121 EAST GRAND AVENUE PROJECT

Initial Study / Mitigated Negative Declaration

July 2022



Prepared for:

City of South San Francisco
Department of Economic and Community Development
Planning Division
315 Maple Avenue
South San Francisco, CA 94083

Prepared By:

ALLISON KNAPP WOLLAM
Planning and Environmental Consulting
In conjunction with **RCH GROUP, INC.**

TABLE OF CONTENTS

CHAPTER		PAGE
CHAPTER 1: LEGISLATIVE FRAMEWORK		**1-1**
1.1	Initial Study/Legislative Framework	1-1
1.2	Project Sponsor Team/Lead Agency Team	1-2
1.3	Documents Incorporated by Reference and Included in Appendix A	1-3
1.4	City of South San Francisco Project Review Process	1-5
1.5	Standard Conditions and Processes of Approval Required by Law Addressing Environmental Issues	1-6
1.6	Environmental Factors Potentially Affected	1-16
1.7	Lead Agency's Determination	1-17
CHAPTER 2: PROJECT DESCRIPTION		**2-1**
2.1	Project Location and Setting	2-1
2.2	Proposed Project	2-4
2.3	General Plan and Zoning	2-25
2.4	Required Legislative Actions and Entitlements	2-30
CHAPTER 3: ENVIRONMENTAL CHECKLIST		
I.	Aesthetics	3-1
II.	Agriculture and Forest Resources	3-14
III.	Air Quality	3-16
IV.	Biological Resources	3-29
V.	Biological Resources	3-26
VI.	Energy	3-45
VII.	Geology and Soils	3-51
VIII.	Greenhouse Gas Emissions	3-65
IX.	Hazards and Hazardous Materials	3-74
X.	Hydrology and Water Quality	3-82
XI.	Land Use and Planning	3-91
XII.	Mineral Resources	3-95
XIII.	Noise	3-96
XIV.	Population and Housing	3-105
XV.	Public Services	3-107
XVI.	Recreation	3-109
XVII.	Transportation	3-111
XVIII.	Tribal Cultural Resources	3-119
XIX.	Utilities and Service Systems	3-120
XX.	Wildfire	3-131
XXI.	Mandatory Findings of Significance	3-133

LIST OF FIGURES

Chapter 2 Project Description

Figure 1 Urban Context, Project Site and Area 2-3
Figure 2 View Looking North East Showing Arrival Plaza 2-5
Figure 3 Vehicular and Service Access and Fire Safety Access 2-6
Figure 4 Public Amenities 2-8
Figure 5 Plazas and Function 2-9
Figure 6 Proposed Landscape Plan 2-13
Figure 7 Approximate Location of Easements 2-15
Figure 8 Downtown Station Area Specific Plan 2-26
Figure 9 Draft 2040 General Plan – East of 101 Sub Area 2-28

Chapter 3 Environmental Checklist

Aesthetics Figure 1 View From Sign Hill Trail 3-7
Aesthetics Figure 2 East View From City Hall 3-8
Transportation Figure 1 Transportation Improvements Incorporated Into The Project 3-115

1

LEGISLATIVE FRAMEWORK

1.1 INITIAL STUDY/LEGISLATIVE FRAMEWORK

This Initial Study has been prepared in accordance with the California Environmental Quality Act (CEQA), which can be found in the California Public Resources Code (PRC) Section 21000 et seq., and the CEQA Guidelines found in California Code of Regulations Title 14, Chapter 3, (CCR) Section 15000 et seq., as amended. This Initial Study identifies the potential environmental impacts associated with demolition, grading, construction, and future occupancy of the Project which includes any *reasonably foreseeable* impacts associated with the Project in its entirety. CEQA (PRC Section 21065) defines a Project as:

> An activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and which is any of the following:
>
> a) An activity directly undertaken by a public agency.
>
> b) An activity undertaken by a person which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.
>
> c) An activity that involves the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more agencies.

The Project Sponsor is seeking legislative and entitlement approvals, described in Chapter 2 Project Description, Legislative Framework to construct a 17-story mixed-use life science and office building at 121 East Grand Avenue in South San Francisco, California. The project proposes 15 stories of life science and office uses above two floors of public amenities. All parking would be on three levels at and below grade. Project details are in Chapter 2.

The proposed project (Project) meets criteria "c", identified above, and therefore requires environmental review. Preparation of an environmental analysis and subsequent environmental determination is required prior to or simultaneously with legislative and entitlement review. Environmental review does not constitute Project approval but is an independent analysis of potential Project impacts and mitigation measures. The Lead Agency may, after review of the entirety of the record, find that the environmental analysis is adequate and approve, disapprove, or conditionally approve the Project based upon environmental and merits review.

The Lead Agency for this document is the City of South San Francisco. The Planning Commission will hold a study session to take public comments and will make findings for recommendation to the City Council on the environmental document and the Project entitlements. The City Council will make the final decision on the Project's environmental documents and entitlements. These meetings and actions will take place in legally noticed public hearings.

Therefore, this Initial Study is required for City Project Numbers ND21-0001and EIR20-0003 at 121 East Grand Avenue in South San Francisco, California (APN:015 024 230). The Grant Deed identifies the site as Parcel 1 that includes Parcel 8-A and 8-B, Parcel 2 and Parcel 3.

1.2 PROJECT SPONSOR TEAM/LEAD AGENCY TEAM

PROJECT SPONSOR AND OWNER

Phase3 Real Estate Development (PH3)
OCI SanFran, LLC
4380 LaJolla Village Drive, Suite 230
San Diego, CA 92122

Mr. Michael Gerrity, President
858.546.0888

PROJECT TEAM

ARCHITECT

Skidmore, Owings and Merrill
300 Clay Street
San Francisco, CA 94111

Mr. Michael K. Leung, Associate Principal
415.981.1555

LANDSCAPE ARCHITECT

Mantle
2612 Eighth Street, Building B
Berkeley, CA 94710

Ms. Ramsey Silverberg, Founding Principal
510.927.3200

CIVIL ENGINEERING

BKF, Engineers
255 Shoreline Drive, Suite 200
Redwood City, CA 94065

Ms. Lokelani Yee, Civil Engineer
650.226.6091

LEAD AGENCY AND ENVIRONMENTAL CONSULTANT TEAM

The Lead Agency for this Initial Study is the City of South San Francisco. The administrative record for the Project is on file at the City's Planning Division. The following person has been assigned as the custodian and Case Planner/Project Manager for the Lead Agency:

Mr. Billy Gross, Principal Planner
Department of Economic and Community Development-Planning Division
315 Maple Avenue
South San Francisco, CA 94080
(650) 877-8535

The Lead Agency's Environmental Consultant is Knapp Planning and Environmental Consulting represented by Ms. Allison Knapp.

Ms. Allison Knapp Wollam,
Knapp Planning and Environmental Consulting
511 Linden Street, Suite B
San Francisco, CA 94102
(415) 902-3238

Allison Knapp serves as Project Manager, preparer of the initial study, and represents the CEQA document in all hearings and meetings. The Air Quality and Greenhouse Gas Assessment was prepared by ECORP Consulting and was peer reviewed by Mr. Dan Jones of RCH Group. The Noise Technical Report was prepared by Mr. Luis Rosas and Mr. Dan Jones of RCH Group. The Hydrology and Water Quality Assessment was prepared by Sutro Science and was peer reviewed by Mr. Dan Jones of RCH Group. Mr. Dan Jones of RCH Group also prepared the air quality, greenhouse gas emissions, energy, hazards and hazardous materials, and noise sections of the Initial Study.

1.3 DOCUMENTS INCORPORATED BY REFERENCE AND INCLUDED IN APPENDIX A

AIR QUALITY

Air Quality and Greenhouse Gas Assessment, 121 East Grand Avenue Project, City of South Francisco, California, ECORP Consulting, Inc. April 2022.

CULTURAL AND TRIBAL RESOURCES

Cultural Resource Services-In Support of 121 E. Grand Avenue, South San Francisco, San Mateo County Basin Research, Colin Busby, Ph.D, RPA, Principal. February 21, 2022.

Archaeological Resources Study of 121 E. Grand Ave., South San Francisco, Leann Taagepera, Cultural and Historic Resource Planning, Principal. June 24, 2021.

BIOLOGICAL RESOURCES

Tree Inventory Report, HortScience/Bartlett Construction, May 5, 2021.

GEOLOGY AND SOILS

Preliminary Geotechnical Investigation 121 East Grand Avenue, South San Francisco, California, Project No. 8961-04-02, March 2021 and April 2021.

Geotechnical Peer Review 121 East Grand Avenue South San Francisco, California Project # 40396 7001, March 24 and April 28, 2021, Ninyo & Moore.

Seismic Risk Assessment SF Bay Development 121 East Grand Avenue, South San Francisco, CA, Partners Project # 20-281457.2, June 8, 2020.

Basis of Design 121 East Grand Avenue South San Francisco, CA, Magnusson Klemenic Associates, Structural Engineers, March 3, 2022.

ENERGY

Air Quality and Greenhouse Gas Assessment, 121 East Grand Avenue Project, City of South Francisco, California, ECORP Consulting, Inc. April 2022.

GREENHOUSE GAS EMISSIONS

Air Quality and Greenhouse Gas Assessment, 121 East Grand Avenue Project, City of South Francisco, California, ECORP Consulting, Inc. April 2022.

HAZARDS AND HAZARDOUS MATERIALS

Draft Phase I Environmental Site Assessment for 121 East Grand Avenue South San Francisco California 94080, Project Number WR3122, Apri120, 2022.

Determination of No Significant Hazard to Air Navigation, Federal Aviation Administration, Aeronautical Study No. 2021-AQP 7644-OF, September 9, 2021.

HYDROLOGY AND WATER QUALITY

Hydrology and Water Quality Assessment, 121 East Grand Avenue Development Project, 121 East Grand Avenue, City of South San Francisco, California. Sutro Science. April 28, 2022.

LAND USE AND PLANNING

Documents Incorporated by Reference Available on City Website:

South San Francisco General Plan (Adopted October 1999).

Draft 2040 South San Francisco General Plan.

Southline Environmental Impact Report (SCH No. 20220050452).

Downtown Station Area Specific Plan (Adopted February 2015).

Downtown Station Area Specific Plan Environmental Impact Report (SCH No. 2013102001).

NOISE

Noise Technical Report, South San Francisco 121 East Grand Avenue Project, RCH Group. May 2022.

TRANSPORTATION

South San Francisco Caltrain Station Eastern Access Study prepared for South San Francisco, Caltrain, Phase 3 Real Estate Partners. October 2021, Fehr & Peers and Mark Thomas ('Access Study').

Mobility 2020 East of 101 Transportation Plan Mobility prepared for the City of South San Francisco. Fehr & Peers, 2019 ('Mobility 2020').

Draft Transportation Demand Management Program, TDM Specialists, Inc, June 2, 2022.

UTILITIES/SERVICE SYSTEMS

121 East Grand Avenue South San Francisco-Water Demand Memorandum, Job # 20201781, Lokelani Yee, BKF Project Manager, April 25, 2022.

Water Supply Assessment for 121 East Grand Avenue Project, South San Francisco District California Water Service, eki environment & water, draft May 2022.

1.4 CITY OF SOUTH SAN FRANCISCO PROJECT REVIEW PROCESS

As a matter of law, the Project is required to comply with federal, state and local laws and regulations. These regulations are verified as satisfied and incorporated into the Project as a matter of demolition, grading and /or building permit issuance or permits will not be issued by the City of South San Francisco. As such, these requirements are considered a part of the Project, not a separate and distinct requirement levied through CEQA review.

City of South San Francisco project processing requires that applications for projects are first reviewed by the City's Technical Advisory Group (TAG). TAG is comprised of representatives from Planning, Building, Police, Fire, Engineering, Parks and Recreation, and Water Quality Control. TAG review identifies changes and additions that are required in a project to comply with local, state and federal laws that are implemented through the City's Municipal Code. The Planning Division, after TAG review, issues a letter to the applicant identifying the changes required in Project plans and supporting materials necessary to comply with prevailing laws pursuant to site development, construction and land use. The applicant is required to revise the plans and supporting documentation, or the application is not determined as complete and not processed. Revised plans and documentation are submitted to the Planning Division to be routed again to all affected City departments and divisions; again, to evaluate the application in light of their earlier comments and requirements. The process results in an application that can be determined 'complete' as well as identification of the Conditions of Approval (COAs) that are required should the Project be approved. Many of these COAs implement environmental mitigations that were historically identified through the environmental review process (California Environmental Quality Act, or CEQA) and now have become a part of the City's legislative requirements pursuant to its general plan, specific plans, area plans, municipal code, special districts zoning requirements, or other authority.

After a project application is complete it is subject to environmental, public and discretionary review through and by the Planning Commission and/or City Council, depending upon the type of project, as defined by the Municipal Code of South San Francisco and state law. The COAs identified through staff review of the project, and any additional ones identified through the public review process become required of the project as a matter of law. Prior to the City issuing a

building, grading and/or demolition permit, all City departments and divisions (identified above) review the project plans for compliance with their identified COAs and any additional ones added through the public review process. Permits are not issued by the Building Division in the absence of authorization from City staff or in absence of the requirements being incorporated into the Project plans.

1.5 STANDARD CONDITIONS AND PROCESSES OF APPROVAL REQUIRED BY LAW ADDRESSING ENVIRONMENTAL ISSUES

The following COAs are designed and implemented to reduce environmental impacts and are required through the City of South San Francisco's standard review and permitting procedures. Therefore, these measures are not separately identified as mitigation measures. As is the case with all aspects of an approved project, a project's conditions of approval cannot not be altered without additional City review and approval, which could entail subsequent or supplemental CEQA review.

Failure of the Project Sponsor to meet the required measures and/or elements of their project description relating to environmental issues may obviate the environmental document and require subsequent or supplemental CEQA review. In summary, the Project as proposed coupled with the required conditions of approval is the baseline from which environmental impacts are evaluated for the Project Described in Chapter 2 Project Description.

1. AESTHETICS

AESTHETICS LIGHT AND GLARE: Signage is required to be reviewed by staff, and in some instances the Design Review Board and the Planning Commission. Lighting, size, color, placement, design and compatibility with surrounding land uses is addressed and assured through this process. The City's sign regulations are intended to preserve and improve appearance, protect from visual clutter and blight, protect property values and enhance community appearance, minimize diversion of vehicle operators' attention and safeguard life, health, property and public welfare. Potential environmental impacts and the need or lack thereof for environmental clearance is also addressed and undertaken as a part of the Sign Permit procedure (Chapter 20.360 South San Francisco Municipal Code-Zoning). The Planning Division implements and monitors this requirement.

Projects are reviewed by the City's Design Review Board consisting of professional architects and landscape architects. The Planning Commission, and in some cases the City Council, adds design elements to projects. Projects that are within a state or local scenic corridor are further addressed through the CEQA process.

2. AIR QUALITY AND GREENHOUSE GAS EMISSIONS

AIR QUALITY DUST CONTROL: All construction projects are required to comply with the Bay Area Air Quality Management District's (BAAQMD) dust control measures. These measures are levied by the Engineering Division as a condition of building permit issuance and are monitored for compliance by staff and/or special City Engineering and/or Planning inspectors. The measures include all the *Basic Fugitive Dust Emissions Reduction Measures* identified by the BAAQMD. The City requires projects to:

a) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

b) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d) All vehicle speeds on unpaved roads shall be limited to 15 mph.

e) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

f) Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.

AIR QUALITY COMBUSTION EXHAUST CONTROL: All construction projects are required to comply with the BAAQMD's combustion exhaust control measures. The measures include *Basic Exhaust Emissions Reduction Measures* and some of the *Enhanced Exhaust Emissions Reduction Measures* identified by the BAAQMD May, 2017. The City requires projects to:

a) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

b) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

c) All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet or exceed USEPA or CARB Tier 4 Final off-road emission standards.

AIR QUALITY TOXIC AIR CONTAMINANTS: The potential for toxic air contaminants (asbestos and lead based paint) to be released into the environment is regulated and monitored through the Building Division in compliance with *BAAQMD Regulation 11, Rule 2 during Demolition*. Any applicant requesting a building or demolition permit involving a structure suspected of containing asbestos (defined as a building constructed prior to 1978) and/or lead based paint (defined as a building constructed prior to 1960) is required to obtain review and permits from the Bay Area Air Quality Management District (BAAQMD). Permits are required to be posted at the job site, and if it is not there the job will be fined by BAAQMD and may be shut down by the City's Building Division. Through this process, BAAQMD and the City Building Division ensure that asbestos and lead based paints are handled, removed, encapsulated and disposed of in accordance with prevailing law requisite to protect the environment, the people conducting the work and nearby sensitive receptors. The process typically requires surveys and removal of lead-based paints and asbestos by licensed contractors certified in the handling methods requisite to protect the environment and public health and safety. The process also provides for BAAQMD and City supervision to ensure compliance.

AIR QUALITY VEHICLE EMISSIONS: The potential for air quality degradation from vehicle emissions is regulated to some extent by Section 20.400.003 of the South San Francisco Municipal Code. Table 20.400.003 in the Zoning Ordinance establishes specific program requirements for a project generating one hundred or more vehicle trips per day or a project seeking a floor area ratio (FAR) bonus. The required alternative mode (mode shift) use for projects is below standard trip rates modeled for the project without TDM measures in place. Projects with an increased FAR are required to increase their alternative mode use accordingly. The Planning Division implements and monitors this requirement.

SOUTH SAN FRANCISCO CLIMATE ACTION PLAN: The City adopted a Climate Action Plan (CAP) on February 12, 2014 and an updated CAP is currently under review (April 2022). The CAP identifies strategies and actions to reduce greenhouse gas (GHG). Some examples include the installation of solar facilities at City buildings; requiring bioswales in private development; adopting and enforcing a construction and demolition waste recycling ordinance; adopting and implementing a transportation demand management program and providing electrical car charging stations at City facilities and moving toward an all-electric City. The City actively participates in the San Francisco International Airport noise insulation program which also reduces heat loss and hence GHG emissions in older buildings. The City also spearheads educational programs to reduce GHG emissions. Through conditions of approval development projects are required to implement a variety of GHG reduction measures. Some measures include use of renewable and alternate energy including solar and cogeneration, electric car facilities, water conservation and waste reduction.

The City of South San Francisco is currently updating the original 2014 CAP to align with new State regulations and targets related to climate change. The 2014 CAP set an emissions target for 2020 and this updated CAP extends the horizon year to 2040 while also setting a long-term goal of carbon neutrality by 2045, consistent with State targets. The 2022 CAP update outlines how the City of South San Francisco will create new policies, programs, and services that will support the community in taking strong action to reduce GHG emissions. Although the City implemented many policies and programs identified in the 2014 CAP, the City experienced steady economic and population growth over that time period. By updating its existing CAP, the City of South San Francisco reaffirms its commitment to leading the way to a more sustainable future. The City has set bold targets and developed strategies for reducing GHG emissions while increasing the City's resilience to climate change impacts. The 2022 CAP identifies 62 actions to achieve the GHG reduction targets and has reduction targets of 40 percent below 1990 levels by 2030 (SB 32), 80 percent reduction by 2040 and carbon net neutrality by 2045.

3. GEOLOGY AND SOILS

CALIFORNIA BUILDING CODE TITLE 24: All construction projects are required to comply with the California Building Code (CBC), as periodically amended. Design specifications are identified and required for projects located on sites subject to liquefaction, differential settlement, severe groundshaking. These requirements are enforced and monitored by the Engineering Division. Compliance with the CBC is also implemented and monitored by the Building Division.

GEOLOGY AND SOILS GEOTECHNICAL REPORTS: The City Engineering Division requires geotechnical reports as a part of the permit package for projects to be constructed on vacant land, for demolition and rebuilding and for additions to buildings that require grading and additional loading. The geotechnical reports are required to be prepared by a licensed geologist, geotechnical engineer or engineering geologist. The reports address design and construction specifications for

the project including grading, site drainage, utility and infrastructure design specifications and placement and building design. The reports are peer reviewed by the City's geotechnical consultant and are modified as recommended by the City's consultant. Geotechnical approval is required prior to issuance of a building permit and is vetted during environmental review. The geotechnical professional of record is required to sign all project drawings. The City's geotechnical consultant provides construction inspections, oversight and monitoring for the City. The Engineering Division implements and monitors this requirement.

4. HAZARDOUS MATERIALS

Properties suspected of containing hazardous materials, due to their location or use history, are required by local, state and federal law to undergo site characterization and if necessary, remediation. Permits from the South San Francisco Fire Department, San Mateo County Department of Environmental Health (SMCDEH) and/or Bay Area Air Quality Management District (BAAQMD) and in some cases the State or local regional water quality board, such as the Bay Area Regional Water Quality Control Board (SFRWQCB) are required. The following table identifies the standard, industry accepted protocol for site characterization and remediation (Aaron Stessman, CSS Environmental Engineering P.E. #C054648).

Media	Hazardous Materials	Approach
Soil Remediation (ex-situ)	Fuels	• Reuse on Site (if concentration is less than 100 ppm). • Haul and Dispose at appropriate landfill. • Capping and Vapor barrier. • Treat on site (see below).
Soil Remediation (ex-situ)	VOCs (gasoline fuels, solvents)	• Consult the SMCEHD for requirements. • Haul and Dispose. • Aeration – requires a notification to BAAQMD, daily volumes are limited. • Vapor Stripping – apply vacuum system to covered piles, notify BAAQMD. • Bioremediation - apply bio-treatment materials, moisture and "work" soil piles. • Thermal Desorption – various vendors provide mobile treatment units. • Capping and vapor barrier.
Soil Remediation (ex-situ)	Inorganics (metals)	• Consult BAAQMD and SMCEHD for requirements. • Haul and Dispose. • Chemical Stabilization. • Sorting – reduce waste volume by screening to target contaminant particle size.
Soil Remediation (in-situ)	VOCs	• Consult SMCEHD for requirements. • Soil Vapor Extraction – apply vacuum to vapor wells, notify BAAQMD. • In-situ chemical oxidation. • In-Situ Vitrification – use electricity to melt waste and surrounding soils.
Soil Remediation	SVOCs	• Consult SMCEHD for requirements. • Bioremediation – saturate soils with bio-treatment materials.

Media	Hazardous Materials	Approach
(in-situ)		• Chemical Stabilization – saturate soils with chemicals to immobilize contaminants. • In-Situ Vitrification. • Capping .
Groundwater - Investigation	All	• If contaminants are detected in the 20 foot below ground surface soil sample an additional boring should be completed to groundwater. • Analyze sample for contaminants detected in soil. • Report results to the SMCEHD and consult on remedial alternatives.
Groundwater Remediation	VOCs	• Consult BAAQMD and SMCEHD for requirements. • Pump and Treat – pump from wells, treat and discharge treated water. • Air Sparging – inject air to volatilize contaminants and create aerobic groundwater conditions suitable for natural bioremediation. Generally applied in conjunction with Soil Vapor Extraction to control released volatiles. • Bioremediation – inject bio-treatment materials into affected groundwater. • Chemical Oxidation – inject oxidation chemicals into affected groundwater.
Groundwater Remediation	SVOCs	• Consult BAAQMD for requirements. • Pump and Treat. • Bioremediation. • Chemical Oxidation.
Groundwater Remediation	Inorganics	• Consult BAAQMD for requirements. • Pump and Treat. • Chemical Immobilization – inject chemicals to precipitate or chemically fix contaminants to soil particles.

5. HYDROLOGY AND WATER QUALITY

HYDROLOGY AND WATER QUALITY: The following is a summary of applicable requirements in Provisions C.3.b.ii and C.3.c.i.2 of the San Francisco Bay Region Municipal Regional Stormwater National Pollutant Discharge Elimination System Permit ("Municipal Regional Permit" or "MRP."

All projects that are required to treat stormwater will need to treat the permit-specified amount of stormwater runoff with low impact development methods. These methods include rainwater harvesting and reuse, infiltration, evapotranspiration, or biotreatment (filtering stormwater through vegetation and soils before discharging to the storm drain system). However, biotreatment will be allowed only where harvesting and reuse, infiltration and evapotranspiration are infeasible at a project site. Vault-based treatment will not be allowed as a stand-alone treatment measure. Where stormwater harvesting and reuse, infiltration, or evapotranspiration are infeasible, vault-based treatment measures may be used in series with biotreatment, for example, to remove trash or other large solids (see Provision C.3.c.i.2 of the MRP).

Projects that create and/or replace 5,000 square feet or more of impervious surface related to auto service facilities, retail gasoline outlets, restaurants, and/or surface parking are required to provide low impact development treatment of stormwater runoff. This requirement applies to uncovered parking that is stand-alone, or included as part of any other development project, and it applies to the top uncovered portion of a parking structure, unless drainage from the uncovered portion is connected to the sanitary sewer (see Provision C.3.b.ii.1 of the MRP). For all other land use categories, 10,000 square feet is the regional threshold for requiring low impact development, source control, site design, and stormwater treatment, although municipalities may have the authority to require treatment to the maximum extent practicable for smaller projects. The new requirements are built into the following (see below) standard requirements.

HYDROLOGY AND WATER QUALITY STORMWATER RUNOFF PREVENTION (OPERATIONAL): All projects are required to comply with the San Mateo Countywide Storm Water Pollution Prevention Program (STOPPP), an organization of the City/County Association of Governments (C/CAG) of San Mateo County holding a National Pollutant Discharge Elimination System (NPDES) Storm Water Discharge permit. The City requires the implementation of Best Management Practices (BMPs) for new development and construction as part of its storm water management program, as levied through standard City COA's. The requirements are implemented and monitored by the Engineering and Water Quality Control Divisions.

The measures address pollution control and management mechanisms for contractor activities, e.g. structure construction, material delivery and storage, solid waste management, employee and subcontractor training. Stormwater pollution prevention measures also affect site development and operations in order to prevent pollution due to Project occupancy. Storm water quality protection measures include and are not limited to the following.

a) Walking and light traffic areas shall use permeable pavements where feasible. Typical pervious pavements include pervious concrete, porous asphalt, turf block, brick pavers, natural stone pavers, concrete unit pavers, crushed aggregate (gravel), cobbles and wood mulch.

b) Parking lots shall include hybrid surfaces (pervious material for stalls only), concave medians with biofilters (grassy swales), and landscaped infiltration/detention basins as feasible.

c) Landscape design shall incorporate biofilters, infiltration and retention/detention basins into the site plan as feasible.

d) Outdoor work areas including garbage, recycling, maintenance, storage, and loading, applicable storm water controls include siting or set back from drainage paths and water ways, provision of roofing and curbs or berms to prevent run on and run off. If the area has the potential to generate contaminated run off, structural treatment controls for contaminant removal (such as debris screens or filters) shall be incorporated into the design.

e) Roof leaders and site drainage shall be filtered and directed to the City storm drain system and harvesting of rainwater shall occur.

f) Drainage from paved surfaces shall be filtered through vegetated swales, buffer or sand strips before discharge to the City's storm drain system.

HYDROLOGY AND WATER QUALITY STORMWATER RUNOFF PREVENTION (CONSTRUCTION): The City of South San Francisco requires through COAs, Project compliance

with the State Water Quality Control Board's general permitting requirements which requires the applicant to secure a Construction Activities Storm Water General Permit, complete a Notice of Intent (NOI) and prepare and obtain approval of a Storm Water Pollution Prevention Plan (SWPPP). The state issues a Waste Discharge Identification number within 10 days of receipt of a complete NOI and SWPPP. The applicant is then required to submit copies of the NOI and SWPPP to the City of South San Francisco's Technical Services Supervisor within the Water Quality Control Plant of the Public Works Department prior to issuance of building and/or grading permits. The requirements are implemented and monitored by City Water Quality Control personnel. Construction stormwater protection measures include and are not limited to the following.

a) Identify all storm drains, drainage swales and creeks located near construction sites and prevent pollutants from entering them by the use of filter fabric cloth, rock bags, straw wattles, slope hydroseeding, cleaning up leaks, drips or spills immediately, use dry cleanup methods to clean up spills, use of berms, temporary ditches and check dams to reduce the velocity of surface flow.

b) Place rock bags at all drain inlets to filter silt and along curb and gutter to filter water before the drain inlets.

c) Place straw wattles and hydroseed the sloped areas.

d) Place straw matting at the temporary sloped areas for erosion control.

e) Place drain systems to filter and then drain into drain inlets.

f) Use silt fencing with straw mats and hand broadcast seed for erosion control.

g) Construct temporary drainage systems to filter and divert water accordingly.

h) Construct temporary rock and asphalt driveways and wheel washers to buffer public streets from dirt and mud.

i) Use part- and full-time street sweepers that operate along public streets and roads.

j) Cover all stockpiled soils to protect from erosion. Use berms around stockpiled soils.

k) Cover and protect from erosion plaster, concrete and other powders which create large amounts of suspended solids.

l) Store all hazardous materials (paints, solvents, chemicals) in accordance with secondary containment regulations and cover during wet weather.

m) Use terracing to prevent erosion.

n) Through grading plan review and approval, phase grading operations to reduce disturbed areas during wet weather, limit vegetation removal, delineate clearing limits, setbacks, easements, sensitive or critical areas, trees, drainage courses and buffer zones to prevent unnecessary disturbance and exposure. Limit or prohibit grading during the wet weather season, October 15 to April 15th.

o) Prevent spills and leaks by maintaining equipment, designating specific areas of a site for such activities that are controlled and away from water courses and perform major maintenance off-site or in designated areas only.

p) Cover and maintain all dumpsters, collect and properly dispose of all paint removal wastes, clean up paints, solvents, adhesives and all cleaning solvents properly. Recycle and salvage appropriate wastes and maintain an adequate debris disposal schedule.

q) Avoid roadwork and pavement stormwater pollution by following manufacturers' instructions.

6. NOISE

INTERIOR AMBIENT NOISE: The City of South San Francisco regulates noise exposure through state law, its General Plan and East of 101 Area Plan, and Municipal Code. The City, through its General Plan, adopted the *Noise Guidelines* of the State Department of Health Services in its Noise Element (1999). Table 9.2-1, *Land Use Criteria for Noise Impacted Areas,* (General Plan, page 280) guides land use decisions based upon noise thresholds correlating to land use classifications, acoustical analyses and mitigations.

The Draft 2040 General Plan update devotes Chapter 16 to noise. Figure 52: *San Francisco International Airport Noise Exposure Map*, p 370 and Table 11 *Land Use/Noise Compatibility Matrix to Guide New Development*, p 373 identifies noise level standards associated with various land use categories..

The City implements the Federal Aviation Administration adopted noise contours, participates in an aircraft noise insulation program and City/County Association of Governments (C/CAG) airport noise planning efforts. Figure 9-1 of the General Plan *Aircraft Noise and Noise Insulation Program* (page 279) identifies the noise contours and program area for these planning efforts.

C/CAG updated the San Francisco International Airport noise impact boundaries in October, 2012. The new boundaries for South San Francisco are on page 118 of the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport for City/County Association of Governments of San Mateo County, Redwood City, California* (Ricondo Associates, Jacobs Consultancy, Clarion Associates. October 2012) (ALUP). Therefore, the maps contained in the South San Francisco General Plan must be used in conjunction with the updated ALUP.

The East of 101 Area Plan requirement for interior ambient noise for commercial, office and retail is 45 dBA, L_{eq}, echoing state law. The Noise Guidelines are implemented by the Planning Division through new project review and occasionally by both building and planning in enforcement cases.

NOISE EXTERIOR AMBIENT NOISE: The City of South San Francisco regulates exterior noise levels through the South San Francisco Municipal Code (Section 8.32.030). The Municipal Code identifies maximum noise exposure corresponding with land use and time of day. Low density residential maximum noise exposure (excluding vehicle horns and emergency vehicles) is restricted to 50 dB 10 P.M. to 7 A.M. and 60 db from 7 A.M. and 10 P.M. Higher density residential and commercial land use noise exposure is restricted to 55 dB from 10 P.M. to 7 A.M. and 65 db from 7 A.M. and 10 P.M. Industrial land uses are restricted to 70 dB anytime of the day. These noise standards are implemented largely through enforcement actions (i.e., citizen complaint and governmental response). The Fire Department's Code Enforcement Officer implements these regulations. The following text and table are excerpted from Section 8.32.030.

a) It is unlawful for any person to operate or cause to be operated any source of sound at any location within the city or allow the creation of any noise on property owned, leased, occupied or otherwise controlled by such person, which causes the noise level when measured on any other property to exceed:

(1) The noise level standard for that land use as specified in Table 8.32.030 for a cumulative period of more than thirty minutes in any hour;

(2) The noise level standard plus five dB for a cumulative period of more than fifteen minutes in any hour;

(3) The noise level standard plus ten dB for a cumulative period of more than five minutes in any hour;

(4) The noise level standard plus fifteen dB for a cumulative period of more than one minute in any hour; or

(5) The noise level standard or the maximum measured ambient level, plus twenty dB for any period of time.

Table 8.32.030
NOISE LEVEL STANDARDS

Land Use Category	Time Period	Noise Level (dB)
R-E, R-1 and R-2 zones or any single-family or duplex residential in a specific plan district	10 p.m.—7 a.m. 7 a.m.—10 p.m.	50 60
R-3 and D-C zones or any multiple-family residential or mixed residential/commercial in any specific plan district	10 p.m.—7 a.m. 7 a.m.—10 p.m.	55 60
C-1, P-C, Gateway and Oyster Point Marina specific plan districts or any commercial use in any specific plan district	10 p.m.—7 a.m. 7 a.m.—10 p.m.	60 65
M-1, P-1	Anytime	70

Source: City of South San Francisco Municipal Code

Construction noise exposure is also regulated by the Municipal Code (Section 8.32.050(d)). Hours of construction are exempt from the standards identified in the preceding paragraph and are limited to 8 A.M. to 8 P.M. Monday through Friday, 9 A.M. to 8 P.M. on Saturdays and 10 A.M. to 6 P.M. on Sundays and holidays. The Building Division enforces and monitors these regulations. Exceptions to the hours of construction and maximum temporary noise levels may be granted by the Chief Building Official.

(a) Sound Performances and Special Events. Sound performances and special events not exceeding eighty dB measured at a distance of fifty feet from the loudest source are exempt from this chapter when approval therefore has been obtained from the appropriate governmental entity.

(b) Vehicle Horns. Vehicle horns, or other devices primarily intended to create a loud noise for warning purposes, shall be used only when the vehicle is in a situation where life, health or property are endangered.

(c) Utilities and Emergencies. Utility and street repairs, street sweepers, franchised garbage services and emergency response warning noises are exempt from this chapter.

(d) Construction. Construction, alteration, repair or landscape maintenance activities which are authorized by a valid city permit shall be allowed on weekdays between the hours of eight a.m. and eight p.m., on Saturdays between the hours of nine a.m. and eight p.m., and on Sundays and holidays between the hours of ten a.m. and six p.m., or at such other hours as may be authorized by the permit, if they meet at least one of the following noise limitations:

(1) No individual piece of equipment shall produce a noise level exceeding ninety dB at a distance of twenty-five feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.

(2) The noise level at any point outside of the property plane of the project shall not exceed ninety dB. (Ord. 1088 § 1, 1990).

7. CALIFORNIA GREEN BUILDING CODE (CALGREEN)

California Green Building Code Standards became effective on January 1, 2014 and is amended periodically. The mandatory and voluntary measures for residential, non-residential and mixed-use buildings are designed to reduce our carbon footprint and promote environmental sustainability; i.e., decrease impacts incumbent upon the environment resulting from human activities. The collection of regulations is contained in the California Building Code. The regulations prescribe measures to reduce water consumption, reduce building construction waste, and energy consumption in both the construction and operation of buildings and for the life of the building. The regulations prescribe methods to test, report, maintain, and improve the measures employed to promote environmental sustainability.

