

## 4.6 Utilities

This section summarizes the regulatory setting, affected environment, environmental consequences, and measures to avoid, mitigate, or compensate for effects to utilities that could result from implementation of any of the project alternatives.

Documents reviewed to prepare this analysis include the San Francisco *Better Streets Plan*, utility maps of the Geary corridor (obtained from utility provider planning documents and City departments), and related information compiled by San Francisco Public Works (SFPW).

### 4.6.1 | Regulatory Setting

#### 4.6.1.1 | STATE REGULATIONS

##### 4.6.1.1.1 STATE OF CALIFORNIA CODE OF REGULATIONS, SUBCHAPTER 5, ELECTRICAL SAFETY ORDERS, GROUP 2, ARTICLE 37

Maintenance and any other work around the overhead contact system (OCS) that intersects the Geary corridor at Masonic/Presidio avenues, Fillmore Street, and Van Ness Avenue is governed by the California Division of Occupational Safety and Health Administration (Cal-OSHA) rule for working around the energized wires (Subchapter 5, Electrical Safety Orders, Group 2, Article 37). This section sets the clearance requirements for equipment used around energized OCS to prevent accidental contact with the overhead lines. Minimum allowable clearances to wires and work requirements near overhead lines are of specific relevance to the build alternatives.

##### 4.6.1.1.2 CALTRANS REQUIREMENTS

The Geary corridor crosses both Van Ness Avenue (part of US 101) and Park Presidio Boulevard (part of State Route (SR) 1). Both US 101 and SR 1 are operated and maintained by the California Department of Transportation (Caltrans). Caltrans has mandatory standards, policies, and procedures for the placement and protection of underground utility facilities within its right-of-way.<sup>1</sup> Caltrans's policies require all utility relocations to be approved through an encroachment permit process which governs utility identification, location, and required clearances, and also sets forth limits on construction period activities. Any construction across Park Presidio Boulevard and/or Van Ness Avenue would require obtaining and complying with terms of encroachment permits from Caltrans.

#### DEFINITION

**CALTRANS ENCROACHMENT PERMIT:** An encroachment permit would need to be obtained for all proposed activities related to the placement of encroachments within, under, or over the State highway rights of way. Some examples of work requiring an encroachment permit are: utilities, excavations, encroachment renewals, advertisements (when allowed by statute), vegetation planting or trimming, etc.

<sup>1</sup> See Chapter 13 of Caltrans's Right-of-Way Manual and the Policy on High- and Low-Risk Underground Facilities within Highway Rights-of-Way.

## 4.6.1.2 | LOCAL REGULATIONS

## 4.6.1.2.1 SAN FRANCISCO PUBLIC WORKS CODE, ARTICLE 2.4 AND DIRECTOR'S ORDER NO. 176,707

## RESOURCE

Article 2.4, Excavation in the Public Right-of-Way, of the San Francisco Department of Public Works Code can be accessed Online:  
<http://www.amlegal.com/library/ca/sfrancisco.shtml>

Public Works Code Article 2.4 (Excavation in the Public Right-of-Way) governs excavation within portions of public right-of-way under jurisdiction of SFPW (in other words, public right-of-way that is not under state or federal jurisdiction). Article 2.4 requires any person excavating in the public right-of-way to obtain an excavation permit and comply with the Orders and Regulations of SFPW.

Order No. 176,707 establishes rules and regulations for excavating and restoring SFPW jurisdictional streets. These rules and regulations are intended to “balance the needs to preserve and maintain public health, safety, welfare, and convenience” by minimizing disruption to neighborhoods and the traveling public while upgrading and maintaining utility services.

SFPW Order No. 176,707 establishes a requirement for 5-year plans of major anticipated work. Each April and October, utility providers and municipal excavators, or City project proponents, must submit a 5-year plan to SFPW that lists all major work anticipated to be completed within the public right-of-way.

## RESOURCE

Information regarding the SFDWP 5-Year Plan can be accessed online:  
<http://sfdpw.org/index.aspx?page=370>

SFPW coordinates these plans with the SFPW Five-Year Paving Plan into a single, comprehensive Five-Year Plan and Map to identify conflicts and opportunities for joint work. This work is coordinated through the SFPW-led Committee for Utility Liaison on Construction and Other Projects (CULCOP) empowered by the San Francisco Administrative Code Sec 5.63.

The CULCOP, which includes every utility provider and municipal excavator in the City, meets monthly to discuss the scheduling of utility work and major projects. The Street Construction Coordination Center works closely with CULCOP to coordinate all work in City streets and provides an agency contact list for official written intent to begin construction, known as Notice of Intent (NOI), for distribution. Prior to issuance of an excavation permit, the permit application is checked against the Five-Year Plan and scheduled paving projects.

Order No. 176,707 establishes a 5-year plan moratorium on excavating in streets that have been reconstructed, repaved, or resurfaced within a preceding 5-year period. Such projects are listed in the Streets under Excavation Moratorium list maintained by SFPW. The 5-year plan moratorium encourages utility owners to determine alternative methods of making necessary repairs to avoid excavating in newly paved streets. It also encourages utility providers and construction project proponents to coordinate and plan activities to avoid work in the recently disturbed public ROW.

Waivers to the moratorium and permits to excavate in moratorium streets may be granted by the Director of Public Works for “good cause,” such as to repair leaks, deploy new technology, provide new service, or other situations deemed to be in the best interest of the general public.

As of December 2017, there are moratoria for more than 20 intersections within the Geary corridor that will end between 2018 and 2022. There are also intersections on O’Farrell Street that will remain under moratorium through the same period.

A Five-Year Plan mapping system/database, known as Envista, is a tool that supports the aforementioned planning efforts by providing a centralized location for utility owners and agencies to provide and obtain information about other relevant utility work. A user-friendly application of this database is available on line to the general public. The publicly-available database lists permits for projects scheduled to occur in the public right-of-way over a rolling six month period; registered users can view the full five-year data.

