

## **P. UTILITIES AND SERVICE SYSTEMS**

### **SETTING**

Service systems and utilities such as electricity, domestic water, sanitary/stormwater sewers, solid waste, communications and natural gas are typically provided to the project area by a variety of local purveyors (e.g., cities, counties, special districts, water agencies, and power companies). The availability of such services depends on the level of urbanization in a given area. Certain utilities such as sanitary sewer/stormwater, natural gas, are usually provided via underground pipelines or conduits.

### ***ELECTRIC, GAS, AND COMMUNICATIONS FACILITIES IN SOUTHERN CALIFORNIA***

Southern California Gas Company (SCG) is the nation's largest natural gas distribution utility, serving 18 million consumers through 5.1 million meters. The company's service territory encompasses 23,000 square miles, from San Luis Obispo on the north, to the Mexican border in the south, and 535 cities, excluding the City of Long Beach and the County of San Diego (both of which are wholesale customers of SCG).

San Diego Gas & Electric (SDG&E) is a regulated public utility that provides service to three million consumers through 1.3 million electric meters and 775,000 natural gas meters in San Diego and southern Orange counties.

SCG and SDG&E are part of Sempra Energy Utilities; the umbrella for Sempra Energy's regulated business units. Sempra Energy is a Fortune 500 energy services holding company based in San Diego.

### **Availability of Utilities and Service Systems**

The proposed project involves conduit installation in existing live natural gas pipelines within SCG/SDG&E's service territories by using an approved FIG technology. FIG installation and repair or replacement work would occur primarily within existing public road rights-of-way in a region with a well-established utility infrastructure.

## **REGULATIONS, APPROVALS, AND PERMITS APPLICABLE TO UTILITIES AND SERVICE SYSTEMS**

### ***CALIFORNIA PUBLIC UTILITIES COMMISSION***

The California Public Utilities Commission (CPUC) regulates privately owned telecommunications, electric, natural gas, water, railroad, rail transit, and passenger transportation companies. The CPUC is responsible for assuring California utility customers have safe, reliable utility service at reasonable rates, protecting utility customers from fraud, and promoting the health of California's economy.

The CPUC regulates natural gas local distribution facilities and services, natural gas procurement, intrastate pipelines, and intrastate production and gathering. The CPUC's approach to natural gas regulation is to ensure low rates with fair allocation across customer classes, service reliability and consumer protection, adequate infrastructure balanced with efficient system use, and provide incentives for efficiency and lower costs. The CPUC works to provide opportunities for competition when in consumer interest, takes the lead in environmental review of gas-related projects, recognizes the growing interaction of electric and gas markets, and monitors gas energy efficiency and other public purpose programs.

The Commission establishes service standards and safety rules, and authorizes utility rate changes. It monitors the safety of utility and transportation operations, and oversees markets to inhibit anti-competitive activity. In its efforts to protect consumers, it prosecutes unlawful utility marketing and billing activities, governs business relationships between utilities and their affiliates, and resolves complaints by customers against utilities. It implements energy efficiency programs, low-income rates and telecommunications services for disabled customers. It oversees the merger and restructure of utility corporations, and enforces the California Environmental Quality Act for utility construction. The CPUC works with other state and federal agencies in promoting water quality, environmental protection and safety. It also intervenes in federal proceedings on issues that affect California utility rates or services.

The Commission also regulates investor-owned water and sewer system utilities. It does not have jurisdiction over municipal utilities or districts. The Water Division supports the Commission by investigating water and sewer system service quality issues and analyzing and processing utility rate change requests.

**IMPACTS AND MITIGATION MEASURES**

<i><b>Issues (and Supporting Information Sources):</b></i>	<i><b>Potentially Significant Impact</b></i>	<i><b>Less Than Significant with Mitigation Incorporation</b></i>	<i><b>Less Than Significant Impact</b></i>	<i><b>No Impact</b></i>
<b>UTILITIES AND SERVICE SYSTEMS—</b>				
<b>Would the project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

<b><i>Issues (and Supporting Information Sources):</i></b>		<b><i>Potentially Significant Impact</i></b>	<b><i>Less Than Significant with Mitigation Incorporation</i></b>	<b><i>Less Than Significant Impact</i></b>	<b><i>No Impact</i></b>
e)	Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g)	Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

***APPROACH TO ANALYSIS***

This analysis focuses on the potential for the project to affect existing underground utilities and service systems during project construction and operation. In addition, this analysis discusses the project's demand for public utilities and services and any infrastructure improvements required to meet these demands.