CALGreen also regulates the exposure (i.e., off gassing) of VOCs (volatile organic compounds), aerosols and formaldehyde and moisture and dust penetration in the use and application of building materials. Regulations address the types of as sealants, coatings, finishes, flooring (wood, carpet, particle board) and architectural finishes that are not permitted based upon the performance and potential toxicity of the substances. Design standards limit and as appropriate prohibit the amount of building heat loss and light pollution incident upon adjacent properties. Standards address the use of potable, grey and recycled water for interior and exterior, residential and non-residential uses.

Maximum Sound Transmission Class (STC) ratings are also identified and apply to interior exposure levels and noise levels at property lines. Distance thresholds are identified that trigger additional STC ratings for buildings within prescribed proximity to freeways, airports and 65dB exceedances at property lines.

Amenities to support people using bicycles are identified and include lockers, showers and secure lock-up areas. Provision of preferential parking spaces for low fuel vehicles at a percentage of overall parking provided on a site is also specified.

1.6 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

This Initial Study evaluates the Project, which is defined as that proposed by the Applicant, as modified by the City of South San Francisco's standard COAs, and Mitigation Measures identified in the Chapter 3. Therefore, any impacts identified by the following Initial Study are those that could exceed the impacts that would be mitigated by the City's standard permitting process and the identified mitigation measures and as such will require additional environmental review.

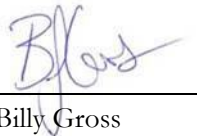
Environmental factors that may be affected by the Project, as defined by CEQA and as described in **Chapter 3**, are listed below. Factors identified in **bold** have been determined to have the potential for significant impacts, in absence of the mitigations identified in **Chapter 3**. Factors which are unshaded have been determined to pose no potential for significant impacts.

Aesthetics	Hazards & Hazardous Materials	Public Services
Agriculture & Forest Resources	Hydrology and Water Quality	Recreation
Air Quality	Land Use and Planning	Transportation
Greenhouse Gas Emissions	Mineral Resources	**Utilities & Service Systems**
Biological Resources	**Noise**	Cumulative Impacts
Cultural Resources	Population &Housing	Tribal Cultural Resources
Geology & Soils	Energy	Wildfire

1.7 LEAD AGENCY'S DETERMINATION

On the basis of the analysis contained in **Chapter 3**:

	I find that the proposed Project COULD NOT have a significant effect on the environment because the Applicant has proposed measures as part of the project to reduce potential impacts to less than significant, and a NEGATIVE DECLARATION will be prepared.
	I find that the proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
X	**I find that although the proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project or proposed by the Project, nothing further is required.**



Mr. Billy Gross
Principal Planner

June 29, 2022
Date

2

PROJECT DESCRIPTION

2.1 PROJECT LOCATION AND SETTING

PROJECT LOCATION

The Project site, located in the eastern portion of the City of South San Francisco ("City"), is in an area known as the of East of 101. The East of 101 Area has historically been known for industrial land uses and has transitioned over the past 40 years to include life science (i.e., Research and Development, "R&D"), office and visitor serving uses such as hotels while retaining industry in the southern portions of the area. These changes are the result of planning and zoning changes adopted by the City (identified in more detail in "**2.3 General Plan and Zoning**," below).

The site, 121 East Grand, is flanked by Poletti Way to the west and East Grand Avenue to the south, and southeast, and Grand Avenue to the north. The site has active street frontage on three sides: west, south and east. A 20 ft wide service area runs the length of the northern side of the building. The northern side is adjacent to the Grand/East Grand Avenue flyover. The recently relocated Caltrain station, approximately 200 feet west from the Project site, is an easy walk. The Caltrain station was relocated and rebuilt to provide updated access to the loading platforms in compliance with the American Disabilities Act ("ADA Accessibility"), easier and safer access for pedestrian and bicycle users, and a better alignment with bus routes. The relocation also facilitated the creation of a high-density transit-oriented development core area (discussed in more detail in **Chapter 2.3 General Plan and Zoning**). The approved Caltrain plans and as-built conditions provide a pedestrian activated traffic signal and crosswalk striping allowing pedestrians to cross Poletti Way to the Project site and other points in the area. The Caltrain pedestrian tunnel, perpendicular to the tracks, provides connection for commuters to the train and links pedestrians to the east and west areas of the City.

Vehicular access to the Project site is from the north by the Oyster Point Boulevard Interchange and flyover, and Airport Boulevard (both from the north and south). Access from the south is provided by East Grand Avenue via the Grand Avenue northbound exit from US 101. All these roadways connect to US 101. Airport Boulevard also connects to Interstate 380. Grand Avenue/East Grand Avenue provides a surface street connection the areas east and west of US 101.

Grand Avenue trends in an east/west direction connecting the east and west areas of the City. Grand Avenue is approximately 3.3 miles in length beginning at Mission Road in the western part of the City and terminating at San Francisco Bay within the Genentech life science campus in the eastern area of the City. Grand Avenue contains the City's downtown and City Hall.

The Project site is in the center of Grand Avenue/East Grand Avenue; 1.8 miles from Mission Road to East Grand Avenue and 1.5 miles from East Grand Avenue to Genentech Campus/San Francisco Bay. Airport Boulevard is approximately 600 feet west of the site and City Hall is approximately a half mile west of the site. Restaurants, cafes, and other downtown services commence at Airport Boulevard and Grand Avenue, easily walkable from the Project site through the Caltrain tunnel connection.

AREA AND SITE CHARACTERISTICS

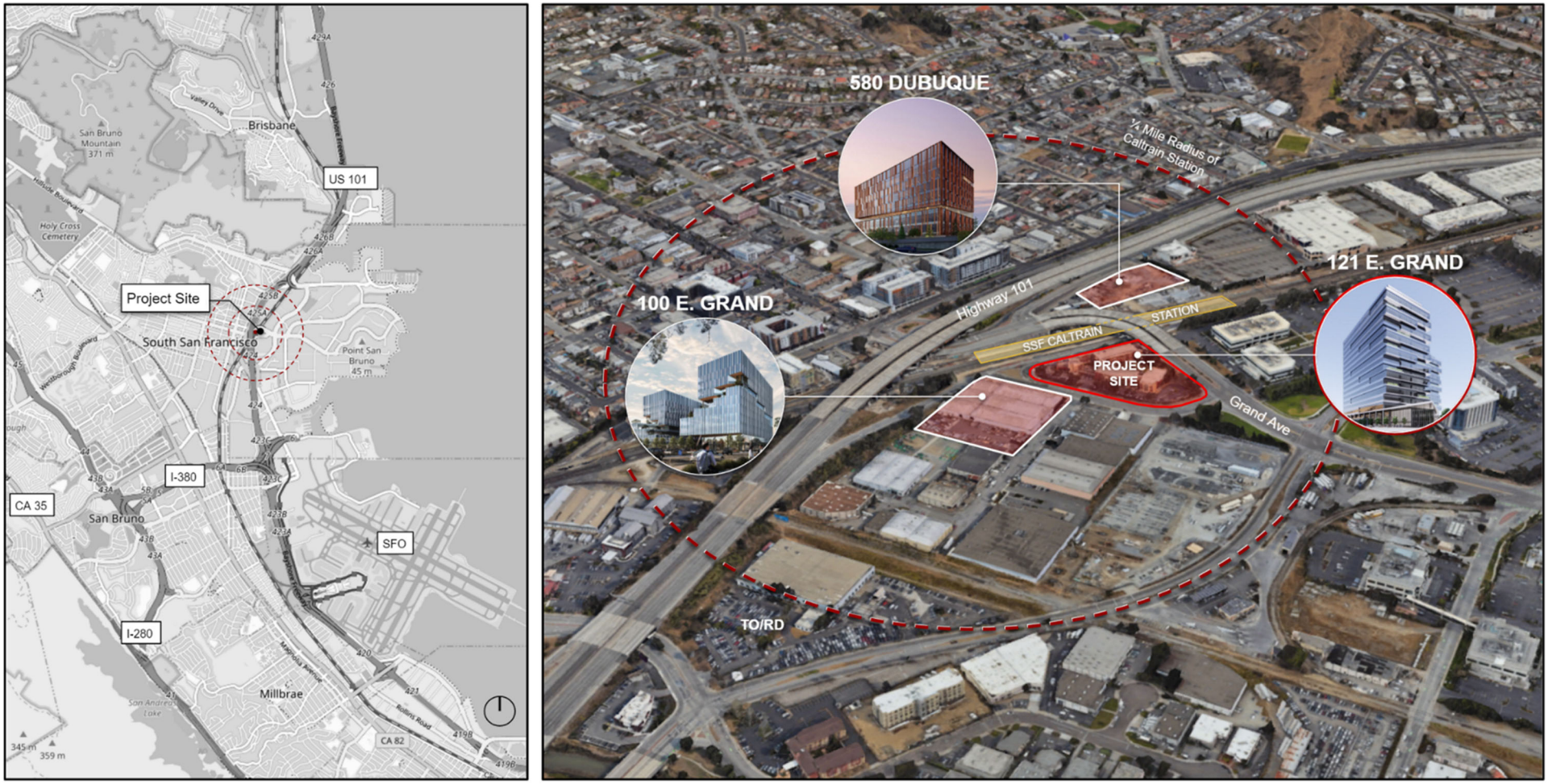
Area: Life science uses are located north of the East Grand Avenue overpass. Jack Drago Park is located to the east of the site as is the Pacific Gas and Electric (PG&E) electrification yard serving Caltrain and the East of 101. A mix of life science, light industrial and food manufacturing uses are south of the Project site. A small triangular shaped parcel at the intersection of East Grand Avenue and Poletti Way is owned by the City of South San Francisco and the Gateway Business Association.

Alexandria Real Estate (ARE) is in the process of entitlement review to construct a R&D/Office project at 100 East Grand Avenue. ARE would construct 554,770 sq ft on a 5.02-acre site. Two buildings, 10 and eight stories in height, would contain R&D/Office and a third eight-story structure would contain parking. South City Ventures IQHQ is in the process of entitlement review for a 295,000 sq ft R&D project with subterranean parking on a 1.89-acre parcel at 580 Dubuque Avenue, north of the Project site. Information on these and other projects may be accessed at: https:/construction.ssf.net/ and the City's Planning Commission and City Council agendas.

Site: The Project site is 126,847 sq ft in area, i.e., 2.91 acres. The site is relatively flat ranging from 15 ft to 20 ft above mean sea level and is shaped like a soft-edged triangle (*Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Ave. SSF, CA.* March 2021 Geocon Consultants, Inc.) ("GeoReport, March 2021"). Groundwater appears approximately 4.5 to 8.0 feet below ground level ("bgl") during wet years and 8.5 to 16 ft during dry years (Geocon GeoReport, March 2021). The Project site is in Flood Zone X, outside the 100- and 500-year flood zones (Flood Insurance Map Rate Community Panel Number 13-09-1038P, September 9, 2013. Federal Emergency Management Agency).

The site is currently developed with a three-story wood framed motel and asphalted surface parking. The motel includes 169 rooms housed in three structures. The site also includes a spa and one shed. Building permits indicate the construction occurred in 1986 (City Building Department Records 2021) Two curb cuts provide access to the site: one off Poletti Way and the other along East Grand at Sylvester Road.

[Remainder Intentionally Blank]



PROJECT DESCRIPTION FIGURE 1
URBAN CONTEXT, PROJECT SITE AND AREA

2.2 PROPOSED PROJECT

The following Project description identifies, and Chapter 3 Environmental Checklist analyzes, a 17-story mixed-use life science, office and transit-oriented community serving retail project. The maximum height is permitted to be 295 ft above mean sea level (msl) and the Project proposes 294 ft msl. Included in the 294 ft height is a 20 ft roof top mechanical screen. The Project proposes a 7.44 FAR building powered by electricity, natural gas and diesel. The analysis contained herein represents a reasonable worst-case analysis of potential Project impacts.

The height of the building is not permitted to exceed 295 ft msl, as this is the maximum currently approved by the Federal Aviation Administration (Public Notice August 8, 2021, and Final Determination September 9, 2021, ASN 2021-AWP-7652-OE, in Appendix A) ('FAA 2021') for the Project site. The maximum height includes all rooftop mechanical, protrusions and screening thereto. The height of the building may be reduced as a result of Project refinements, described below. The maximum height permitted by the City is shown in **Project Description Figure 8, Downtown Station Area Specific Plan. The maximum height for the project site is that permitted by the FAA.**

The Project was refined during City review and prior to publication of this environmental evaluation. The Project now proposes a 7.22 FAR. The Project is also proposing an all-electric project. The rooftop infrastructure requirements for an all-electric project may require up to a 32 ft rooftop screen and to accommodate a worst-case height of 32 ft modifications to the 17th floor may be required. , including the potential elimination of part or all of Level 17.

PROJECT DESCRIPTION

SITE LAYOUT

The Project proposes two 17-story research and development building "wings" connected through a glass atrium atop a two-story podium. The two-story podium would be designed, landscaped and furnished to provide seating, gathering areas and various access points to the building. The first two floors of the building, Level 1 and Level 2, would provide public amenities and Levels three through 17 would include research and development and office uses. A 700 ft long lighted and landscaped bicycle and pedestrian trail would traverse the site from the Poletti Way crosswalk along the southern and eastern frontages of the Project site to Grand Avenue. The 30 ft wide Class IV bicycle/pedestrian facility would separate pedestrians from bicyclists and both user groups from vehicles. The City received a grant for the construction of these facilities. The Applicant proposed the enhancement of the pedestrian portion and would likely construct the facilities.

Bicycle parking would include 140 short-term spaces along the Poletti Way sidewalk, and 108 long-term spaces within an enclosed storage area accessed from both the Arrival Plaza lobby and East Grand Avenue, totaling approximately 1,593 sq ft. The Project proposes 49 more short term spaces than required by the Municipal Code to assist the East of 101 area in meeting bicycle parking needs. Figure 2 below shows a northeast view of the Project; Alexander Real Estate project is shown in the foreground and the Grand Avenue Overpass and Poletti Way are shown on the left.



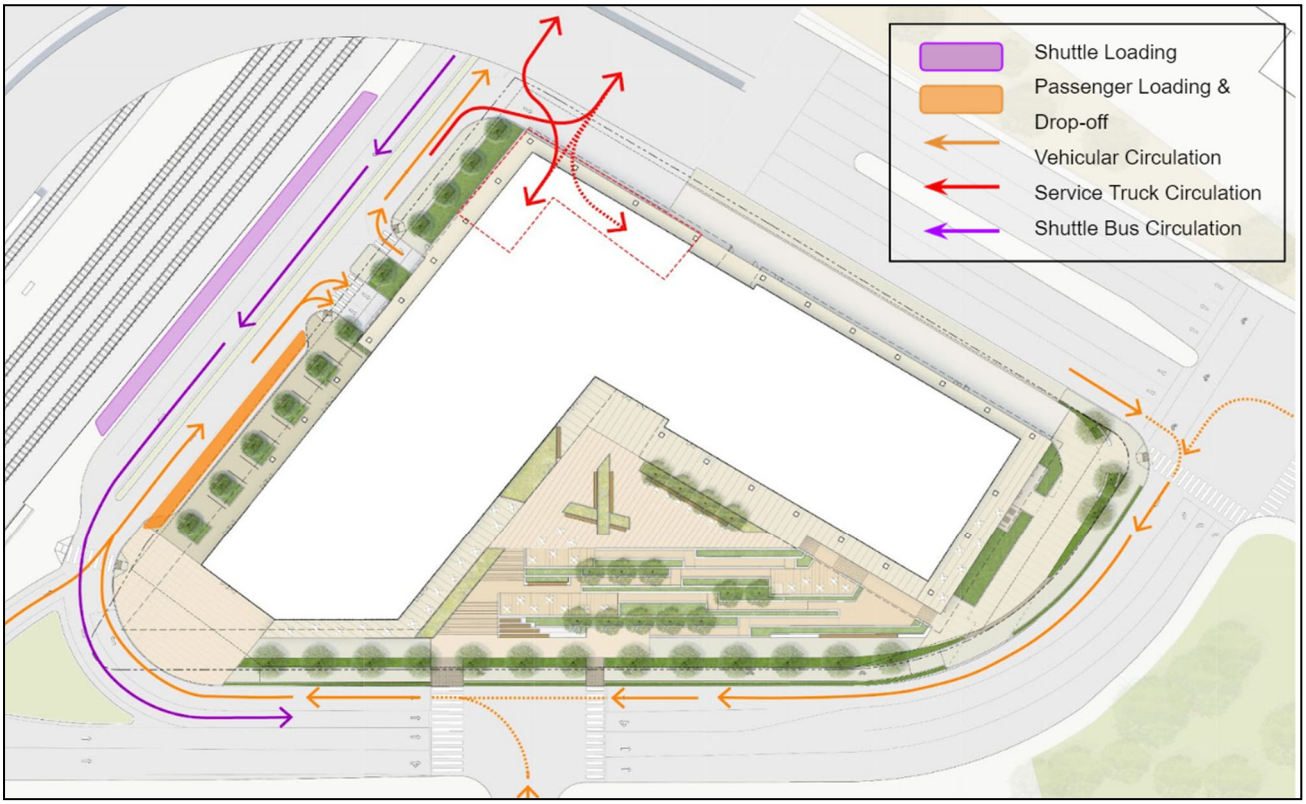
Rendering Provided by SOM, P3RE

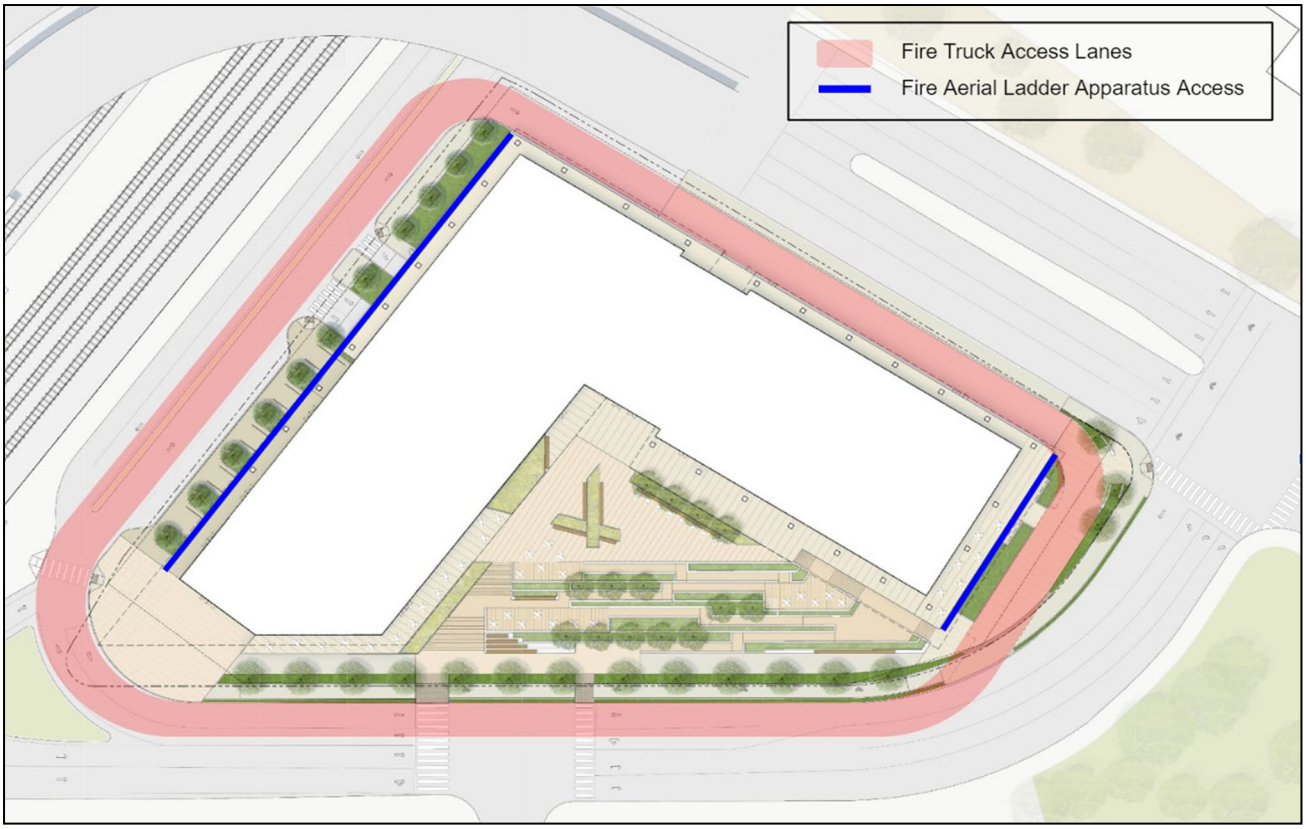
PROJECT DESCRIPTION FIGURE 2
VIEW LOOKING NORTH EAST SHOWING ARRIVAL PLAZA

All commercial parking would be accessed on Level 1 behind the retail component off Poletti Way. Parking would total 1,413 spaces through a combination of valet-assist and automated parking. Vehicular parking is proposed primarily in two below-grade levels consisting of 229,216 sq ft. Accessible, valet assist, and the mechanical lift for parking would also occur on Level 1, consuming approximately 26,191 sq ft of the aforementioned total. The Project proposes a 47.5% reduction from code requirements as part of the Transportation Demand Management Program ("TDM Program") requirements.

Other back-of-house uses are programmed for Level 1, including a 4,927 sq ft loading area with a dock leveler and refuse and recycling areas. Mechanical, storage, and lab-support areas would consume an additional approximate 30,649 sq ft, also proposed on Level 1. The back-of-house uses including the loading dock would be accessed off the 20-ft service and fire access alley running along the northern side of the building which is adjacent to the Grand Avenue overpass. Therefore, by design commercial parking access would be separated from the heavier back-of-house activities. The design minimizes potential vehicular, pedestrian and bicycle conflicts by separating vehicular activity areas from the pedestrian realm to the maximum extent feasible. The 20 ft wide service and fire lane (described below) along the northern elevation would be restricted to those uses only. The remainder of the site frontage continuing on Poletti Way and East Grand Avenue wrapping around to Grand Avenue is void of curb cuts.

City Fire Marshal Ian Hardage (February 14, 2022) directed the Project Sponsor to provide at grade fire access along all sides of the building ranging from 20 to 26 ft in width. To provide emergency access to the upper floors of the building Fire Marshal Hardage directed the Project Sponsor to limit landscaping to a maximum height of 15 ft along the façade of the building. Taller trees are permissible along the edges of the site near the bicycle and pedestrian lane, within the Confluence Plaza, and some intermediate areas. The site plan includes emergency access from East Grand Avenue through the East Access Plaza, as requested by the Fire Marshal.





PROJECT DESCRIPTION FIGURE 3
VEHICULAR AND SERVICE ACCESS AND FIRE SAFETY ACCESS

The Project as proposed cannot exceed a maximum height of 295 ft approved by the Federal Aviation Administration (Public Notice August 8, 2021, in **Appendix A**). The 17-story building would likely reach 262 ft in height. Rooftop mechanical screening would likely be 32 ft, for a maximum height up to 295 ft. These heights may vary, but the overall height maximum is 295 ft.

Levels three-17 are programmed for office/lab and would range from 51,654 to 56,151 sq ft in area for a total of 805,764 sq ft. The public amenity space programmed in Level 1 and Level 2 would be 107,125 sq ft. Site coverage would be 69.3%, or 87,849 sq ft. The Project would include 24-hr security as with all life science developments.

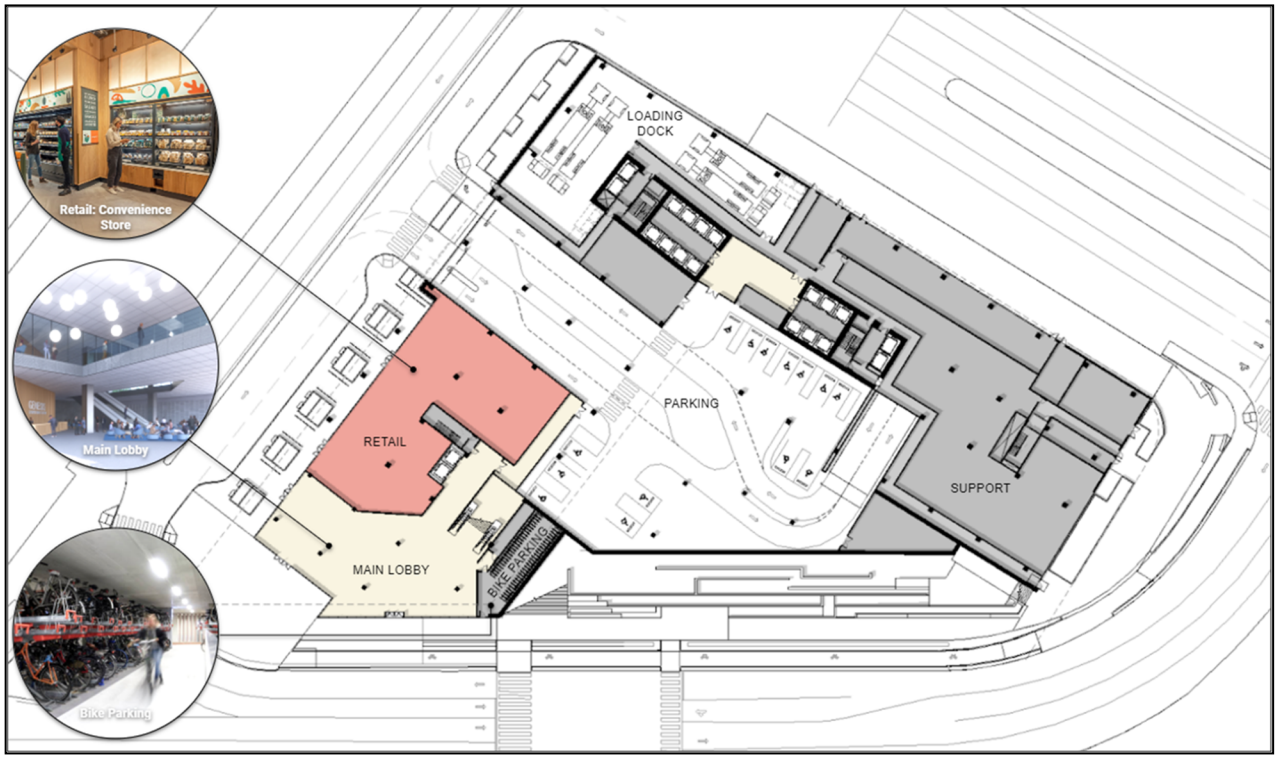
Levels 1 and 2 are programmed to include amenities available to the public as well as the occupants of the building. Level 1 would include a 7,573 sq ft main gathering and lobby and a 9,328 sq ft retail space. Retail space considerations include café, restaurant, personal services and a grab and go convenience store. Level 2 amenities are programmed for a 16,264 sq ft fitness/wellness center; a 4,489 sq ft lobby; a 5,134 sq ft pre-function space, a 13,237 sq ft conference center, a 5,546 sq ft restaurant, a 2,342 sq ft café, and a 2,551 sq ft kitchen. Area calculations may vary. The amenities would be accessed from Arrival Plaza, Poletti Way Plaza, Confluence Plaza, and East Grand Plaza.

The site is designed in a series of landscaped plazas and entry ways accessing both the public and private realms. Gathering, lighting and circulation areas are proposed on three active sides of the building. Navigation on the site is presented by Arrival Plaza, the main and grand entry across from the Caltrain Station. Poletti Way Plaza would be the busiest in terms of commuting and mode shift options. Poletti Way Plaza would be the only side of the building that accommodates vehicular access. Multi-model transit options would also arrive and depart here. Confluence Plaza would be as its name implies, an area for people to converge, gather, eat, relax and socialize. East Access Plaza would provide pedestrian and bicycle access to and from the site, fire apparatus access to the site and a visual connection to Jack Drago Park. These four plaza areas would provide approximately 46,663 sq ft of open space.

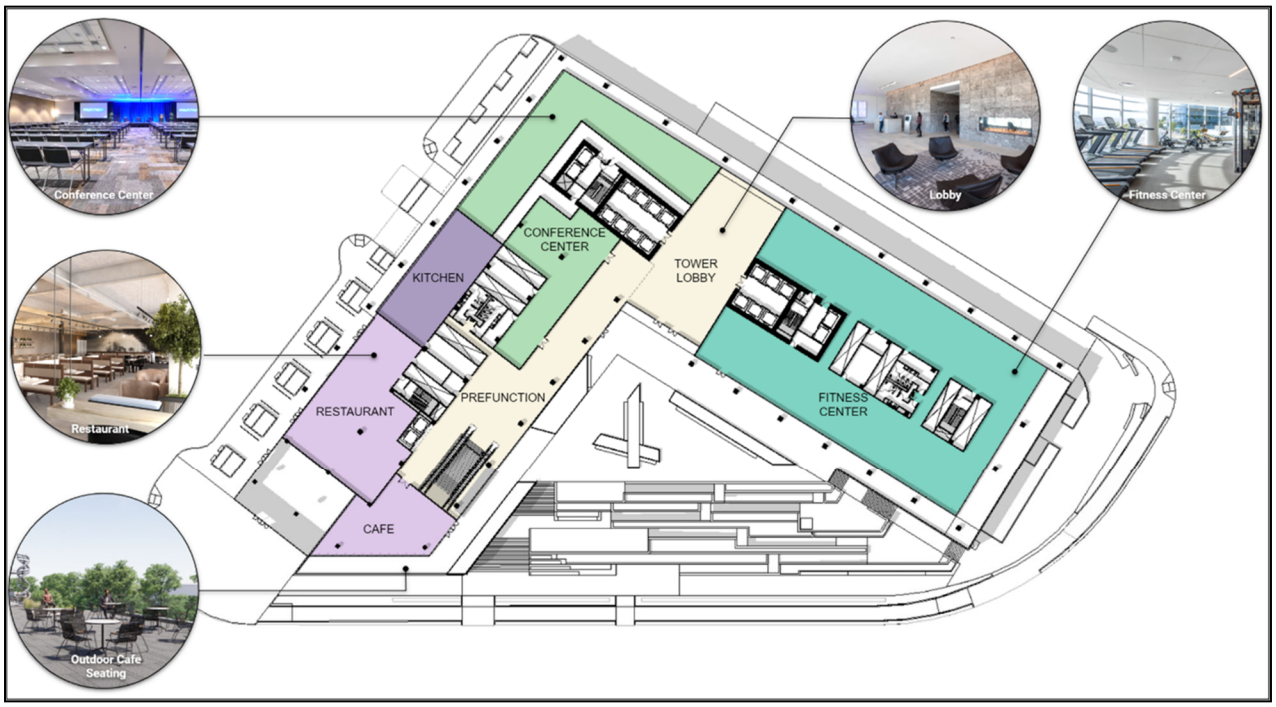
Wind Canopy is proposed as a design element that would provide protection from sun, wind and rain. At its proposed Level 2 placement, Wind Canopy would define the pedestrian realm and wrap around the building from west to east. The following studies assisted in shaping the design of the site plan.

[Remainder Intentionally Blank]

Ground Level



Second Level



PROJECT DESCRIPTION FIGURE 4
PUBLIC AMENITIES



PROJECT DESCRIPTION FIGURE 5
PLAZAS AND FUNCTION

FORM AND FUNCTION: ARCHITECTURAL AND LANDSCAPE DESIGN AND ART PLACEMENT

Wind Canopy weaves the public realm use and identity together. At the intersection of East Grand Avenue and Poletti Way, Wind Canopy would provide a landmark entry to the East of 101 at Arrival Plaza. Wind Canopy is proposed to wrap continuously around the building above the second story and would vary in its horizontal projection to accommodate different conditions and planned uses of the public realm and landscape elements. Wind Canopy would provide a civic-scaled presence to the public-facing open space of the Project. Wind Canopy, as its name suggests, would buffer the strong prevailing winds and create habitable spaces along the Poletti Way Plaza frontage, as well as Arrival and Confluence Plazas.

Wind Canopy would be characterized by a metal paneled soffit to bring in dappled daylight to the outdoor space's underneath, and a sky oculus. In the evening, the soffit is proposed to be illuminated with up-lighting to activate the public realm and provide an iconic and recognizable destination for commuters traversing in the area.

Along Poletti Way, Wind Canopy begins as a minimal projection on the north, and transitions to provide a 13.5 ft overhang along the western 150 ft-long frontage of the vehicular drop-off area at Poletti Way Plaza.

Above Arrival Plaza, Wind Canopy cantilevers 60 ft to the south, to cover approximately 2,250 sq ft of Arrival Plaza. From there, Wind Canopy continues along 170 ft of the East Grand Ave frontage, and wraps inward, into the Confluence Plaza, culminating at the main tower lobby on Level 2. The design and placement serve to draw people up to the raised Confluence Plaza. Arrival Plaza also signifies the primary building entry for tenants of the commercial, research and development office tower. The 14 ft canopy projection would line both edges of the 28,000 sq ft landscaped and furnished Confluence Plaza (180 ft length along the west wing, and 201 ft length along the east wing) to provide areas of shelter and support the functions and programs that open onto the plaza. These covered areas would provide shade and protection for cafe seating and outdoor meeting areas flanking the conference center pre-function and fitness amenities. From Confluence Plaza, the canopy continues around the east side of the building to provide a modest five ft projection that faces the East Access Plaza.

Arrival Plaza, the southwest entrance to the building, is proposed 200 ft from access to South San Francisco Caltrain Station. The Project proposes to be a 'transportation hub' and as such is designed to provide multi-modal commute options and services.

The cantilevered Wind Canopy forms a triangular shape, approximately 2,250 sq ft, over Arrival Plaza providing a sheltered and grand entrance to the building. Task oriented and directional accent lighting would highlight the area. The form and lighting of Arrival Plaza and Wind Canopy would provide a visual landmark inviting the community into the East of 101 area, acting as the nexus of the surrounding mode-shift options.

Arrival Plaza would dedicate a 5,178 sq ft area for pedestrians and bicyclists to arrive and depart the site, enter the building or continue to other locations in the East of 101 area. Arrival Plaza fans into a 60 ft wide arc at the intersection of the Poletti Way crosswalk thus providing a wider and unobstructed disbursement area for commuters. Arrival Plaza is proposed to be 'bracketed' by the landscaping proposed in Poletti Way and Confluence Plazas.

Poletti Way Plaza, connected to and north of the Arrival Plaza, would be the busiest area of the site with respect to motorized commuter travel. A rideshare pick up and drop off lane is shown to commence near the intersection of Poletti Way and East Grand Avenue and continue northward 150 ft on the

eastern side of Poletti Way. The rideshare lane compliments the commuter bus lane constructed by Caltrain on the western side of Poletti Way. Access to the parking structure is located off Poletti Way.

Poletti Way Plaza would include a 30 ft wide and 165 ft long sidewalk creating a 5,105 sq ft circulation area protected under Wind Canopy. Retail access is provided along this frontage. Short-term bicycle parking, landscaping and seating areas are also proposed.

Poletti Way Plaza would to be landscaped with raised planters creating a strong planted edge on this active west side of the building. The planters would be divided to provide an area for smaller multi-stemmed species trees; Arbutus marina or Olea europaea 'Swan Hill' or 'Wilsonii'. Eleven 36-inch box trees are proposed. Both species would reach a maximum height and width of 10-15 ft and be sculptural in form. Placed in raised planters below the trees, ornamental grasses are proposed to add texture and diversity to the landscape. Biotreatment gardens are proposed in the eastern portion of the planters and would be planted with Chondropetalum tectorum and Deschampsia cespitosa; both are drought and flood tolerant species suited for stormwater treatment.

Confluence Plaza takes advantage of the L-shaped building design to create a 28,000 sq ft landscaped outdoor gathering and seating area that is wind protected. A wind study was conducted to identify and address site conditions. Most open street level locations are rated between "Pedestrian Standing" (13 miles per hour (mph)) and "Business Walking" (18 mph) with sheltered locations between buildings rated mainly "Pedestrian Sitting Only" (nine mph). Small areas would be well sheltered in the apex of the buildings and be rated "Outdoor Dining" (five mph) (Design Review Board presentation, 2.15.22 pps 70, 71).

