouts, it was determined that both designs contain identical transformers, which are a constant source of operational noise. In both designs, the transformers are located outside of the on-site buildings.

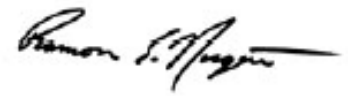
As a result, the transformers would generate a similar level of noise in either design. The large buildings that would enclose the switchgear would alter the dispersion pattern of the noise from the transformers used in the GIS design; therefore, these contours would appear distorted when compared to those from the AIS design. Given the similarities in equipment quantity, location, and noise output, the anticipated noise from the GIS design would be within approximately one to two decibels (dB) of those simulated for the AIS design when measured at a similar distance from the proposed transformers. Because the GIS design

would shift the transformers approximately 200 feet south when compared to the proposed AIS design, the resulting noise contours would shift south as well, increasing the noise exposure to the industrial facility located adjacent to the proposed substation site by approximately four to six dB.

The original PEA noise simulation—Figure 4.10-3: Bay Boulevard Substation Operational Noise Contours—indicated that operation noise from the AIS design would be less than 44 dB at the southern boundary of the 12.42-acre parcel. If a six-dB increase is assumed due to the revised transformer locations, the light industrial land use directly south of the substation would be exposed to approximately 50 dB of operational noise. This is well below the City of Chula Vista's sound level limit of 70 dB for light industrial land uses.

Sincerely yours,

ACENTECH INCORPORATED



Ramon E. Nugent, P.E. (TX)
Supervisory Consultant

ATTACHMENT B: SILVERGATE SUBSTATION EIR EXCERPT

SDG&E 5/24/11 Response
A. 10-06-007 South Bay Substation Relocation Project PTC
Energy Division Data Request 05 Dated May 4, 2011
SDGE-ED-005: Q

Attachment B: Silvergate Substation EIR Excerpt

D.9.1.3 138 kV Circuit Removal, Undergrounding and Removal of Lattice Steel

Bridge Structure (South Bay Power Plant Switchyard to Main Street Substation

The portion of the Proposed Project area south of theMain Street Substation to the Sweetwater River consists of primarily commercial, industrial andmilitary uses in the cities of SanDiego and National City. All construction activities associated with the 138 kV circuit removal would occur within the existing SDG&E ROW and no potentially contaminated sites were identified along the ROW. From the Sweetwater River to the South Bay Power Plant Switchyard in the City of Chula Vista, the Proposed Project area would traverse industrial, commercial, open space, and recreation land uses.

Based on the records review conducted for the Proposed Project, there are a number of sites listed along the project study area. See Appendix 5 to this EIR for site name, location and descriptions. Areas of possible environmental concern include a burn ash site within and adjacent to the eastern end of the Sweetwater Marsh and the BF Goodrich/Rohr property located between J Street and G Street in the City of Chula Vista.

Several studies have been conducted on the BF Goodrich/Rohr property as listed in Sections D.9.1 and D.9.8 (references). Studies show that soil and groundwater on theNorth and South Campuses of Goodrich's facility have been impacted by various chemicals. Site investigations have indicated that shallow groundwater contains trichloroethylene (TCE) and other chlorinated volatile organic compounds (VOCs) in the vicinity of the SDG&E easement. Chromium VI is also present in shallow groundwater approximately 100 feet west of the easement in one area. In addition, the depth of groundwater is shallow, ranging from approximately 5 to 14 feet as further described in Section D.6 of this EIR.

Impact HAZ-2: Excavation Could Result in Mobilization of Existing Contamination

Installation of the 138 kV cable along the underground route would involve trenching and excavation within the ROW from the South Bay Substation to the Sweetwater River area, with the exception of the Sweetwater Marsh which would be avoided by use of HDD. Trenching and/or excavation required to install the duct bank below the ground surface and to construct utility vaults would involve the removal of native soil or fill material to depths of approximately six feet below the ground surface. However, bore pits used to horizontally bore beneath Telegraph Canyon Creek and two unnamed drainages would require excavations to depths approximately 15 below the ground surface. Additionally, existing utility crossings would require deeper excavations in order to install the duct bank below the utility.