#### **4.6.1.2.2 REGULATIONS FOR WORKING IN SAN FRANCISCO STREETS (BLUE BOOK)**

In addition to the aforementioned SFPW right-of-way regulations, the San Francisco Municipal Transportation Agency (SFMTA) has established its own set of “Regulations for Working in San Francisco Streets,” informally known as the “Blue Book.” The Blue Book sets forth rules for construction and repair work to ensure such work can be done safely and with the least interference to pedestrians, bicycles, transit, and vehicular traffic.

The Blue Book requires the use of control, warning, and guidance devices that must conform to the most current version of the California Manual on Uniform Traffic Control Devices (CA MUTCD), which is the amended version of FHWA’s MUTCD for use in California that provides uniform standards and specifications for all official traffic control devices in California.

The Blue Book states that only one general contractor at a time (inclusive of any associated subcontractors) is allowed to work on any one block. This means that project construction and maintenance work must be coordinated with other projects, including those of utility providers, along the corridor to ensure that adequate and continuous travel lanes remain open. In addition, typically only one crosswalk at an intersection is allowed to be closed at a time per the Blue Book. Furthermore, appropriate temporary crosswalk signs must be posted to guide pedestrians and bicyclists.

The Blue Book rules would be applied to the build alternatives at SFMTA’s discretion, because the Blue Book is intended for minor development or construction projects that are typically only a few blocks in extent.

#### **4.6.1.2.3 SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC) WASTEWATER & WATER STANDARDS FOR SURFACE IMPROVEMENTS PROJECTS**

In order to minimize disruption to the various wastewater and water conveyance and storage facilities that travel along and/or below public rights-of-way, SFPUC has established a series of standards for the placement

of wastewater and water facilities with respect to street and sidewalk improvements.

Wastewater and water facilities under SFPUC's oversight include all conveyance and storage facilities associated with sewer and stormwater conveyance and storage pipes and structures; and fire-fighting, potable use, recycled water, and groundwater distribution systems. These facilities include but are not limited to sewer mains, manholes, catch basins, culverts; and water distribution lines, cisterns, and fire hydrants. As access to such facilities is needed for both emergency and routine maintenance needs, SFPUC has set forth these standards to help maintain efficient access when street or sidewalk repairs are necessary.

#### 4.6.1.2.4 SAN FRANCISCO BETTER STREETS PLAN

The San Francisco *Better Streets Plan* includes guidelines for streetscape and pedestrian design that are intended to foster a unified set of standards, guidelines, and implementation strategies for the City's pedestrian environment. Chapter 6.6 (Utilities and Driveways) sets forth guidelines for well-organized utility design and placement that address the following goals:

RESOURCE

The San Francisco Better Streets Plan was adopted in December 2010 and is available online: <http://www.sf-planning.org/ftp/BetterStreets/index.htm>

- Minimization of streetscape clutter and maximization of space for plantings;
- Improved efficiency of utilities and integrated alignment with storm water facilities, street furnishings, and lighting;
- Reduced cutting and trenching;
- Reduced long-term maintenance conflicts and potential costs;
- Reduction of long-term street and sidewalk closures; and
- Improved pedestrian safety, quality of life, and right-of-way aesthetics.

The *Better Streets Plan* also includes guidelines for screening surface-mounted utilities and recommendations that support utility undergrounding to address aesthetic goals in citywide streetscape improvement. Section 4.4 (Visual/Aesthetics), discusses these and other City aesthetic and streetscape policies.

#### 4.6.1.2.5 SFPUC URBAN WATERSHED MANAGEMENT PROGRAM

SFPUC's Urban Watershed Management Program encourages proponents of projects in the public right-of-way to integrate stormwater management features. If determined that stormwater management is feasible, any proposed stormwater features or best management practices (BMPs) must be designed per SFPUC Stormwater Design Guidelines and per SFPW requirements.

#### 4.6.1.2.6 WATER EFFICIENT IRRIGATION ORDINANCE

In response to the Water Conservation in Landscaping Act (Assembly Bill 1881), San Francisco has replaced its existing irrigation ordinance (Chapter 63 of the San Francisco Administrative Code) with the Water Efficient Irrigation Ordinance and companion rules that will expand the water

conservation requirements for outdoor water use. This ordinance is applicable to public agency projects (among others) that include at least 1,000 square feet of new or modified landscape area and propose substantial areas of new turf and/or non-climate appropriate or non-low water use plantings.

**4.6.1.2.7 CITY OF SAN FRANCISCO ORDINANCE 175-91**

This ordinance, enacted in 1991, requires that water used for dust control, consolidation of backfill, or other nonessential construction purposes must be either groundwater or secondary treated wastewater (aka recycled water).

**4.6.2 | Affected Environment**

Underground and aboveground utilities are present along the entire Geary corridor. Utilities in the project corridor include utility poles and overhead wires, underground electric and telecommunications wires, surface-mounted utility boxes, OCS support poles and wires, the cable car tracks, traffic signals, streetlights, fire hydrants, natural gas lines, steam mains, and water and sewer mains, laterals, vaults, manholes, and valves.

Most utilities typically run parallel to the Geary corridor within the sidewalk, pavement, and median. In addition, some utilities run perpendicular (e.g., Muni OCS lines and some underground lines) and obliquely to the Geary corridor at cross street locations and at lateral connections serving adjacent land uses.

**4.6.2.1 | EXISTING UTILITIES AND MAJOR SERVICE PROVIDERS**

Primary utility providers and facilities serving the Geary corridor include:

- **San Francisco Public Utilities Commission (SFPUC):** underground combined sewer/stormwater treatment system, Hetch Hetchy water and power, street lights, potable water lines, low pressure hydrants, auxiliary water supply service system (AWSS) lines, underground cisterns, emergency drinking water hydrants
- **Recology:** solid waste disposal
- **SFMTA:** underground traction power duct bank, OCS facilities, underground cable car cable system
- **SFMTA Bureau of Engineering:** traffic signal hardware and conduits
- **Pacific Gas & Electric (PG&E):** Golden Triangle Street Lights, underground natural gas lines, electrical transmission and distribution lines
- **NRG Energy:** Steam mains
- **AT&T, Century Link, City of San Francisco, Level 3, RCN, Sprint/Nextel, Time Warner, Verizon/MCI, XO Communications, ZAYO, and Comcast (above- and below-grade):** Telecommunications copper and fiber-optic lines

The utility facilities and their relation to the Geary corridor are described in more detail below.