Interior access to the Confluence Plaza would be provided off Level 2. Exterior access to Confluence Plaza is provided by a series of accessible scissor pathways (approximately 300 ft in length) to and from East Grand Avenue. The area leading to Confluence Plaza is referred as 'Confluence Terraces'. Confluence Terraces are proposed to be flanked with landscaping, lighting and informal seating areas. Glass wind guards and guardrails and moveable and stationary seating and tables are proposed. Moveable furnishings were proposed in response to the Design Review Board (DRB) suggestion of including some non-stationary furnishing for event planning. Confluence Plaza is designed to allow events to spill both into and out of the 5,025 sq ft pre-function space programmed on Level 2.

Proposed outdoor areas are designed to accommodate both reflective and interactive gathering spaces, accommodating one or a group of individuals. The transparent glazing on Levels 1 and 2 of Confluence Plaza would provide an interaction between interior and exterior areas. There are four entry points to the building within Confluence Plaza. Public art is proposed and currently programmed for a sculpture, and a mural. Lighting and textured surface and paving treatments are also proposed. The bicycle and pedestrian trail traverses along this frontage to the Grand and East Grand Avenue intersection. The Project Sponsor proposes to maintain the facility.

Confluence Plaza and Terraces is intended as a public garden. Raised planters in Confluence Plaza would be planted with drought tolerant ornamental grasses such as Bouteloua gracilis 'Blonde Ambition,' Lomandra longifolia 'Arctic Frost,' and Muhlenbergia capillaris 'White Cloud'. Shrub, perennial, and succulent species would provide flowers and seasonal interest, and include Anigazanthos sp., Hesperaloe parviflora, Agastache barberi 'Kudo's Gold', and Euphorbia characias 'Tasmanian Tiger' or other similar Mediterranean flowering plants. Ginkgo biloba 'Autumn Gold,' a columnar tree species or similar such as Nyssa sylvatica, is proposed to edge the terraces and plaza. This planting selection would provide shade in the summer, vibrant yellow fall foliage and habitat for aerial species. The design includes fourteen 36-inch box Gingko trees, which reach a height of 35-40 ft and a width of 15-20 ft at maturity.

Along East Grand Avenue Quercus franietto are proposed to line the street and shade the pedestrian walkway and raised bike path. Alternative species considered are Nyssa sylvatica, Lophostemon confertus, Koelreuteria paniculate, Cedrus deodara, or Olea Europaea 'Swan Hill' or 'Wilsonii'. The proposed range of planting options is in response to the need to navigate variables along the street due to unforeseen conditions with utilities, unidentified clearance requirements by emergency and maintenance vehicles, water allowance calculations as required by the Model Water Efficiency Landscape Ordinance (MWELO), and availability of species at the nursery at time of planting. The design includes thirteen 36-inch box Quercus which reach a height of 40-50 ft and a width of 20-25 ft at maturity. Lomandra longifolia 'Breeze' are proposed to be planted between the street trees in a continuous planter that separates the pedestrian walk from the bike lane.

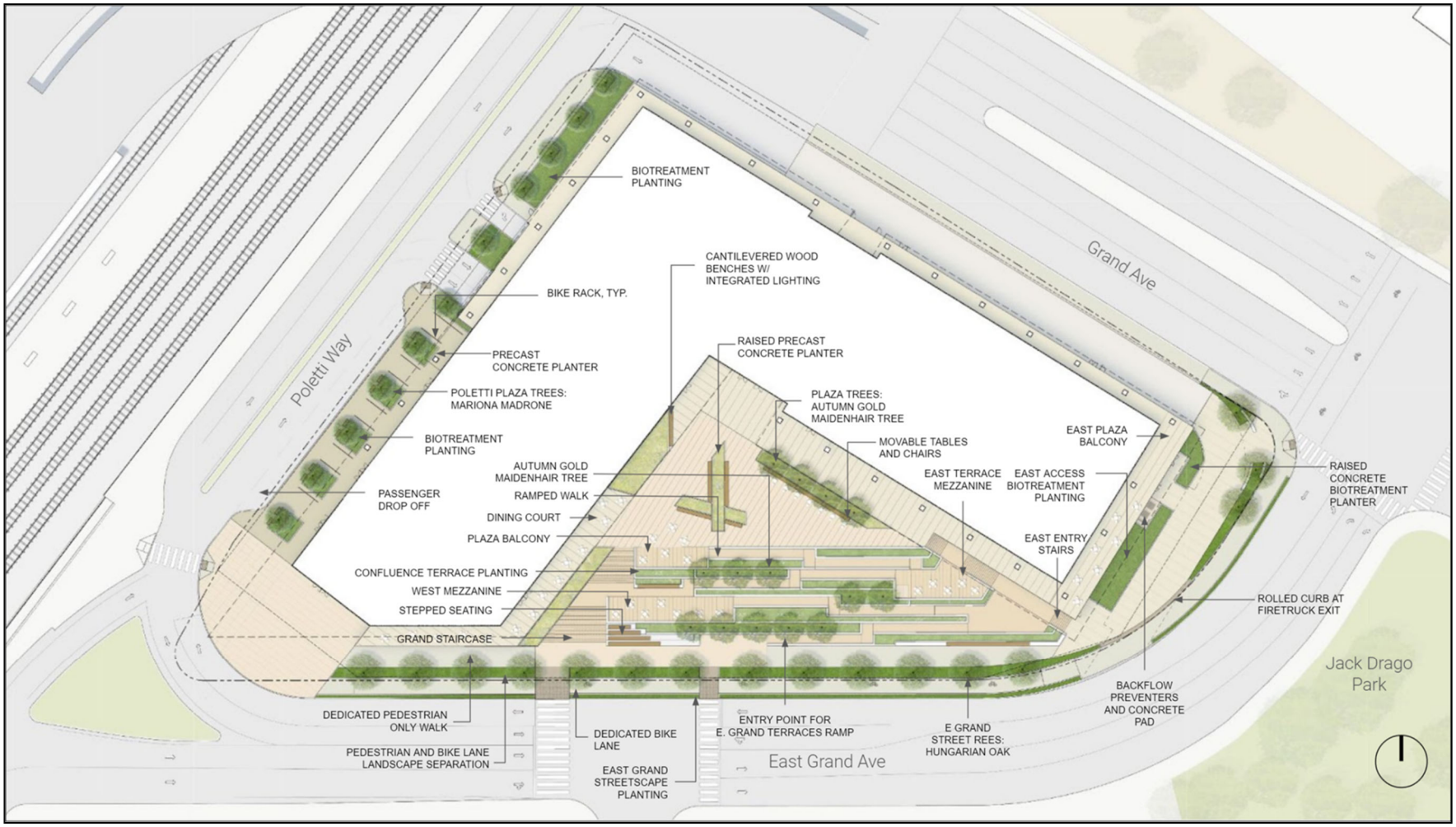
East Access Plaza, located at the intersection of East Grand and Grand Avenues, is programmed to be an 8,350 sq ft landscaped bioswale and seating area. East Access Plaza is directly across from Jack Drago Park. The landscaping in this area proposes larger specimen street trees outside the area programmed for emergency access. The larger trees would also serve to visually connect with Jack Drago Park: providing a green belt on both sides of East Grand Avenue. Public art is proposed on the façade of the building adjacent to the glazing that would encompass the fitness center. Options being considered are a mural or a sculptured wall.

Cedrus deodara are proposed to mark the East Access Plaza entrance at Grand Avenue. The three Deodar Cedars would reach a height of 40 ft in windy urban conditions. Street trees along the Project and street interface are proposed to be larger specimen as heights would not be restricted here. A biotreatment planting area would be located on the western façade of the building, in part screening above ground utilities. The biotreatment garden would include flood tolerant species that would grow three ft tall, such as Chondopetalum tectorum and Cornus serecia.

In summary, the landscape architect notes (letter dated March 9, 2022 Mantle Landscape Architecture to Knapp Consulting):

> "The planting palette selected for the 121 E Grand project includes species that are hardy and adapted to the current South San Francisco climate and will continue to thrive as the climate changes. Given the site's windy environment, all selected species are hardy in wind and all trees shall be anchored with a rootball-fixing system to support them as they establish their root systems. The site planting will [be] irrigated using a Netafim system to conserve water and all trees will have two bubblers. A weather-based controller will serve all irrigation on the site. Biotreatment gardens will treat and manage for stormwater."

[Remainder Intentionally Blank]



PROJECT DESCRIPTION FIGURE 6
PROPOSED LANDSCAPE PLAN

GRADING, RETAINING WALL REINFORCEMENT, LOT MERGER EASEMENTS, UTILITY RELOCATION, TREE REMOVAL AND CONSTRUCTION SCHEDULE

Grading and Retaining Wall Replacement: For purposes of CEQA review it is assumed the entire site would be graded and all vegetation removed to provide for subterranean parking, structure support and utility relocation. The Project proposes to reinforce the existing retaining wall adjacent to the site's northeast property line abutting the Grand Avenue Overpass. The retaining wall would have a variable height from two to 30 ft that would correspond with the elevation slope change of the Grand Avenue Overpass sidewalk.

The preliminary grading plan indicates 175,000 cubic yards of cut to a depth of 40.67 (41 ft) below existing grade would be required to construct the Project, including improvements to the Grand Avenue Overpass. The calculation assumed a three-level below grade structure, which has been revised to two levels below grade: ergo representing a reasonable worst-case scenario. Little or no fill would be required (BKF Engineers, undated grading plan C1.0 "BKF Grading Plan"). The grading plan would be reviewed by the City's Engineering and Building Divisions prior to issuance of grading permits.

The new reinforced concrete retaining wall would be constructed and tied back into the earth beneath the Grand Avenue Overpass with regularly spaced tiebacks for stability. (Michael Leung, SOM in concert with MKA International Construction Consultants and Engineers, email to Knapp Consulting April 29, 2022).

Lot Merger, Easements and Utility Relocation: The three parcels that make up the entire Project site would be merged into one. This action requires a parcel map approval process.

Easements are required to construct Project and area wide improvements. General locations of easement areas are shown on **Project Description Figure 7 Easements** and described below.

- **Retaining Wall for Grand Avenue Overpass**: An easement would be required to allow the Project Sponsor to improve the Grand Avenue Overpass by partially removing the earthen berm supporting the facility and replacing it with a concrete reinforced retaining wall with tie backs. The design depth of the tie backs and depth of grading will inform the parameters of the easement. A tieback easement underneath the overpass measuring approximately 50 ft deep would be needed along the entire length to allow for the construction of the retaining wall and tiebacks. The required depth of the tiebacks roughly correlates with the height of the wall and would be finalized following a detailed structural and geotechnical assessment

- **Construction, Use and Maintenance of the Bicycle/Pedestrian Facility**: The Project Sponsor may construct the 30 ft wide pedestrian/bicycle facility. An easement is required to allow public access on private and public property. Should the City construct the facility an access easement would also be required to work on private property.

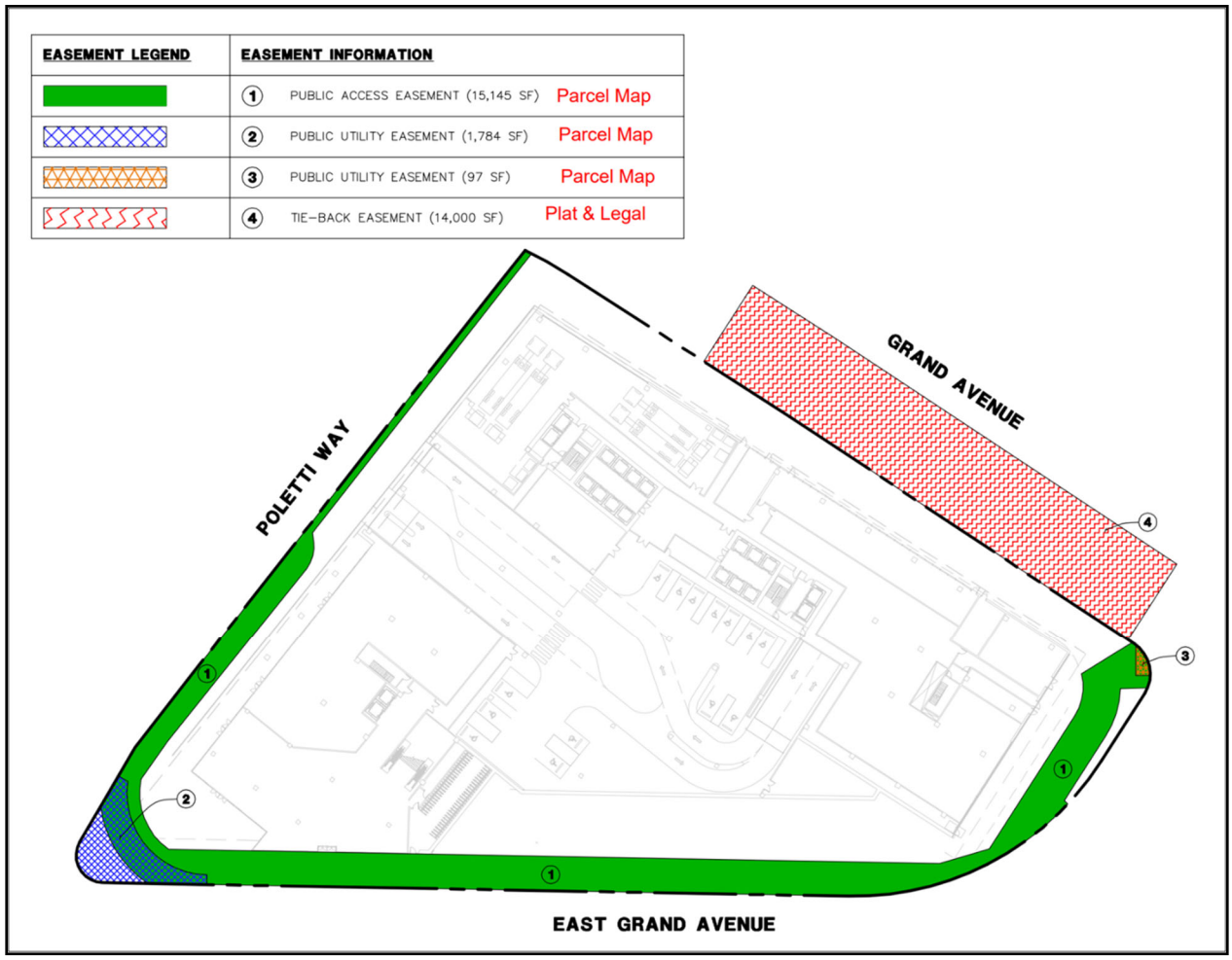
- **Maintenance Access for Traffic Light**: The City would require access to existing traffic infrastructure supporting traffic signals at two locations on the Project site. Access would be required at the northeast corner of the Grand and East Grand Avenue Intersection and the other would be at the southwest corner of Poletti Way and East Grand Avenue.

- **Utility Relocation:** The existing 60-inch storm drain and 14-inch domestic water line would be relocated from the Project site to the street. The relocation would be approximately parallel to and 45 ft south from the existing location. Domestic water and irrigation water connections are shown to be relocated to the street approximately 100 ft from the corner of Grand and East

Grand Avenues. The existing easement for these utilities within the Project site would be quit claimed through the required mapping process.

- **Shipping and Receiving Truck Turnaround Area:** Currently a parking area exists adjacent to the northwestern property line of the Project, underneath the Grand Avenue Overpass. The Project Sponsor has a recorded easement for use of the area. The area would provide maneuvering area for large delivery trucks. The site plan, described above, purposely separated commercial parking (smaller vehicles) from shipping and receiving, utility maintenance, refuse and recycling pick-up, etc.

Various City permits are required for grading, hauling, encroachment and public improvement (see Section 2.4), prior to commencing work. These permits require various measures to protect public and worker safety, and supervision and inspections of the work being conducted.



PROJECT DESCRIPTION FIGURE 7
APPROXIMATE LOCATION OF EASEMENTS

Tree Removal: Bushes, shrubs and trees are on the Project site. A tree removal plan was prepared for the Project. 69 trees representing ten species are located on the site. 49 (or 71%) of the trees are in poor condition, 17 (or 25%) are in fair condition, a coast redwood and white alder are in good condition and one white alder is dead (Tree Inventory Report, HortScience/Bartlett Construction, May 5, 2021) ('Tree Inventory, 2021').

Construction Schedule: WEBCOR has provided a conceptual Project schedule. Overall construction is estimated to require approximately five years. Site preparation is anticipated to commence in December 2023 and completion and issuance of occupancy permits in November 2028.

PROJECT DESCRIPTION TABLE 1
PROJECT CONSTRUCTION SCHEDULE

Task Name	Start Date	Completion Date
Hotel Shutdown	12/19/2023	12/25/2023
Site Setup	12/26/2023	2/19/2024
Demolition	1/23/2024	4/1/2024
Utility Relocation	2/27/2024	4/8/2024
Below Grade and Concrete Podium	4/9/2024	1/12/2026
Above Grade Building	1/13/2026	11/29/2028
Site Work	4/5/2028	9/19/2028

Source: WEBCOR, P3RE, 2022

GENERATORS AND BOILERS AND WATER ASSESSMENT STUDY

Generators and Boilers: The Project Sponsor may propose an all-electric building. However, the analysis for the CEQA document, as identified above, will evaluate a combination of electricity and gas. For either scenario the Project would require back up power. Four 2,000 kilowatt standby generators, a total of 8,000 kilowatts, are proposed by the Project. The generators would have Tier 4 emissions controls per Bay Area Air Quality Management District (BAAQMD). The building would be programmed for eight 5-Million British thermal units per hour gas-fired condensing boilers for a total of 40 Million British thermal units per hour of total heating for HVAC.

Water Assessment Study: A water assessment study was prepared for the Project (Water Supply Assessment for 121 East Grand Avenue Project, South San Francisco District California Water Service, eki environment & water, draft May 2022 [WSA]). The WSA concluded that, through the (1) development of supplemental water supplies and/or (2) implementation of conservation or demand management measures equal to the Project's estimated net new demands consistent with the Cal Water's Water Neutral Development Policy, the proposed Project will not affect water supply reliability within the South San Francisco District. Based on currently available information and conservative estimates of projected demand, Cal Water expects to be able to meet all future demands within its existing South San Francisco District service area (as well as the Mid-Peninsula and Bear Gulch Districts), inclusive of the proposed Project in normal hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the South San Francisco District Water Shortage Contingency Plan (WSCP). In addition, as described herein and in Cal Water's 2020 UWMP, BAWSCA, Cal Water, and SFPUC are pursuing the development of additional water supplies to improve the RWS and South San Francisco District supply reliability (WSA, eki, p 5).

PROJECT DESCRIPTION TABLE 2
PROJECT CHARACTERISTICS

Condition/Project Feature/Element	Metric
Site Characteristics	
Size	126,849 sq ft (2.9 acre)
Elevation	15 to 20 ft above mean sea level
FEMA Flood Zone	X (outside the 100- and 500-year flood zone)
Depth to Groundwater (below existing grade)	4.5 to 8.0 ft rainy year/8.5 to 16 ft dry year
Proposed Project	
Building Size/FAR	943,965 sq ft/ 7.44 FAR
Uses	
R&D/Office	836,865 sq ft
Community Amenities	107,100 sq ft
Landscaped Public Plazas	41,528 sq ft
Bicycle Parking	250 spaces
Vehicle Parking	255,407 sq ft
Loading/Storage & Support	4,600 sq ft/30,649 sq ft
Height	294' top of screening/262' to top of roof
Site Coverage	69.3%/87.849 sq ft
Cut/Depth/Fill	175,000 cubic feet/41 ft/0
Generators	4 (2,000 kilowatt each) 8,000 kWh total
Boilers	8 (5 million British Thermal Units/hr i.e., 40 million BTU/hr)

REPORTS PREPARED AND MITIGATIONS PROPOSED AS PART OF THE PROJECT

The Project Sponsor met with City staff and consultants during the application submittal and review process. As part of the process, reports were prepared by consultants at the direction of the City that identify measures that shall be incorporated into the Project should the Project be approved. Some existing reports also contain measures that were identified and incorporated into the Project design.

STUDIES AND PLANS

Biology

- Tree Inventory Report, HortScience/Bartlett Construction, May 5, 2021.

Circulation and Mobility

- South San Francisco Caltrain Station Eastern Access Study prepared for South San Francisco, Caltrain, Phase 3 Real Estate Partners. Fehr & Peers and Mark Thomas, October 2021 (Access Study).
- Mobility 2020 East of 101 Transportation Plan Mobility Prepared for the City of South San Francisco. Fehr & Peers, 2019 (Mobility 2020).

Cultural Resources

- Cultural Resource Services-In Support of 121 E. Grand Avenue, South San Francisco, San Mateo County Basin Research. Colin Busby, Ph.D, RPA, Principal, February 21, 2022.
- Archaeological Resources Study of 121 East Grand Avenue, South San Francisco, Leann Taagepera, Cultural and Historic Resource Planning, Principal, June 24, 2021.

Geotechnical

- Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Ave. SSF, CA, Geocon Consultants, Inc., March and April 2021.
- Response to Peer Review Comments Proposed Mixed-Use Development 121 East Grand Ave. SSF, CA, Geocon Consultants, Inc., April 2021.
- Seismic Risk Assessment SF Bay Development 121 East Grand Avenue, South San Francisco, CA, Project # 20-281457.2, June 8, 2020.
- Basis of Design 121 East Grand Avenue South San Francisco, CA, Magnusson Klemenic Associates, Structural Engineers, March 3, 2022.

Hazards

- Draft Phase I Environmental Site Assessment for 121 East Grand Avenue South San Francisco California 94080, Project Number WR3122, Apri1 20, 2022.
- Determination of No Significant Hazard to Air Navigation, Federal Aviation Administration, Aeronautical Study No. 2021-AQP 7644-OF, September 9, 2021. The project sponsor will:
    1. The structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4, 5 (Red) and 15.
    2. Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.
    3. An FAA Form 7460-2, Notice of Actual Construction or Alteration is required to be e-filed within five days after the construction reaches its greatest height (7460-2, Part 2).

Water

- 121 East Grand Avenue South San Francisco-Water Demand Memorandum, Job # 20201781, Lokelani Yee, BKF Project Manager, April 25, 2022.
- Water Supply Assessment for 121 East Grand Avenue Project, South San Francisco District California Water Service, eki environment & water, draft May 2022.

SUSTAINABILITY MEASURES PROPOSED BY THE PROJECT

The Project Sponsor proposes sustainable design measures throughout the Project and to incorporate the measure identified in **Chapter 3 Initial Study Checklist** (Michael Gerrity, President Phase 3 Real Estate, letter to Billy Gross and Allison Knapp dated May 26, 2022, see **Appendix A**).

CLIMATE ACTION PLAN (DRAFT 2022)

The 121 East Grand Project proposes to integrate sustainable design throughout the building to the extent that measures are technically and economically feasible. The approach will support the City of South San Francisco's 2022 Climate Action Plan and the specific goals set forth in the plan. The general design approaches and strategies will include a wide variety of energy reduction, water conservation and renewable energy solutions.

The Project has committed to an All-Electric Design for long term reduction of greenhouse gas emissions and the future ability to operate on 100% renewable energy provided by energy company partnerships. In response to State Senate Bill 100 and the mandated decarbonization of the California electrical grid by 2045, the development will prioritize use of all-electric sources of energy. Common areas where natural gas have been traditionally used include HVAC, domestic hot water, cooking, and process uses (e.g., laboratory, R&D). In most, if not all, of these examples, cost effective and practical all-electric alternatives exist and will be prioritized for this development. Where there are technical impediments for all-electric design approaches or they are substantially more costly, life cycle cost analyses will be performed alongside assessment of relative energy / carbon performance to inform design decisions. This design decision is in alignment with SSF 2022 Climate Action Plan Goals CP-1 and CP-2.

The following items will also be considered to improve resiliency and reduce reliance on fossil fuels in accordance with the **SSF Climate Action Plan Goals – CP-2:**

- Review opportunities for installation of on-site renewable energy (e.g., PV, solar thermal).
- Plan locations for future energy storage batteries to reduce peak loads and support grid harmonization.
- Prioritization of all-electric energy sources.
- Installation of electric vehicle charging stations.
- Reduce heat island effect of developments through use of high-albedo surfaces and / or similar technologies.
- Evaluation the purchase of off-site renewable energy to offset at least 50% of building energy use as calculated by building's Title 24 modeled energy consumption.
- Building will be wired to be solar-ready.

The following items will be considered to reduce the overall building energy use in accordance with **the 2022 SSF Climate Action Plan Goals – CP-3-1**:

- Optimization of building envelopes to balance building energy uses (e.g., artificial lighting, heating, cooling, fans) while also providing healthy, productive spaces for building occupants (e.g. daylight, views, thermal comfort). This reduces the building's energy use in alignment with CP-3-1 as well as creating better working environments and improving the well-being and overall productivity of the businesses.
- Use of passive design strategies to minimize reliance on active heating and cooling systems.
- Selection of energy efficient HVAC system approaches and equipment.

- Balance of ventilation and indoor air quality outcomes alongside energy efficiency considerations.

The following items will be considered to reduce the overall building water use in accordance with the **SSF 2022 Climate Action Plan Goals – CP-8:**

- Use of efficient water consuming devices (e.g. plumbing fixtures, appliances, cooling equipment) to minimize demand for water and manage energy consumption of domestic hot water systems.
- Prioritize water efficient landscaping practices.
- Review opportunities to reuse water on-site (e.g. stormwater or greywater reuse) to minimize water consumption and manage site outflows.
- Undertake the following water efficiency measures as outlined by the CAP:
    - Establishing a variable-speed pump exchange for water features.
    - Restricting hours of irrigation to occur between 3:00 a.m. and two hours after sunrise.
    - Installing irrigation controllers with rain sensors.
    - Landscaping with native, water-efficient plants.
    - Installing drip irrigation systems.
    - Reducing impervious surfaces.

The 121 East Grand Project proposes to integrate sustainable design throughout the design of the building. The Project Sponsor's goal is to reach a LEED Gold level of classification. General design approaches and strategies or a reasonable facsimile thereto include:

- Optimization of building envelopes to balance building energy uses (e.g. artificial lighting, heating, cooling, fans) while also providing healthy, productive spaces for building occupants (e.g. daylight, views, thermal comfort).
- Use of passive design strategies to minimize reliance on active heating and cooling systems.
- Selection of energy efficient HVAC system approaches and equipment.
- Balance of ventilation and indoor air quality outcomes alongside energy efficiency considerations.
- Use of efficient water consuming devices (e.g. plumbing fixtures, appliances, cooling equipment) to minimize demand for water and manage energy consumption of domestic hot water systems.
- Prioritize the use of water efficient landscaping practices.
- Review opportunities to reuse water on-site (e.g. stormwater or greywater reuse) to minimize water consumption and manage site outflows.
- Review opportunities for installation of on-site renewable energy (e.g. PV, solar thermal)
- Prioritization of all-electric energy sources (see further discussion below).

The Project Sponsor is knowledgeable of and will comply with the City of South San Francisco's Climate Action Plan (CAP). A summary of the design responses mostly likely to comply with the CAP for the Project is listed below:

- Install conduit to enable installation of electric vehicle charging stations
- Reduce heat island effect of developments through use of high-albedo surfaces and / or similar technologies
- Purchase off-site renewable energy to offset at least 50% of building energy use as calculated by building's Title 24 modeled energy consumption
- Building will be wired to be solar-ready
- Undertake the following water efficiency measures as outlined by the CAP:
    i. Establishing a variable-speed pump exchange for water features.
    ii. Restricting hours of irrigation to occur between 3:00 a.m. and two hours after sunrise.
    iii. Installing irrigation controllers with rain sensors.
    iv. Landscaping with native, water-efficient plants.
    v. Installing drip irrigation systems.
    vi. Reducing impervious surfaces.

MITIGATION MEASURES

The following mitigation measures are agreed to and proposed by the Project Sponsor and identified in **Chapter 3 Initial Study.**

Bio 1.A.1: Tree Removal Within Nesting Season (approximately March 1 to August 31). No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the following protocol is met.

The Project Sponsor, or designated representative shall retain a licensed biologist to conduct a preconstruction survey for protected birds on the site and in the immediate vicinity if any Project construction activities occur during nesting season. The survey shallbe done no more than 15 days prior to the initiation of tree removal and grading and other construction activities. In the event that nesting birds are found on the Project site or in the immediate vicinity, Project Sponsor, or designated representative shallnotify the City, locate and map the nest site(s) within three (3) days, submit a report to the City and the California Department of Fish and Wildlife ("CDFW"), establish a no-disturbance buffer of 250-ft, and conduct on-going weekly surveys to ensure the no-disturbance buffer is maintained. In the event of destruction of a nest with eggs, or if a juvenile or adult raptor should become stranded from the nest, injured or killed, the qualified biologist shall immediately notify the CDFW. The licensed biologist shall coordinate with the CDFW to have the injured bird either transferred to a raptor recovery center or, in the case of mortality, transfer it to the CDFW within 48 hours of notification.

A tree permit per South San Francisco Municipal Code Section 13.30.030 (Tree Preservation Ordinance), shall be required prior to removal of a Protected Tree, defined in section 13.30.020 as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representativ shall contact the Parks Division to determine if a removal permit is needed. The Project

Sponsor, or designated representative shall obtain City issued tree removal permits prior to commencing any tree removal activities; **or**,

Bio 1.B.1: Tree Removal Outside Nesting Season (approximately September 1 to February 28). No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the following protocol is met.

Tree removal outside of nesting season would preclude the need for the measures identified in 1.A.1, above. A tree permit shall be required per South San Francisco Municipal Code Section 13.30.030 (Tree Preservation Ordinance)prior to removal of a Protected Tree, defined in section 13.30.020 as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representative shall contact the Parks Division to determine if a removal permit is needed. The Project Sponsor, or designated representative shall obtain City issued tree removal permits prior to commencing any tree removal activities.

The Project would have a less than significant impact on biological resources with regard to native wildlife movement opportunities or nursery sites because the Project Sponsor would either remove trees outside of nesting season or follow the established protocol and mitigation measure during nesting season.

Archaeology Impact 1: There is a remote possibility that culturally significant soils, those containing artifacts or remains, could be located in subsurface areas of the site. Disturbance of these soils could result in a significant impact.

Archaeology Mitigation 1

Arch 1.A.1a: Employee Training and Awareness. Prior to the start of ground disturbing grading, demolition or construction, the Project Sponsor/designated representative shall ensure that a *Worker Awareness Environmental Training* (WAET) is conducted by a licensed archaeologist (Archaeologist) in the state of California. Training shall be scheduled in consultation with the Project Sponsor/designated representative, construction manager and other key site personnel, and the City of South San Francisco. WAET training shall be required for all personnel participating in ground disturbing construction to alert them to the archaeological sensitivity of the Project area and provide protocols to follow in the event of a discovery of archaeological materials. The Project Sponsor/designated representative shall also ensure the occurrence of the following:

1.A.1.b: Archaeologist shall be on an "on-call" basis to review and identify any potential archaeological discoveries during ground disturbing grading, demolition and excavation operations and work shall stop within 50 feet of the find. Archaeologist shall be contacted for identification, evaluation and further recommendations consistent with California Environmental Quality Act and City of South San Francisco requirements.

1.A.1c: Grading, demolition and any other plans that require soil disturbance shall note that there is a potential for exposing buried cultural resources including prehistoric Native American burials on the site.

1.A.1.d: Archaeologist shall develop and distribute for job site posting an "ALERT SHEET" summarizing potential finds that could be exposed and the protocols to be followed as well as points of contact to alert in the event of a discovery.

Arch 1.B.1: Protocol in the Event of Discovery of Potentially Culturally Significant Soils, Objects or Remains

1.B.1.a: Stop work and contact the on-call archaeologist.

1.B.1.b: Should Archaeologist determine that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource under CEQA, Archaeologist shall notify the appropriate parties of the evaluation and recommend mitigation measures to mitigate to a less-than significant impact in accordance with California Public Resources Code Section 15064.5. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal *Archaeological Monitoring Plan* (AMP) and/or *Archaeological Treatment Plan* (ATP) that may include data recovery may be recommended by the Professional Archaeologist if significant archaeological deposits are exposed during ground disturbing construction. Development and implementation of the AMP and ATP and treatment of significant cultural resources will be determined by the project proponent in consultation with any regulatory agencies.

The treatment of human remains, and any associated or unassociated funerary objects discovered during any soil-disturbing activity within the Project site shall follow the requirements of section 5097.99 of the Public Resources Code). This shall include immediate notification of the appropriate county Coroner/Medical Examiner, Project Sponsor and the City of South San Francisco.

1.B.1c: *A Monitoring Closure Report* shall be filed with the Applicant/Project Sponsor/designated representative and the City at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken

Geology and Soils Mitigation 1: An updated geotechnical report(s) shall be provided to the City for peer review prior to any issuance of building, grading, grubbing or tree removal permits. The updated report(s) shall address the revised Project description and include all design measures requisite to be compliant with the California Building Code. The updated report(s) shall include at a minimum, structural design and construction specifications, including but not limited to, undergrounding of utilities addressing any construction requirements for potentially and/or corrosive soils, grading, site stabilization, drainage, utility and infrastructure design and placement, foundation design, retaining wall specifications, and soil compaction requirements and design. The report(s) shall be peer reviewed by the City's consultant and revised accordingly until determined complete by the City.

DSASP Mitigation Measure 4.6-1: HVAC Mechanical Equipment Shielding. Prior to the approval of building permits for non-residential development, the applicant shall submit a design plan for the project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for a designated receiving land use category as specified in Noise Ordinance Section 8.32.030. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical barriers.

DSASP Mitigation Measure 4.6-2: Site-Specific Acoustic Analysis – Nonresidential Development. Prior to the approval of building permits for new non-residential land uses where exterior noise level exceeds 70 dBA CNEL, an acoustic analysis shall be performed to determine appropriate noise reduction measures such that exterior noise levels shall be reduced below 70 dBA CNEL, unless a higher noise compatibility threshold (up to 75 dBA CNEL) has been determined

appropriate by the City of South San Francisco. The analysis shall detail the measures that will be implemented to ensure exterior noise levels are compatible with the proposed use. Measures that may be implemented to ensure appropriate noise levels include, but are not limited to, setbacks to separate the proposed nonresidential structure from the adjacent roadway, or construction of noise barriers on site.

DSASP Mitigation Measure 4.6-4: Construction Vibration. For all construction activities within the study area, the construction contractor shall implement the following measures during construction:

a) The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.

b) Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c) Trucks shall be prohibited from idling along streets serving the construction site.

DSASP Mitigation Measure 4.6-5: Rail Line Groundborne Vibration. Implement the current FTA and Federal Railroad Administration (FRA) guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains. Specifically, Category 1 uses (vibration-sensitive equipment) within 300 feet from the rail line, Category 2 uses (residences and buildings where people normally sleep) within 200 feet, and Category 3 uses (institutional land uses) within 155 feet of the rail line shall require a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines prior to obtaining a building permit. Vibration control measures deemed appropriate by the site-specific groundborne vibration analysis to meet 65 VdB, 72 VdB, and 75 VdB respectively for Category 1, Category 2, and Category 3 uses, shall be implemented by the project applicant and approved by the City prior to receiving a building permit.

Utility and Service Systems Mitigation Measure 1: The Project Sponsor shall implement Cal Water's net neutral policy by either (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy.

PROJECT SPONSOR OBJECTIVES

The Project Sponsor has indicated the following objectives for the realization of the Project.