SDG&E 5/24/11 Response
A. 10-06-007 South Bay Substation Relocation Project PTC
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Attachment B: Silvergate Substation EIR Excerpt

Trench dewatering would be required to remove groundwater that infiltrates into the trench or bore pits during construction in order to provide a dry work area to install the duct bank. Groundwater levels along the 138 kV undergrounding route range from five to 14 feet below the existing grade (Geocon 2005 and URS 2005b). For the purposes of this analysis, it is assumed that groundwatercould be encountered along the entire underground route and groundwater levels experienced during construction could be higher or lower then previously documented levels depending on seasonal changes.

Mobilization of existing contaminates can be categorized into two groups: above surface impacts and subsurface impacts. During construction existing contaminants could bemobilized if contaminated soil is exposed to wind or runoff that could transport hazardous substances outside the work area. Soil particles or runoff (either from rain or dewatering operations) with harmful levels contaminates could pose a threat to the public and workers in the vicinity of the project.While significant, above surface mobilization would be short-term and minimized by implementing APM-30 (Hazardous substance management, handling, storage, disposal, and emergency response plan) and Mitigation Measure Haz-2b. Implementation of these measures would ensure exposure to the public and workers is less than significant (Class II).

Mobilization of existing contaminants below the ground surface would be considered a significant impact to public health and safety if subsurface mobilization resulted in exposure to the public or workers that would not otherwise occur if the project was not built. Several studies were conducted as part of the SDG&E Otay Mesa Power Purchase Agreement Transmission Project (CPCN) Application No. 04-03-008) to determine whether groundwatermigrationwould occur during trench dewatering (short-term) or following installation of several anticipated future duct banks (including the Silvergate 138 kV duct bank) within the ROW (long-term). The studies were limited to the underground alignment from J Street to G Street in the City of Chula Vista and based on historical and recent data collected on the North and South Campuses of the Goodrich facility. Pre-construction groundwater modeling indicates that groundwater in the vicinity of the underground route generally migrates from east to west. Consequently, soluble contaminates would also migrate east to west. Post-construction groundwater modeling shows particle movement continuing in a westerly direction along the same path as the pre-construction model, with the exception of at the duct banks where groundwater would flow around the impermeable structures. Several models were also conducted to determine the short-term effect on groundwater during dewatering operations. These models showed that dewatering would draw groundwater towards the trench, but would not result in substantial changes to contaminant migration patterns or expose the public or workers to harmful substances. Implementation of APM 30 and Mitigation Measures HAZ-2 and HAZ-2d would ensure that impacts from contaminated groundwater encountered during trenching activities are reduced to a less than significant level (Class II). Implementation of Mitigation Measures H-5a, H-5b, H-

SDG&E 5/24/11 Response
A. 10-06-007 South Bay Substation Relocation Project PTC
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Attachment B: Silvergate Substation EIR Excerpt

5c (refer to Section D.6.3.6, Impact H-5) would further reduce impacts to changes in groundwater flow patterns or migration of existing contaminants through project-related excavation.

ATTACHMENT C: ALTERNATIVE SUBSTATION SITE INTERCONNECTIONS

Broadway & Palomar Site

Circuits	Approx. distance from alternative site to utility tie-in (ft)	Description
230KV		
TL23042	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
138kV		
TL13823/24	Adjacent	Circuit alignment & tie-in adjacent to alternative site. Construction may be similar to preferred site.
69kV		
641	10,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.
642	10,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.
644	10,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.
645	3,500	Require installing overhead/underground transmission structures along city streets.
646	Adjacent	Circuit alignment & tie-in adjacent to alternative site. Construction may be similar to preferred site.
647	5,000	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.