**Muni Overhead Contact System (OCS)**  
Photo credit: SFGATE

DEFINITION

**MANHOLE:** the top opening to an underground utility access point for making connections or performing maintenance on underground utilities

### ***Sewer/Stormwater Treatment System***

SFPUC operates and maintains various sewer lines that generally run down the center of the Geary corridor. The sewer also functions as a stormwater system, called the combined sewer system (CSS). According to SFPUC,<sup>2</sup> San Francisco is the only coastal city in California with a combined sewer system that collects both wastewater and stormwater in the same network of pipes. Generally, stormwater enters the combined sewer system through building roof drains or catch basins along the street and is treated, in addition to wastewater, at one of San Francisco's wastewater treatment plants.

SFPUC released the draft San Francisco System Improvement Program (SSIP) Report in 2010 that summarizes capital improvements and level of service goals for sustainable operation of the City's sewer system. The SSIP is the culmination of seven years of Sewer System Master Plan planning efforts. According to the report, San Francisco has approximately 781 miles of local sewers threading under all the streets that collect wastewater and stormwater. The average age of these sewers is about 72 years old; however, some portions of sewer are over 100 years old. Several sections have been upgraded over the years, but many emergency repair projects have been required in recent years due to pipe failure. The sizes and types of sewer lines in the Geary corridor vary from 3-foot to 5-foot egg-like shaped brick sewers to circular sewers that range in diameter from 12-inch to 72-inch made of materials such as brick, reinforced concrete, and iron-stone pipe. Generally, the sewers are located under or adjacent to the center median. Some of the oldest pipe sections lie beneath the Geary corridor.

A series of pump stations exist within the City's collection system and face challenges such as aging infrastructure, system deficiencies, operational efficiency, and community impacts (i.e., odor, flooding, etc.). Generally, the collection system is a network of sewers that collects residential, business, and industrial wastewater and stormwater runoff and conveys flows through the transport/storage system via eight major pump stations to one of three San Francisco treatment facilities. An existing pump station is located at Geary Boulevard near the Fillmore Street underpass; this station is used to collect stormwater and groundwater to keep the underpass from flooding.



**Hetch Hetchy Reservoir**  
Photo credit: Yosemite hikes.com

### ***Potable (Drinking) Water***

The San Francisco Water Department of the SFPUC operates the water system that feeds low-pressure fire hydrants and provides water to the area. According to the San Francisco Urban Water Management Plan, San Francisco's water system includes 10 reservoirs and 8 water tanks that store the water delivered by the Hetch Hetchy system and complementary local facilities. Within San Francisco city limits, there are 17 pump stations, several storage facilities, and approximately 1,250 miles of mostly underground distribution lines.

<sup>2</sup> San Francisco Public Utilities Commission. 2014. About the Wastewater Enterprise. Accessed March 1, 2014 from <http://www.sfwater.org/index.aspx?page=392>.

The system includes underground pipes, gate valves to control water flow, and hydrants along the west and east sides of the Geary corridor. Water lines parallel to the Geary corridor vary from 8 to 16 inches in diameter. Lines that cross the corridor vary between 8 to 22 inches in diameter.

***Auxiliary Water Supply System (AWSS) and Emergency Water Supply***

SFPUC operates and maintains the AWSS, which is a high-pressure water system that supplies water to San Francisco Fire Department (SFFD). Historical need for the AWSS was made clear when the 1906 San Francisco earthquake crippled access to water to combat the resulting fires. As a result, the fire destroyed 25,000 buildings and was a catalyst for an improved water system design for the sole purpose of fire protection. The AWSS was constructed between 1908-1913 in an effort to limit such devastation in the event of another natural disaster.

The AWSS is a separate and distinct water supply system for fire protection use only. As of 2014, the AWSS has approximately 135 miles of underground pipe (27 miles of ductile iron pipe and 108 miles of cast-iron pipes), underground cisterns, and aboveground gate valves to control water flow.<sup>3</sup> A special truck with a motorized rig is used to turn gate valves. Also as of 2014, AWSS above- and below-ground infrastructure is nearly 100 years old, which compromises the system’s reliability. Efforts to study possible system upgrades are underway.

According to the Auxiliary Water Supply System Study (2009), existing AWSS pipelines primarily cover the northeast portion of the City. AWSS pipelines travel along the Geary corridor beneath the roadway in the eastern portions of the Geary corridor on Geary Street and O’Farrell Street between Taylor Street and Market Street, and also between Scott Street and Van Ness Avenue. The AWSS also crosses the Geary corridor at several locations between 12th Avenue and Market Street. Pipes are typically 8 to 12 inches in diameter.

There are approximately 177 underground cisterns in the City that can be used for emergency safe drinking water or SFFD use, as needed. Cisterns are large storage tanks buried under the roadway surface approximately 25 to 30 feet in diameter and 20 to 25 feet tall, and they hold approximately 75,000 gallons of water. The cisterns provide a source of water second to that of fire hydrants. Approximately 8 cisterns have been identified along Geary corridor. Five of these cisterns are located directly under Geary Boulevard and three are directly adjacent, located just off the cross street intersection.

In a program initiated in 2006, the City designated 67 low-pressure hydrants as Emergency Drinking Water Hydrants. These are marked with a blue water droplet icon. Two are located on Geary Boulevard, one near Park Presidio; the other at 21st Avenue.

DEFINITION

**CISTERN:** a large storage tank buried under the roadway surface that holds a large amount of water

<sup>3</sup> Final Report Auxiliary Water Supply System (AWSS) Study, prepared for Capital Planning Committee City and County of San Francisco, Metcalf & Eddy/AECOM - January 23, 2009.

### ***Solid Waste***

According to the Central SoMa Plan Initial Study (2014), San Francisco generated about 454,500 tons of solid waste in 2012, including materials from residents and businesses. Approximately 375,000 tons were disposed of in landfills.