- Design and build an iconic building that honors South San Francisco as the birthplace of Biotechnology.
- Connect and celebrate the East and West areas of the City and the Caltrain Station.
- Provide a community gathering space with vibrant indoor and outdoor areas that are safe, comfortable, lighted, usable, landscaped with the environment in the forefront of design and punctuated with world class art.
- Create an ecosystem that supports scientists in their discovery of the life changing technologies of the future.
- Be a good partner and neighbor to the City of South San Francisco.

2.3 GENERAL PLAN AND ZONING

GENERAL PLAN DESIGNATION

The Project site is within the Gateway Planning Sub Area (Figure 2-6, Planning Sub Area p 2-26 and Figure 2-7 Specific, Area and Redevelopment Plans, p 2-37) identified in the South San Francisco General Plan ('1999 SSF GP'). The Gateway Plan area harkens to a redevelopment plan promulgated in the 1980's and is superseded by both state law and the City's adoption of the Downtown Station Area Specific Plan (February 2015) and amended in February 2018 ("DSASP").

DOWNTOWN STATION AREA SPECIFIC PLAN (DSASP)

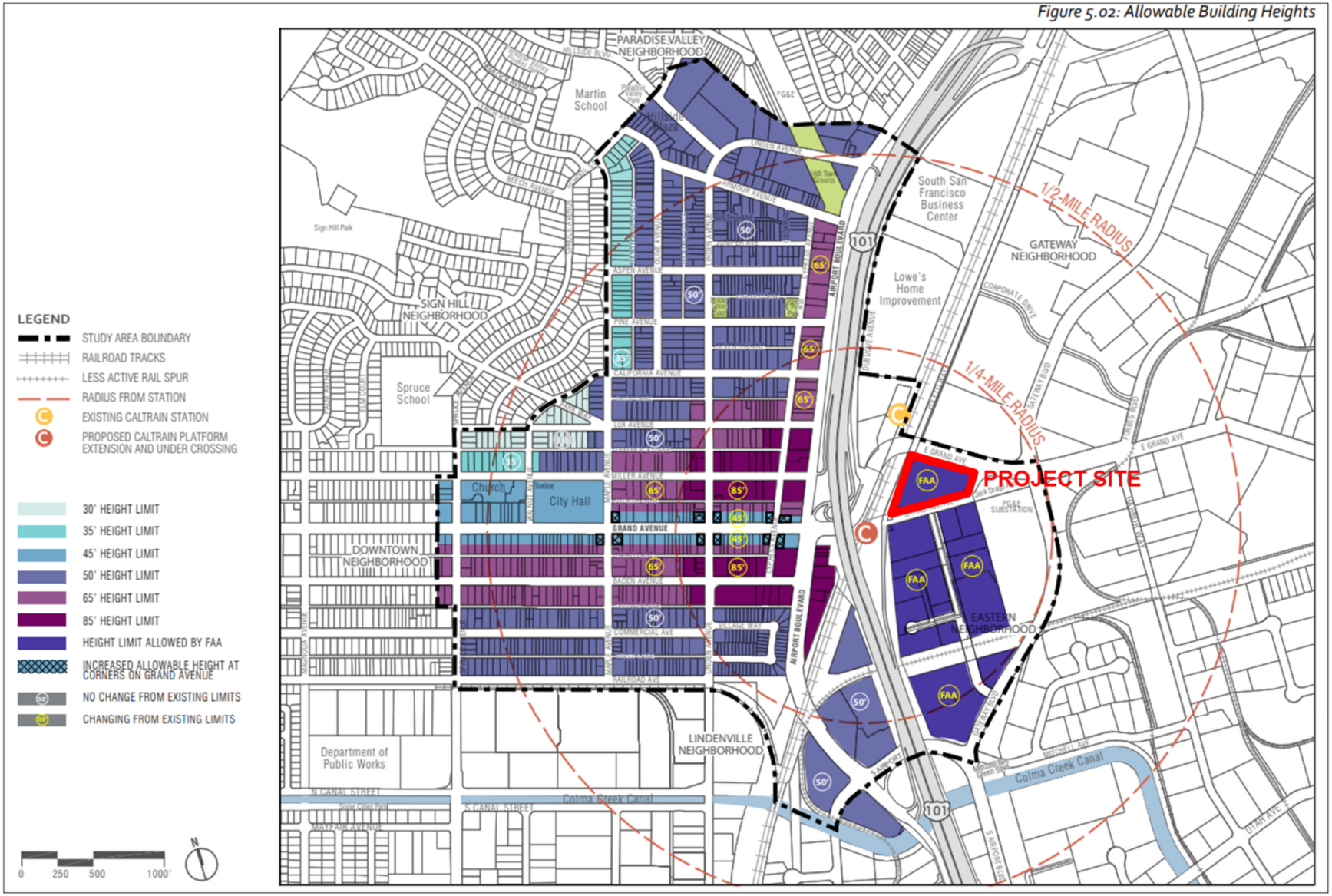
The DSASP is an important tool in implementing the City's goals to: (1) provide more opportunities for safe and convenient alternatives to commuting in cars (i.e., mode shift); (2) increase land use densities around the South San Francisco Caltrain station thereby making mode shift options more convenient in response to Assembly Bill 32 (AB 32) and Senate Bill 375 (SB 375) to reduce Greenhouse Gas Emissions and global warming.

The DSASP was built upon concept drawings the City prepared in 1998 to relocate the Caltrain station to align with East Grand and Grand Avenues. The relocation provided a pedestrian link between the east and west portions of the City and a safer and more convenient place to access Caltrain. Adoption of the DSASP also provided the opportunity for various funding partnerships for this capital improvement. Funding participants included voter approved monies from the San Mateo County Measure A and Peninsula Joint Powers Board and City funding (https://caltrain.comassetsSF+Improve. Accessed January 2022).

Implementation of the DSASP resulted in ADA-compliant facilities; a bus and shuttle drop-off area on the west side of Poletti Way; a pedestrian and bicycle underpass to a new platform that connects East Grand Avenue/Poletti Way to Grand Avenue/Airport Boulevard on the west side of US 101. The relocation also enables buses direct access to the east side of the train station, opening the opportunity for SamTrans bus expansion to the East of 101. The relocation also serves to increase and streamline employer-provided and Commute.org shuttles to serve the area. The tunnels will remain open 24 hours a day, year-round.

AB 32 and SB 375 direct local governments to promote and approve sustainable development. These bills define sustainable development as being that which is high density and near major transit routes designed to be safe and convenient to alternatives to driving in cars. Higher density development is clustered in a radius of ¼ to ½ mile from the major transit routes such as Caltrain and Bay Area Rapid Transit. Creating mode shift alternatives and walkable communities with supporting retail and commercial services will reduce commuter reliance on single-occupancy vehicular travel, vehicular miles traveled and greenhouse gas emissions.

The DSASP brings together the City's efforts to identify a long-term and comprehensive effort to find effective solutions to housing, employment, economic development, transportation, and environmental sustainability. The DSASP provides a mechanism to respond, "to state mandates requiring a balance between creating jobs and housing, and to position the City to develop denser, walkable housing opportunities for a new generation of residents" (Downtown Station Area Specific Plan, Staff Report to Planning Commission, December 18, 2014). **Project Description Figure 8 Downtown Station Area Specific Plan** shows the location of the Caltrain station, the boundaries of the DSASP, the Transit Oriented/Research and Development Zoning (TO/RD) and the Project location.



PROJECT DESCRIPTION FIGURE 8
DOWNTOWN STATION AREA SPECIFIC PLAN

SHAPE SOUTH SAN FRANCISCO 2040 GENERAL PLAN UPDATE (DRAFT 2040GP)

The City is undergoing a general plan update and anticipates final adoption in mid- to late-summer of 2022. While the update is city-wide, the substantive changes are proposed in the East of 101, Lindenville and El Camino Real sub-areas. Within the East of 101 Area, the Draft 2040GP would allow higher densities near the Caltrain station (higher than the ones envisioned in the DTSAP), and reduced densities further away. For this specific area, a maximum 8.0 FAR is proposed for development in this transit-oriented core area. The City has allowed applicants to undergo the legislative process to amend planning and zoning standards to realize up to an 8.0 FAR.

A robust community benefits package is a requirement of increased density. The guiding concept is the fiscal benefit of increased density a project sponsor would realize should be shared with the City to offset affects and assist in realizing community goals. To this end, community benefits are a negotiated combination of built benefits and financial contributions.

Built community benefits include but are not limited to the creation of public plazas and open spaces, bicycle and pedestrian trails, creating visual and physical connections between the east and west areas of US 101 and creating 'transit-hubs' where a variety of mobility options are provided. Applicants are encouraged to construct and lease space within their projects for services such as grab and go grocery stores; cafes and restaurants; and personal retail services.

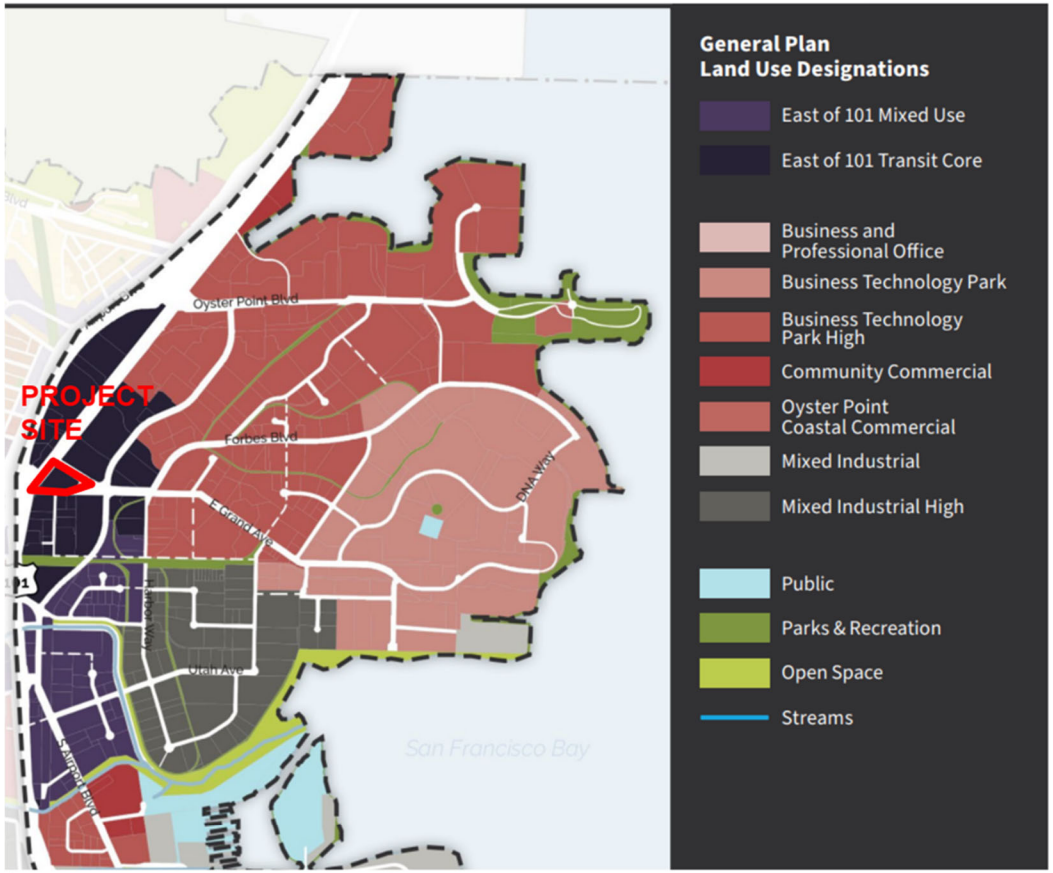
Financial contributions will assist the implementation of City visions contained in a variety of planning and capital improvement projects. City documents such as the Mobility 2020, the Access Study, and the Draft 2040GP identify mobility needs that could be implemented in the East of 101 to improve vehicular, pedestrian and bicyclist safety. These reports identify policies to create open space areas that engage the community as a whole, connect pedestrian and bicycle paths to larger linkages, and repair and/or construct sidewalks. Other considerations include reducing the drive-alone commute modality and optimizing mode-shift methods. Other documents include the City's Capital Improvement Program, Parks and Recreation Master Plan and general plan.

The update as well as the other planning documents referenced herein are available on the City's website (www.ssf.net) and is referred to as SHAPE/SSF 2040 (https://shapessf.com/). The Draft 2040GP (p 9) identifies the East of 101 Transit Core envisioned as:

> Transit-oriented community with a walkable street pattern and a vibrant mix of high-density multifamily and employment uses with supportive retail, services, and amenities (minimum FAR from 2.0 up to 8.0 with community benefits; residential densities range from 120 du/ac to 200 du/ac with community benefits).

[Remainder Intentionally Blank]

EAST OF 101



Vision Statement

East of 101 is a well-connected innovation district with a diverse mix of uses that serves as a model of sustainability, resilience, multimodal mobility, and economic opportunity.

The East of 101 sub-area covers all parts of the city that lie to the east of Highway 101. By far the largest sub-area geographically, it covers over 1,600 acres, is defined by large parcels, and is bordered by the San Francisco Bay. The area primarily contains employment-generating land uses and includes office, life science and other R&D uses, logistics, food processing, manufacturing, and other industrial uses. Most life science uses are located north of East Grand Avenue, with the Genentech campus being the largest corporate campus in East of 101. At the present, South San Francisco is home to over 200 biotech companies, and there is room for continued expansion of these uses, particularly on infill sites and in planned campus environments, such as Oyster Point. South of East Grand Avenue, there are warehousing, logistics, manufacturing, and other industrial land uses that provide a diversity of employment opportunities. As of 2021, no residential zoning exists in this sub-area and there are no housing units or residents, though as part of the General Plan update, there is opportunity to introduce residential uses to East of 101 to create more complete neighborhoods with options for living, working, and recreation.

East of 101 Transit Core	Transit-oriented community with a walkable street pattern and a vibrant mix of high-density multifamily and employment uses with supportive retail, services, and amenities (minimum FAR from 2.0 up to 8.0 with community benefits; maximum residential densities up to 120 du/ac to 200 du/ac)

PROJECT DESCRIPTION FIGURE 9
DRAFT 2040 GENERAL PLAN – EAST OF 101 SUB AREA

ZONING CLASSIFICATION

The implementing DSASP zoning regulations are codified in Chapter 20 Zoning of the South San Francisco Municipal Code and appear in summary form within *Table 20.280.003 Land Use Regulations, Downtown Station Area Specific Plan Sub District*. The Project site is within an area referred to as the Transit Oriented Research and Development Core ("TO/RD"). The purpose of the TO/RD district is:

> **Transit Office / R&D Core (TO/RD).** The Transit Office/R&D Core sub-district is located just east of the Caltrain tracks in an area bounded by East Grand Avenue on the north, Gateway Boulevard on the east, Poletti Way and US 101 on the west, and S. Airport Boulevard on the south. This sub-district is intended to provide a location for the highest intensity office or R&D uses. Suited to headquarters or other office type uses that do not include significant manufacturing, the sub-district offers the opportunity for locating high intensity uses in immediate proximity to the Caltrain Station. In addition, with the relocation of the Caltrain Station and construction of a pedestrian and bicycle rail undercrossing, this subdistrict will provide convenient access to Grand Avenue and the surrounding areas and will support commercial revitalization. (SSF General Plan, p 2-20 as updated by DTSASP, 2015).

The TO/RD District description further notes:

> With the extension of the Caltrain Station and construction of the pedestrian/ bicycle underpass, this area will be well connected to the Downtown, providing an opportunity for a significant number of workers to easily access downtown amenities. Taller buildings are suitable here in conformance with the FAA height limitations. (SSF General Plan, p 2-20 as updated by DTSASP, 2015).

Currently the maximum FAR is 3.5. Approval of the Draft 2040GP would require Chapter 20.280 to be amended to reflect up to an 8.0 FAR in the TO/RD Zoning District.

This environmental document analyzes a 7.44 FAR. The Project size may be reduced through the design and entitlement process. Analyzing a 7.44 FAR will disclose a reasonable worst-case scenario at the earliest stage of the planning process.[1] An addendum to this document may be prepared should the Project be reduced in size and if "only minor technical changes or additions are necessary" and no new impacts or the severity thereto have been identified, Section 15164 CEQA Guidelines (b).

[1] California Code of Regulations, Title 14 Natural Resources, Division 6 Resources Agency, Chapter 3 Guidelines for Implementation of the California Environmental Quality Act ("CEQA"), last amended December 28, 2018. Commonly referred to as "CEQA Guidelines"

2.4 REQUIRED LEGISLATIVE ACTIONS AND ENTITLEMENTS

LEAD AGENCY REQUIREMENTS

LEGISLATIVE ACTIONS CONDUCTED BY CITY COUNCIL

- General Plan Amendment for Floor Area Ratio (FAR) greater than 3.5
- Zoning Ordinance Amendment for FAR greater than 3.5
- Community Benefits Agreement to memorialize community benefits agreement between City and Applicant

DISCRETIONARY ACTIONS CONDUCTED BY PLANNING COMMISSION

- Review and adoption of Mitigated Negative Declaration-CEQA Compliance
- Review of General Plan and Zoning Amendments and recommendation to City Council
- Transportation Demand Management Program-Use Permit to allow a parking reduction in coordination with the TDM Program and to approve an FAR greater than 3.5
- Lot Merger to merge three lots in common ownership that comprise the Project

COMMITTEE AND BOARD REVIEW

- Design Review Board
- Bikeway and Pedestrian Advisory Committee

STAFF MINISTERIAL REVIEW

- Demolition and Building Permits-Building Division
- Grading, Hauling, Encroachment and Public Improvement Permits-Engineering and Building Divisions
- TDM Program-Planning Division
- Utility Relocation-Engineering and Utility Provider

OTHER AGENCY REQUIRED PERMITS/REVIEW

- General Construction Activity Storm Water Permit Notice of Intent and Storm Water Pollution Prevention Plan (SWPPP) as required by State and /or Federal regulations
- Federal Aviation Administration Review for Building Height and Construction Crane
- City and County Association of Governments (C/CAG) Airport Land Use Commission (ALUC) Consistency Finding, TDM Program Review and staff review for Construction Crane
- Potential Bay Area Air Quality Management District (BAAQMD) review and permitting

3

ENVIRONMENTAL CHECKLIST

ENVIRONMENTAL CHECKLIST

The following checklist is consistent with CEQA Guidelines, Appendix G. A "***no impact***" response indicates that the Project would not result in an environmental impact in a particular area of interest, either because the resource is not present, or the Project does not have the potential to cause an effect on the resource. A "***less than significant***" response indicates that, while there may be potential for an environmental impact, the significance of the impact would not exceed established thresholds and/or that there are standard procedures or regulations in place that would apply to the Project and hence no mitigation is required, or that, although there is the potential for a significant impact, feasible mitigation measures are available and have been agreed to and proposed by the Project to reduce the impact to a level of "***less than significant***." A "***potentially significant impact***" response indicates that the Project could exceed established thresholds, no mitigation is currently proposed or identified and therefore the impact will be analyzed in an environmental impact report. A "***less than significant with mitigation***" response indicates that although the impact would be considered significant, measures are identified and required herein that will reduce the impact to less than significant.

Citations for this chapter are contained within the relevant discussion.

I. Aesthetics *Except as provided in Public Resources Code Section 21099, would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

INTRODUCTION

The Project is considered a transit-oriented infill employment center project and as defined is not subject to an aesthetics evaluation notwithstanding potential impacts on cultural or historic resources (Chapter 2.7 'Modernization of Transportation Analysis for Transit Oriented Infill Projects' California Environmental Quality Act, Public Resources Code, Division 13 Environmental Quality Statute, as amended in 2021 (Section 21099)).

An 'infill site" is one that is within an urban area that has been previously developed, or on a vacant site where at least 75 percent of the perimeter of the site adjoins or is separated by only an improved public right-of-way from parcels that are developed with qualified urban uses (Section 21099(a)(4). The Project site is developed and in an urban area.

A qualified urban use is defined as "employment center project" that is located on property zoned for commercial uses with a floor area ratio (FAR) of no less than 0.75 and located within a transit priority area (Section 21099(a)(1)). The Project proposes a 7.44 FAR. The Project site is zoned Transit-Oriented/Research and Development (TO/RD).

A 'transit priority area' is defined as a project within ½ mile of a major transit stop that is either existing or planned to be included within the horizon of a transportation improvement program or applicable regional transportation plan (21099(a)(7)). The Project site is centrally located within the first ¼ mile of the City's transit priority area or 'Priority Development Area'. The City's transit priority area or priority development area was formed in 2015 by adoption of the Downtown Station Area Specific Plan (DSASP). DSASP and the implementing TO/RD zoning district were funded by partnerships with the Association of Bay Area Governments, Metropolitan Transportation Commission, the Peninsula Joint Powers Board and the City of South San Francisco. Additional funding was provided from the approved San Mateo County Measure A ballot initiative. The relocation of the Caltrain station was the nexus of these efforts to streamline train service in San Mateo and San Francisco counties and to increase densities along this corridor to facilitate mode share.

The DSASP is designed to implement many City objectives. The staff report for the DSASP adoption notes, "…the City has pursued a long-term and comprehensive effort to find effective solutions to housing, employment, economic development, transportation, and environmental sustainability … the City must respond to the demand for residential and commercial development near transit routes to reduce vehicular travel and greenhouse gas emissions from daily driving…" (Downtown Station Area Specific Plan, Staff Report to Planning Commission, December 18, 2014).

In conclusion, pursuant to Section 21099(d)(1), "aesthetic and parking impacts of a residential, mixed-use residential, or employment center project on an infill site within a transit priority area shall not be considered impacts on the environment."

The following section does include an analysis of aesthetics and found all impacts would be less than significant, or no impact. The analysis is included as it serves to describe, at the earliest juncture possible, the proposed project and impacts thereto (California Code of Regulations, Title 14 Natural Resources, Division 6 Resources Agency, Chapter 3 Guidelines for Implementation of the California Environmental Quality Act ("CEQA"), last amended December 28, 2018. Commonly referred to as "CEQA Guidelines").

SETTING

SOUTH SAN FRANCISCO

South San Francisco's urban character is one of contrasts within a visually well-defined setting. San Bruno Mountain to the north, the ridge along Skyline Boulevard to the west, Interstate 380 to the south, and the San Francisco Bay to the east provide the City with distinctive edges. The City is contained in an almost bowl-like shape by hills on two sides. The City's terrain ranges from the flatlands along the water to hills east and north. Hills are visible from all parts of the City; Sign Hill and San Bruno Mountain are visual landmarks. Much of the City's topography is rolling, resulting in distant views from many neighborhoods. Geographically, the City is relatively small, extending approximately two miles in a north-south direction and about five miles from east to west. According to the United States Census Bureau South San Francisco consists of 32 square miles of which 9.1 square miles are land and 21 square miles water.

PROJECT SITE AND AREA

The Project site, located in the northeastern portion of the City of South San Francisco ("City"), is in an area known as the of East of 101. The East of 101 Area has historically been known for industrial land uses. A sign emblazoned into a hill overlooking the city states 'South San Francisco The Industrial City' underscoring this identity. The hill is monikered 'Sign Hill'. The sign was created in 1923 by the South San Francisco Chamber of Commerce and the City. In 1996 the City petitioned and succeeded to have the sign placed on the National Register of Historic Places (National Historic Register #96000761, 1966).

Over the past 46 years, the East of 101 has transformed into an area that includes life science (i.e., Research and Development, "R&D"), office and visitor serving uses such as hotels while retaining industry in the southern portions of the area. Genentech, a major life science company, ushered in this change by locating in South San Francisco in 1976 (ssf.net accessed March 8, 2022). Now South San Francisco has over 200 life science companies in the East of 101 Area alone and is known as 'The Birthplace of Biotechnology' (ssf.net, accessed March 8, 2022). These changes are in large part the result of planning efforts championed by the City (identified in more detail in **Chapter 2.3 General Plan and Zoning** and **Chapter 3.XI Land Use and Planning**) and the natural evolution of society and land uses thereto.

The design of the built environment in the Project area is changing from minimally landscaped and industrially developed parcels with surface parking to life science buildings and campuses, hotels, and local- and -visitor serving uses. Architecture and landscape and site design standards have changed over the past 46 years from one to three story buildings with surface parking surrounded by chain-link fencing to multi-story campuses, screened and/or structured parking, bicycle and pedestrian facilities, and community amenities.

The Project site is surrounded by roadways, freeways, and Caltrain. Beginning on the west side of the site and moving westward, in succession, is located Poletti Way; followed by the Caltrain Station; the Grand Avenue/US 101 overpass; and Airport Boulevard resulting in a contiguous 780 ft wide band of roadways.[1] The 50 ft wide band of East Grand Avenue wraps the site on the south and southeast connecting with Grand Avenue to the north. The northern Project property line is contiguous with the 110 ft wide Grand Avenue overpass.

REGULATORY FRAMEWORK

FEDERAL AVIATION ADMINISTRATION (FAA)/SAN MATEO COUNTY

Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport (ALUCP)

The Project site is within the San Mateo County Airport Land Use Commission (ALUC) and the ALUCP jurisdiction, and approximately 1.8 mi north of San Francisco International Airport. The Project is not within two miles of a private airstrip.

The Project is required to undergo ALUC review. ALUC is a function of the City/County Association of Governments in San Mateo County (C/CAG). C/CAG board members serve as the ALUC board. The review requirement is contained in the ALUCP to assure development within, or nearby, airspace of San Francisco International Airport environs is consistent with the ALUCP and will not result in an airspace hazard. The FAA determination of "No Significant Hazard to Air Navigation" allowing the Project a 295 ft height is part of the ALUC review process (see **Chapter 2 Project Description, Section 2.2**). (Aeronautical Study No. 2021-AWP 7644-OF, 09.09.2022).

CITY

1999 General Plan (1999 GP) and Downtown Station Area Specific Plan (DSASP)

The 1999 GP was amended and the DSASP and was adopted in 2015. The legislative actions brought the DSASP into conformance with the amended 1999 GP. The Project site is identified as a high-density transit-oriented site in these documents. See **Project Description Figure 1 Urban Context, Project Site and Area** and **Project Description Figure 8 Downtown Station Area Specific Plan**. The DSASP and TO/RD zoning ushered in the height limits approved by the FAA. FAA review and no hazard safety determination allows a height of up to 295 ft pursuant to the DSASP.

The South San Francisco Caltrain station is the center of the ½ mile radius comprising the TO/RD District. The TO/RD District is identified in two zones, ¼ and ½ mile radius. The policies of higher

[1] Google Earth measured approximately midpoint from 121 East Grand western property line to edge of sidewalk along Airport Boulevard.

density development within a ½ mile radius of a major transit station are in concert with state law designed to encourage higher development densities near transit stations to encourage mode shift.[2]

Draft 2040 General Plan (Draft 2040GP)

As noted in **Chapter 2.3 General Plan and Zoning** the City is in the process of a general plan update. The update will usher in an increased intensity and diversity of land uses in the East of 101. Within the East of 101 Area, the update would allow higher densities near the Caltrain station (up to an 8.0 FAR), and reduced densities further away. The City has allowed applicants to undergo the legislative process to amend planning and zoning standards to realize up to an 8.0 FAR within the TO/RD District, while the general plan is undergoing review and adoption.

Negotiation and approval of a community benefits package is a requirement for density over the conditionally permitted 3.5 FAR. Increased density up to an 8.0 FAR is an entitlement, not a guaranteed right, and as such density may be conditionally approved based upon an agreement negotiated between the City and the developer. Community benefits take the form of built benefits and financial contributions.

Built community benefits include but are not limited to the creation of public plazas and open spaces, bicycle and pedestrian trails, and creating visual and physical connections between the east and west areas of US 101. Applicants are encouraged to construct and lease space within their projects for services such as grab and go grocery stores; cafes and restaurants; and personal retail services. The provision of services and a lively streetscape associated with plazas and cafes will encourage the use of different transit options and reduce the need to leave an area to obtain these services, thus reducing impacts associated with vehicular use.

Financial contributions will assist the City in implementation of visions, policies and programs contained in a variety of planning and capital improvement documents. City documents such as the "Mobility 2020" report (Fehr & Peers Traffic Engineers, 2019) identify mobility needs that could be implemented in the East of 101 to improve vehicular, pedestrian and bicyclist safety and expand and connect bicycle and pedestrian trails. Other documents include but are not limited to the City's Capital Improvement Program, Parks and Recreation Master Plan, bicycle and pedestrian plans, and general plan.

These plans address the provision of emergency services, parks and open spaces, connection and completion of sidewalks and bicycle trails, additional transit options and facilities thereto, provision of market rate and affordable housing, construction and staffing services such as grocery and convenience stores, medical and dental offices, and personal services. One of the goals identified in Draft 2040GP is the creation of "complete neighborhoods" where most if not all the needs of a neighborhood can be accessed by a 20-minute walk (Draft 2040GP, p 69). Another important goal is "complete streets" street networks that provide pedestrian and bicycle facilities for people of all ages and abilities; access to public transportation to get people anywhere in the city or the Bay Area; and that accommodate emerging transportation innovations and micro-mobility, such as scooters, bike share, and electric buses and vehicles (p 10 Draft 2040GP).

[2] Senate Bill (SB) 743 (2013) was enacted to assist in achieving state climate policy and sustainability goals. SB 743 eliminates traffic delay as an environmental impact under the California Environmental Quality Act and replaces the analysis with Vehicle Miles Traveled (VMT). Additionally, Subsection (b)(1) of new section 15064.3 (California Code of Regulations Title 14 Natural Resources, Division 6 Resources Agency, Chapter: Guidelines for Implementation of the California Environmental Quality Act ('CEQA Guidelines') as amended December 28, 2018 (CEQA Guidelines) provides that "[g]enerally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant impact", described in more detail in Section 3.XVII Transportation.

The City is actively seeking ways to connect the east and west areas of the city currently separated physically and visually by US 101. The relocation of the Caltrain Station to Grand Avenue at Airport Boulevard, discussed in **Chapter 2. Project Description Section 2.1** and **above**, is one of the completed strategies in realizing this east/west connection. The Caltrain tunnel provides access to the train platform and connects the east and west areas of the city through the pedestrian/bicycle facilities that are open 24-hrs a day. The Project site is 200 ft from this connection on the east side of US 101.

Design Review

Through a multi-level City review from staff, and the Design Review Board (DRB), Planning Commission and City Council, site design, architecture and landscape design achieve sustainability levels identified in "Leadership in Energy and Environmental Design" (LEED). LEED provides a framework for healthy, highly efficient, and cost-saving green buildings and is the most widely used green building rating system in the world (http://usgbc.org, accessed March 8, 2022). Design review also addresses the aesthetics of a project, presence in the neighborhood and overall architectural and landscape design.

PROJECT ELEMENTS

OVERALL

The Project proposes two 17-story research and development building "wings" connected through a glass atrium atop a two-story podium with a 262 ft building height The 32 ft mechanical screen would bring the total height of the building to 294 ft. Building materials would largely be steel and glass. Two types of insulated glazing are proposed: creamy white opaque and shadowbox. Balconies are proposed on the south and east elevations where the office functions would be located above Level 2. These balconies surround the open sky "Confluence Plaza" a 28,000 sq ft public plaza located along the East Grand Avenue frontage. Although three of the four elevations of the building would be activated with public uses it is the Confluence Plaza that is designed to accommodate a variety of opportunities to site, eat, gather, read, converse, and enjoy.

The two-story podium is proposed to be designed, landscaped and furnished to provide seating, gathering areas and various entry points to the building. The first two floors of the building would provide public amenities and Floors three through 17 would include research and development and office uses. A 700 ft long lighted and landscaped bicycle and pedestrian trail would traverse the site from Poletti Way, along the western, southern, and eastern frontages of the Project site to the intersection of Grand Avenue and East Grand Avenue.

DESIGN ELEMENTS AND ACCESS

There are four entry areas to the Project site: "Arrival Plaza", "Poletti Way Plaza", "Confluence Plaza", and "East Access Plaza." Each are designed with a specific purpose, as described in **Chapter 2 Project Description**. These areas are identified through a combination architectural features, lighting, landscaping and art**.** These landscaped and furnished areas total approximately 46,663 sq ft.

These four areas are all connected seamlessly around the building and provide different but interconnected purposes. "Wind Canopy", a structural element proposed at the second story level, would wrap around the building from west to east and serve as a design and functional element. The second-story placement would define the pedestrian realm and provide some buffer from wind, rain and sun. Please refer to **Chapter 2 Project Description** for a detailed description of these areas.

Arrival Plaza is a 5,178 sq ft arrival plaza located 200 feet from the access to Caltrain. Through its size and design this plaza is intended to identify the main entrance to the building and get people quickly out

of Poletti Way and into the pedestrian realm. Ergo, by design Arrival Plaza does not include landscaping and seating. No elements that could impede safe access out of Poletti Way into the pedestrian realm are programmed in this area.

Poletti Way Plaza is designed with a 30 ft wide and 150 ft long sidewalk creating a 5,105 sq ft landscaped circulation area. Poletti Way Plaza includes seating, bicycle parking and access to the café or other retail along this frontage.

Confluence Plaza: The L-shaped building design provides a wind protected area to include a 28,000 sq ft landscaped outdoor gathering and seating area. The Confluence Plaza would include stairs and an accessible ramp that weaves from East Grand Avenue to the top of the plaza. Informal and formal seating areas are programmed into the landscape plan. Access to Level 1 and Level 2 amenities is provided in this area.

East Grand Plaza: The 8,350 sq ft outdoor area brings the bicycle and pedestrian trail to Grand Avenue and provides a visual link to Jack Drago Park. Street trees and bioswale grasses are the proposed planting palette (see **Figure 6 Proposed Landscape Plan in Chapter 2, Project Description.**)

IMPACTS

a) Scenic Vistas

Significance Criteria: For the purpose of assessing impacts of a project on scenic vistas, the threshold of significance is exceeded when a project would result in the obstruction of a designated public vista, or in the placement of an arguably offensive or negative-appearing project within such a vista. Any clear conflict with a general plan policy or other adopted planning policy regarding scenic vistas would also be considered a potentially significant adverse environmental impact.

The City does not have a view preservation ordinance or policies thereto (1999 GP, proposed Draft 2040GP and interview with Billy Gross, Principal Planner March 2, 2022). The potential impacts on scenic vistas are considered less than significant pursuant to CEQA Section 21099. An analysis on aesthetics is included from two important publicly accessed view corridors and is for informational purposes.

The two view corridors selected for this evaluation are along a Sign Hill Park Trail and a street view in front of City Hall at 400 Grand Avenue. These points were selected because they:

1. Represent areas where the public frequents.
2. Both are historic landmarks.
3. Represent different views, one at street level and one atop a hill.

Sign Hill provides vistas to the East of 101 Area, San Francisco Bay and beyond. Grand Avenue provides a street level view to the east from the west of US 101.

As noted previously, the Sign Hill sign is on the National Register of Historic Places. South San Francisco City Hall, located at 400 Grand Avenue, was constructed in 1920 by architects Werner and Coffee, from San Francisco. The architecture is neo-colonial-Georgian and was modeled after Philadelphia's Independence Hall. President Hoover's motorcade traveled along Grand Avenue in 1932 and Robert Fitzgerald Kennedy's U.S. Presidential campaign motorcade traveled the same route in 1968 (Everything South City; https://www.ssf.net, accessed March 17, 2022). City Hall was added to the list of National Register of Historic Places in 1986, HR-86-001.

View From Sign Hill Park Trail

Sign Hill Park includes approximately 66 acres of public open space, hiking trails and habitat preservation areas. Sign Hill Trail located north of Diamond Avenue ranges in elevation from approximately 230 ft to 584 ft above mean sea level (msl) (Google Earth, accessed March 16, 2022). The image in **Aesthetics Figure 1** is taken approximately 482 ft above msl. The view corridor from Sign Hill Park and Sign Hill Trail would largely be one looking down onto the East of 101 area given the differences in elevation and the 295 ft building height. Views from this vantage point are and would continue to be panoramic.