Note: 1. Utility tie-in refers to nearest transmission corridor. 2. Assume UG profile substation would require undergrounding along city streets. 3. A full engineering study would need to be performed to determine route feasibility and constructability.

CIMA NV Site

Circuits	Approx. distance from alternative site to utility tie-in (ft)	Description
230KV		
TL23042	1,500	Require installing overhead/underground transmission structures along city streets.
138kV		
TL13823/24	1,500	Require installing overhead/underground transmission structures along city streets.
69kV		
641	7,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.
642	7,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.
644	7,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.
645	3,000	Require installing overhead/underground transmission structures along city streets.
646	1,500	Require installing overhead/underground transmission structures along city streets.
647	2,500	Require installing overhead/underground transmission structures along city streets. HDD (Horizontal Directional Drill) to cross I-5 would be required.

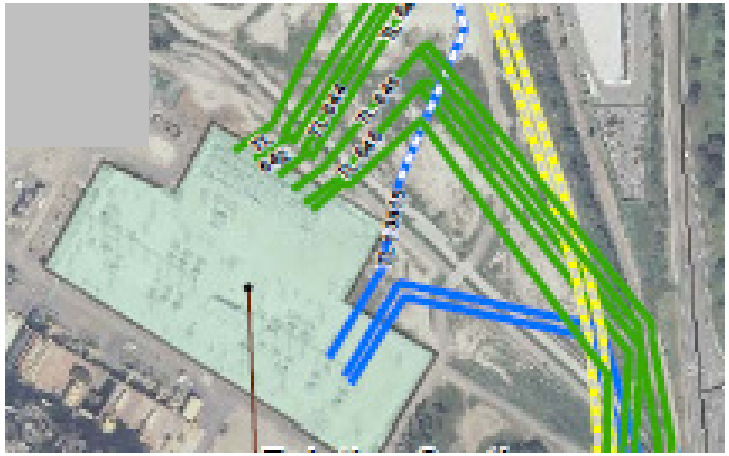
Note: 1. Utility tie-in refers to nearest transmission corridor. 2. Assume UG profile substation would require undergrounding along city streets. 3. A full engineering study would need to be performed to determine route feasibility and constructability.

S. Bay Boulevard Site

Circuits	Approx. distance from alternative site to utility tie-in (ft)	Description
230KV		
TL23042	2,500	Require installing overhead/underground transmission structures along city streets.
138kV		
TL13823/24	2,500	Require installing overhead/underground transmission structures along city streets.
69kV		
641	7,000	Require installing overhead/underground transmission structures along city streets.
642	7,000	Require installing overhead/underground transmission structures along city streets.
644	7,000	Require installing overhead/underground transmission structures along city streets.
645	2,500	Require installing overhead/underground transmission structures along city streets.
646	2,000	Require installing overhead/underground transmission structures along city streets.
647	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.

Note: 1. Utility tie-in refers to nearest transmission corridor. 2. Assume UG profile substation would require undergrounding along city streets. 3. A full engineering study would need to be performed to determine route feasibility and constructability.

Existing Southbay Substation Site



Circuits	Approx. distance from alternative site to utility tie-in (ft)	Description
230KV		
TL23042	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
138kV		
TL13823/24	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
69kV		
641	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
642	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
644	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
645	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
646	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
647	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.

Note: 1. Utility tie-in refers to nearest transmission corridor. 2. Assume UG profile substation would require undergrounding along city streets. 3. A full engineering study would need to be performed to determine route feasibility and constructability.

Tank Farm Site

Circuits	Approx. distance from alternative site to utility tie-in (ft)	Description
230KV		
TL23042	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
138kV		
TL13823/24	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
69kV		
641	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
642	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
644	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
645	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
646	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.
647	Adjacent	Circuit alignment & tie-in adjacent to the alternative site. Construction may be similar to preferred site.

Note: 1. Utility tie-in refers to nearest transmission corridor. 2. Assume UG profile substation would require undergrounding along city streets. 3. A full engineering study would need to be performed to determine route feasibility and constructability.