Waste collection is handled by Recology (formerly Norcal Waste Systems Inc.), which provides disposal services through the following subsidiaries: San Francisco Recycling and Disposal, Golden Gate Disposal and Recycling, and Sunset Scavenger. Residents and businesses in San Francisco separate their refuse into recyclables, compostables, and garbage. Materials collected are hauled to the Recology transfer station/recycling center on Tunnel Avenue located in southeast San Francisco, for sorting and subsequent transportation to other facilities. Recyclable materials are taken to Recology's separating facility at Pier 96, where they are sorted into commodities (e.g., aluminum, glass, and paper) and transported to other facilities for reprocessing. Compostables (e.g., food waste, plant trimmings, and soiled paper) are transferred to a Recology composting facility in Solano County, where they are converted to soil amendment and compost. The remaining material that cannot otherwise be reprocessed ("trash") is transported to the Altamont Landfill in Alameda County for disposal.

### ***Traction Power Duct Bank***

To provide traction power to the OCS as well as electricity to traffic signals, SFMTA operates and maintains major duct banks at Fillmore Street and Van Ness Avenue, consisting of a series of concrete-encased electrical ducts. A duct bank is an assembly of conduits or ducts installed between structures or buildings to protect electrical wiring. The duct bank is used for traction power and communications infrastructure. The Fillmore Street Duct Bank carries six, 1 1/2 -inch conduits in 3 7/8-inch diameter ducts supported on UNISTRUT hangers attached to the Fillmore Bridge Deck. Off the bridge the ducts are encased in concrete.

### ***Cable Car System***

SFMTA operates and maintains the cable car system (in addition to bus and light rail services). The cable car system began in the late 1800s and dominated the City's transit scene for more than 30 years, remaining an iconic cultural symbol of San Francisco. These cable cars are located above ground with a cable system below ground. There are three service lines: the California Street line, the Powell-Mason line, and the Powell-Hyde line. Both Powell Street Cable car lines cross Geary Street and O'Farrell Street.

### ***Gas and Electricity***

Natural gas and electric power is supplied to the project corridor by the PG&E. PG&E is regulated by the National Transportation Safety Board (NTSB), CPUC, and the Office of Pipeline Safety of the Pipeline and Hazardous Materials Safety Administration (PHMSA).

PG&E owns and manages the natural gas transmission and distribution lines that serve San Francisco. Within the Geary corridor there are only gas distribution lines. Natural gas lines in the Geary corridor vary in size from



4” to 16” in diameter. The lines are located under the sidewalk and the street. There are also abandoned and deactivated gas mains along the Geary corridor.

PG&E owns and operates the electric transmission and distribution infrastructure system in San Francisco, with the exception of the services at Hunters Point and Treasure Island. In addition, PG&E owns all of the high-voltage transmission lines entering the City.

The electric distribution system is generally below ground and is made up of a network of lines and vaults. There are no aboveground electric distribution lines along the Geary corridor; however, SFMTA OCS crosses Geary corridor at Masonic Avenue, Presidio Avenue, and Van Ness Avenue and runs along the Geary corridor between Masonic Avenue and Presidio Avenue.

### ***Telecommunications Systems***

Several telecommunications lines (copper and fiber optic lines) and vaults, accessed by manholes, are located beneath Geary Street and O’Farrell Street. At several locations these utilities have been consolidated into a common trench as recommended by the *Better Streets Plan*.

The corridor also is host to above-ground telecommunications suspended from poles (e.g. Comcast) lines at various locations west of Van Ness.

### ***Surface Mounted Utility Boxes***

Surface mounted facilities (SMF) are utility boxes of various sizes and are located along the Geary corridor. These include facilities such as AT&T surface boxes and traffic signal cabinets.

### ***Underground Steam Lines***

A network of steam distribution lines in downtown San Francisco is maintained by NRG Energy. NRG Energy provides steam for space heating, domestic hot water, air conditioning, and industrial processes. NRG Energy services approximately 170 buildings within a 2 square mile area in downtown San Francisco. The lines have limited length runs along Geary Street and O’Farrell Street. The lines cross Geary Street and O’Farrell Street between Hyde Street and Market Street.

#### **4.6.2.2 | OTHER PLANNED PROJECTS**

All alternatives (No Build and build) include several planned projects (described in more detail below) involving utilities in the Geary corridor. For the build alternatives, any of these projects that would be constructed concurrently would be integrated into build alternative construction in compliance with City policies to minimize community disturbance and identify potential conflicts and opportunities for joint work (see Section 4.6.2.3).

***California Pacific Medical Center (CPMC) (2013-2019)***

A major new medical facility is under construction as of 2014 along Geary Street at Van Ness Avenue. The project will require new or modified utilities into the proposed new facility. Part of the project includes relocation of an existing bus bulb from the east to the west side of the Van Ness Avenue intersection.

***Central Subway (2010–2019)***

The Central Subway Project is constructing a 1.7-mile extension of Muni's T Third Street Line, with new stops just south of Bryant Street, at the Moscone Center, at Union Square, and at Chinatown. Construction of the tunnel and stations commenced in 2013 and will continue through 2018. The project includes relocation of a number of utility lines to prepare for station construction and tunneling. The Central Subway segment of the T Third Street Line is slated to open to the public in 2019.

***Van Ness Bus Rapid Transit (2016–2020)***

The lead agency issued a Record of Decision (ROD) for the Van Ness BRT project on December 30, 2013. The project will implement dedicated bus lanes separated from traffic from Lombard to Mission Streets along Van Ness Avenues. In addition, pedestrian improvements, signal upgrades, new streetlights, new landscaping, and roadway resurfacing will be implemented throughout the corridor. Construction began in November 2016, with BRT service expected to begin in 2020.

***Earthquake Safety and Emergency Response Bond (ESER BOND)***

The improvements covered within the ESER BOND are divided into two bond measures, 2010-ESER and 2014-ESER.

2010 ESER Bond work is currently underway and includes the construction of a new cistern on Funston just north of Geary Boulevard. The work involves sewer relocation on Funston from Geary to Clement.

In June 2014, San Francisco voters approved the 2014 ESER Bond. This bond will include a range of improvements to the system including an extension of the AWSS pipeline in the Richmond District. The extension is planned to run beneath Geary Blvd from 26th Avenue to 43rd Avenue.