Three buildings, the Project being one, penetrate the horizon where the Bay meets land and sky, but do not eclipse the view. The staggered heights and various building setbacks articulate the view from Sign Hill Park trail.

The 780 ft band of transportation infrastructure on the eastern side of the Project assures an open view corridor for the reasonably foreseeable future. The separation between the 100 East Grand and Project site buildings would be approximately 123 ft thus retaining a view corridor. Views of San Francisco Bay, sky and the East Bay would not be obstructed. This view corridor would remain for the reasonably foreseeable future. The Project would have a less than significant impact on scenic resources.



AESTHETICS FIGURE 1
VIEW FROM SIGN HILL TRAIL

View East from Grand Avenue at City Hall

Existing views from the west to the East Grand Avenue corridor are largely unremarkable and eclipsed by transportation infrastructure, most notably the elevated portion of US 101. The multifamily residential buildings, approximately 85 ft in height, along the southeastern side of Airport Boulevard would help screen the underbelly of US 101 and Caltrans support infrastructure from view. The 100 East Grand Avenue project, 580 Dubuque Avenue project and the Project would provide visual interest and draw one's attention from US 101 to the East of 101 Area. The Project alone and in combination with the aforementioned projects, would improve views to the East of 101 area.

The Project would identify the location of the east side of the Caltrain Station from all directions and draw one's attention from the roadways. As the City implements the policies in the Draft 2040 GP, the East of 101 Area will become a vibrant, well designed 'complete neighborhood' with an active pedestrian street presence, goods and services, and a sense of place. The Project and other planned development would visually identify the East of 101 area as a "place to go".

In summary, the Project would not obstruct street views from the downtown corridor into the east of US 101. The Project would provide a visual landmark identifying the East of 101 area drawing one's view away from elevated freeways, streets and avenues. The Project would not obstruct views but would provide a view corridor and identify the east and west connection point by turning its attention to the Caltrain station and the eastern area of the City. The City's design process would continue to ensure attractive, viable and sustainable development.



AESTHETICS FIGURE 2
EAST VIEW FROM CITY HALL

Closer views of the Project would revel architectural and site details. The proposed landscaping, public art and lighting would provide an easily negotiable and "useable" experience for all user groups. The Project would provide a variety of goods and services including public plazas, linkages to multi-modal transportation options, bicycle and pedestrian paths, retail services and seating, eating, gathering and meeting areas. Plaza areas are identified by use and accented with lighting, art and landscaping. Impacts to public scenic vistas would be less than significant. The site is "readable" in that entryways are well lit and marked with defining architecture.

The Project would not result in an "arguably offensive or negative-appearing project within a scenic vista" but provide a linkage from the west to the east of US 101.

Planning policies are addressed in c, below.

b) Substantially Damage Scenic Resources, i.e. including those within a State Scenic Highway

Significance Criteria: For the purposes of assessing impacts of the Project on scenic resources, the threshold of significance is exceeded by any Project-related action that would substantially damage scenic resources (i.e., trees, rock outcroppings, and historic buildings within a state [or local] scenic highway).

The Project site is not within or near a designated scenic highway designated as scenic. Therefore, there are no scenic resource impacts within a scenic highway. Additionally, there are no historic resources on the Project site (**see Chapter 3, Section V. Cultural Resources.**).

No rock outcroppings or trees of significance are located on the site (A. Knapp, site visit March 14, 2022, and Tree Inventory, 2021 HortScience/Bartlett Construction, see **Chapter IV Biological Resources**). The Tree Inventory identified 69 trees on the site of which 67 are in poor, fair or dead condition and two are in good condition. Therefore, the Project would have no impact on scenic resources, trees, rock outcroppings or historic buildings.

c) For a Project located in an Urbanized Area, would the project Conflict with Applicable Zoning and other regulations Governing Scenic Quality

Significance Criteria: The Project would have a significant environmental impact if it were to substantially degrade the existing visual character or quality of the site and its surroundings.

The Project site is in an urbanized city. The Draft 2040 GP identifies the existing population, housing and jobs based upon 2018 census data and projected the 2040 buildout anticipated by the plan.

AESTHETICS TABLE 1
ESTIMATED GROWTH PROJECTIONS

	2018	2040	% Change
Population	67,400	107,200	59
Housing Units	21,200	39,080	84
Employment	52,600	137,000	162

Source: City of South San Francisco Draft 2040 General Plan, p 67

The City's website notes that the population "has tripled since World War II with the opening of such subdivisions as Buri, Winston Manor and Westborough on the slopes west of El Camino. It has grown from 4,411 in 1920 to 67,082 in 2019" (ssf.net/our-city/about-south-san-francisco, accessed March 14, 2022). The City of South San Francisco is urbanized. Therefore, the Project site is in an urbanized area.

The City does not have a view preservation ordinance or policies thereto (1999 GP, Draft 2040GP and interview with Billy Gross, Principal Planner, March 2, 2022).

The Project underwent review with the DRB on February 15 and April 19, 2022. DRB indicated overall acceptance of the Project design and on February 15th had the following refinements to address for the subsequent meeting.

- Study and potentially expand the proposed accessible ramping on the east to make it easier for people coming from Jack Drago Park.
- Investigate and identify ways the Access Plaza could be transformed or adjusted to accommodate event space.
- Add seating elements for Poletti Way drop-off waiting area.

- Tower Architecture needs to be complex, but not complicated. Consider detail refinements to the North and West facades.
- Review articulation of rooftop mechanical screens.
- Provide additional information on the proposed landscape palette, including the survivability, location and size of tree species.
- Provide more information on the bioswale deign.
- Recommend using "Satin Aluminum: as opposed to "Silver Painted Aluminum" for durability.
- Describe the mechanics of the parking and location of recycling and garbage areas.
- Overall, do not make wholesale changes to the design.

The DRB studied the revisions to the Project on April 19, 2022. The DRB noted:

- Accepted and applauded the design changes including the Wind Canopy oculus.
- Preference for Scheme 1 for the facade modification and Single Ramp Option 2 site mid-point for accessibility.
- Recommended approval with conditions and to proceed to the Planning Commission.

DRB noted that the comments related to the landscape species be addressed in the Planning Commission meeting. DRB also commended the Project Sponsor for their studies and although minor the changes were critical to Confluence Plaza for group seating capacity.

The plant selection comments were to provide additional information on the proposed landscape palette, including the survivability, location and size of tree species. The landscape architect responded to these comments subsequently in **Biology Table 1 Proposed Tree Planting** in **Chapter 3, Section IV Biological Resources**.

Development Trends in the Project Area

There are approximately 17 parcels located within the east side of the ¼ mile TO/RD District radius within the area that an 8.0 FAR could be permitted. Three of the parcels are developed with land uses that will likely remain for the foreseeable future; the PG&E electrification yard, Jack Drago Park and the Caltrain parking lot. The PG&E electrification yard is 125 ft southeast, Jack Drago Park 100 ft east of the Project site and Caltrain surface parking is approximately 250 ft northwest. As of April 1, 2022, three parcels (including the Project) are undergoing City entitlement review within the ¼ mile TO/RD District.

- 100 East Grand Avenue, approximately 60 ft south of the Project site, proposes to construct a 554,770 sq ft (2.55 FAR) project on a 5.02-acre site with a maximum height of 185 ft with above-ground structured parking.
- 580 Dubuque Avenue, approximately 500 ft northwest of the Project site, proposes to construct a 295,000 sq ft (3.60 FAR) project on a 1.89-acre parcel with a maximum height of 155 ft and subterranean parking.
- 121 East Grand Avenue, the Project, proposes 943,965 sf ft (7.44 FAR) project on a 2.9-acre site (126,847 sq ft) with structured and subterranean parking and 295 ft height to the top of the mechanical screen.

Other parcels within the TO/RD District will likely see a change in land use as market conditions vary and land uses continue to shift. Development densities will likely be similar to the three projects identified above: higher density on smaller lots close to Caltrain. Another factor shaping density is the community benefits package required of developers requesting densities higher than a 3.5 FAR.

Aesthetics Figure 1 View from City Hall and **2 View from Sign Hill Trail** illustrate the type of skyline, view corridors and placement of future development in the TO/RD District. Views would be enhanced with newer construction, roadways would provide view corridors from a distance and closeup, public open space would enhance the urban environment and the shape of development, and the varying height and shape of buildings would all provide views. Civic engagement would replace isolation, connections between the eastern and western portions of the City would be enhanced and a sense of place would grow. The Project would have no impact to view preservation ordinances or general plan policies. The Project would implement vision statements identified in the Draft 2040GP (see **Chapter 3, Section XI Land Use and Planning**). Through the City's review process and the varying lot sizes and locations it is reasonable to assume that development in the Project area will be similar to 580 Dubuque, 100 East Grand and 121 East Grand in terms of density, placement, services and view corridors. The Project would not conflict with a general plan policy or other adopted planning policy regarding scenic vistas. Again, the Project is considered a transit-oriented infill employment center project and as defined is not subject to an aesthetics evaluation notwithstanding potential impacts on cultural or historic resources (Chapter 2.7 'Modernization of Transportation Analysis for Transit Oriented Infill Projects' California Environmental Quality Act, Public Resources Code, Division 13 Environmental Quality Statute, as amended in 2021 (Section 21099). This analysis is informational only.

d) Light or Glare

Significance Criteria: Project related creation of any new source of substantial light or glare that would adversely affect day or nighttime views in the area would be regarded as a significant environmental impact.

Substantial light and glare are typically associated with high intensity bright glaring light that spills off site or is pointed in such a direction that it can affect and can temporarily blind a person's vision. Other considerations include needlessly pointing light into the sky. These types of lights have historically been associated with military use during World War II, that later evolved into domestic "search" or "event" lights. Searchlights are used for advertising fairs, festivals and other types of public events, in areas where they are permitted by city or county municipal codes. These rotating beam lights can be seen for miles around the spot they are advertising. Other sources of light pollution include unshielded light fixtures and wide beam fixtures that essentially spill outside the area requiring the lighting.

The City of South San Francisco does not allow these types of lights. South San Francisco Municipal Code ("SSFMC") Section 20.300.008 contains lighting and illumination regulations. 20.300.008.B.4 provides lighting shall "not produce offensive light or glare into the public right-of-way". Moreover, 20.300.008.B.5 requires shielding of lights and city review of site lighting to assure conformance with the ordinance. The Project would be required to comply with these requirements.

The Project proposes shielded, downcast, task-oriented and accent lighting. Lighting is proposed to announce pathways and entries to the building, key and crucial elements of site safety and readability for users. Pathway lighting and landscape lighting is proposed. Soft accent lighting that may include one or a variety of colors is being considered for the west and potentially northern elevations of the building. Lighting is proposed for site readability, safety and visual interest. The Project is not near any light sensitive receptors and is surrounded by transportation infrastructure. The Project would not result in

creating a substantial new offsite source of light or glare. Project lighting would result in a less than significant impact.

Aesthetics Finding:

(1) The Project would not obstruct street views from the downtown corridor into the east side of U.S. 101. The Project would not obstruct views but would provide a view corridor and identify the east and west connection point by turning its attention to the Caltrain station and the eastern area of the City. The City's design process would continue to ensure attractive, viable and sustainable development. The Project would provide a visual landmark identifying the East of 101 area drawing one's view away from elevated freeways, streets and avenues. The site is "readable" in that entryways are well lit and marked with defining architecture. Impacts to public scenic vistas would be less than significant.

(2) The Project site is not within or near a designated scenic highway designated as scenic. Therefore, there are no scenic resource impacts within a scenic highway. Additionally, there are no historic resources on the Project site (see Chapter 3, Section V. Cultural Resources.).

No rock outcroppings or trees of significance are located on the site (A. Knapp, site visit March 14, 2022, and Tree Inventory, 2021 HortScience/Bartlett Construction.) The Tree Inventory identified 69 trees on the site of which 67 are in poor, fair or dead condition and two are in good condition. Therefore, the Project would have no impact on scenic resources, trees, rock outcroppings or historic buildings.

The Project would provide a view corridor and identify the east and west connection point by turning its attention to the Caltrain station and the eastern area of the City. The City's design process would continue to ensure attractive, viable and sustainable development.

(3) The Project site is not within or near a designated scenic highway. Therefore, there are no scenic resource impacts within a scenic highway. Other parcels within the TO/RD District will likely see a change in land use as market conditions vary and land uses continue to shift.

Aesthetics Figure 1 View from City Hall and 2 View from Sign Hill Trail illustrate the type of skyline, view corridors and placement of future development in the RO/RD District. Views would be enhanced with newer construction, roadways would provide view corridors from a distance and closeup, public open space would enhance the urban environment and the shape of development, and the varying height and shape of buildings would all provide views. Civic engagement would replace isolation, connections between the eastern and western portions of the City would be enhanced and a sense of place would grow. The Project would have no impact to view preservation ordinances or general plan policies. The Project would implement vision statements identified in the Draft 2040GP (see Chapter 3, Section XI Land Use and Planning.

Through the City's review process and the varying lot sizes and locations it is reasonable to assume that development in the Project area will be similar to 580 Dubuque, 100 East Grand and 121 East Grand in terms of density, placement, services and view corridors. The Project would not conflict with a general plan policy or other adopted planning policy regarding scenic vistas. Moreover, the Project is considered a transit-oriented infill employment center project and as defined is not subject to an aesthetics evaluation notwithstanding potential impacts on cultural or historic resources (Chapter 2.7 'Modernization of Transportation Analysis for Transit Oriented Infill Projects' California Environmental Quality Act, Public

Resources Code, Division 13 Environmental Quality Statute, as amended in 2021 (Section 21099).

(4) Lighting is proposed for site readability, safety and visual interest. The Project proposes shielded, downcast, task-oriented and accent lighting. Lighting is proposed to announce pathways and entries to the building, key and crucial elements of site safety and readability for users. Pathway lighting and landscape lighting is proposed. Soft accent lighting that may include one or a variety of colors is being considered for the west and potentially northern elevations of the building. Lighting is proposed for site readability, safety and visual interest. The Project is not near any light sensitive receptors, but is surrounded by transportation infrastructure. The Project would not result in creating a substantial new offsite source of light or glare. Project lighting would result in a less than significant impact.

II. Agriculture and Forestry Resources	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

SETTING

The site is currently developed with a three-story wood framed hotel and asphalted surface parking. The hotel includes 169 rooms housed in three structures. The site also includes a spa and one shed.

A tree removal plan was prepared for the Project (Tree Inventory Report, HortScience/Bartlett Construction, May 5, 2021. "Tree Inventory, 2021"). In summary, 69 trees representing ten species were evaluated on the Project site. 49, (or 71%) of the trees were in poor condition, 17 (or 25%) were in fair condition, a coast redwood and white alder were in good condition and one white alder was dead. Vegetation and tree removal and replanting are vetted in **Chapter 3 Section IV, Biological Resources**.

The City does not have any timber or farmlands, as defined below, within its boundaries (Draft 2040 GP and 1999GP).

IMPACTS

a, b and e) Farmland Impacts

Significance Criteria: The Project would have a significant environmental impact if it would result in the conversion of farmland to non-agricultural use, conflict with current zoning for agricultural use or the provisions of a current Williamson Act contract or involve any environmental changes that could result in the conversion of farmland currently in agricultural uses to non-agricultural uses.

The Project site contains no farmland, is not zoned agricultural or adjacent thereto, and as such would not involve the conversion of Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. The Project site is not in Williamson Act Contract. The Project site is not nearby or adjacent to any agricultural use and as such would have no impact to farmland.

c, d and e) Forest Land Impacts

Significance Criteria: A significant impact would result from a conflict with existing zoning for, or cause rezoning of, forest land (as defined in the Public Resources Code section 12220(g)), timberland (as defined in Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104 (g)) or result in the loss of forest land or conversion of forest land to non-forest use.

The site is not zoned for timberland production or in use as such, or in proximity to such a use. Removal of trees to construct the Project would not cause rezoning of forest land (as defined in the Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104(g)). The Project is not nearby or adjacent to timberland or forest lands and would have no impact on timberland production or resources or forest lands.

Agriculture and Timber Resources Finding:

(1) The Project would not adversely affect any existing agricultural operations as none exist on the site.

(2) The Project would not impact agricultural resources individually or cumulatively and does not contain any Farmland, Unique Farmland, Farmland of Statewide Importance (Farmland) nor land in a Williamson Act Contract.

(3) The site is not zoned for timberland production or in use as such and would not cause rezoning of forest land (as defined in the Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526) or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).

III. Air Quality *Where applicable, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

INTRODUCTION

This section is based on the Air Quality & Greenhouse Gas Emissions Assessment (AQ/GHG Assessment) prepared for the Project by ECORP Consulting Inc. (2022), found in **Appendix A** of this Initial Study. This AQ/GHG Assessment was prepared using methodologies and assumptions recommended in the rules, regulations, and guidelines of the Bay Area Air Quality Management District (BAAQMD). This section presents regional and local existing conditions, pertinent emissions standards and regulations, estimated criteria air pollutants and health risk emissions attributable to the Project, and a comparison of modeled Project emissions to BAAQMD significance thresholds to determine significance. The AQ/GHG Assessment also performed an air quality health risk assessment analyzing potential health impacts from construction and operation of the Project, the results of which are detailed in impact c) of this section.

SETTING

The following includes pertinent environmental and regulatory setting information. Additional setting information can be found in the AQ/GHG Assessment.

ENVIRONMENTAL SETTING

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the San Francisco Bay Area Air Basin (SFBAAB), which encompasses the Project Site, pursuant to the regulatory authority of the BAAQMD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project area.

San Francisco Bay Air Basin

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The Project site is in the SFBAAB. The SFBAAB is approximately 5,600 square miles in area and consists of nine counties that surround the San Francisco Bay, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County.

Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone, coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered as local pollutants because they tend to accumulate in the air locally. Particulate matter is also considered a local pollutant.

Toxic Air Contaminants

In addition to the criteria pollutants, toxic air contaminants (TACs) are another group of localized pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Carcinogenic TACs can also have noncarcinogenic health hazard levels.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine. Some short-term (acute) effects of

diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Ambient Air Quality

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. See the AQ/GHG Assessment for a summary of ambient air quality data at the nearest monitoring station to the Project site. The United States Environmental Protection Agency (USEPA) and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutant standards. The federal standards are referred to as the National Ambient Air Quality Standards (NAAQS) and the state standards are referred to as the California Ambient Air Quality Standards (CAAQS). Areas that do not meet the standards are classified as nonattainment areas. The San Mateo County region of the BAAQMD is designated as a nonattainment area for the federal ozone and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for ozone, PM_{10}, and $PM_{2.5}$.

Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive land uses to the Project site is an apartment building (Cadence Apartments) located approximately 690 ft west of the Project site on Airport Boulevard.

REGULATORY FRAMEWORK

FEDERAL

Federal Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

STATE

California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both

federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

Bay Area Air Quality District (BAAQMD)

2017 BAAQMD Clean Air Plan

In April 2017, BAAQMD adopted the 2017 Clean Air Plan, whose primary goals are to protect public health and to protect the climate. The 2017 Clean Air Plan updates the Bay Area 2010 Clean Air Plan and complies with state air quality planning requirements, as codified in the California Health and Safety Code (although the 2017 plan was delayed beyond the three-year update requirement of the code). State law requires the Clean Air Plan to include all feasible measures to reduce emissions of O_3 precursors and to reduce the transport of O_3 precursors to neighboring air basins. The 2017 Clean Air Plan contains 85 measures to address reduction of several pollutants: O_3 precursors, PM, air toxics, and GHGs. Other measures focus on a single type of pollutant: super GHGs such as methane and black carbon that consists of harmful fine particles that affect public health. These control strategies are grouped into the following categories:

- Stationary Source Measures
- Transportation Control Measures
- Energy Control Measures
- Building Control Measures
- Agricultural Control Measures
- Natural and Working Lands Control Measures
- Waste Management Control Measures
- Water Control Measures
- Super GHG Control Measures

BAAQMD Rules and Regulations

The BAAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The BAAQMD's responsibilities include preparing plans for the attainment of ambient air quality standards, adopting and enforcing air pollution rules, issuing permits for and inspecting stationary air pollution sources, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing state and federal programs and regulations. The BAAQMD has also adopted various rules and regulations that are designed to reduce and control pollutant emissions from project's construction and operational activities. Regulation 2, Rule 1, General Permit Requirements; Regulation 2, Rule 2, New Source Review; Regulation 6, Rule 1, General Requirements; Regulation 6, Rule 6, Prohibition of Trackout; and Regulation 7, Odorous Substances would apply to the Project.

CITY

Downtown Station Area Specific Plan (DSASP)

The DSASP guides the City in its planning efforts to create a vibrant, transit-supportive, diverse Downtown, particularly the area surrounding the City's Caltrain commuter rail station. The DSASP crafts a vision for the Downtown core and identifies an implementation process to achieve City and community goals, including design standards and regulations for future development. The Project site is in an area identified in the DSASP as being intended for transit offices/ research & development core. The DSASP EIR identifies various mitigation measures that all projects taking place in the DSASP Area must abide by.

BAAQMD Thresholds of Significance

To assist local jurisdictions in the evaluation of air quality impacts under CEQA, the BAAQMD has published a guidance document for the preparation of the air quality portions of environmental documents that include thresholds of significance to be used in evaluating land use proposals. Thresholds of significance are based on a source's projected impacts and are a basis from which to apply mitigation measures. BAAQMD's CEQA thresholds have also been used to determine air quality impacts in this analysis. If a project's individual emissions exceed its identified significance thresholds, the Project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable. The thresholds of significance applied to assess project-level air quality impacts are shown in **Air Quality Table 1**.

AIR QUALITY TABLE 1
BAAQMD SIGNIFICANCE THRESHOLDS

Construction Related		
Air Pollutant	**Average Daily Emissions (pounds per day)**	
ROG	54	
NO_x	54	
PM_{10} (exhaust)	82	
$PM_{2.5}$ (exhaust)	54	
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	
Local CO	None	
Operational Related		
Air Pollutant	**Average Daily Emissions (pounds per day)**	**Maximum Annual Emissions (tons per year)**
ROG	54	10
NO_x	54	10
PM_{10} (exhaust)	82	15
$PM_{2.5}$ (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	None	None
Local CO	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

Source: BAAQMD, CEQA Air Quality Guidelines, May 2017.

In addition to the emission of criteria air pollutants, this evaluates the health risk from construction and operations of the Project. Specifically, the potential exposure of nearby existing residents to DPM emissions from heavy-duty trucks, R&D vented lab emissions, and emergency generator emissions.

The BAAQMD thresholds for what constitute an exposure of substantial air toxics are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.

The BAAQMD has also established non-carcinogenic risk parameters for use in Health Risk Assessments (HRAs). Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at, or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

Air Quality Conditions of Approval for the Project

The BAAQMD recommends quantifying a proposed project's construction-generated emissions by implementing the Basic Construction Mitigation Measures as mitigation for dust and exhaust construction impacts in CEQA compliance documentation. If additional construction measures are required to reduce construction-generated emissions, the BAAQMD's Additional Construction Mitigation Measures should then be applied.

The Air Quality Conditions of Approval that are required to be implemented as part of the Project pursuant to the City of South San Francisco's project review and building permit process are as follows:

Air Quality Dust Control: All construction projects are required to comply with BAAQMD Basic Construction Mitigation Measures. These measures are levied by the Engineering Division as a condition of building permit issuance and are monitored for compliance by staff and/or special City Engineering and/or Planning inspectors. The measures include all the *Basic Fugitive Dust Emissions Reduction Measures* identified by the BAAQMD May, 2017. The City requires Projects to implement the following, as conditions of project approval:

a) All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

b) All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

c) All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

d) All vehicle speeds on unpaved roads shall be limited to 15 mph.

e) All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

f) Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.

Air Quality Combustion Exhaust Control: All construction projects are required to comply with the BAAQMD's combustion exhaust control measures. The measures include *Basic Exhaust Emissions Reduction Measures* and some of the *Enhanced Exhaust Emissions Reduction Measures* identified by the BAAQMD in May, 2017. The City requires projects to implement the following, as conditions of project approval:

a) Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

b) All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.

c) All off-road equipment greater than 25 horsepower and operating for more than 20 total hours over the entire duration of construction activities shall meet or exceed USEPA or CARB Tier 4 Final off-road emission standards.

Air Quality Toxic Air Contaminants: The potential for toxic air contaminants (asbestos and lead based paint) to be released into the environment is regulated and monitored through the Building Division in compliance with *BAAQMD Regulation 11, Rule 2 during Demolition*. Any applicant requesting a building or demolition permit involving a structure suspected of containing asbestos (defined as a building constructed prior to 1978) and/or lead based paint (defined as a building constructed prior to 1960) is required to obtain review and permits from the BAAQMD. Permits are required to be posted on the job site, and if it is not there the job will be fined by BAAQMD and may be shut down by the City's Building Division. Through this process, BAAQMD and the City Building Division ensure that asbestos and lead based paints are handled, removed, encapsulated and disposed of in accordance with prevailing law requisite to protect the environment, the people conducting the work and nearby sensitive receptors. The process typically requires surveys and removal of lead-based paints and asbestos by licensed contractors certified in the handling methods requisite to protect the environment and public health and safety. The process also provides for BAAQMD and City supervision to ensure compliance.

Air Quality Vehicle Emissions: The potential for air quality degradation from vehicle emissions is regulated to some extent by Section 20.400.003 of the South San Francisco Municipal Code. Table 20.400.003 in the Zoning Ordinance establishes specific program requirements for a project generating one hundred or more vehicle trips per day or a project seeking a floor area ratio (FAR) bonus. The required alternative mode (mode shift) use for projects is below standard trip rates modeled for the project without TDM measures in place. Projects with an increased FAR are required to increase their alternative mode use accordingly. The Planning Division implements and monitors this requirement.

IMPACTS

a) Conflict with or Obstruct Implementation of Applicable Air Quality Plan

Significance Criteria: The Project would have a significant environmental impact if it would conflict with or obstruct implementation of BAAQMD's 2017 Clean Air Plan. Determination of whether a project supports the goals in the 2017 Clean Air Plan is achieved by a comparison of Project-estimated emissions with BAAQMD thresholds of significance. If Project emissions would not exceed the thresholds of significance, the Project would be consistent with the goals of the 2017 Clean Air Plan.

The most recently adopted and applicable air quality plan is the BAAQMD's 2017 Clean Air Plan, the primary goals of which are to protect public health and the climate. The 2017 Clean Air Plan includes a wide range of control measures and actions to reduce combustion-related activities, decrease combustion of fossil fuels, improve energy efficiency, and reduce emissions of potent greenhouse gases. Several measures address the reduction of multiple pollutants such as ozone precursors, particulate matter, air toxics, and GHG emissions.

As shown in **Air Quality Table 2 and 3**, emissions generated during Project construction and operations would not exceed the BAAQMD's significance thresholds. Therefore, the Project would not conflict with or obstruct reduction measures presented in the 2017 Clean Air Plan.

Additionally, the Project site can be identified for its "location efficiency". Location efficiency describes the location of the Project site relative to the type of urban landscape its proposed to fit within, such as an 'urban area', 'compact infill', or 'suburban center'. In general, compared to the statewide average, a project could realize vehicle miles traveled (VMT) reductions up to 65 percent in an urban area, up to 30 percent in a compact infill area, or up to 10 percent in a suburban center, and thus reductions in air pollutant emissions, a primary goal of the 2017 Clean Air Plan. The Project site represents an urban/compact infill location within the central portion of South San Francisco. The Project Site is served by existing public transportation. Additionally, the Project is in proximity to surrounding nonresidential land uses. The increases in land use diversity and mix of uses in the Project area would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation, which would result in corresponding reductions in transportation-related emissions, a primary goal of the 2017 Clean Air Plan. Therefore, air quality impacts related to a conflict with applicable air quality plans would be less than significant.

b) Result in a Cumulatively Considerable Net Increase of Non-Attainment Criteria Pollutants

Significance Criteria: The Project would have a significant environmental impact if it would result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard. The Project would result in a cumulatively considerable net increase of a criteria pollutant if it exceeds the applicable BAAQMD threshold of significance for that pollutant.

Air quality impacts were assessed in accordance with methodologies recommended by the BAAQMD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for San Mateo County and information provided by the Project proponent such as the construction equipment and duration. Operational air pollutant emissions were calculated based on specific Project site plans.

For the purposes of this analysis, projected emissions associated with proposed operations are compared to the existing baseline, which includes an existing 169-room, 57,623 sq ft, Comfort Inn and Suites.

Construction

Emissions associated with Project construction would be temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions would be generated through construction of the Project: operation of the construction vehicles (i.e., tractors, forklifts, pavers), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving and coating activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive particulate emissions that could affect local air quality at various times

during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. Predicted maximum daily construction-generated emissions for the Project are summarized in **Air Quality Table 2** and are below the BAAQMD significance thresholds. Therefore, construction air quality impacts related to a cumulatively considerable net increase of non-attainment criteria pollutants would be less than significant.

AIR QUALITY TABLE 2
CONSTRUCTION-RELATED CRITERIA AIR POLLUTANT EMISSIONS

Construction Year	Pollutant (maximum pounds per day)					
	ROG	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**	**PM_{10} (fugitive dust)**	**$PM_{2.5}$ (fugitive dust)**
Construction First Year	1.19	21.26	0.21	0.20	2.17	0.56
Construction Second Year	0.67	15.87	0.15	0.14	1.79	0.48
Construction Third Year	21.05	14.18	0.17	0.16	5.54	1.50
Construction Fourth Year	20.91	13.45	0.16	0.16	5.54	1.50
Construction Fifth Year	1.40	11.97	0.10	0.10	4.74	1.28
BAAQMD Potentially Significant Impact Threshold	54 pounds/ day	54 pounds/ day	82 pounds/day	54 pounds/ day	Basic Construction Mitigation Measures	Basic Construction Mitigation Measures
Exceed BAAQMD Threshold?	No	No	No	No	No	No

Source: ECORP Consulting 2022. Refer to AQ/GHG Assessment for Model Data Outputs.

Notes: BAAQMD's Basic Construction Mitigation Measures would be a condition of Project approval. Emissions estimates account for the quantifiable components of the BAAQMD's Basic Construction Mitigation Measures, specifically watering unpaved portions of the construction site twice daily, limiting off-road equipment to speeds of 15 mph, and removing dirt track-out on adjacent public roads with a wet power vacuum once daily. Additionally, Tier 4 Final construction equipment is required as a condition of Project approval to account for Mitigation Measure 4.2-1 in the DSASP EIR.

Operations

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as ozone precursors such as ROG and NO_X. As previously described, projected emissions associated with proposed operations are compared to the existing baseline, which includes the current operation of an existing 169-room, 57,623 sq ft, Comfort Inn and Suites. Predicted maximum daily operational-generated emissions of criteria air pollutants for the Project are summarized in **Air Quality Table 3** and are below the operational significance thresholds promulgated by the BAAQMD. Therefore, operational air quality impacts related to a cumulatively considerable net increase of non-attainment criteria pollutants would be less than significant.

AIR QUALITY TABLE 3
OPERATIONAL CRITERIA AIR POLLUTANT EMISSIONS

Emission Source	Pollutant					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project						
Summer Emissions (Pounds per Day)						
Proposed Project	40.17	17.66	135.41	0.32	33.06	9.27
Winter Emissions (Pounds per Day)						
Proposed Project	38.92	19.45	151.76	0.31	33.06	9.27
Annual Emissions (Tons per Year)						
Proposed Project	6.39	2.91	19.79	0.04	4.39	1.25
Existing Conditions						
Summer Emissions (Pounds per Day)						
Existing Baseline	4.57	3.08	23.53	0.04	4.65	1.29
Winter Emissions (Pounds per Day)						
Existing Baseline	4.37	3.48	26.32	0.04	4.65	1.29
Annual Emissions (Tons per Year)						
Existing Baseline	0.76	0.58	4.27	0.00	0.77	0.21
Difference						
Summer Emissions (Pounds per Day)						
Difference	+35.6	+14.58	+111.88	+0.28	+28.41	+7.98
BAAQMD Daily Significance Threshold	54 pounds/ day	54 pounds/ day	None	None	82 pounds/ day	54 pounds/ day
Exceed BAAQMD Daily Threshold?	No	No	No	No	No	No
Winter Emissions (Pounds per Day)						
Difference	+34.55	+15.97	+125.44	+0.27	+28.41	+7.98
BAAQMD Daily Significance Threshold	54 pounds/ day	54 pounds/ day	None	None	82 pounds/ day	54 pounds/ day
Exceed BAAQMD Daily Threshold?	No	No	No	No	No	No
Annual Emissions (Tons per Year)						
Difference	+5.63	+2.33	+15.52	+0.04	+3.62	+1.04
BAAQMD Annual Significance Threshold	10 tons/ year	10 tons/ year	None	None	15 tons/ year	10 tons/ year
Exceed BAAQMD Daily Threshold?	No	No	No	No	No	No

Source: ECORP Consulting, 2022. Refer to AQ/GHG Assessment for Model Data Outputs.

Notes: Operational emissions for the Project account for the testing for four 2,000 horsepower Tier 4 generators five days per year.

c) Expose Sensitive Receptor to Substantial Pollutant Concentrations

Significance Criteria: The Project would have a significant environmental impact if it would expose sensitive receptors to substantial pollutant concentrations. The BAAQMD thresholds for what constitute an exposure of substantial air toxics are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.
- Maximum $PM_{2.5}$ annual concentration that exceeds 0.3 $\mu g/m^3$.

A HRA was performed to determine the health risk associated with construction and operations of the Project. The HRA analyzed cancer and chronic non-cancer risk calculated for 70-year, 30-year, 25-year and 9-year exposure scenarios for operational emissions and 5-years for construction emissions. Per OEHHA guidance, the 25-year scenario was used to model the health risk for workers at business locations and the 70-, 30-, and 9-year scenarios were used for residents in residential areas. In addition, the maximum annual $PM_{2.5}$ concentration was modeled for comparison with BAAQMD thresholds.

DPM concentrations and associated dispersion generated from both construction off-road equipment and construction haul trucks during construction, as well as heavy-duty trucks for Project operations and operational emissions from Project deliveries and R&D lab vents (assumed to be located on the roof) and emergency generators were modeled using the HARP2 modeling program provided by CARB, with regulatory default settings, to perform the dispersion and health risk modeling for this analysis. HARP2 implements the latest regulatory guidance to develop inputs to the U.S. EPA AERMOD dispersion model for dispersion and as the inputs for calculations for the various health risk levels. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The resultant concentration values at vicinity sensitive receptors were then used to calculate chronic and carcinogenic health risk using the standardized equations contained in the Office of Environment Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments. See the AQ/GHG Assessment for more details.

Air Quality Table 4 presents the maximum cancer risk summary. Impacts related to cancer risk for all modeled scenarios would be below the 10 in one million threshold for both operations and construction. These calculations do not account for any pollutant-reducing remedial components inherent to the Project or the Project site. For construction and operational emissions, the Maximumly Exposed Individual Resident (MEIR) is an apartment building located off Airport Boulevard (Cadence Apartments) approximately 690 ft west of the Project site while the Maximumly Exposed Individual Worker (MEIW) is located directly to the north of the Project site, within the existing roadway of Grand Avenue.

In addition to cancer risk, the significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index. An acute or chronic hazard index of 1.0 is considered individually significant. The highest maximum chronic hazard indexes for residents and workers at the Project site as a result of DPM from mobile sources and emergency generators and the R&D lab emission exposure is shown in **Air Quality Table 5**. No acute risk was analyzed for construction or operations as DPM from the truck trips and generators as well as the TACs associated with R&D lab emissions have no identified acute risk.