***CRITERIA FOR DETERMINING SIGNIFICANCE***

Determination of impacts of the proposed project is based on criteria a-g in the environmental checklist as listed above. According to CEQA, a project would normally have a significant effect on public utilities and service systems if it would interfere with or substantially change the demand for the utility service, generate a need for new utilities, or require substantial alteration to utility systems (e.g., construction or expansion of public facilities such as storm drainage systems, and wastewater treatment facilities). For the purposes of this analysis, the project would be deemed to have a significant impact if it would affect and disrupt existing underground utilities.

***IMPACT MECHANISMS***

**Construction Activities**

Construction of the proposed project would involve ground-disturbing activities associated with accessing an existing natural gas pipeline for installation of conduit. During construction, the project could:

- affect and disrupt existing underground utilities;
- generate construction debris or soils that could affect the availability of regional landfill capacity and compliance with solid waste regulations;
- require water that could affect existing water supplies;

- generate surface water runoff that could exceed wastewater treatment requirements of the Regional Water Quality Control Board and that could affect drainage systems and associated wastewater treatment facilities.

### **Pipeline Operation Following Project Implementation**

Placement of conduit within existing natural gas distribution pipelines may:

- interfere with or substantially change the demand for the utility service;
- generate a future need for new utilities; or
- require substantial alteration to utility systems.

### ***IMPACT ASSESSMENT***

The proposed new form of service has service implications including potential impacts on operations, existing capacity and future expansion of active gas pipelines. SCG/SDG&E does not anticipate that maintenance required on the conduit or fiber optics would necessitate shutting off the respective gas pipeline at any time, which could potentially impose a cost on the ratepayers either through disruption or curtailment of service. SCG/SDG&E would ensure that such technology would not necessitate the interruption of gas service either upon the initial installation or subsequent maintenance. In the case that installation of fiber optics cable could interfere with pipeline capacity needed for service, SCG/SDG&E has drafted special conditions upon which this potential is taken into account.

Additionally, the current flowing capacity would decline as a direct result of offering the proposed tariff service. Only pipelines that operate at 60 psi or less will be eligible for this service. Further, any possible impact would be very local in nature, affecting only a particular distribution line.

Finally, further issues exist in response to when capacity of the distribution system must be expanded due to future gas load demands. To resolve this issue, SCG/SDG&E would not allow installation of fiber optic cable in any pipeline if they estimate that installation would result in insufficient gas capacity in the line in the next 60 months, unless arrangements were made for the carrier for it to pay to increase the gas capacity to avoid this situation. Thus, in the case of capacity constraints more than 60 months in the future, the Carrier may elect to terminate service or relocate its route, such that no additional pipeline construction or trenching would occur.

### **Pipeline Capacity**

**Impact UTL-1: The placement of fiber optic cable within existing gas pipelines would reduce the service capacity of the existing gas pipelines.**

The placement of fiber optic cable within existing gas pipelines would reduce the service capacity of the existing gas pipelines. Testing conducted in August of 2001 found that this reduction ranges from approximately 8.35 percent to 15.66 percent in 4-inch gas pipes, to approximately

0.50 percent in 12-inch gas pipes (See **Table 3.P-1**). No testing was conducted on pipes less than 4 inches in diameter. The installation of 0.5-inch, rather than 1-inch conduit is proposed for 2-inch, 3-inch (and sometimes 4-inch) size pipes. A 0.375-inch conduit is proposed for gas service lines.