***Westside Recycled Water Project (2017–2020)***

The Westside Recycled Water Project would be constructed at the SFPUC's existing Oceanside Water Pollution Control Plant (WPCP). The project would produce and deliver up to 2 million gallons per day (mgd) on average of recycled water that is suitable for state-approved recycled water uses. As of 2014, the project is under preliminary design. The environmental review phase will follow. Construction of the project is expected to begin in September 2017 and be complete in March 2020.

## RESOURCE

The Van Ness BRT Final Environmental Impact Report (EIR) can be accessed online: <http://www.sfcta.org/delivering-transportation-projects/van-ness-avenue-bus-rapid-transit-home>

The WPCP planning study indicates that the pipeline is planned to cross Geary Boulevard at 39th Avenue.<sup>4</sup> Depending on the construction schedule, work associated with the WPCP may need to be coordinated with implementation of any of the build alternatives.

### ***Eastside Recycled Water Project (2026–2029)***

The Eastside Recycled Water Project would deliver recycled water to a variety of customers on the east side of the City for non-potable uses, such as irrigation and toilet flushing. The project aims to save an average of 2 mgd of drinking water that would otherwise be used for non-drinking purposes.

As of 2017, the project has been paused to allow for better coordination with the City's Sewer System Improvement Program. The Southeast Wastewater Treatment Plant has been preliminarily identified as a potential site and water source for the eastside recycled water facility.<sup>5</sup>

### ***SFgo***

SFMTA operates traffic signals citywide, including along the Geary corridor. SFMTA is implementing an advanced traffic signal management program called SFgo that operates all of SFMTA's traffic signals. Some of the traffic signals are proposed for upgrade/replacement in order to provide needed functionality for the SFgo program. The SFgo program would implement the signal priority operation needed for Geary BRT. The installation would be done in conjunction with the Geary BRT project.

### ***Pavement Rehabilitation***

SFPW is responsible for the maintenance of the Geary Corridor pavement with the exception of Park Presidio Boulevard and Van Ness Avenue, which fall under the jurisdiction of Caltrans. Planned improvement projects would be coordinated with construction of the proposed BRT project and the aforementioned utility projects.

### ***Road Repaving and Street Safety Bond Projects***

A \$248 million Road Repaving and Street Safety Bond was approved by voters in November 2011 (Proposition B), which was recommended as part of the citywide Ten-Year Capital Plan to improve and invest in the City's infrastructure. The bond will repave streets, make repairs to deteriorating street structures, improve streetscapes for pedestrian and bicyclist safety, improve traffic flow on local streets, and install sidewalk and curb ramps to meet the City's obligations under the Americans with Disabilities Act (ADA).

### ***Gas Pipeline Replacement Program***

PG&E is responsible for the improvement of the overall safety and reliability of the natural gas distribution system. Since 1985, the Gas Pipeline

#### RESOURCE

More information on Road Repaving and Street Safety Bond Projects can be found at <http://sfdpw.org/index.aspx?page=1580>

<sup>4</sup> San Francisco Westside Recycled Water Project - Project Alternatives Workshop Series, Evaluation of Alternatives Prepared for SFPUC by Kennedy/Jenks Consultants, 11 February 2011.

<sup>5</sup> SFPUC. San Francisco Eastside Recycled Water Project. Available at: [http://sfwater.org/bids/projectDetail.aspx?prj\\_id=311](http://sfwater.org/bids/projectDetail.aspx?prj_id=311). Accessed 10/3/2014.

Replacement Program (GPRP) continues to work to replace aging and leak prone sections of distribution and transmission pipelines within the San Francisco Bay Area considered vulnerable to earthquake damage, including on the Geary corridor. The focus of this effort is to replace old cast-iron pipe with modern pipe. In the City of San Francisco, 26 miles of cast-iron pipe were to be replaced. PG&E completed this work in December 2014.

### ***SFPUC Water Department Projects***

The water supply infrastructure underneath the Geary corridor is aging and in need of replacement. Accordingly, the SFPUC Water Enterprises Division has projects planned to replace approximately eight lane-miles of water mains in the Geary corridor area. As of 2017, these are understood to include segments on Geary Street between Kearny Street and Van Ness Avenue, and on Geary Boulevard between Van Ness Avenue and Stanyan Street, and between 10th and 36th avenues. If a Build Alternative is selected as the Preferred Alternative, water main replacement within the Geary corridor would be timed to coincide with Build Alternative construction, consistent with the City and County of San Francisco's coordination requirements (further discussed in Section 4.6.1.2).

### ***SFPUC Sewer System Improvement Program (SSIP)***

Since 2012, SFPUC has been implementing a 20-year, city-wide program to upgrade aging sewer infrastructure. The program is intended to improve seismic safety as well as to improve the quality of water discharged. SFPUC's program includes replacement of sewer mains along and near the Geary corridor. Consistent with City of San Francisco policies regarding coordination of utility replacement, any sewer replacements within the Geary corridor would be coordinated with construction of any of the Build Alternatives, if any are ultimately selected for construction.

## **4.6.3 | Methodology**

The alternatives were evaluated for potential utilities effects in terms of several utility and service system considerations. The alternatives have the potential to result in construction period and/or operational period effects as noted below.

### Construction-Related Effects

- Utility facility relocations and modifications

### Construction and Operational-Related Effects

- Stormwater management system capacity
- Potable water supply/emergency service water supply capacity
- Solid waste collection capacity
- Electricity demand and capacity

Potential effects to the utilities and service systems listed above were evaluated in terms of changes in demand requirements, available capacity, and/or potential physical conflicts/incompatibility. Note that planned SFPUC projects described in 4.6.2.2 may be coordinated with Geary BRT construction; their cumulative effects have been considered in this EIS.

The Draft EIS/EIR analysis considered utilities existing in the Geary corridor as of 2008 (when the Notice of Intent and Notice of Preparation were issued), as well as any pertinent changes to such facilities through 2014. This Final EIS takes into account actual improvements and plan updates since issuance of the Draft EIS/EIR.