AIR QUALITY TABLE 4
MAXIMUM CANCER RISK SUMMARY

Maximum Exposure Scenario	Total Maximum Risk
Project Operations	
70-Year Exposure Resident	2.027
30-Year Exposure Resident	1.078
9-Year Exposure Resident	1.187
25-Year Exposure Worker	1.702
Project Construction	
5-Year Exposure Resident	4.68
5-Year Exposure Worker	0.70
Significance Threshold	10
Exceed Threshold?	No

Source: ECORP Consulting 2022. See AQ/GHG Assessment.

AIR QUALITY TABLE 5
MAXIMUM NON-CARCINOGENIC HEALTH RISK SUMMARY

Exposure Scenario	Chronic Hazard Values			Maximum $PM_{2.5}$ Annual Concentration ($\mu g/m^3$)
	Maximum Residential Hazard	Maximum Worker Hazard	Maximum Sensitive Receptor Hazard	
Operation	0.001	0.003	0.001	0.008
Construction	0.01	0.01	1.0e-02	0.068
Significance Threshold	1	1	1	0.3
Exceed Threshold?	No	No	No	No

Source: ECORP Consulting 2022. See AQ/GHG Assessment.

As shown in **Tables AQ-4** and **AQ-5**, construction and operational emissions associated with the Project would be below the BAAQMD thresholds for air toxics. Therefore, air quality impacts related the exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

d) Odors Adversely Affecting a Substantial Number of People

Significance Criteria: The Project would have a significant environmental impact if it would result in odors adversely affecting a substantial number of people. The BAAQMD's significance criteria for odors are subjective and are based on the number of odor complaints generated by a project. Generally, the BAAQMD considers any project with the potential to frequently expose members of the public to objectionable odors to cause a significant impact.

Odors from diesel exhaust during construction are short-term in nature and would rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. For operations, the Project does not include any uses associated with odors, as described in the BAAQMD's CEQA Guidelines. The Project would also be

subject to the BAAQMD Regulation 7, Odorous Substances, which places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Therefore, odors from the Project would not adversely affect a substantial number of people and odor impacts would be less than significant.

Air Quality Finding:

(1) Emissions generated during Project construction and operations would not exceed the BAAQMD's significance thresholds. Therefore, the Project would not conflict with or obstruct reduction measures presented in the 2017 Clean Air Plan.

(2) Estimated daily construction and operational-generated emissions of criteria air pollutants for the Project are below the operational significance thresholds promulgated by the BAAQMD. Therefore, construction and operational air quality impacts related to a cumulatively considerable net increase of non-attainment criteria pollutants would be less than significant.

(3) Construction and operational emissions associated with the Project would be below the BAAQMD thresholds for air toxics. Therefore, air quality impacts related the exposure of sensitive receptors to substantial pollutant concentrations would be less than significant.

(4) Odors from the Project would not adversely affect a substantial number of people and odor impacts would be less than significant.

IV. Biological Resources *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, U.S. Fish and Wildlife Service, or NOAA Fisheries?	☐	☐	☒	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☒	☐	☐
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

SETTING

The site is currently developed with a three-story wood framed hotel and asphalted surface parking. The hotel includes 169 rooms housed in three structures. The site also includes a spa and one shed.

The Project site is 126,849 sq ft in area, i.e., 2.91 acres. The site ranges from 15 ft to 20 ft msl (*Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Ave. SSF, CA*. March 2021 Geocon Consultants, Inc.) ("GeoReport, March 2021"). Groundwater appears approximately 4.5 to 8.0 ft below ground level ("bgl") during wet years and 8.5 to 16 ft during dry years (GeoReport, March 2021). The Project site is in Flood Zone X, outside the 100- and 500-year flood zones (Flood Insurance Map Rate Community Panel Number 13-09-1038P, September 9, 2013. Federal Emergency Management Agency).

Some bushes and shrubs are on the Project site. A tree removal plan was prepared for the Project. 69 trees representing ten species are located on the site. 49 (or 71%) of the trees were in poor condition, 17 (or 25%) were in fair condition, a coast redwood and white alder were in good condition and one white alder was dead (Tree Inventory Report, HortScience/Bartlett Construction, May 5, 2021) ("Tree Inventory, 2021").

The site is in an area formerly developed with industrial uses and is transitioning to life science.

REGULATORY FRAMEWORK

Local, State, and federal regulations have been enacted to provide for the protection and management of sensitive biological and wetland resources. The following section outlines the key local, State, and federal regulations that apply to these resources.

FEDERAL

The U.S. Fish and Wildlife Service (USFWS) is responsible for protection of terrestrial and freshwater organisms through implementation of the federal Endangered Species Act (ESA) and the Migratory Bird Treaty Act (MBTA). The U.S. Army Corps of Engineers (Corps) has primary responsibility for protecting wetlands under Section 404 of the Clean Water Act (CWA). The Corps also regulates navigable waters under Section 10 (33 U.S.C. 403) of the Rivers and Harbors Act.

STATE

The California Department of Fish and Wildlife (CDFW) is the responsible agency for administration of the California Endangered Species Act (CESA), and for protection of streams and water bodies through the Streambed Alteration Agreement process under Section 1600 et seq. of the California Fish and Game Code.

Certification from the California Regional Water Quality Control Board (RWQCB) is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the CWA and Environmental Protection Agency (EPA) Section 404(b)(1) Guidelines. The RWQCB also has jurisdiction over waters of the State not regulated by the Corps under the Porter-Cologne Act. The following discusses in more detail how State and federal regulations address special-status species, wetlands and other sensitive natural communities.

Special-Status Species

Special-status species are plants and animals that are legally protected under the State and/or federal ESAs, the Migratory Bird Treaty Act, the California Fish and Game Code (sections 3503, 3503.5, 3511, 3513, 3515, and 4700), or other regulations.[3] In addition, pursuant to CEQA Guidelines Section 15380, special-status species also include other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts and other essential habitat. Species with legal protection under the federal and State ESAs often represent major constraints to development; particularly when they are wide ranging or highly sensitive to habitat disturbance and where proposed development would result in a take of these species.

[3] Special-status species include: designated (rare, threatened, or endangered) and candidate species for listing by the CDFW; designated (threatened or endangered) and candidate species for listing by the USFWS and NOAA Fisheries; species considered to be rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those identified on lists 1A, 1B, and 2 in the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (2001); and possibly other species which are considered sensitive due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on list 3 in the CNPS Inventory or identified as "California Species of Special Concern (SSC)" by the CDFW. Species designated as a SSC have no legal protective status under the California Endangered Species Act but are of concern to the CDFW because of severe decline in breeding populations and other factors.

Wetlands and Other Waters of the United States

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. The CDFW, Corps, and RWQCB have jurisdiction over modifications to riverbanks, lakes, stream channels and other wetland features. Technical standards for delineating wetlands have been developed by the Corps and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

The Clean Water Act (CWA) was enacted to address water pollution, establishing regulations and permit requirements regarding construction activities that affect storm water, dredge and fill material operations, and water quality standards. The regulatory program requires that discharges to surface waters be controlled under the National Pollutant Discharge Elimination System (NPDES) permit program which applies to sources of water runoff, private developments, and public facilities.

Under Section 404 of the CWA, the Corps is responsible for regulating the discharge of fill material into waters of the United States. The term "waters" includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. All three of the identified technical criteria must be met for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human activity. In general, a permit must be obtained before fill can be placed in wetlands or other waters of the United States. The type of permit is determined by the Corps depending on the amount of acreage and the purpose of the proposed fill.

Certain activities in wetlands or "other waters" are automatically authorized or granted a nationwide permit which allows filling where impacts are considered minor. Eligibility for a nationwide permit simplifies the permit review process. Nationwide permits cover construction and fill of waters of the U.S. for a variety of routine activities such as minor road crossings, utility line crossings, streambank protection, recreational facilities, and outfall structures. A project must demonstrate that it has no more than a minimal adverse effect on the aquatic ecosystem, including species listed under the ESA to qualify for a nationwide permit. Typically, this means that there will be no net loss of either habitat acreage or habitat value, resulting in appropriate mitigation where fill activities are proposed.

The Corps assumes discretionary approval over proposed projects where impacts are considered significant, requiring adequate mitigation and permit approval. To provide compliance with EPA Section 404(b)(1) Guidelines, an applicant must demonstrate that the proposed discharge is unavoidable and is the least environmentally damaging practicable alternative that will achieve the overall project purpose. The 1990 Memorandum of Agreement between the EPA and Corps concerning the Determination of Mitigation under the Guidelines prioritizes mitigation, with the first priority to avoid impacts, the second to minimize impacts, and the third to provide compensatory mitigation for unavoidable impacts.

Jurisdictional authority of the CDFW over wetland areas is established under Section 1600 et seq. of the Fish and Wildlife Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Wildlife Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream or lake without notifying the CDFW, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. The Wetlands Resources Policy of the CDFW states that the Fish and Wildlife Commission will strongly discourage development in or conversion of wetlands, unless, at a minimum, project mitigation assures there will be no net loss of either wetland habitat values

or acreage. The CDFW is also responsible for commenting on projects requiring Corps permits under the Fish and Wildlife Coordination Act of 1958.

In addition, the RWQCB is responsible for upholding state water quality standards. Pursuant to Section 401 of the CWA, projects that apply for a Corps permit for discharge of dredge or fill material, and projects that qualify for a Nationwide Permit must obtain water quality certification from the RWQCB. The RWQCB is also responsible for regulating wetlands under the Porter-Cologne Act, which may include hydrologically isolated wetlands no longer regulated by the Corps under Section 404 of the Clean Water Act. Recent federal Supreme Court rulings have limited the limits of Corps jurisdiction, but the RWQCB in some cases continues to exercise jurisdiction over these features.

Sensitive Natural Communities

Protecting habitat on an ecosystem-level is increasingly recognized as vital to the protection of natural diversity in the State, in addition to species-oriented management. Protecting habitat on an ecosystem-level is considered the most effective means of providing long-term protection of ecologically viable habitat, and can include whole watersheds, ecosystems, and sensitive natural communities. Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species.

Although sensitive natural communities have no protected legal status under the State or federal Endangered Species Acts, they are provided some level of protection under CEQA. The CEQA Guidelines identify potential impacts on a sensitive natural community as one of six significance criteria. As an example, a discretionary project that is constructed on any riparian habitat, native grassland, valley oak woodland, or other sensitive natural community would normally be considered to have a significant effect on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality, and degree of past disturbance, and the anticipated impacts to the specific community type. Where determined to be significant under CEQA, the potential impact would require mitigation through avoidance, minimization of disturbance or loss, or some type of compensatory mitigation when unavoidable.

CITY

1999 General Plan (1999 GP)

The Open Space and Conservation Element of the 1999 GP contains two figures identifying special biological areas requiring a more detailed study. Figure 7.1 General Plan Policies for sensitive Biological Species (p 7-5) and Figure 7.2 Special Environmental Studies Required for Development Proposals (p 7-7). The Project site is not identified on either of these figures as requiring additional biological study.

Draft 2040 General Plan (Draft 2040GP)

The Draft 2040GP identifies biologically sensitive areas and policies to improve the City's biological health and diversity. Chapter 15 Environmental and Cultural Stewardship (p 334, Draft 2040GP) identifies policies and action items to protect habitat, promote tree cover connectivity and protect ecologically sensitive areas. Figure 48: Existing Habitat and Protected Areas (p 340, Draft 2040GP) identifies habitat and protection areas throughout South San Francisco. The Project site is not identified as a habitat or protected area. Figure 49: Connectivity (p 340, Draft 2040GP) identifies areas that contain tree cover. The Project site is shown with sparse tree cover. Figure 50: Ecologically Sensitive Areas (p 341, Draft 2040GP) identifies environmentally sensitive areas. The Project site is not identified as an ecologically sensitive site.

The draft general plan identifies goals to improve habitat and quality of life. These goals, not specific to endangered or threatened species, are applicable to urban open spaces and tree removal.

> "GOAL ES-1: The City supports nature in South San Francisco to encourage healthy ecosystems, improve air and water quality, improve public health, and adapt to a changing climate. INTENT: To foster urban ecology in South San Francisco including open space and connectivity, habitat diversity, urban forestry, planting and vegetation, and land and vegetation management (p 353, Draft 2040GP).
>
> GOAL ES-4: An abundant, robust urban forest that contributes to South San Francisco's quality of life as it combats the effects of climate change. INTENT: To enhance South San Francisco's environmental quality and the mental and physical health of its residents, while bringing significant economic benefits through increased property values. To make the city more resilient to the impacts of climate change and provide habitat for wildlife (p 354, Draft 2040GP).
>
> Policy ES-4.2: Avoid tree removal. Avoid removing trees whenever possible. When removals are warranted, replace each removed tree with three new trees (p 354, Draft 2040GP)."

Municipal Code

SSFMC Section 13.30.020 defines a "Protected Tree" as one with a circumference of 48 inches or more when measured 54 inches above natural grade; a tree or stand of trees designated by the Director of Parks and Recreation as one of uniqueness, importance to the public due to its location or unusual appearance, historical significance or other factor; or a stand of trees that the Director of Parks and Recreation has determined each tree is dependent on the others for survival.

IMPACTS

a) Special-Status Species

Significance Criteria: The Project would have a significant impact if were to result in a substantial adverse effect on special-status species.

The Project site is not within a special-status species habitat as shown on Figure 48: Existing Habitat and Protected Areas (p 340, Draft 2040GP). The Project site is not within an ecologically sensitive area as shown on Figure 50: Ecologically Sensitive Areas (p 341, Draft 2040GP). The Project site is not identified as a biologically sensitive site, as it is located within an urbanized area. Potential suitable and suitable habitat may be along Colma Creek 0.4 mi south of the Project, and Bay fringe areas as noted in the DSASP Environmental Impact Report (Atkins, City of South San Francisco Downtown Station Area Specific Plan EIR, October 2014 SCH# 201302001, p 5-1). The Project would have a less than significant impact on special-status species because it is not located on a sensitive or protected site.

b) and c) Jurisdictional Habitat

Significance Criteria: The Project would have a significant impact if it were to substantially impact sensitive natural communities or jurisdictional wetlands and Waters of the U.S.

Generally speaking, wetlands are legally defined as areas that are suitable for retention or flow of water, have soils that indicate the presence of water, and have plants that mostly require the presence of water. A formal protocol for wetland analysis was not conducted. General observations revealed that the ground surface of the Project site is predominately impervious. Suitable basins or other depressions were not noted where water would likely pool during the winter rainy season. Further wetland analysis regarding jurisdictional evaluation is not required.

The Project site is not within an ecologically sensitive area as shown on Figure 50: Ecologically Sensitive Areas (p 341, Draft 2040GP). The Project site does not contain ponded or pooling water (site inspections December 14, 2021, January 22, 2022, and April 11, 2022, Allison Knapp, USGS National Wetlands Inventory,https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/, accessed on April 14, 2022). The site is not identified in the 1999 SSF General Plan or the Draft 2040GP as biologically sensitive or containing wetland or riparian habitat. The Project would have a less than significant impact on jurisdictional habitat because it is not located within a jurisdictional habitat.

The Project would have no impact on any sensitive natural communities or jurisdictional wetlands because wetlands are not present on the site.

d) Native Fish and Wildlife Movement Opportunities, Nesting Habitat, and Native Wildlife Nursery Sites.

Significance Criteria: The Project would have a significant environmental impact if it were to interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

Wildlife movements include migration (i.e., usually one way per season), inter-population movement (i.e., long-term genetic flow) and small travel pathways (i.e., daily movement within an animal's territory). While small travel pathways usually facilitate movement for daily home range activities, such as foraging or escape from predators, they also provide connection between outlying populations, permitting an increase in gene flow among populations.

These linkages among habitat types can extend for miles from primary habitat areas and occur on a large scale throughout California. Habitat linkages facilitate movement between populations located in small, discrete areas and populations located within larger habitat areas. The mosaic of habitats found within a large-scale landscape result in wildlife populations that consist of discrete sub-populations comprising a large single population, which is often referred to as a meta-population. The movement between wildlife populations is facilitated through habitat linkages, migration corridors and movement corridors even where patches of pristine habitat are fragmented. Potentially low frequency genetic flow may lead to complete isolation and, if pressures promoting mortality are strong, potential extinction.

The Project would result in demolition of a hotel and parking and construction of a life science development building. The Project site does not presently provide linkages to other suitable habitat given its location in an industrial area that is transitioning to life science uses. The Project is not located in any special studies zones and would have a less than significant impact on biological resources with regard to movement corridors.

Migratory Bird Treaty Act (MBTA): The MBTA protects all common wild birds found in the United States except certain introduced species and certain game birds. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend would be in violation of the MBTA. California Fish and Game (CFG) Code section 3503 also makes it illegal to destroy any birds' nest or any birds' eggs that are protected under the MBTA. CFG Code section 3503.5 further protects all birds of prey, such as hawks and owls, and their eggs and nests from any form of taking.

Although no nesting birds were observed during the site visits identified above, the large trees and brushy areas at the Project site may provide suitable cover for nesting of birds, including birds of prey, during the spring and summer seasons. Nest disturbance as a result of proposed tree and brush removal would be considered a breach of MBTA regulations and would be a significant environmental impact.

The Project would remove all the trees on the site and replace them with a minimum of 41 trees which are identified in **Biology Table 1 Proposed Tree Planting**, below. There is the potential for raptors (birds of prey) and other protected birds to nest on the site, and adjacent to the site. These birds are protected under the federal Migratory Bird Treaty Act and California Fish and Game Code section 3503.5. Disturbance of birds during the nesting season that results in loss of nestlings would be a significant environmental impact.

As noted in **Chapter 2, Project Description**, the Project Sponsor is proposing mitigation measures as part of the Project. The Project Sponsor understands nests could be disturbed should trees be removed during nesting season. The impact without mitigation is shown below along with the mitigation proposed as part of the Project.

Biology Impact 1: Tree removal during nesting season could result in a significant impact if active nests are disturbed or destroyed.

Biology Mitigation 1

Bio 1.A.1: Tree Removal Within Nesting Season (approximately March 1 to August 31). No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the following protocol is met.

The Project Sponsor, or designated representative shall retain a licensed biologist to conduct a preconstruction survey for protected birds on the site and in the immediate vicinity if any Project construction activities occur during nesting season. The survey shall be done no more than 15 days prior to the initiation of tree removal and grading and other construction activities. In the event that nesting birds are found on the Project site or in the immediate vicinity, Project Sponsor, or designated representative shall notify the City, locate and map the nest site(s) within three (3) days, submit a report to the City and the California Department of Fish and Wildlife ("CDFW"), establish a no-disturbance buffer of 250-ft, and conduct on-going weekly surveys to ensure the no-disturbance buffer is maintained. In the event of destruction of a nest with eggs, or if a juvenile or adult raptor should become stranded from the nest, injured or killed, the qualified biologist shall immediately notify the CDFW. The licensed biologist shall coordinate with the CDFW to have the injured bird either transferred to a raptor recovery center or, in the case of mortality, transfer it to the CDFW within 48 hours of notification.

A tree permit per South San Francisco Municipal Code Section 13.30.030 (Tree Preservation Ordinance), shall be required prior to removal of a Protected Tree, defined in section 13.30.020 as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representative shall contact the Parks Division to determine if a removal permit is needed. The Project Sponsor, or designated representative shall obtain City issued tree removal permits prior to commencing any tree removal activities; **or**,

Bio 1.B.1: Tree Removal Outside Nesting Season (approximately September 1 to February 28). No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the following protocol is met.

Tree removal outside of nesting season would preclude the need for the measures identified in 1.A.1, above. A tree permit shall be required per South San Francisco Municipal Code Section 13.30.030 (Tree Preservation Ordinance)prior to removal of a Protected Tree, defined in section 13.30.020 as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representative shall contact the Parks Division to determine if a removal permit is needed. The Project Sponsor, or designated representative shall obtain City issued tree removal permits prior to commencing any tree removal activities.

The Project would have a less than significant impact on biological resources with regard to native wildlife movement opportunities or nursery sites because the Project Sponsor would either remove trees outside of nesting season or follow the established protocol and mitigation measure during nesting season.

e) Local Policies and Ordinances

Significance Criteria: The Project would have a significant environmental impact if it were to conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

The tree removal and landscape plan indicate 69 trees to be removed and 41 to be planted.

BIOLOGY TABLE 1
PROPOSED TREE PLANTING

Species	Quantity/Size at Planting	Size at Maturity Tall/Wide	Site Location
Arbutus marina (MS) Olea Europaea 'Swan Hill' or 'Wilsonii' (MS)	11/36" box	10-15 ft t/w	Poletti Way Plaza
Ginkgo biloba 'Autumn Gold' Nyssa sylvatica	10/36" box	35-40 ft t/15-20 ft w	Confluence Terraces
Ginkgo biloba 'Autumn Gold' Nyssa sylvatica	4/36" box	35-40 ft t/15-20 ft w	Confluence Plaza
Quercus franietto Nyssa sylvatica Lophostemon confertus Koelreuteria paniculata	13/36" box	30-50 ft t/20-25 ft w	East Grand Ave Streetscape from Confluence to East Access Plaza
Quercus franietto Nyssa sylvatica Lophostemon confertus Koelreuteria paniculata (S) Cedrus deodara Olea Europaea 'Swan Hill' or 'Wilsonii' (S)	3/36" box	30-50 ft t/20-25 ft w	East Access Plaza

Source: Mantle Landscaping April 2022

(MS) Multistem; (S) Standard

Note: Preferred species noted in bold. Alternate species provided to represent list of possible trees suitable for the environment and design, as there are potential variables that may require an alternate tree being selected. Variables include compliance with the Model Water Efficiency Landscape Ordinance (MWELO), optimal hydrozoning based on compatibility

of water needs of adjacent perennials, availability of trees at nursery at time of planting, unforeseen utility conflicts or other conditions, and not currently identified circulation clearance requirements for emergency and maintenance vehicles.

Figure 49: Connectivity (p 340, Draft 2040GP) identifies areas that contain tree cover. The Project site is shown with sparce tree cover. The Project would remove 69 trees on the site and replant 41 trees as well as grasses and ornamentals and incorporate bioswales in the planting plan.

The landscape plan shows street trees being planted on three elevations, and planting relates to the programmed use of the area. For example, Poletti Way Plaza is proposed to be landscaped with raised planters creating a strong planted edge on the active west side of the building. The planters would include a seating bench and lighting. Smaller multi-stemmed species trees; Arbutus marina or Olea europaea 'Swan Hill' or 'Wilsonii' are proposed. Both species would reach a maximum height and width of 10-15 ft. Biotreatment gardens are proposed in the eastern portion of the planters and would be planted with Chondropetalum tectorum and Deschampsia cespitosa; both are drought and flood tolerant species suited for stormwater treatment. Together the raised planters would create a densely planted landscape along this active edge of the Project and would be under the maximum height required by the Fire Department to provide emergency access to the upper floors of the building.

Raised planters in Confluence Plaza would be planted with drought tolerant ornamental grasses such as Bouteloua gracilis 'Blonde Ambition,' Lomandra longifolia 'Arctic Frost,' and Muhlenbergia capillaris 'White Cloud'. Shrub, perennial, and succulent species would provide flowers and seasonal interest, and include Anigazanthos sp., Hesperaloe parviflora, Agastache barberi 'Kudo's Gold', and Euphorbia characias 'Tasmanian Tiger' or other similar Mediterranean spurge cultivars. Ginkgo biloba 'Autumn Gold,' a columnar tree species or similar such as Nyssa sylvatica, is proposed to edge the terraces and plaza. The planting selection would provide shade in the summer, vibrant yellow fall foliage and habitat for aerial species. The design includes fourteen 36-inch box Gingko trees, which reach a height of 35-40 ft and a width of 15-20 ft at maturity.

Along East Grand Avenue Quercus franietto are proposed to line the street and shade the pedestrian walkway and raised bike path. Alternative species considered are Nyssa sylvatica, Lophostemon confertus, Koelreuteria paniculate, Cedrus deodara, or Olea Europaea 'Swan Hill' or 'Wilsonii'. The design includes thirteen 36-inch box Quercus which reach a height of 40-50 ft and a width of 20-25 ft at maturity. Lomandra longifolia 'Breeze' or similar cultivar will be planted between the street trees in a continuous planter that separates the pedestrian walk from the bike lane.

East Access Plaza is programmed to be an 8,350 sq ft landscaped bioswale and seating area and is directly across from Jack Drago Park. The landscaping in this area proposes larger specimen street trees outside the area programmed for emergency access. Larger specimen trees also serve to visually connect with Jack Drago Park. An art mural is proposed along the façade of the building adjacent to the glazing that encompasses the proposed fitness center.

Cedrus deodara are proposed to mark the East Plaza entrance. The three Deodor Cedars will reach a height of 40 ft in windy urban conditions. Street trees along the Project and street interface are proposed to be larger specimen as they are not restricted in height for emergency access. A biotreatment planting area would be located on the western façade of the building, in part screening above ground utilities. The biotreatment garden would include flood tolerant species that can grow 3 ft tall, such as Chondopetalum tectorum and Cornus serecia.

The proposed landscaping plan would contribute to the creation of an urban forest within the TO/RD area. The proposed Project assists in implementing Goal ES-1 and ES-4, identified below.

GOAL ES-1: The City supports nature in South San Francisco to encourage healthy ecosystems, improve air and water quality, improve public health, and adapt to a changing climate. INTENT: To foster urban ecology in South San Francisco including open space and connectivity, habitat diversity, urban forestry, planting and vegetation, and land and vegetation management (p 353, Draft 2040GP).

GOAL ES-4: An abundant, robust urban forest that contributes to South San Francisco's quality of life as it combats the effects of climate change. INTENT: To enhance South San Francisco's environmental quality and the mental and physical health of its residents, while bringing significant economic benefits through increased property values. To make the city more resilient to the impacts of climate change and provide habitat for wildlife (p 354, Draft 2040GP).

Policy ES-4.2: "Avoid tree removal. Avoid removing trees whenever possible. When removals are warranted, replace each removed tree with three new trees" (p 354, Draft 2040GP). The Project would be required to pay in-lieu fees at a 3:1 ratio removal of the trees on the site and is required by ordinance to obtain a tree removal permit.

The proposed Project would have a less than significant impact on tree removal in light of the proposed landscaping plan that proposes species suitable to the climate in which they would be planted aiding in long term viability and the City policies in place to capture additional plantings.

Biology Finding:

(1) The Project site is not within a special-status species habitat as shown on Figure 48: Existing Habitat and Protected Areas (p 340, Draft SSFGP). The Project site is not within an ecologically sensitive area as shown on Figure 50: Ecologically Sensitive Areas (p 341, Draft SSFGP). The Project would have a less than significant impact on special-status species because it is not located on a sensitive or protected site.

(2) The Project would have no impact on any sensitive natural communities or jurisdictional wetlands because wetlands are not present on the site.

(3) In absence of Biology Mitigation 1, proposed by the Project, there could be a significant impact on biological resources with regard to native wildlife movement opportunities or nursery sites because the Project Sponsor would either remove trees outside of nesting season or follow the established protocol and the mitigation measure during nesting season.

(4) The Project would have a less than significant impact on tree removal in light of the proposed landscaping plan that proposes species suitable to the climate in which they would be planted aiding in long term viability and the City policies in place to capture additional plantings.

(5) The choice of plant species and the spatial distribution of the landscaping along the edges and interior of the site would be the onset of a tree canopy. The placement would lead people onto the sidewalk and bicycle and pedestrian pathway from Caltrain and Grand Avenue.

V. Cultural Resources *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to in §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

SETTING

The Project site is 126,847 sq ft in area, i.e., 2.91 acres. The site is relatively flat ranging from 15 ft to 20 ft above mean sea level and is shaped like a soft-edged triangle (*Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Ave. SSF, CA.* March 2021 Geocon Consultants, Inc.) ("GeoReport, March 2021"). Groundwater appears approximately 4.5 to 8.0 ft below ground level ("bgl") during wet years and 8.5 to 16 ft during dry years (GeoReport, March 2021). The Project site is in Flood Zone X, outside the 100- and 500-year flood zones (Flood Insurance Map Rate Community Panel Number 13-09-1038P, September 9, 2013. Federal Emergency Management Agency).

The site is currently developed with a three-story wood framed hotel and asphalted surface parking. The hotel includes 169 rooms housed in three structures. The site also includes a spa and one shed. Building permits indicate the construction occurred in 1986 (City Building Department Records 2021). Two curb cuts provide access to the site: one off Poletti Way and the other along East Grand at Sylvester Road.

REGULATORY FRAMEWORK

STATE

Assembly Bill 52 (AB 52)

AB52 became effective July 1, 2015 and requires notification to Native American tribes that are traditionally and culturally affiliated with the geographic location of a project that is being proposed. The Lead Agency, in this case the City of South San Francisco, is required by law to within 14 days of an application being deemed complete, provide a formal notification to the designated contact or tribal representative of traditionally and culturally affiliated California Native American tribe(s) that have requested notice.

No designated contact or tribal representative of traditionally and culturally affiliated California Native American tribes have requested to be noticed pursuant to AB 52 (Billy Gross, Principal Planner conversation April 21, 2021, and updated April 14, 2022). Therefore, the City has no obligation to consult as no one has requested notification to be consulted.

CITY

Archeological Studies Required by City

The City required preparation of an archaeological research study. The study was deemed prudent given there have been no archaeological studies performed on the Project site that involved borings and soil

classifications. The following identifies the history of the site, that includes some ambiguity with respect to the potential presence of 'culturally significant soils' within the Project vicinity. Culturally significant soils are those that may contain artifacts and/or human remains, including those potentially interred outside of formal cemeteries.

Leann Taagepera, a cultural and historic resource planner, was contracted to conduct an archaeological records search of the Project site. The study was requested to ascertain the presence or lack thereof of archaeological and/or tribal resources on the site. The study's findings identified the very remote possibility of an archaeological site 1,250 ft (or more) from the Project site. The public record is muddled. A previously prepared environmental document for the Caltrain Electrification Project mentions an archaeological site that was presumed to be present and later found not to be present. The assumption is that the site was either previously destroyed or misidentified (P-41-00004/CA-SMA-41).

Basin Research, an archaeological firm that conducts records search; cultural and archaeological monitoring; and retrieval and preservation of culturally significant soils or artifacts if discovered, was retained to conduct peer review of Taaepera's findings. Colin Busby of Basin Research confirmed the findings of Taagepera. The findings of these two reports are summarized below and included in Appendix A in complete form.

Archaeological Reports

Archaeological Resources Study of 121 E. Grand Ave., South San Francisco, Leann Taagepera Cultural and Historic Resource Planning, Principal June 24, 2021 (Taagepera, 2021)

Taagepera's scope of work included a records search for archaeological resources on the Project site and included a study area of 0.25 miles around the site. Data was requested from Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University.

Taagepera, at the direction of the City, assumed that the entire site would be graded to a depth of 38 ft (p 1), a reasonably conservative assumption. Relying on the Geocon GeoReport, March 2022 for the Project (which was peer reviewed and accepted by the City's Engineering Division, See **Chapter 3.VII Geology and Soils**). Artificial fills are present below the site to a depth of 7.5 to 12 ft below existing grade (bgl). Bay Mud appears approximately 12 ft to 15.5 ft below bgl. Mixed alluvial soils appear below Bay Mud 33 ft to 95 ft bgl. Pleistocene-age sedimentary deposits (the Colma Formation) appear below the mixed alluvial layer to 112 ft bgl.

The records search did not locate any known archaeological resources on the Project site. The search did identify one archaeological resource that potentially exists at least 1,250 ft from the Project site (P-41-00004/CA-SMA-41). The site was first identified in 1909. Taagepera notes the site was identified in a 'technical report' prepared for the Environmental Impact Report/Environmental Impact Statement ("EIR/EIS") for the San Francisco to San Jose Station, California High-Speed Train Project. The consulting firm AECOM, working on the EIR/EIS found that "the site may no longer be present or may never have existed in this location" (p 3).

Taagepera concluded there is a low possibility for culturally significant soils to be present on the site.

Resource Services-In Support of 121 E. Grand Avenue, South San Francisco, San Mateo County, Basin Research, Colin Busby, Ph.D, RPA, Principal February 21, 2022 (BASIN 2022)

According to BASIN, after peer reviewing the archival and literature record, historic maps, and geoarchaeological data the data strongly suggest a very low to low potential for subsurface archaeological resources. The conclusions of BASIN's peer review are excerpted from the report (pps 3, 4).

- No prehistoric resources have been recorded within the project area or immediate area.

- Archaeological studies in the early 20th century recorded no shell mounds along this portion of San Francisco Bay.
- Geoarchaeological sensitivity reviews for potential subsurface cultural resources suggest a low to very low sensitivity for the Pleistocene or Older Deposits adjacent to the project site. While Waechter et al. assign a Low-Moderate sensitivity for Bay Mud deposits, it is unlikely that the project site had surfaces stable enough to support and preserve a prehistoric or contact-era shell mound as it historically bordered a tidal marsh or may have been located within one.
- No surface indications of significant prehistoric or historic archaeological resources have been noted during the past 50 years during archaeological inventories and/or development construction suggesting a very low potential for surface and shallow subsurface cultural resources within or adjacent to the project site.

BASIN notes review of the archaeological data suggests that the potential for the exposure of significant cultural resources within the Project site is very low to low during ground disturbing construction. The BASIN report notes archaeological testing does not appear necessary and archaeological monitoring does not appear to be warranted during Project excavation.

However, a 'Worker Awareness Environmental Training' (WAET) is recommended for personnel involved with ground disturbing construction as well as the retention of an "on-call" archaeologist to respond in the event of an unexpected discovery. These measures, according to BASIN, would provide resource protection in the event of any unexpected cultural discoveries. Additional measures are identified in the report outlining the protocol should culturally significant soils be discovered. (BASIN, 2022, pps 3,4)

The Project Sponsor retained both Taagepera and BASIN as consultants to research and prepare the cultural reports in consultation with the City. The mitigation measures identified in the BASIN report are proposed as part of the Project and identified in **Chapter 2 Project Description** and again below.

IMPACTS

The analysis regarding cultural, archeological and historic resources are based, in part, on examining the criteria identified in California Code of Regulations, Title 14, Chapter 3, Article 5, section 15064.5 (a)(3). In summary, these criteria include consideration of whether any object, building, structure, site, area or other resource would be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California, based on criteria such as that the resource:

1) Is associated with events that have made a significant contribution to the broad patterns of California history and cultural heritage;
2) Is associated with the lives of persons important in our past;
3) Embodies the distinctive characteristics of type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
4) Has yielded or may be likely to yield, information important in prehistory or history.

A lead agency does not have to rely solely on the above criterion and may determine the appropriateness of a potential resource based upon age. Commonly 50 years of age is used as a basis by which to consider a structure's potential historic significance under which a more detailed and rigorous analysis is required to determine actual or imagined significance (section 15064.5, California Code of Regulations).

Archaeological resources are evaluated pursuant to Public Resources Code section 21083.2, 21084.1 and Section 15064.5 of the CEQA Guidelines. If it is determined that a project will cause damage to a unique archaeological resource the lead agency may require reasonable efforts to permit the resource to remain in situ. Measures that are listed as appropriate in subsection(b) of Section 21083.2 include planning construction to avoid the resource; deed the resource into a conservation easement; cap the resource with a layer of soil prior to building; and planning a park or open space to incorporate the resource. A mitigation plan is required if disturbance of the resource is not feasible per subsection (c). Subsection (e) identifies not-to-exceed mitigation cost maximums for archaeological resources.

a) Historic Resources

Significance Criteria: The Project would have a significant environmental impact if it were to cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5.

Comfort Inn and Suites was constructed in 1986 (City Building Permit Records, address file). The 36-year-old building is not considered an historic resource. Moreover, the building is not identified in the City's 1999 General Plan or the Draft 2040GP as an historic resource. Consequently, there are no historical resources or structures on the Project site. The Project would have no impact on historic resources.

b -c) Archaeological Resources

Significance Criteria: The Project would have a significant environmental impact if it were to cause a substantial adverse change in the significance of an archaeological resource as defined in section 15064.5, directly or indirectly destroy a unique paleontological resource or unique geologic feature, or disturb any human remains, including those interred outside formal cemeteries.