**TABLE 3.P-1**  
**ESTIMATE OF CAPACITY LOSS IN NATURAL GAS PIPE WITH**  
**INTRODUCTION OF 1" FIBER OPTIC CABLE CONDUIT**

<b>Approximate Pipe Size<sup>a</sup></b> <b>(Steel Pipe)</b>	<b>Approximate Percentage</b> <b>Reduction of Capacity</b>
4 inches	8.35% to 15.66%
5 inches	5.40% to 8.43%
6 inches	3.78% to 5.85%
8 inches	0.91% to 1.23%
10 inches	0.58% to 0.76%
12 inches	0.41% to 0.50%

<sup>a</sup> Pipes of various wall thickness and inside diameters were tested for each pipe size

Depending upon the size of the gas pipe and conduit, and the needs of a particular service area, a reduction in a 4-inch gas pipeline’s capacity may have adverse individual and/or cumulative impact to natural gas service. In a developed environment, a large amount of natural gas infrastructure is already in place and natural gas service needs would be expected to remain relatively constant in the future, because limited areas would be available for future growth.

**Mitigation Measure UTL-1a: Application of the Schedule No. G-FIG’s Terms and Special Conditions shall address/avoid potentially significant impacts to pipeline service capacity.**

Special Conditions 11 and 12 of the DRAFT Schedule No. G-FIG, related to “Pipeline Capacity Available to Provide Service,” state:

- Access will be limited to one fiber optic cable or cables of a combined maximum of 1 inch diameter to be installed in one conduit with a maximum diameter of 1.2 inches per SCG/SDG&E pipeline.
- Utilities may deny service under this schedule for a particular location or route if Utility determines that there is now, or will be in the next 60 months, insufficient capacity in its pipelines to accommodate placement of fiber optic cable, or that placement of fiber optic cable would create a threat to the safety or reliability of Utility’s gas service.

Utility may not deny service on insufficiency of capacity, if capacity is forecast to be adequate for at least the next 60 months. Utility may offer Carrier service for a particular location or route where there will be insufficient capacity within 60 months on condition that Carrier agrees to pay a portion acceptable to Utility of the cost of increasing the capacity of Utility's pipelines in that particular location or route.

If actual future local growth creates the need to add capacity to the particular pipeline segment(s) occupied by the fiber optic cable at any time one or more years after the effective date of the contract, SCG/SDG&E will promptly notify the Communications Company and provide the company with an estimate of the least cost method of adding needed additional capacity. The amount of additional capacity needed will be determined by employing standard utility planning procedures that consider cost efficiency and effectiveness. The Communications Company would have the option of: (1) paying the proportionate share of the incremental costs of adding the needed capacity in the most effective manner, or (2) removing the conduit from the pipeline.

Application of the Schedule No. G-FIG's terms and Special Conditions would address/avoid potentially significant impacts to pipeline service capacity, and reduce those impacts to less-than-significant levels.

### **Impacts to Operations**

#### **Impact UTL-2: The proposed new form of service will have service implications including potential impacts on operations.**

Installation of all facilities (conduit and necessary fittings) needed to accommodate fiber optic cable in gas pipelines would be performed only by SCG/SDG&E employees or qualified persons under contract to SCG/SDG&E. The actual installation of the fiber optic cable would be performed by the Carrier, however, SCG/SDG&E will have an inspector present to ensure damage to the existing pipeline facilities would not result during construction.

SCG/SDG&E's primary responsibility during an emergency is to minimize the hazard resulting from a damaged pipeline. Therefore, SCG/SDG&E employees may have to perform tasks during emergency situations that may result in the damage to the conduit and/or cable. However, existing procedures will be modified to minimize the damage to FIG conduit and cable. An estimated twenty-seven current procedures will require modifications to accommodate this new technology.

#### **Mitigation Measure UTL-2a: Primary operations and maintenance procedures shall be modified to address potential operational impacts.**

The primary operations and maintenance procedures that will need to be modified in response to the following subjects:

- Leak Survey – It is anticipated that leak survey of pipeline containing fiber optic cable will increase because SCG/SDG&E's employees will need to survey the manholes where the fiber optic cable will be brought to the surface. This procedure will comply

49 CFR 192.723b(1), which requires that leak surveys be conducted at any location providing the opportunity for finding gas leaks.