#### 4.6.4 | Environmental Consequences

This section describes potential impacts and benefits for utilities. The analysis compares each build alternative relative to the No Build Alternative.

As set forth in Section 4.6.4.1, the modifications to the Hybrid Alternative/LPA since publication of the Draft EIS/EIR do not change the conclusions regarding impacts to utilities in the Draft EIS/EIR.

##### 4.6.4.1 | HYBRID ALTERNATIVE/LPA MODIFICATIONS: POTENTIAL ADDITIVE EFFECTS SINCE PUBLICATION OF THE DRAFT EIS/EIR

As discussed in Section 2.2.7.6, the Hybrid Alternative/LPA now includes the following six minor modifications added since the publication of the Draft EIS/EIR:

- 1) Retention of the Webster Street pedestrian bridge;
- 2) Removal of proposed BRT stops between Spruce and Cook streets (existing stops would remain and provide local and express services);
- 3) Addition of more pedestrian crossing and safety improvements;
- 4) Addition of BRT stops at Laguna Street;
- 5) Retention of existing local and express stops at Collins Street; and
- 6) Relocation of the westbound center- to side-running bus lane transition to the block between 27th and 28th avenues.

This section presents analysis of whether these six modifications could result in any new or more severe effects to utilities during construction or operation. As documented below, the Hybrid Alternative/LPA as modified would not result in any new or more severe effects to utilities relative to what was disclosed in the Draft EIS/EIR.

##### ***Retention of the Webster Street Pedestrian Bridge***

**Construction:** Retention of the Webster Street bridge would reduce the amount of demolition and construction required, thereby reducing construction-period demand for energy. Retention of the bridge would not require any major additional utility relocations, change the amount of impervious surfaces, or change any plans for landscaping or irrigation. Therefore, this modification would not result in any new or more severe impacts to utilities during construction.

**Operation:** Retention of the Webster Street bridge would not substantially affect BRT ridership and, thereby, solid waste generation. Therefore, this modification would not result in any new or more severe utility impacts during operation.

***Removal of Proposed BRT Stops between Spruce and Cook Streets***

**Construction:** Retention of the existing bus stops between Spruce and Cook streets would eliminate construction outside the curb-to-curb portion of the right-of-way in this area, thereby reducing construction-period demand for energy. Retention of existing stops between Spruce and Cook streets would not require any major additional utility relocations, change the amount of impervious surfaces, or change any plans for landscaping or irrigation. Therefore, this modification would not result in any new or more severe impacts to utilities during construction.

**Operation:** Retention of the existing bus stops between Spruce and Cook streets would not substantially affect system-wide BRT ridership and, therefore would not be expected to result in any substantial change to solid waste generation. Therefore, this modification would not result in any new or more severe utility impacts during operation.

***Addition of More Pedestrian Crossing and Safety Improvements***

**Construction:** Implementation of additional pedestrian enhancements throughout the corridor would entail localized construction activities where new pedestrian crossing bulbs would be constructed. None would require any major additional utility relocations, change the amount of impervious surfaces, or change any plans for landscaping or irrigation. Therefore, this modification would not result in any new or more severe impacts to utilities during construction.

**Operation:** Additional pedestrian enhancements would not substantially affect BRT ridership and, thereby, solid waste generation. Therefore, this modification would not result in any new or more severe impacts to utilities during operation.

***Addition of BRT Stops at Laguna Street***

**Construction:** Construction of transit islands would not require any major additional utility relocations, change the amount of impervious surfaces, or change any plans for landscaping or irrigation. Therefore, this modification would not result in any new or more severe impacts to utilities during construction.

**Operation:** During operation, the addition of BRT stops at Laguna Street would not be expected to so substantially increase systemwide ridership so as to result in a substantial increase in solid waste generation. Therefore, this modification would not result in any new or more severe impacts to utilities during operation.

***Retention of Existing Local and Express Stops at Collins Street***

**Construction:** Retention of the existing bus stops at Collins Street would eliminate construction outside the curb-to-curb portion of the right-of-way, thereby reducing construction-period demand for energy. Retention of existing stops at Collins Street would not require any major additional utility relocations, change the amount of impervious surfaces, or change any plans for landscaping or irrigation. Therefore, this modification would not result in any new or more severe impacts to utilities during construction.

**Operation:** Retention of the existing bus stops at Collins Street would not substantially affect system-wide BRT ridership and, therefore would not be expected to result in any substantial change to solid waste generation. Therefore, this modification would not result in any new or more severe utility impacts during operation.

***Relocation of the Westbound Center- to Side-Running Bus Lane Transition***

**Construction:** Relocation of the westbound bus lane transition at 27th Avenue would not alter the total level of construction activities but would simply shift about half of it one block to the west. This modification would not require any major additional utility relocations, change the amount of impervious surfaces, or change any plans for landscaping or irrigation. Therefore, this modification would not result in any new or more severe impacts to utilities during construction.

**Operation:** Relocation of the westbound bus-only lane transition would not be expected to change projected BRT ridership and thus no change to anticipated solid waste generation would be expected. Therefore, this modification would not result in any new or more severe utility impacts during operation.

**4.6.4.2 | NO BUILD ALTERNATIVE**

Under the No Build Alternative, transit and transportation facilities and services would remain unaltered except for changes that are currently planned or programmed to be implemented on the Geary corridor by 2020. Such improvements would include new buses, signaling, and bus-only lanes. Additionally, proposed physical improvements on the Geary corridor by 2020 include some modifications to road surface and curbs to provide better access for pedestrians.

However, the No Build Alternative would not substantially increase the amount of impervious surface from existing conditions that might increase flow to a specific area of the City combined sewer system. Additionally, other previously planned and programmed physical improvements associated with the No Build Alternative would not have the potential to result in substantial increases in demand for potable water or generation of wastewater.

The planned and programmed projects comprising the No Build Alternative would have some potential to affect the access to utility providers to utility facilities. Street and sidewalk improvements may require the relocation or protection in place of below-ground and surface level utilities, either temporarily or permanently.

The No Build Alternative may slightly increase transit ridership as a result of expanded transit facilities, thus leading to an increase in the amount of solid waste produced by passengers. However, this increase would be unlikely to translate into an increase of solid waste that exceeds the capacity of available area landfills, particularly given relatively low waste generation rates in San Francisco.