Native Americans, over 5,000 years ago, typically settled along creek banks and the margins of San Francisco Bay. According to BASIN there is a low to very low possibility that culturally significant soils could be located in subsurface areas of the site.

Archaeology Impact 1: There is a remote possibility that culturally significant soils could be located in subsurface areas of the site. Disturbance of these soils could result in a significant impact.

Archaeology Mitigation 1

Arch 1.A.1a: Employee Training and Awareness. Prior to the start of ground disturbing grading, demolition or construction, the Project Sponsor/designated representative shall ensure that a *Worker Awareness Environmental Training* (WAET) is conducted by a licensed archaeologist (Archaeologist) in the state of California. Training shall be scheduled in consultation with the Project Sponsor/designated representative, construction manager and other key site personnel, and the City of South San Francisco. WAET training shall be required for all personnel participating in ground disturbing construction to alert them to the archaeological sensitivity of the Project area and provide protocols to follow in the event of a discovery of archaeological materials. The Project Sponsor/designated representative shall also ensure the occurrence of the following:

1.A.1.b: Archaeologist shall be on an "on-call" basis to review and identify any potential archaeological discoveries during ground disturbing grading, demolition and excavation operations and work shall stop within 50 feet of the find. Archaeologist shall be contacted for identification, evaluation and further recommendations consistent with California Environmental Quality Act and City of South San Francisco requirements.

1.A.1c: Grading, demolition and any other plans that require soil disturbance shall note that there is a potential for exposing buried cultural resources including prehistoric Native American burials on the site.

1.A.1.d: Archaeologist shall develop and distribute for job site posting an "ALERT SHEET" summarizing potential finds that could be exposed and the protocols to be followed as well as points of contact to alert in the event of a discovery.

Arch 1.B.1: Protocol in the Event of Discovery of Potentially Culturally Significant Soils or Objects

1.B.1.a: Stop work and contact the on-call archaeologist.

1.B.1.b: Should Archaeologist determine that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource under CEQA, Archaeologist shall notify the appropriate parties of the evaluation and recommend mitigation measures to mitigate to a less-than significant impact in accordance with California Public Resources Code Section 15064.5. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal *Archaeological Monitoring Plan* (AMP) and/or *Archaeological Treatment Plan* (ATP) that may include data recovery may be recommended by the Professional Archaeologist if significant archaeological deposits are exposed during ground disturbing construction. Development and implementation of the AMP and ATP and treatment of significant cultural resources will be determined by the project proponent in consultation with any regulatory agencies.

The treatment of human remains, and any associated or unassociated funerary objects discovered during any soil-disturbing activity within the Project site shall follow the requirements of section 5097.99 of the Public Resources Code). This shall include immediate notification of the appropriate county Coroner/Medical Examiner, Project Sponsor and the City of South San Francisco.

1.B.1c: *A Monitoring Closure Report* shall be filed with the Applicant/Project Sponsor/designated representative and the City at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.

Cultural Resources Finding:

(1) The Basin Report concludes that no prehistoric resources have been recorded within the Project area or immediate area. The Basin Report further notes archaeological studies in the early 20th century recorded no shell mounds along this portion of San Francisco Bay. Additionally, geoarchaeological sensitivity reviews for potential subsurface cultural resources suggest a low to very low sensitivity for the Pleistocene or Older Deposits adjacent to the Project site. While Waechter et al. assign a Low-Moderate sensitivity for Bay Mud deposits, it is unlikely that the Project site had surfaces stable enough to support and preserve a prehistoric or contact-era shell mound as it historically bordered a tidal marsh or may have been located within one.

There are no known culturally significant soils on the Project site

In summary, no surface indications of significant prehistoric or historic archaeological resources have been noted during the past 50 years during archaeological inventories and/or development construction suggesting a very low potential for surface and shallow subsurface cultural resources within or adjacent to the Project site. In light of the low to very low cultural sensitivity of the Project site Archaeology Mitigation 1, proposed by the Project, is

required. there could potentially be a significant impact given that there is a low to very low potential there are culturally significant soils on the site. Implementation of Archaeology Mitigation 1 would reduce this impact to less than significant.

(2) There are no historical resources on the site. Therefore, there would be no impacts to a historic resource.

VI. Energy *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

INTRODUCTION

This section evaluates potential energy impacts related to construction and operation of the Project. Energy resources required for the Project would include electricity, natural gas, and petroleum fuels (gasoline and diesel). These energy resources would be required for the Project building and equipment, as well as vehicles associated with the Project. Energy resources would also be consumed by onsite equipment and vehicles required for construction of the Project. Energy consumption estimates were derived from the Air Quality & Greenhouse Gas Emissions Assessment (AQ/GHG Assessment) prepared for the Project by ECORP Consulting, Inc. (2022), found in **Appendix A** of this Initial Study.

The Project includes Conservation Measures and Sustainable Design – See **Chapter 2, Project Description**. The Project building would also be designed to achieve Leadership in Energy and Environmental Design (LEED) Gold standard. LEED certified buildings save money, improve efficiency, lower carbon emissions and create healthier places for people. To achieve LEED certification or standard, a project earns points by adhering to prerequisites and credits that address carbon, energy, water, waste, transportation, materials, health and indoor environmental quality. Projects go through a verification and review process by GBCI and are awarded points that correspond to a level of LEED certification: Certified (40-49 points), Silver (50-59 points), Gold (60-79 points) and Platinum (80+ points).[4]

SETTING

The following includes pertinent environmental and regulatory setting information.

ENVIRONMENTAL FRAMEWORK

Electricity and Natural Gas

Electricity and natural gas service is provided to the City and the Project site by Pacific Gas & Electric (PG&E). Electricity and natural gas is currently consumed by the existing Comfort Inn and Suites at the Project site. Peninsula Clean Energy (PCE) is San Mateo County's official Community Choice Aggregation electricity provider. PCE delivers electricity through existing PG&E utility infrastructure. In 2020, San Mateo County consumed approximately 4,167,506,557 kilowatt-hours (kWh) of electricity

[4] United States Green Building Council (USGBC), LEED Rating System, https://www.usgbc.org/leed, Accessed May 5, 2022.

and 200,000,000 Therms (1 Therm equals 100,000 British Thermal Units [BTU] or 100 kilo-BTU [kBTU]).[5]

Petroleum Fuels

Petroleum fuels (diesel and gasoline) are currently consumed by the existing Comfort Inn and Suites at the Project site. Petroleum fuel consumption for San Mateo County is not available. In 2019, California consumed approximately 662 million barrels of petroleum, with transportation sources consuming approximately 85 percent. In 2019, California consumed approximately 1,668 trillion BTU of gasoline (roughly 14.4 billion gallons) and 567 trillion BTU of diesel (roughly 4.1 billion gallons).[6]

REGULATORY FRAMEWORK

STATE

Integrated Energy Policy Report

Senate Bill (SB) 1389 (Chapter 568, Statutes of 2002) required the California Energy Commission (CEC) to: "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (Public Resources Code Section 25301(a)). This work culminated in the Integrated Energy Policy Report (IEPR). CEC adopts an IEPR every two years and an update every other year. The 2019 IEPR is the most recent IEPR, which was adopted February 20, 2020. The 2019 IEPR provides a summary of priority energy issues currently facing the State, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally responsible energy sources.

Senate Bill 1078, 350 and 100: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002) establishes a renewable portfolio standard (RPS) for electricity supply. The RPS required that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. The program was accelerated in 2015 with SB 350, which mandated a 50 percent RPS by 2030. SB 350 includes interim annual RPS targets with three-year compliance periods and requires 65% of RPS procurement to be derived from long-term contracts of 10 or more years. In 2018, SB 100 was signed into law, which again increases the RPS to 60% by 2030 and requires all the state's electricity to come from carbon-free resources by 2045.

Assembly Bill 32, Senate Bill 32, and Climate Change Scoping Plan and Update

Reducing GHG emissions in California has been the focus of the state government for approximately two decades. GHG emission targets established by the state legislature include reducing statewide GHG emissions to 1990 levels by 2020 (AB 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (SB 32 of 2016). Executive Order S-3-05 calls for statewide GHG emissions to be reduced to 80 percent below 1990 levels by 2050.

---

[5] California Energy Commission, Energy Reports, California Energy Consumption Database, http://www.ecdms.energy.ca.gov/Default.aspx, Accessed May 5, 2022.

[6] United States Energy Information Administration (USEIA), California State Energy Profile, https://www.eia.gov/state/print.php?sid=CA, Accessed May 5, 2022.

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by CARB, outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and substantially advance toward our 2050 climate goals. It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). California plans to significantly reduce GHG emissions from the energy sector through the development of renewable electricity generation in the form of solar, wind, geothermal, hydraulic, and biomass generation. The State will further its climate goals through improving the energy efficiency of residential and non-residential buildings by continual updates (i.e., every three years) to the Energy Code, which contains mandatory and prescriptive energy efficiency standards for all new construction.

Low Carbon Fuel Standard

Under the Climate Change Scoping Plan, the CARB identified the low carbon fuel standard (LCFS) as one of the nine discrete early action measures to reduce California's GHG emissions. The LCFS is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits.

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The 2022 California Energy Code was adopted by the CEC on August 11, 2021 and will apply to projects constructed after January 1, 2023. The 2022 Energy Code focuses on four key areas in new construction and businesses: (1) encouraging electric heat pump technology and use, (2) establishing electric ready requirements when natural gas is installed, (3) expanding solar system and battery storage standards, and (4) strengthening ventilation standards to improve indoor air quality. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards exceed those in the California Energy Code.

California Green Building Standards Code (Title 24, Part 11)

The California Green Building Standards Code (CALGreen) is part 11 of Title 24, California Code of Regulations. CALGreen is the first-in-the-nation mandatory green building standards code, developed in an effort to meet the goals of California's landmark initiative AB 32, which established a comprehensive program of cost-effective reductions of GHG emissions to 1990 levels by 2020. CALGreen includes a waste diversion mandate, which requires that at least 65 percent of construction materials generated during new construction or demolition projects are diverted from landfills.

DISTRICT/PROVIDER

PG&E Integrated Resource Plan

PG&E adopted the 2020 Integrated Resource Plan (IRP) on September 1, 2020, to provide guidance for serving the electricity and natural gas needs of residents and businesses within its service area while fulfilling regulatory requirements.

PCE 2018 Integrated Resource Plan

PCE is a Community Choice Aggregation energy program that serves the entirety of San Mateo County, including the City of South San Francisco. PCE adopted the 2018 IRP on December 14, 2017, to provide guidance for serving the electricity needs of the residents and businesses in the county, all while fulfilling regulatory requirements over a 10-year period from 2018 to 2027.

CITY

2014 Climate Action Plan

The City Climate Action Plan (CAP), adopted in 2014, includes goals, policies, and strategies to reduce the City's GHG emissions, in compliance with AB 32. GHG reduction strategies identified in the CAP include a development checklist to identify applicable plan measures for discretionary projects. The City's CAP was adopted, with the purpose of reducing GHGs community-wide to achieve a reduction target of 15 percent below 2005 emission levels by 2020. The CAP identifies GHG reduction measures to reduce GHG emissions within the City. Strategies include implementation of transportation demand management plans, expanding active transportation alternatives, maximizing energy efficiency in the built environment, developing a waste reduction strategy to increase recycling and reuse of materials, and reducing water demand. The City's CAP is currently being updated, as part of the General Plan Update. The City's CAP was adopted with the intention of supporting AB 32 while also protecting the unique resource of the community through goals, policies, and strategies that can be built on for future GHG reduction.

2022 Climate Action Plan

The City of South San Francisco is currently updating the original 2014 CAP to align with new State regulations and targets related to climate change. The 2014 CAP set an emissions target for 2020 and this updated CAP extends the horizon year to 2040 while also setting a long-term goal of carbon neutrality by 2045, consistent with State targets. The 2022 CAP update outlines how the City of South San Francisco will create new policies, programs, and services that will support the community in taking strong action to reduce GHG emissions. Although the City implemented many policies and programs identified in the 2014 CAP, the City experienced steady economic and population growth over that time period. By updating its existing CAP, the City of South San Francisco reaffirms its commitment to leading the way to a more sustainable future. The City has set bold targets and developed strategies for reducing GHG emissions while increasing the City's resilience to climate change impacts. The 2022 CAP identifies 62 actions to achieve the GHG reduction targets and has reduction targets of 40 percent below 1990 levels by 2030 (SB 32), 80 percent reduction by 2040 and carbon net neutrality by 2045.

IMPACTS

a) Result in Potentially Significant Environmental Impact Due to Wasteful, Inefficient, or Unnecessary Consumption of Energy Resources

Significance Criteria: The Project would have a significant environmental impact if it would result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

Construction

Construction of the Project would require consumption of petroleum fuels (gasoline and diesel fuel) by construction workers travelling to and from the site, transportation of site and building materials, and equipment for on-site construction activities. Petroleum fuels would be the primary sources of energy for these activities except where electricity is available and feasible, thus electricity use during construction would be minor. Construction of the Project would utilize fuel efficient equipment and trucks consistent with state regulations and would be consistent with state regulations intended to reduce the inefficient, wasteful, or unnecessary consumption of energy, such as anti-idling and emissions regulations.

Construction energy estimates were derived using standard fuel consumption conversions from the GHG emissions estimated in the AQ/GHG Assessment.[7] Project construction would consume approximately 378,000 gallons of diesel fuel and approximately 85,500 gallons of gasoline over the approximately five-year construction period. This increase in petroleum fuel consumption would be temporary and would cease once project construction is completed. This minor increase in fuel consumption would not require the development of new petroleum supplies or construction of new production or distribution facilities. Therefore, energy usage during construction of the Project would not be wasteful, inefficient, or unnecessary and construction energy impacts would be less than significant.

Operations

Energy consumption during Project operation would consist of electricity and natural gas consumption for operation of the Project building and equipment, and petroleum fuel consumption for Project vehicles (assumed to be gasoline for the purpose of estimating the volume) and emergency generator testing (diesel). Operational energy estimates (for existing baseline and Project) were derived using standard fuel consumption conversions from the GHG emissions estimated in the AQ/GHG Assessment.[8]

Energy resources are currently consumed under the existing baseline, which includes an existing 169-room, 57,623 sq ft, Comfort Inn and Suites. Annual operation under the existing baseline was estimated to consume approximately 98,000 gallons of gasoline, 468,000 kWh of electricity, and 2 million kBTU of natural gas. Annual operation under the Project would consume approximately 389,000 gallons of gasoline, 800 gallons of diesel, 6.8 million kWh of electricity, and 25 million kBTU of natural gas.

[7] Fuel usage is estimated using the CalEEMod output for CO2, and a kgCO2/gallon conversion factor, as cited in the U.S. Energy Information Administration, Carbon Dioxide Emissions Coeffiecients, https://www.eia.gov/environment/emissions/co2_vol_mass.php

[8] Fuel usage is estimated using the CalEEMod output for CO2, and a kgCO2/gallon conversion factor, as cited in the U.S. Energy Information Administration, Carbon Dioxide Emissions Coeffiecients, https://www.eia.gov/environment/emissions/co2_vol_mass.php

Therefore, annual operation of the Project would result in the net consumption of 291,000 gallons of gasoline, 800 gallons of diesel, 6.3 million kWh of electricity, and 23 million kBTU of natural gas.

The Project building would be highly energy efficient due to California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (Title 24, Part 11) and would replace less efficient buildings since the existing hotel was constructed in 1986. Furthermore, the Project includes Conservation Measures and Sustainable Design – See Chapter 2, Project Description. The Project building would also be designed to meet requirements equivalent to achieving LEED Gold Certification. Therefore, energy usage during operation of the Project would not be wasteful, inefficient, or unnecessary and operational energy impacts would be less than significant.

b) Conflict With or Obstruct a State or Local Energy Plans

Significance Criteria: The Project would have a significant environmental impact if it would conflict with or obstruct implementation State or local plans for renewable energy or energy efficiency.

The State and local plans applicable to the Project are discussed in the Regulatory Setting section above. State plans include Senate Bill 1078, 350 and 100, the LCFS, Low Carbon Fuel Standard, California Building Energy Efficiency Standards (Title 24, Part 6), and California Green Building Standards Code (Title 24, Part 11). Each State plan contains required standards related to renewable energy development and energy efficiency. Local plans that address energy efficiency, which are designed to achieve the state's RPS mandates, include PG&E's 2020 IRP, PCE's 2018 IRP, and the City's Climate Action Plans (2014 and 2022). The Project would be required to comply with all applicable standards related to State and local plans for renewable energy and energy efficiency. Furthermore, the Project exceeds these standards by implementing Conservation Measures and Sustainable Design – **See Chapter 2, Project Description**, and by designing the Project building to achieve LEED Gold Certification. Therefore, the Project would not conflict with State or local energy plans and the Project would have no impact.

Energy Finding:

(1) Energy usage during construction and operation of the Project would not be wasteful, inefficient, or unnecessary and operational energy impacts would be less than significant.

(2) The Project would not conflict with State or local energy plans and the Project would have no impact.

VII. Geology and Soils *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☒	☐	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv) Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☒	☐	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

SETTING

The Project site is 126,847 sq ft in area, i.e., 2.91 acres and is relatively flat ranging from 15 ft to 20 ft above mean sea level (*Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Ave. SSF, CA.* April 2021 Geocon Consultants, Inc.) ('Geocon, April 2021'). Groundwater appears approximately 4.5 to 8.0 feet bgl during wet years and 8.5 to 16 ft during dry years (Geocon, April 2021). Artificial fills are present below the site to a depth of 7.5 to 12 ft bgl. Bay Mud appears approximately 12 ft to 15.5 ft below bgl. Mixed alluvial soils appear below Bay Mud 33 ft to 95 ft bgl. Pleistocene-age sedimentary deposits (the Colma Formation) appear below the mixed alluvial layer to 112 ft bgl (Geocon, April 2021 pps 5,6). The Project site is in Flood Zone X, outside the 100- and 500-year flood zones (Flood Insurance Map Rate Community Panel Number 13-09-1038P, September 9, 2013. Federal Emergency Management Agency).

The site is currently developed with a three-story wood framed hotel and asphalted surface parking. The hotel includes 169 rooms housed in three structures. The site also includes a spa and one shed. Building permits indicate the construction occurred in 1986 (City Building Department Records 2021). Two curb cuts provide access to the site: one off Poletti Way and the other along East Grand at Sylvester Road. An earthen embankment coincident with the northern property line supports the Grand Avenue Overpass.

REGULATORY FRAMEWORK

CITY

Conditions of Project Approval

Chapter 1, Legislative Framework, Sections 4 and 5 outline the City's standard review process and conditions of project approval. Additional conditions of approval will become more specific through the forthcoming entitlement review.

General Plan

1999 General Plan (1999 GP)

The Health and Safety Element of the City of *South San Francisco General Plan* acknowledges and mitigates the risks posed by hazards (e.g. geologic and seismic). The 1999 GP includes the following policy applicable to seismic activity and geologic hazards:

> "Policy 8.1-G-1: Minimize the risk to life and property from seismic activity and geologic hazards in South San Francisco."

Draft 2040 General Plan (Draft 2040GP)

The draft general plan identifies areas and policies to minimize risk from seismic activity and geologic hazards. Chapter 13 Community Resilience (p 278, Draft 2040GP) identifies policies and action items to protect habitat, promote tree cover connectivity and protect ecologically sensitive areas. Figure 40: Projected Groundshaking (p 290, Draft 2040GP) identifies ground shaking zones for South San Francisco. The Project site is identified as being within Zone VIII (Very Strong). Figure 41: Liquefaction Risk (p 291, Draft 2040GP) identifies areas that have the potential for liquefaction risk. The Project site is shown within the liquefaction zone. Figure 42: Landslide Zones (p 292, Draft 2040GP) identifies areas with general susceptibility to landslides. The Project site is not identified within a landslide zone.

The draft general plan identifies goals and policies to minimize risk related to seismic activity and geologic hazards.

> "GOAL CR-4: The City minimizes the risk to life and property from seismic activity and geologic hazards in South San Francisco (p 305, Draft 2040GP).
>
> Policy CR-4.1: Protect buildings, infrastructure, and other assets from seismic hazards (p 305, Draft 2040GP).
>
> Policy CR-4.4: Protect buildings, infrastructure, and other assets from other geologic hazards. Protect existing and new buildings, infrastructure and other assets from other geologic hazards, including landslides, slope instability, liquefaction, settlement, subsidence, unstable geologic units, unstable soils, and expansive soils (p 305, Draft 2040GP).
>
> Action CR-4.4.1: Require site-specific soils and geologic reports for projects located in high-hazard areas. On a parcel by parcel basis, require that permit applications for projects located

within areas susceptible to geologic hazards, as shown in Figure 43, prepare site-specific soils and geologic reports for review and approval by the City Engineer, and incorporation of the recommended actions during construction (p 310, Draft 2040GP)."

Municipal Code

SSFMC Section 13.04.000 regulates excavation and construction on public property, The municipal code requires that excavation and construction must adhere to certain conditions, including adhering to applicable restrictions and requirements for excavation and grading as imposed by the Uniform Building Code (enforced through adoption of the California Building Standards Code), disposing of constructed or excavated materials, adhering to maximum or minimum slopes to be used, adhering to requirements for degree of compaction of fill immaterial, and adhering to requirements for safe and adequate drainage of the site.

Geotechnical Reports Required by City

The City Engineering Division requires geotechnical reports as a part of the building permit process for projects to be constructed on vacant land, demolition and rebuilding, and additions to buildings that require grading and additional loading (see **Chapter 1, Section 5**). Geotechnical reports are required to be prepared by a licensed geologist, geotechnical engineer, or engineering geologist. The reports shall include a detailed site characterization study, an analysis of potential hazards and design specifications to mitigate the potential hazards. The reports identify design and construction specifications for (among other items) grading, site stabilization, drainage, utility and infrastructure design and placement, foundation design, retaining wall specifications and placement, and soil compaction requirements. The reports are peer reviewed by the City's geotechnical consultant and are often modified through this process. The final geotechnical report is required to incorporate the modifications recommended by the City's consultant and the project is required to be built as identified through this process. The types of grading and construction methods that are required reduce geotechnical impacts (i.e., expansive soils, liquefaction, differential settlement, severe ground shaking, etc.) to the maximum extent technically feasible.

The Project Sponsor's geotechnical consultant is Geocon Consulting, their seismic consultant is Partner and structural engineers are Magnussan and Klemenic Associates. The City's peer reviewer for this Project is Ninyo & Moore. The following reports were provided by the Project Sponsor. The following reports and peer reviews are identified below.

- Preliminary Geotechnical Investigation 121 East Grand Avenue, South San Francisco, California, Project No. 8961-04-02, March 2021 and April 2021 Response to Peer Review Comments.

  The Geocon March 2021 report provides a geotechnical assessment and recommendations on an 11-story mixed use life science building. The Geocon April 2021 report responds to the peer review comments presented by Ninyo & Moore on April 28, 2021.

- Geotechnical Peer Review 121 East Grand Avenue South San Francisco, California Project # 40396 7001, March 24 and April 28, 2021, Ninyo & Moore.

  Ninyo & Moore identified five points requiring clarification and found after review of Geocon's April 2021 memorandum that the questions were satisfactorily addressed.

- Seismic Risk Assessment SF Bay Development 121 East Grand Avenue, South San Francisco, CA, Partners Project # 20-281457.2, June 8, 2020

- Basis of Design 121 East Grand Avenue South San Francisco, CA, Magnusson Klemenic Associates, Structural Engineers, March 3, 2022

These reports are included in **Appendix A**

March 2021 Geocon Report

Geocon performed field exploration, laboratory testing, engineering analysis and presented the findings in their March 2021 report. Geocon conducted Cone Penetrometer Testing (CPT) December 16. 2016, April 26, 2017, and May 5, 2017. CPT testing reached a maximum depth of 55 ft below existing grade (i.e., ground surface) (bgl). Additional research was conducted on December 3 and 10 2020 and included two exploratory borings to depths of approximately 60 and 112.6 ft bgl. CPTs were conducted to maximum depths of approximately 85 ft bgl. Seismic shear wave velocity measurements were collected at five-foot intervals at each CPT location (Geocon March 2021, p 1).

As noted above, the project description was modified from 2021 to 2022. The Geocon recommendations assume the following Project design (Geocon March 2021, pps 1, 2):

- Underground utilities located along the eastern and southern margins of the Project site would be relocated. The above ground retaining wall supporting the Grand Avenue Overpass would be replaced and rebuilt.
- Reinforced concrete mat foundation would be proposed for the Project, anticipated to be on the order of three to eight feet in width.
- Depth of cut to 40 ft below existing ground surface.
- Subterranean levels will extend laterally to the site limits.
- Development would consist of eleven levels above grade, three levels of subterranean parking and a two-deck reinforced concrete podium at ground level.

Geocon identifies seismic design criteria, characterizes soil and excavation activities and materials for any on site fill, and all matters of grading, design of mat foundations, exterior slabs, temporary excavations and shoring, retaining wall design, undergrounding of utilities, pavement recommendations and surface drainage.

Geotechnical consultants typically identify standard recommendations addressing future plan and specification review, and testing and observation services for projects. These recommendations along with the others identified in the Geocon reports are a requirement of City issuance of grading permits, as standard permitting procedure by the Engineering and Building Divisions of the City.

Ninyo & Moore March 24, 2021 Peer Review and Geocon Response

Ninyo & Moore (NM) noted four items to be clarified by Geocon. The comments and responses are below.

1. NM: Provide an evaluation and estimates of the span at which the estimated differential settlement occurs. Geocon: Design mat foundation loadings are not yet available as the Project design is in its early stages. Assuming relatively uniform mat foundation pressures, Geocon estimates differential settlement under dead plus live load conditions will be ¼ inch or less across a horizontal distance of 50 ft.

2. NM: Provide an estimate of the uplift pressure under the proposed mat slab foundation. Geocon: Recommendations for design uplift pressure have been included in the updated geotechnical report.
3. NM: Provide the potential for ongoing secondary consolidation of the ground surface from the initial land reclamation fill, including differential of underground utilities. Geocon: Bay Mud deposits were encountered in Geocon Borings B1, B3, B4, and B5 with the maximum observed thickness of those deposits being approximately 8 ft in Boring B1. Given the age of the fills placed atop the Bay Mud during original development in the area, as well as the surcharge effects of the nearby East Grand Avenue overcrossing embankment that was constructed in the 1980s, the potential for ongoing secondary compression in the Bay Mud is considered low.

Peer Review April 28, 2021, Ninyo & Moore

Ninyo and Moore provided a peer review letter, April 28, 2021, stating Geocon had adequately addressed all of the geotechnical issues at the subject property.

April 2021 Geocon Report

Geocon prepared a revised geotechnical report incorporating their responses to the Ninyo and Moore peer review. The April 2021 Geocon report is the document that shall be updated (see **Geology and Soils Mitigation Measure 1**, below) to incorporate the requirements of this Initial Study.

MKA International Consulting Engineers

The Grand Avenue Overpass is an approximately 2:1 sloped landscape berm that aligns with the top of the East Grand Overpass sidewalk and slopes down to the ground floor grade of the site. The existing landscape berm varies in its height, starting at the elevation of the street intersection of Grand Avenue and East Grand Avenue, and rising in elevation towards the west up to a height of approximately 30 ft.

The Project proposes to build a retaining wall against the site's northeast property line abutting the Grand Avenue Overpass, with a variable height of two to 30 ft that corresponds with the elevation slope change of the sidewalk adjacent to the overpass. The new reinforced concrete retaining wall would be constructed and tied back into the earth beneath the Grand Avenue Overpass with regularly spaced tiebacks for stability. A tieback easement underneath the overpass measuring approximately 50 ft deep would be needed along the entire length to allow for the construction of the retaining wall and tiebacks. The required depth of the tiebacks roughly correlates with the height of the wall and would be finalized following a detailed structural and geotechnical assessment (Michael Leung, SOM in concert with MKA International Construction Consultants and Engineers, email to Knapp Consulting April 29, 2022).

Seismicity

The following description of the geomorphology of the Bay Area is excerpted from Geocon, April 2021, p 2.

> South San Francisco is located within the Coast Ranges Geomorphic Province of California, which is characterized by a series of northwest trending mountains and valleys along the north and central coast of California. Topography is controlled by the predominant geological structural trends within the Coast Range that generally consist of northwest trending synclines, anticlines and faulted blocks. The dominant structure is a result of both active northwest trending strike-slip faulting, associated with the San Andreas Fault system, and east-west compression within the province. The San Andreas Fault (SAF) is a major right-lateral strike-

slip fault that extends from the Gulf of California in Mexico to Cape Mendocino in northern California. The SAF forms a portion of the boundary between two tectonic plates on the surface of the earth. The Pacific Plate is west of the SAF which moves north relative to the North American Plate, located east of the fault. In the San Francisco Bay Area, movement across this plate boundary is concentrated on the SAF but also distributed, to a lesser extent, across several other faults including the Hayward, Calaveras and Rodgers Creek faults, among others. Together, these faults are referred to as the SAF system. Basement rock west of the SAF is generally granitic, while to the east it consists of a chaotic mixture of highly deformed marine sedimentary, submarine volcanic and metamorphic rocks of the Franciscan Complex. Both are typically Jurassic to Cretaceous in age (205 to 65 million years old). Overlying the basement rocks are Cretaceous (about 140 to 65 million years old) marine, as well as Tertiary (about 65 to 1.6 million years old) marine and nonmarine sedimentary rocks with some continental volcanic rock. These Cretaceous and Tertiary rocks have typically been extensively folded and faulted largely because of movement along the SAF system, which has been ongoing for about the last 25 million years, and regional compression during the last about 4 million years. The inland valleys, as well as the structural depression within which San Francisco Bay is located, are filled with unconsolidated to semi-consolidated deposits of Quaternary age (about the last 1.6 million years). Continental deposits (alluvium) consist of unconsolidated to semi-consolidated sand, silt, clay and gravel, while the bay deposits typically consist of soft organic-rich silt and clay (bay mud) or sand. Available geologic mapping by the United States Geological Survey (USGS) and other sources indicates the site is underlain by artificial fills over Bay Mud deposits. Geologic mapping by the USGS indicates bedrock depths of approximately 50 to 100 feet below mean sea level (msl) across the site.

Geology and Soils Table 1 identifies faults and fault systems in the Project area. All faults trend in a north south direction with the San Andreas and San Gregorio faults west of the Project site. The remaining faults are east of the Project site.

GEOLOGY AND SOILS TABLE 1
REGIONAL FAULT SUMMARY

Fault	Distance (miles)	Maximum Earthquake Magnitude Mw
San Andreas	3.0	8.0
San Gregorio	8.75	7.4
Hayward	15.0	7.43
Monte Vista-Shannon	21.50	6.4
Silver Creek	23.25	6.9
Calaveras	23.75	6.9
Contra Costa Shear Zone	23.75	6.5
Pleasanton	25.25	6.4

Source: California Geological Society, appearing on p 3, Geocon, April 2021

IMPACTS

SEISMIC HAZARDS

Seismic hazards are generally classified as two types, primary and secondary. Primary geologic hazards include surface fault rupture. Secondary geologic hazards include ground shaking, liquefaction, dynamic densification and seismically induced ground failure.

ai) Surface Fault Rupture

Significance Criteria: The Project would have a significant environmental impact if it were to expose people or structures to potential substantial adverse effects associated with the surface rupture of a known earthquake fault.

The California Geological Association (CSG) defines an active fault is one with surface displacement within the last 11,000 years. A potentially active fault has demonstrated evidence of surface displacement within the past 1.6 million years. Faults that have not moved in the last 1.6 million years are typically considered inactive. The closest fault line to the Project site is the San Andreas fault, located three miles to the west. The Project site is not located on an earthquake fault line or shear zone. The site is not within a currently established State of California Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults are known to pass directly beneath the site. The Project would result in no impact from exposing people or structures to danger from surface rupture of a known earthquake fault.

aii) Strong Seismic Ground Shaking

Significance Criteria: The Project would have a significant environmental impact if it were to expose people or structures to potential substantial adverse effects associated with strong seismic ground shaking.

Given that there are no active faults within the Project site, damage from a seismic event is most likely to occur from the secondary impact of strong seismic ground shaking originating on a nearby fault. Estimates of actual ground shaking intensity at a particular location are made according to the **Geology and Soils Table 1 Regional Fault Summary**. Intensity would vary depending upon where the seismic event originates. For the Maximum Credible Earthquakes (MCE) along the nearby San Andreas and San Gregorio faults (Richter Magnitude 8.0 and 7.4, respectively) the shaking intensities would be IX,

"violent" and VIII, "very strong", respectively, at the Project site (Association of Bay Area Governments, Seismic Hazard Maps).

The American Society of Civil Engineers (ASCE) publishes information based upon research data correlating the impacts associated with a design seismic event and the response of various soil types thereto. Soil classifications are identified in seven categories: those being A through F. These classifications are referred to as 'site class'. Class A is hard rock and Class F is liquefiable soils, peat, and high plasticity clay.

Geology and Soils Table 2 identifies the site class, soil profile, velocity, resistance, and strength of a design level seismic event. Geotechnical mitigation measures are identified based upon the magnitude of the seismic event, soil type, and loading. Modeling of these and other factors identify the structural design elements to incorporate into site improvements and building design to reduce impacts associated with severe ground shaking to less than significant. This information is included in the City's Building Code.

Essentially, soil site classification and magnitude of the seismic event is modeled, and the resulting information informs the structural engineer's design of a building. This information is contained in the Uniform Building Code and informs the design criteria for site improvements.

Geocon April 2021 identifies the site located within two grounding shaking classifications, Classes C and D. Class C consists of very dense soil and soft rock, While Class D consists of stiff soil. The following table identifies the various soil classifications. As mentioned above, since the review and acceptance of the Geocon April 2022 report the Project has been designed to have one less level of underground parking and six additional floors. Although the City will require an updated geotechnical report and peer review thereto, the requirement is identified as a mitigation measure.

GEOLOGY AND SOILS TABLE 2
SITE CLASSIFICATIONS FROM ASCE 7-02 AND 7-05

Site Class	Site Profile Name	Soil Shear Wave Velocity, v_s (ft/sec)	Standard Penetration Resistance, $\overline{N}$ or Nch	Undrained Shear Strength, $\overline{S_u}$ (psf)
A	Hard Rock	$\overline{v_s} > 5{,}000$	NA	NA
B	Rock	$2{,}500 < \overline{v_s} \leq 5{,}000$	NA	NA
C	Very Dense Soil and Soft Rock	$1{,}200 < \overline{v_s} \leq 2{,}500$	>50	> 2,000 psf
D	Stiff Soil	$600 < \overline{v_s} \leq 1{,}200$	15 to 20	1,000 to 2,000 psf
E	Soft Clay Soil	$\overline{v_s} \leq 600$	<15	<1,000 psf
		Any profile with more than 10 ft of soil having the following characteristics: • Plasticity index PI > 20 • Moisture Content $w \geq 40$&, and • Undrained Shear Strength, $S_u < 500$ psf		
F	Soil Requires Site Response Analysis	Liquefiable soils, peat, high plasticity clay		

Source: California Geological Society.

Geology and Soils Impact 1: In absence of an updated geotechnical report and peer review by the City, there could be an impact with respect to severe groundshaking, expansive soils, liquefaction and ground failure.