- Locate and Mark – Locating wire will be installed with the PE conduit to locate the conduit beyond the steel main.
- Leak Repair – To the extent possible, leak repairs will be made with specialized mechanical fittings to minimize damage to the conduit and cable.
- Third Party Damages – The primary concern after a third party damage will be to prevent hazards to the public and employees. To the extent possible the conduit and cable will be pulled out to minimize damage. Once the damaged section is replaced, the conduit will be re-installed and capped. The Carrier will then be responsible for the insertion of the cable under the inspection of SCG/SDG&E.
- Service Connection – To the extent possible mechanical means will be utilized when providing gas service to new customers to minimize damage to the conduit and cable from welding directly on the steel pipe. At this time, the largest mechanical service connection available is two inches. Any service connection larger than two inches will be welded.
- Main Relocations – In the event that a main containing fiber optic cable has to be relocated, the fiber optic cable will be removed prior to starting the relocation work. SCG/SDG&E will coordinate these jobs with the Carrier.
- Pinching Process – The space between FIG exit and re-entry fittings will be used as pre-designated pinching points. In order for this proposal to work, utility locator maps (also known as “Atlas Sheets”) will have to be clearly marked with the location of FIG fittings. The required information can be posted on Atlas Sheets as part of the FIG installation process. In extreme cases where a main containing cable has to be pinched, tests conducted to date have shown that the hydraulic tool used for pinching the gas pipeline will sever the conduit and cable. However, there will be no interference with gas control procedures.
- Mapping and Tracking Requirements – company procedures will be revised to include the process of identifying FIG exit/entry locations and mains serving as FIG carriers on SCG/SDG&E Company Atlas Sheets.
- Static Electricity – Although the risk associated with static electricity produced during the handling of PE conduit is low, following company procedure 184.0160, which deals with the process of working with PE pipe will mitigate this risk.
- System Capacity – The installation of the PE conduit in gas mains will have some impact on the capacity of the line. System analysis will be conducted prior to the installation of conduit to ensure that line capacity will not be adversely impacted.

## ***IMPACT ASSESSMENT***

- a) ***Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?***

The project involves installation of conduit within existing natural gas pipelines. There will be no wastewater generated other than potential dewatering activities, which are discussed in *Section 4h, Hydrology* of this document. Additionally, there will be no development as a part of this project and therefore, no additional wastewater generation would occur from the project sites. Thus, the project would not exceed wastewater treatment requirements by the RWQCB.

- b) ***Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

As discussed in the previous question, there will be no development associated with this project. Thus, there will be no impacts to existing water or wastewater facilities.

- c) ***Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?***

The proposed project would not create new impermeable surfaces that would substantially increase drainage runoff beyond that existing without the project. Accordingly, the proposed project would not require or result in the construction or expansion of stormwater drainage facilities.

- d) ***Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?***

Water needs of the project during construction would be relatively minor and temporary. Existing water resources would be sufficient to meet those needs. Following construction, the proposed project would require no external water supply. Therefore, existing water supplies would be sufficient without requiring new or expanded entitlements, so there will be no impacts to the existing water supplies.

- e) ***Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?***

The appropriate districts will continue to maintain jurisdiction over the wastewater treatment for SCG/SDG&E's service territories where project sites are located. The proposed project would generate no additional wastewater and would require no wastewater treatment services. Existing wastewater treatment services would be sufficient. There will be no impacts to each district's wastewater treatment capacity.

***f) Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?***

As discussed in the project description, most of the soil excavated during pipeline access points would be used to refill the excavation, construction spoils such as paving materials would be returned to the asphalt manufacturer, a local recycler, or transported to an appropriate facility for disposal. The quantity of construction-related materials transported to area landfills would be extremely minor relative to the daily volumes handled at these facilities and would not substantially affect the remaining capacity of any landfill.

Project activities will not affect landfill capacity for solid waste disposal needs as no new construction or related activities will take place. Thus, no impacts to solid waste disposal needs would result from the project.

***g) Would the project comply with federal, state, and local statutes and regulations related to solid waste?***

Solid wastes associated with the proposed project include soil displaced by project construction, conduit spools, and other packaging material associated with FIG installation. Other than these wastes produced during construction, the proposed project would not produce substantial amounts of solid waste. Most, if not all, of the soil removed during pipeline access for FIG installation would be replaced and the surface returned as close to pre-project conditions as possible or practicable. Spools and other packaging for conduit and cable would be taken away for reuse, recycling, or disposal at a landfill consistent with federal, state, and any local solid waste statutes. Once installation is complete, the proposed project would produce no solid wastes.

There are no federal, state, or local statutes or regulations applicable to the proposed project relative to solid waste. The proposed project would have no impacts related to solid waste.