#### 4.6.4.3 | BUILD ALTERNATIVES

##### 4.6.4.3.1 UTILITY FACILITY RELOCATIONS

In addition to serving as a transportation facility, Geary corridor provides access to key public utilities. Several utility facilities are located both above and below ground within the Geary corridor. Utility providers need to access these facilities for maintenance, repair, and upgrade/replacement.

Implementation of any of the build alternatives would involve construction of: a dedicated transit way, station platforms, curb bulbs, center medians, and landscaping that all have the potential to conflict with public utilities and/or limit access to public utilities by utility providers.

Due to the proximity to existing facilities, some utilities would require relocation or modification due to direct conflict or to maintain access for utility providers to conduct maintenance, repair, and upgrade/replacement activities.

See Section 4.5, Cultural Resources, for a discussion of potential project related effects to the AWSS in light of the historic status of the AWSS

##### *Minor Utility Relocations/Modifications*

In general, any of the build alternatives would necessitate some utility relocation. One example is the construction of bus bulbs and pedestrian crossings. These features would require relocation of some existing urban infrastructure, including but not limited to storm water drainage facilities (inlets and laterals), fire hydrants (low pressure and high pressure), valves, manholes, surface-mounted utility boxes, or other appurtenances. Pavement work would require the resetting of manhole and valve covers to meet grade as well as the installation of brick cistern rings.

##### *Major Utility Relocations*

In the median of Geary Boulevard between 14th Avenue and 4th Avenue, there is an existing brick sewer more than 120 years old that has relatively shallow cover (as little as 3 feet in some locations). Under Alternatives 3, 3-Consolidated, and the Hybrid Alternative/LPA, planned construction of the median busway would require excavation and soil compaction over the sewer, which would increase potential risk of damage to the sewer.

Additionally, between Funston Avenue and 12th Avenue, an existing 55-year old reinforced concrete sewer lies at a depth of 60 to 72 inches. The sewer aligns closely with the proposed south platform of the Park Presidio station (Alternatives 3, 3-Consolidated, and the Hybrid Alternative/LPA). A transit platform would be a significant impediment to access and maintain the sewer line.

As noted in Section 2.3.4.2, Alternatives 3, 3-Consolidated, and the Hybrid Alternative/LPA each include either reconstruction or relocation of these facilities, pending close coordination and review with SFPUC.

SFMTA will also coordinate with SFPUC regarding other brick sewers with greater thicknesses of soil cover that may nonetheless have age-related vulnerabilities. SFPUC will undertake inspections to assess the condition for these sewers and then determine if rehabilitation or replacement is required.



Alternatives 3 and 3-Consolidated propose the removal of the Fillmore Underpass and decommission (and potential removal) of the Underpass Pump Station. Removal of the pump station would likely require the relocation of utilities (such as AWSS, gas, electric, AT&T, SMFTA traction power duct bank, water, sewers, etc.). The largest of these utilities is the combined sewer under Fillmore Street (6'-4" x 4'-0" elliptical reinforced concrete pipe).

### ***Utilities Protected in Place***

In situations where utility facilities would remain beneath the busway or station areas, SFMTA would provide temporary closure of the transit way and/or stations to allow utility providers to perform maintenance, repair, and upgrade/replacement of underground facilities. As feasible, station areas would be designed to position station amenities to permit direct access to existing utilities.

Planning for temporary utility access within the transit way would likely involve temporarily rerouting bus service to a mixed-flow travel lane and providing temporary curbside stations or station consolidation if needed. Planning for temporary utility access within the station areas may necessitate temporary relocation of station functions while utility work is underway. Temporary signage for BRT patrons and safety protocols for Muni operators and utility providers would be coordinated. These planning efforts would avoid impacts to facility access by utility providers.

Based on available information, it is anticipated that construction and operation of any of the build alternatives would be coordinated with utility providers to avoid adverse impacts to utility facilities.

#### **4.6.4.3.2 STORMWATER MANAGEMENT CAPACITY**

As discussed in Section 4.9, Hydrology and Water Quality, the Geary corridor is almost entirely covered with impervious surfaces, with the exception of tree and landscape plantings on sidewalks and existing landscaped center medians. Under the build alternatives, stormwater would continue to flow from these impervious surfaces into existing catch basins, although some catch basins would be relocated (typically on the same block) to accommodate bus bulbs and other improvements. Alternatives 3, 3-Consolidated, and the Hybrid Alternative/LPA would require construction of additional catch basins in medians at the downstream ends of the blocks in areas with center-running buses to prevent point flows across the travel lanes, requiring connections to the existing system.

Alternative 2 would generally not disturb existing landscaped medians; thus, the area of impervious surface would not change significantly from existing conditions. Accordingly, Alternative 2 would not result in any need to increase stormwater capacity.

Areas of impervious surfaces under Alternatives 3 and 3-Consolidated would be reduced by slightly less than an acre from current conditions. For the Hybrid Alternative/LPA, areas of impervious surface would be reduced by roughly half an acre from current conditions.

See Section 4.9, Hydrology and Water Quality, for more information on the hydrological effects of the build alternatives

As these alternatives would require construction in the existing landscaped medians, construction of these alternatives could allow the incorporation of rain gardens and biotreatment swales in addition to pervious paving and infiltration planters.

Additionally, Alternatives 3 and 3-Consolidated would involve filling the underpass at Fillmore Street and decommissioning the existing pump station north of Geary Boulevard. These actions would require installation of new inlets and connections to the relocated Fillmore stormwater sewer to replace existing Fillmore Street underpass inlets. Implementation of stormwater retention and treatment features set forth in City ordinances and the *Better Streets Plan* would be possible under all build alternatives. While local stormwater management capacity may change, due to changes in landscaping and pervious land cover, there would be no need to increase stormwater capacity systemwide, as no substantial overall increase in stormwater quantity would be anticipated to result.

#### 4.6.4.3.3 POTABLE WATER CAPACITY AND DEMAND

The build alternatives propose implementing transit improvements in the Geary corridor. Such improvements do not entail components that would substantially alter potable water use beyond existing conditions. Potable water is used in bus washing and maintenance, but proposed new BRT buses would replace existing coaches; no substantial increase in potable water for washing and maintenance would thus be anticipated. Furthermore, non-potable water would be required to be used for dust control and soil compaction activities during project construction as directed by City of San Francisco Ordinance 175-91.

All of the build alternatives would include new landscaping would be installed along the corridor. SFPW requires that any new median landscaping include irrigation, and review of any proposed landscape and irrigation plans for right-of-way areas prior to installation. New landscaping would be subject to the Water Efficient Irrigation Ordinance requiring use of climate-appropriate and low-water use plantings.

As such, no substantial increases in potable water demand would result under any build alternative.

#### 4.6.4.3.4 CORRIDOR SOLID WASTE COLLECTION CAPACITY AND DEMAND

Solid waste receptacles already exist at bus stops along the Geary corridor. Accordingly, solid waste disposal receptacles would continue to exist at stations along the Geary corridor to accommodate garbage generated by bus patrons. The build alternatives propose implementing transit improvements in the Geary corridor. The build alternatives may slightly increase transit ridership as a result of expanded services and facilities, thus slightly increasing the amount of solid waste produced by passengers. However, such improvements do not entail project components that would substantially increase solid waste generation. Accordingly, no adverse effects to existing landfills are anticipated under any project alternative.



**Recology Solid Waste  
Receptacles**

Photo credit: SF Dept. of the Environment

#### 4.6.4.3.5 DEMAND AND CAPACITY IMPACTS ON ELECTRICITY

The build alternatives would not result in changes to utility capacity. Changes in demand are described below.

##### *PUC Street Lighting*

Existing street lighting would be replaced with new median-street lighting between 27<sup>th</sup> Avenue and Arguello Boulevard. Moreover, new pedestrian scale lighting is planned for the BRT station areas. New lighting would be consistent with the LED Street Light Conversion Project (2014 – 2016) that replaced high-pressure sodium cobra-head light fixtures with ultra-efficient light emitting diodes (LED) fixtures. All of the project alternatives would benefit from the street lighting with improved energy efficiency, increased reliability, reduced risk to maintenance staff due to a new standardized electrical service, and decreased operational costs.

##### *PG&E Street Lighting*

The build alternatives would not require additional capacity or infrastructure for PG&E-owned street lighting.

##### *Other Demands on Electricity*

Addition of Shelters with Next-Bus screens lighted advertising and push to talk features would increase demand for electricity.

Addition of Elevators at the Masonic BRT stations in Alternative 3 and 3-Consolidated would introduce additional demand for electricity.

Removal of the Fillmore pump station and Fillmore underpass lighting in Alternative 3 and 3-Consolidated would reduce demand for electricity.

Removal of the Webster Street pedestrian bridge under Alternatives 2, 3, and 3-Consolidated, which has lighting, would reduce demand for electricity.

Two manholes for the duct bank would also need to be replaced and relocated.

##### *Demand and Capacity Impacts on Other Utilities*

The build alternatives would not require additional capacity or infrastructure for natural gas or other utility systems in the project corridor.

#### 4.6.4.4 | CONCLUSION

A number of projects are planned within the Geary corridor that would involve utility work. Known projects to be coordinated with the proposed BRT project include the Van Ness BRT, Central Subway, ESER Bond, CPMC, SFgo signal upgrades, Road Repaving and Street Safety Bond repaving, and pedestrian improvement projects, among others. In addition, SFPUC may plan to replace or rehabilitate some of their combined sewer and water mains and laterals as part of the BRT construction.

These projects and other planned projects in the project corridor listed in Section 1.3.4, Related Projects, would be included in the mapping system/database, known as Envista, and also be scheduled and coordinated with CULCOP and the San Francisco Street Construction Coordination Center to avoid impacts to utilities to the largest extent possible.

#### 4.6.4.5 | COMPARATIVE EFFECTS OF ALTERNATIVES

As demonstrated in the preceding subsections, all build alternatives would necessitate some utility relocation during construction. The No Build Alternative and Alternative 2 would require the least utility relocations or construction-period enhancements, followed by the Hybrid Alternative/LPA. Alternatives 3 and 3-Consolidated would require additional construction-period energy, utility relocations, and operational stormwater capacity enhancements.

#### 4.6.5 | Avoidance, Minimization, and/or Mitigation Measures

In compliance with City and Caltrans policies, coordination with the utility providers and Caltrans would be initiated during the preliminary engineering phase of the project and would continue through final design and construction.

Where feasible, utility relocations would be undertaken in advance of project construction. Design, construction, and inspection of utilities relocated for any of the build alternatives would be done in accordance with City and Caltrans requirements. SFMTA would coordinate with the affected service provider in each instance to ensure that work completed is in accordance with the appropriate requirements and criteria.

The following minimization measures would be incorporated into project design and planning to minimize adverse impacts to utility systems and services:

**MIN-UT-1.** BRT construction shall be closely coordinated with concurrent utility projects planned within the Geary corridor.

**MIN-UT-2.** Inspection and evaluation of sewer pipelines within the project limits shall be undertaken to assess the condition of the pipelines and need for replacement. Drain inlets on the corridor shall also be inspected to assess condition and confirm functionality. Spot repairs or minor replacement-in-place of sewers may be performed during construction of the project if desired by SFPUC and agreed to by SFMTA.

**MIN-UT-3.** During planning and design, consideration would be given to ensure that Geary corridor station facilities do not prevent access to the underground AWSS lines. Adequate access for specialized trucks to park next to gate valves shall be maintained. Gate valves shall not be located beneath medians, station platforms, or sidewalks.

**MIN-UT-4.** In situations where utility facilities are being protected in place, SFMTA shall create a plan to accommodate temporary closure of the transitway and/or stations in coordination with utility providers to allow utility providers to perform maintenance, emergency repair, and upgrade/replacement of underground facilities that may be located beneath project features such as the BRT transitway, station platforms, or curb bulbs. Signage for BRT patrons and safety protocols for Muni operators and utility providers shall be integrated into this plan.

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