Geology and Soils Mitigation 1: An updated geotechnical report(s) shall be provided to the City for peer review prior to any issuance of building, grading, grubbing or tree removal permits. The updated report(s) shall address the revised Project description and include all design measures requisite to be compliant with the California Building Code. The updated report(s) shall include at a minimum, structural design and construction specifications, including but not limited to, undergrounding of utilities addressing any construction requirements for potentially and/or corrosive soils, grading, site stabilization, drainage, utility and infrastructure design and placement, foundation design, retaining wall specifications, and soil compaction requirements and design. The report(s) shall be peer reviewed by the City's consultant and revised accordingly until determined complete.

The maximum seismic protections identified to date are implemented through the provisions of the Title 15 of the City's Municipal Code (Building Code) which was updated in 2021 (City Ordinance 1628-2021). These measures are implemented through the building permit process and coupled with an updated geotechnical review would reduce Project impacts to less than significant.

aiii) Seismic-related ground failure/liquefaction

Significance Criteria: The Project would have a significant environmental impact if it were to expose people or structures to potential substantial adverse effects associated with seismic-related ground failure, including liquefaction.

The site is not located within a State of California Seismic Hazard Zone related to liquefaction as CGS has not published liquefaction mapping for the Project area. According to Geocon (March 2022) web-based mapping by United States Geological Society (USGS) and CGS indicates portions of the site

possess a "very high" susceptibility to liquefaction. Due to the increasing overburden pressure with depth, liquefaction of granular soils is generally limited to the upper 50 feet of a soil profile. Geocon assessed the potential for liquefaction using the computer software program CLiq (Version 2.0, Geologismiki) and the in-situ soil parameters measured in the CPT soundings.[9]

Geocon's liquefaction analysis identified potentially liquefiable layers at each CPT location that did not meet refusal on obstructions within the artificial fills that comprise the site. In general, the liquefiable layers are located more than 5 ft bgl at the site as several sandy layers within the upper 30-35 ft are potentially liquefiable. Geocon notes total ground surface settlements of up to approximately 3.5 inches may occur. However, site grading would occur to depths of 40 ft removing the sandy soil layers and replacing them with reinforced concrete walls for the parking structure. Assuming relatively uniform mat foundation pressures, Geocon estimates differential settlement under dead plus live load conditions would be ¼ inch or less across a horizontal distance of 50 ft. In light of Geology and Soils Mitigation Measure 1, the Project would result in a less than significant impact associated with liquifiable soils as design measures identified in the geotechnical studies would reduce impacts to less than significant.

aiv) Landslides

Significance Criteria: The Project would have a significant environmental impact if it were to expose people or structures to substantial hazards from landslides.

A landslide is a mass of rock, soil and debris displaced down slope by sliding, flowing or falling. There are no known landslides near the site, nor is the site in the path of any known or potential landslides. Geocon does not consider the potential for a landslide to be a hazard to the Project. The Project would have no impact with respect to landslides.

b) Erosion or Loss of Topsoil

Significance Criteria: The Project would result in a significant environmental impact if it were to result in substantial soil erosion or in the loss of topsoil.

Erosion of topsoil can result from grading and site preparation activities as well as a result of improper landscaping design. The Project assumes grading the entire site and cutting up to 40 ft below grade for parking and back-of-house uses. Off hauled soil, if not properly packed and covered, can migrate off site. A prescribed amount of soil watering during construction activities keeps a site moist enough to reduce the potential for dust to be created and soil to be tracked off site, in addition to many other measures required to reduce erosion impacts.

In absence of the NPDES C-3 requirements enforced by the City as a condition of building and grading permit issuance the Project would have a potential to increase erosion during construction. The NPDES requirements are enforced by the City's Engineering Division to reduce impacts associated with soil erosion and water pollution during both construction and operation of projects to less than significant. These requirements are described in detail in **Section 3.9, Hydrology and Water Quality** and in **Chapter 1, Section 5**.

[9] Geocon's evaluation incorporated an earthquake moment magnitude (Mw) of 7.9 and a groundwater depth of 5 feet. The software applied the methodology of Boulanger and Idriss (2014) to the CPT data to evaluate liquefaction potential and estimate resultant settlements. Geocon implemented a depth weighting factor proposed by Cetin (2009) to estimate post-liquefaction settlement at the site. The Geocon analysis also considered the potential for cyclic softening in clayey soil. Geocon used a ground motion/Peak Ground Acceleration (PGA) of 1.0g for their analysis based on 2019 CBC seismic design criteria.

Soil erosion can occur after construction as a result of an improperly designed landscape and irrigation plan. As noted in **Chapter 2, Project Description** the Project proposes:

1. Limiting irrigation between 3:00 AM and two hours after sunrise.
2. Drip irrigation with rain sensors.
3. Drought tolerant landscaping.
4. Bioswale design embedded in planting areas.

The final landscape plan is required to be reviewed by Planning and Parks and Recreation staff as part of the building permit issuance. The City's review and approval process ensures sustainable measures are incorporated into the as-built environment.

Erosion control measures are required as a matter of law during site preparation, grading, construction and a period of time until landscaping takes hold, and as a result off site erosion impacts are considered to be less than significant. The landscape plan proposes measures to reduce off site erosion to less than significant. The City's review and approval process ensures sustainable measures are incorporated into construction and as-built environments. Off-site erosion is considered less than significant.

c and d) Geologic Instability, Expansive Soils, Lateral Spreading, Subsidence, or Collapse.

A significant environmental impact would occur if a project was not engineered to reduce impacts associated with substantial risks to life or property to a less than significant level.

Significance Criteria: The Project would have a significant environmental impact if located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

Soils containing clay are considered expansive. Clay containing coarse-grained particles, such as cobbles, pebbles, and sands, may also be expansive depending upon the percentage and type of clay minerals present in its fine content. Artificial fill can be considered expansive for the same reasons. Expansive soils can become unstable in a seismic event.

The site contains loose undocumented fill to 12 ft bgl, Bay Mud, a highly plastic soil, to 15 ft bgl and medium to stiff and sandy clays to 93 ft bgl. The depth of cut and removal of soils would occur up to 40 ft bgl. Some but not all expansive soils would be removed. If not engineered properly the Project could result in a significant impact with respect to expansive soils. Implementation of Geology and Soils Mitigation Measure 1 would reduce this impact to less than significant.

Geologic Instability: Geocon conducted soil testing for minimum resistivity of utilities buried in normal portland cement, to resist corrosion from phenyl groups (benzene, tripenylmethane) (pH), chloride, and water-soluble sulfur monoxide (SO), an inorganic compound only found in a dilute gas phase. Failure of cement encased structures or utilities resulting from corrosion could result in site instability.

Geology and Soils Table 3 below summarizes the results of Geocon's corrosivity testing. The California Geologic Society, Caltrans and the construction industry considers a site corrosive to foundation elements if one or more of the following conditions exists for the representative soil samples at the site (https://corrosion-doctors.org/Corrosion-Kinetics/Ohmic-drop-soil.htm:, accessed June 23, 2022).[10]

[10] Table modified by Knapp to incorporate 'Constituent Threshold'.

- The pH is equal to or less than 5.5
- Chloride concentration is equal to or greater than 500 parts per million (ppm) or 0.05%
- Sulfate concentration is equal to or greater than 1,500 ppm (0.15%)
- Resistivity (ohm-cm) less than 20,000 oh-cm

GEOLOGY AND SOILS TABLE 3
SUMMARY OF SOIL TESTING AND CORROSION PARAMETERS

Boring No. (sample depth in ft)	Soil Type (USCS Classification)	Resistivity (ohm-cm)	pH	Chloride	Sulfate (ppm)
Constituent Threshold		***Less than 20,000***	***Equal or greater than 5.5***	***Equal to or greater than 500 ppm***	***Equal to or greater than 1,500 ppm***
B1 (0-5)	SAND with clays and gravels (SP)	3,900	8.5	50	<10
B2 (0-5)	Sandy SILT with gravels (ML)	2,000	8.2	96	190
B3 (1-5)	Gravelly Sand with clay (SC)	3,600	9.4	56	110
B4 (9.5)	Gravelly SAND with clay (SC)	3,200	6.5	56	140

Source: California Geological Society and Geocon, appearing in Appendix B 'Laboratory Testing', (Geocon April 2022)

According to Geocon (email from Shane Rodaker, Vice President, Geocon to Adam Cashner, Senior Vice President PH3 RE, June 24, 2022)

> Soil resistivity is the measure of the soil's ability to transmit electric current. Corrosion of buried ferrous metal is proportional to the resistivity of the soil. A lower resistivity indicates a higher propensity for transmitting electric currents that can cause corrosion of buried ferrous metal items. In general, the higher the resistivity, the lower the rate for corrosion. Per Caltrans Corrosion Guidelines (Caltrans 2018), resistivity serves as an indicator parameter for the possible presence of soluble salts and it is not included as a parameter to define a corrosive area for structures. A minimum resistivity value for soil less than 1,100 ohm-cm may indicate the presence of high quantities of soluble salts and a higher propensity for corrosion. Based on the laboratory minimum resistivity test results and Caltrans criteria, soil at the locations tested does not have a higher propensity for corrosion.

Page 6 of the April 2021 Geocon report notes:

> Geocon does not practice in the field of corrosion engineering and mitigation. If corrosion sensitive improvements are planned, it is recommended that a corrosion engineer be retained to evaluate corrosion test results and incorporate the necessary precautions to avoid premature corrosion of buried metal pipes and concrete structures in direct contact with the soils.

Geology and Soils Mitigation Measure 1 includes additional assurances regarding soil corrosivity by requiring this to be addressed in the updated geotechnical report. Soil corrosivity is considered less than significant with implementation of Geology and Soils Mitigation Measure 1.

e) Capability of Soils to Support Septic Tanks

Significance Criteria: The Project would have a significant environmental impact if it involved construction of septic systems in soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems.

The Project does not propose to build any new septic tank or alternate waste disposal systems. The Project site would be connected to the city's wastewater system. The Project would have no impact on soils due to septic systems as the Project would be connected to the City's wastewater system.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature

The presence of paleontological resources is very low to low as identified in Section **V Cultural Resources**. The Project Sponsor has proposed the mitigations identified in the BASIN report and this environmental analysis restates the mitigation measures as **Cultural 1.A.1 and 1.B.1.**

Geology and Soils Finding:

(1) No active or potentially active faults are known to pass directly beneath the site. The Project would result in no impact from exposing people or structures to danger from surface rupture of a known earthquake fault.

(2) Geology and Soils Impact 1: In absence of an updated geotechnical report and peer review by the City, there could be an impact with respect to severe groundshaking, expansive soils, liquefaction and ground failure.

Geology and Soils Mitigation 1: An updated geotechnical report(s) shall be provided to the City for peer review prior to any issuance of building, grading, grubbing or tree removal permits. The updated report(s) shall address the revised Project description and include all design measures requisite to be compliant with the California Building Code. The updated report(s) shall include at a minimum, structural design and construction specifications, including but not limited to, undergrounding of utilities addressing any construction requirements for corrosive soils, grading, site stabilization, drainage, utility and infrastructure design and placement, foundation design, retaining wall specifications, and soil compaction requirements and design. The report(s) shall be peer reviewed by the City's consultant and revised accordingly until determined complete.

(3) The City's building code was updated in 2021 (City Ordinance 1628-2021). The maximum seismic protections identified to date are implemented through the provisions of the Title 15 of the City's Municipal Code, (Building Code), which was updated in 2021 (City Ordinance 1628-2021). These measures are implemented through the building permit process and coupled with an updated geotechnical review would reduce Project impacts to less than significant.

(4) Assuming relatively uniform mat foundation pressures, Geocon estimates differential settlement under dead plus live load conditions would be ¼ inch or less across a horizontal distance of 50 ft. In light of Geology and Soils Mitigation Measure 1, the Project would result

in a less than significant impact associated with liquifiable soils as design measures identified in the geotechnical studies and building code would reduce impacts to less than significant.

(5) Erosion control measures during site preparation, grading, construction and a period of time until landscaping takes hold, are required as a matter of law and as a result off site erosion impacts are considered to be less than significant. The landscape plan proposes measures to reduce off site erosion to less than significant. The City's review and approval process ensures sustainable measures are incorporated into construction and as-built environments. Off-site erosion is considered less than significant.

(6) The site contains loose undocumented fill to 12 ft bgl, Bay Mud, a highly plastic soil, to 15 ft bgl and medium to stiff and sandy clays to 93 ft bgl. The depth of cut and removal of soils would occur up to 40 ft below grade. Some but not all expansive soils would be removed. If not engineered properly the Project could result in a significant impact with respect to expansive soils. Implementation of Geology and Soils Mitigation Measure 1 would reduce this impact to less than significant.

(7) Geocon conducted soil testing for minimum resistivity of utilities buried in normal portland cement, to resist corrosion from phenyl groups (benzene, tripenylmethane) (pH), chloride, and water-soluble sulfur monoxide (SO), an inorganic compound only found in a dilute gas phase. Failure of cement encased structures or utilities resulting from corrosion could result in site instability. All categories were found to be under significance thresholds. Geologic instability relating to soil corrosion would be less than significant based upon the findings identified in Geology and Soils Table 3. Geocon recommends the Project Sponsor retain a corrosion engineer to conduct additional study and identify design parameters should corrosion sensitive improvements be considered (Geocon March 2021, p 6).

(8) The Project would have no impact on soils due to septic systems as the Project would be connected to the City's wastewater system and not a septic tank.

(9) The presence of paleontological resources is very low to low as identified in Section 3, Chapter V Cultural Resources. The Project Sponsor has proposed the mitigations identified in the BASIN report and this environmental analysis restates the mitigation measures as Cul 1.A.1 and 1.B.1.

VIII. Greenhouse Gas Emissions *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

INTRODUCTION

This section is based on the Air Quality & Greenhouse Gas Emissions Assessment (AQ/GHG Assessment) prepared for the Project by ECORP Consulting Inc. (2022), found in **Appendix A** of this Initial Study. This AQ/GHG Assessment was prepared using methodologies and assumptions recommended in the rules, regulations, and guidelines of BAAQMD. This section presents existing conditions, pertinent GHG emissions standards and regulations, estimated GHG emissions attributable to the Project, and an analysis of the Project's consistency with the City's Climate Action Plans (2014 and 2022).

SETTING

The following includes pertinent environmental and regulatory setting information. Additional setting information can be found in the AQ/GHG Assessment.

ENVIRONMENTAL SETTING

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature

from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2. Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere.

REGULATORY FRAMEWORK

STATE

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the State, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

Senate Bill X1-2

SB X1-2 expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources.

Senate Bill 350

SB 350 further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030, be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy efficiency program is focused) of retail customers through energy conservation and efficiency.

Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045.

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions.

The 2022 California Energy Code was adopted by the CEC on August 11, 2021 and will apply to projects constructed after January 1, 2023. The 2022 Energy Code focuses on four key areas in new construction and businesses: (1) encouraging electric heat pump technology and use, (2) establishing electric ready requirements when natural gas is installed, (3) expanding solar system and battery storage standards, and (4) strengthening ventilation standards to improve indoor air quality. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards exceed those in the California Energy Code.

California Green Building Standards Code (Title 24, Part 11)

The California Green Building Standards Code (CALGreen) is part 11 of Title 24, California Code of Regulations. CALGreen is the first-in-the-nation mandatory green building standards code, developed in an effort to meet the goals of California's landmark initiative AB 32, which established a comprehensive program of cost-effective reductions of GHG emissions to 1990 levels by 2020. CALGreen includes a waste diversion mandate, which requires that at least 65 percent of construction materials generated during new construction or demolition projects are diverted from landfills.

BAY AREA AIR QUALITY DISTRICT (BAAQMD)

2017 BAAQMD Clean Air Plan

In April 2017, BAAQMD adopted the 2017 Clean Air Plan, whose primary goals are to protect public health and to protect the climate. The 2017 Clean Air Plan updates the Bay Area 2010 Clean Air Plan and complies with state air quality planning requirements, as codified in the California Health and Safety Code (although the 2017 plan was delayed beyond the three-year update requirement of the code). State law requires the Clean Air Plan to include all feasible measures to reduce emissions of O_3 precursors and to reduce the transport of O_3 precursors to neighboring air basins. The 2017 Clean Air Plan contains 85 measures to address reduction of several pollutants: O_3 precursors, PM, air toxics, and GHGs. Other measures focus on a single type of pollutant: super GHGs such as methane and black carbon that consists of harmful fine particles that affect public health. These control strategies are grouped into the following categories:

- Stationary Source Measures
- Transportation Control Measures
- Energy Control Measures
- Building Control Measures
- Agricultural Control Measures
- Natural and Working Lands Control Measures
- Waste Management Control Measures
- Water Control Measures
- Super GHG Control Measures

CITY

Chapter 15.60.030 Diversion and Requirements, South San Francisco Municipal Code, Demolition Debris Ordinance

The City's Construction and Demolition Debris Ordinance requires that at least 65 percent of non-inert waste materials and 100 percent of inert waste materials are diverted from landfills through recycling and salvage.

2014 Climate Action Plan

The City Climate Action Plan (CAP), adopted in 2014, includes goals, policies, and strategies to reduce the City's GHG emissions, in compliance with AB 32. GHG reduction strategies identified in the 2014 CAP include a development checklist to identify applicable plan measures for discretionary projects. The City's 2014 CAP was adopted with the purpose of reducing GHGs community-wide to achieve a reduction target of 15 percent below 2005 emission levels by 2020. The 2014 CAP identifies GHG reduction measures to reduce GHG emissions within the City. Strategies include implementation of transportation demand management plans, expanding active transportation alternatives, maximizing energy efficiency in the built environment, developing a waste reduction strategy to increase recycling and reuse of materials, and reducing water demand. The City's 2014 CAP was adopted with the intention of supporting AB 32 while also protecting the unique resource of the community through goals, policies, and strategies that can be built on for future GHG reduction.

2022 Climate Action Plan

The City of South San Francisco is currently updating the original 2014 CAP to align with new State regulations and targets related to climate change. The 2014 CAP set an emissions target for 2020 and this updated 2022 CAP would extend the horizon year to 2040 while also setting a long-term goal of carbon neutrality by 2045, consistent with State targets. The 2022 CAP update outlines how the City of South San Francisco will create new policies, programs, and services that will support the community in taking strong action to reduce GHG emissions. Although the City implemented many policies and programs identified in the 2014 CAP, the City experienced steady economic and population growth over that time period. By updating its existing CAP, the City of South San Francisco reaffirms its commitment to leading the way to a more sustainable future. The City has set bold targets and developed strategies for reducing GHG emissions while increasing the City's resilience to climate change impacts. The 2022 CAP identifies 62 actions to achieve the GHG reduction targets and has reduction targets of 40 percent below 1990 levels by 2030 (SB 32), 80 percent reduction by 2040 and carbon net neutrality by 2045.

THRESHOLDS OF SIGNIFICANCE

The State CEQA Guidelines do not prescribe specific methodologies for performing a GHG assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) state that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines § 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The BAAQMD recently approved Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans (April 2022). The BAAQMD developed these thresholds of significance based on typical residential and commercial land use projects. As such, these thresholds may not be appropriate for other types of projects that do not fit into the mold of a typical residential or commercial project. A lead agency does not necessarily need to use a threshold of significance if the analysis and justifications that were used to develop the threshold do not reflect the particular circumstances of the project under review. Accordingly, a lead agency should not use these thresholds if it is faced with a unique or unusual project for which the analyses supporting the thresholds as described in Justification Report do not squarely apply. In such cases, the lead agency should develop an alternative approach that would be more appropriate for the particular project before it, considering all of the facts and circumstances of the project on a case-by-case basis.

The 2014 CAP is the most recent adopted City document addressing GHG emissions. While this document was intended to reduce Citywide GHG emissions consistent with Statewide reduction goals for the year 2020, the City's GHG-reduction program, as promulgated by the City's CAP process, is currently being updated as part of the General Plan Update. The 2022 CAP, which is anticipated to be adopted in the near future, extends the horizon year to 2040 and sets a long-term goal of carbon neutrality by 2045 to align with State targets. The City's climate action program, as encapsulated in both the 2014 CAP and 2022 CAP set bold targets and developed strategies for reducing GHG emissions while increasing the City's resilience to climate change impacts.

Due to the timing of this Initial Study in correlation with the adoption of the updated 2022 CAP and BAAQMD Justification Report, and the ability for a lead agency to choose, at its discretion, methods of analyzation supported by substantial evidence, this Project is analyzed for consistency with the GHG reduction measures contained in both the 2014 CAP and 2022 CAP.

IMPACTS

a) Generate GHG Emissions That May Have a Significant Impact on the Environment; and
b) Conflict with an Applicable Plan, Policy, or Regulation Adopted for Reducing GHG Emissions

Significance Criteria: The Project would have a significant environmental impact if it would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or if it would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing GHG emissions. If the Project would conflict with the GHG reductions measures in the City's 2014 and 2022 CAPs, it would be deemed to have a potentially significant impact.

GHG Emissions were modeled using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction generated GHG emissions were calculated using CalEEMod model defaults for San Mateo County and information provided by the Project proponent such as the construction equipment and duration. Operational GHG emissions were calculated based on specific Project site plans. For the purposes of this analysis, projected emissions associated with proposed operations are compared to the existing baseline, which includes an existing 169-room, 57,623 sq ft, Comfort Inn and Suites hotel.

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Project construction would result in the generation of approximately 4,595 metric tons of CO_2e over the course of the five-year construction period. Once construction is complete, the generation of these GHG emissions would cease. Furthermore, as an Air Quality Condition of Project Approval, construction equipment would meet USEPA or CARB Tier 4 Final off-road emission standards. Tier 4 engine standards reduce precursor and subset GHG emissions such as nitrogen oxide by as much as 90 percent.

In addition, the Project would be required to comply with the applicable version of the Title 24 Building Energy Efficiency Standards and CALGreen, as well as the City's Construction and Demolition Debris Ordinance, which requires that at least 65 percent of non-inert waste materials and 100 percent of inert waste materials are diverted from landfills through recycling and salvage. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills and reduces demand for natural resources. The City's 2014 and 2022 CAPs do not contain GHG reduction measures or policies related to construction emissions. Therefore, the Project would not generate GHG emissions that would have a significant impact on the environment or conflict with or obstruct implementation of the City's 2014 and 2022 CAPs and construction GHG emissions impacts would be less than significant.

Operations

Implementation of the Project would result in long-term operational GHG emissions from area sources, energy use, motor vehicles, water usage, and solid waste disposal. As previously described, projected emissions associated with proposed operations are compared to the existing baseline, which includes the current operation of an existing 169-room, 57,623 sq ft, Comfort Inn and Suites hotel. Operational-generated GHG emissions for the Project are summarized in **GHG Emissions Table 1**.

GHG EMISSIONS TABLE 1
OPERATIONAL-RELATED GHG EMISSIONS

Emission Source	CO_2e Emissions (Metric Tons/Year)
Proposed Project	
Area Source Emissions	7
Energy Emissions	1,293
Mobile Source Emissions	3,458
Waste Emissions	206
Water Emissions	16
Proposed Project Operations Total	4,980
Existing Conditions	
Area Source Emissions	0
Energy Emissions	112
Mobile Source Emissions	713
Waste Emissions	46
Water Emissions	5
Existing Operations Total	876
Difference	
Project Net Operations Total	4,104

Source: ECORP Consulting, 2022. Refer to AQ/GHG Assessment for Model Data Outputs.

Notes: Emissions for the Project account for the testing for four 2,000 horsepower Tier 4 generators five days per year.

The Project building would be highly energy efficient due to California Building Energy Efficiency Standards (Title 24, Part 6) and California Green Building Standards Code (Title 24, Part 11) and would replace less efficient buildings since the existing hotel was constructed in 1986. Furthermore, the Project includes Conservation Measures and Sustainable Design – **See Chapter 2, Project Description**. The Project building would also be designed to the requirements of LEED Gold classification.

Additionally, the Project site can be identified for its "location efficiency". Location efficiency describes the location of the Project site relative to the type of urban landscape its proposed to fit within, such as an 'urban area', 'compact infill', or 'suburban center'. In general, compared to the statewide average, a project could realize vehicle miles traveled (VMT) reductions up to 65 percent in an urban area, up to 30 percent in a compact infill area, or up to 10 percent in a suburban center, and thus reductions in GHG emissions. The Project site represents an urban/compact infill location within the central portion of the City and is served by existing public transportation (adjacent to Caltrain Station). Furthermore, the Project is in proximity to surrounding nonresidential land uses. The increases in land use diversity and mix of uses in the Project area would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation, which would result in corresponding reductions in transportation-related GHG emissions.

The Project was reviewed relative to the GHG reductions measures and policies within the City's 2014 and 2022 CAP. The Project would not conflict with the GHG reductions measures in the City's 2014 and 2022 CAPs (See AQ/GHG Assessment). Furthermore, all development within the City is required to adhere to applicable City-adopted policy provisions supporting its GHG reduction program,

including those contained in the 2014 and 2022 CAPs. The Project applicant would be required to complete a Development Review Checklist to confirm consistency with the CAP measures to the satisfaction of City staff. The City ensures all CAP provisions are incorporated into projects and their permits through development review and applications of conditions of approval as applicable. Applicable and feasible provisions of the City GHG reduction program as promulgated by its CAP documents would be incorporated into the proposed Project. Therefore, the Project would not generate GHG emissions that would have a significant impact on the environment or conflict with or obstruct implementation of the City's 2014 and 2022 CAPs and operational GHG emissions impacts would be less than significant.

Greenhouse Gas Emissions Finding:

(1) The Project would not generate GHG emissions that would have a significant impact on the environment or conflict with or obstruct implementation of the City's 2014 and 2022 CAPs and construction and operational GHG emissions impacts would be less than significant.

IX. Hazards and Hazardous Materials *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☒	☐
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

INTRODUCTION

This section utilizes information from the Phase I Environmental Site Assessment by Geosyntec Consultants (2022) and Federal Aviation Administration (FAA) Aeronautical Study No. 2021-AWP 7644-OF, 09.09.2022.

SETTING

PROJECT SITE HISTORY

The Project site is currently developed with a three-story hotel and associated courtyard areas, which was constructed in 1986 according to the San Mateo County Assessor's Office and City of South San Francisco Building Division records. Remaining areas of the site consist of parking and landscaped areas.

Based on a review of historic topographic maps, the Project site consisted of a small structure on the western side of the Project site from at least 1896 to 1899. Based on a review of additional historical resources, including historical aerial photos, the Project site appeared mostly undeveloped, with an

unimproved road passing through the southeast corner of the Project site from at least 1930 to 1946. By 1946, a drainage feature was observed in the center of the Project site. By 1956, the drainage feature was no longer observed, and a rail spur was added parallel to the improved road and the land east of the road paved; infrastructure/equipment extended onto the Project site from the structure north of the Project site until removed by 1968; and a small structure was observed in the western corner of the site.

By 1968, two man-made surface impoundments were present in the center of the Project site. In aerial photographs the Project site appeared to be graded in 1974 and 1982. By 1982, the eastern road, rail spur, and paved area were removed. By 1993, the small structure in the western corner of the Project site was removed, and the current on-Site buildings and associated parking lot was observed. The Project site was first listed as Comfort Suites in the 1996 city directory. By 2006, the Site was listed as Comfort Suites and Paramount Hospitality Management, by 2012 as Comfort Inn-Airport North, and by 2016 as Comfort Inn.[11]

SENSITIVE RECEPTORS

Residential, schools, childcare facilities, schools and convalescent facilities are typically considered sensitive land uses. Heavy commercial and industrial land uses are typically considered potential sources of toxic or hazardous materials. Construction and operation of the Project would be considered a potential source of hazardous materials. The nearest sensitive land use to the Project site is an apartment building (Cadence Apartments) located approximately 690 ft west of the Project site on Airport Boulevard. The closest school to the Project site is Martin Elementary School, on School Street, over one-half mile away to the west.

REGULATORY FRAMEWORK

Hazardous materials use, storage, and disposal are governed by the following standards and permits at both the federal and state level. **Chapter 1 Legislative Framework Section 1.5.4** provides additional information on the regulation and treatment of hazardous materials.

FEDERAL

- Toxic Substances Control Act, administered by the EPA, Regulation 40 CFR, Part 720.
- Hazardous Materials Transportation Act, administered by the Department of Transportation, Regulation 49 CFR 171 et seq.
- Resource Conservation and Recovery Act (RCRA) 42 U.S.C. 6901 et seq.
- Hazardous Waste Management Standards for Generators, Transporters, and Waste Facilities, administered by EPA, 40 CFR 260 et seq.
- Occupation Safety and Health Act, 29 U.S.C. 651.
- Workplace Exposure Limits, administered by Occupational Safety and Health Administration. 29 CFR 1900 et seq.

STATE

- California Hazardous Waste Control Act. California Health and Safety Code, Division 20, Chapter 6.5.

[11] Geosyntec Consultants, Phase I Environmental Site Assessment, Site: 121 East Grand Avenue, South San Francisco, California 94080, 2022

- California Hazardous Waste Management Regulations. California Code of Regulations, Title 22. Social Security, Division 4. Environmental Health.
- California Department of Toxic Substances Control, Hazardous Waste and Substances Site List – Site Cleanup (Cortese List).
- California Occupational Safety and Health Act, California Labor Code sections 6300 et seq.

REGIONAL/COUNTY

The San Mateo County Department of Environmental Health (SMCDEH) largely serves as the lead permitting or remediation agency through various memoranda of understandings with federal, state, regional agencies, and local government. Often the Regional Water Quality Control Board (RWQCB) and/or the BAAQMD take a lead or partnership in site remediation with the SMCDEH.

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program) was established in 1993 to protect public health and safety, and to restore and enhance environmental quality, and sustain economic vitality through an effective and efficient implementation of the Unified Program. San Mateo County Environmental Health Services was designated by the State Secretary for Environmental Protection as the Certified Unified Program Agency (CUPA) for San Mateo County in 1996. Compliance is achieved through routine inspections of regulated facilities, and investigation of citizen-based complaints and inquiries regarding improper handling and/or disposal of hazardous materials and/or hazardous wastes.

Businesses must complete a Hazardous Materials Business Plan (HMBP) using an electronic reporting system for the safe storage and use of chemicals. Firefighters, health officials, planners, public safety officers, health care providers and others rely on the HMBP in an emergency. They use it to prevent or lessen damage to the health and safety of people and the environment when a hazardous material is released. The HMBP Program is also known as the Community Right to Know Program and any citizen has the right to review these plans upon request.

The HMBP must include:

- Summary of business activities
- Owner/operator information including emergency contacts
- The type and quantity of reportable hazardous materials
- Site map
- Emergency response procedures
- Employee training program

In general, a HMBP is required if a business/facility handles and/or stores a hazardous material equal to or greater than the minimum reportable quantities. These quantities are 55 gallons for liquids, 500 pounds for solids and 200 cubic ft (at standard temperature and pressure) for compressed gases. For, minimum reportable quantities other than the quantities referenced above, refer to the Health and Safety Code Division 20 Chapter 6.95.

SAN MATEO COUNTY EVACUATION MAP

San Mateo County along with other Bay Area Counties have launched an interactive map enabling residents to find out which evacuation zone they live within and obtain the evacuation status for a given zone. The interactive map is accessed through myzone.zonehaven.com.

CITY

Fire Department

The South San Francisco Fire Department (SSFFD) reviews development and entitlement applications, levies and enforces code requirements for fire prevention and safety and conducts periodic inspections of business activities.

Chapter 15.60.030 Diversion and Requirements, South San Francisco Municipal Code (Demolition Debris Ordinance)

The City of South San Francisco is mandated by the State of California to divert sixty-five percent (65%) of all solid waste from landfills either by reusing or recycling. A Waste Management Plan ("WMP")is required for covered building projects, such as the Project. The WMP shall identify the methods by which at least sixty-five percent (65%) of non-inert project waste materials and one hundred percent (100%) of inert materials ("65/100") will be diverted from the landfill through recycling and salvage. Preparation and approval of the WMP is required prior to issuance of building, grading and/or demolition permits.

1999 General Plan (1999 GP)

The 1999 GP contains *Figure 8-4 Fire Hazard Management Units,* which identifies High Priority Fire Management Zones (1999 GP, p. 265). The Project site is not identified as being within a High Priority Fire Management Zone.

Draft 2040 General Plan (Draft 2040GP)

Similar to the 1999 GP, the Draft 2040GP (Figure 44), identifies the only California High Fire Hazard Severity Zone in the City to be San Bruno Mountain State & County Park over one-half mile away from the Project site. The Draft 2040 GP also shows the Project site well outside of Airport Hazard Zones (Figure 46), such as runway protection zones, approach/turning zones, and sidelines zones.

IMPACTS

a) and b) Hazardous Materials Impacts to the Public or Environment

Significance Criteria: The Project would have a significant environmental impact if it were to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or if it were to create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Construction Impacts

Hazardous materials would be stored, used, and transported in varying amounts during construction of Project. Construction activities associated with the Project would involve the use of heavy equipment, which would contain fuels and oils, and various other products such as concrete, paints, and adhesives. The Project would be required to comply with all Federal, State, and local regulations regulating the handling, storage, and transportation of hazardous materials.

The State of California adopted a Construction General Permit on September 2, 2009 (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (CGP), discussed in more detail in the **Hydrology and Water Quality Section X** following this section. The CGP regulates construction site stormwater management. This process, vetted in the **Hydrology and Water Quality Section X** would prevent the discharge of pollutants to surface waters or groundwater and minimize or

eliminate potential degradation of surface water or groundwater quality during construction of the Project. Construction activities would not create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials or through a reasonably foreseeable upset and accident condition involving the release of hazardous materials in the environment. Therefore, construction impacts would be less than significant.

Operational Impacts

Hazardous materials would also be stored, used, and transported in varying amounts during Project operations, mainly related to the proposed R&D laboratories and occasional refueling of emergency generators with diesel fuel. While specific tenants have not yet been identified, R&D laboratories would likely handle some materials considered to be biological and/or chemical hazards. Furthermore, the other proposed uses in the building would involve hazardous materials typical of commercial operations such as cleaners and solvents.

The SMCEHD enforces regulations pertaining to safe handling and proper storage of hazardous materials to prevent or reduce the potential for injury to health and the environment. Among these regulations is a requirement for a HMBP. Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Division of Occupational Safety and Health Administration is responsible for developing and enforcing workplace safety standards and ensuring worker safety in the handling and use of hazardous materials.

Furthermore, the City requires that building spaces be designed to handle the intended uses, with sprinklers, alarms, vents, and secondary containment structures, in accordance with the guidelines laid out in the City's Fire Code. Compliance with state and local regulations would ensure that buildings are equipped with safety measures including sprinklers, alarms, etc., to minimize potential impacts of the presence of hazardous materials. The City further requires that upon completion of the construction of the proposed building, occupancy is not allowed until a final inspection is made by the South San Francisco Fire Department for conformance of all building systems with the City's Fire Code and National Fire Protection Association requirements. The inspection includes a review of the emergency evacuation plans.

The Project would be required to comply with all Federal, State, and local regulations regulating the handling, storage, and transportation of hazardous materials during operations. Operational activities would not create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials or through a reasonably foreseeable upset and accident condition involving the release of hazardous materials in the environment. Therefore, operational impacts would be less than significant.

c) Hazardous Materials Impacts to Schools within One-Quarter Mile

Significance Criteria: The Project would have a significant environmental impact if it were to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within a quarter mile of an existing or proposed school.

The Project site is not within a quarter mile of an existing or proposed school. The closest school to the Project site is Martin Elementary School, on School Street, over one-half mile away to the west. Therefore, no impacts related to hazardous materials on schools would occur.

d) Hazardous Materials Presence Pursuant to Government Code Section 65962.5

Significance Criteria: The Project would have a significant environmental impact if it was located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 ("Cortese List") and, as a result, would create a significant hazard to the public or the environment.

The Project site was reviewed by Geosyntec Consultants through a Phase I Environmental Site Assessment (2022). The Phase I Environmental Site Assessment indicated the Project site is not on a list of hazardous materials site complied pursuant to Government Code section 65962.5 ("Cortese List"). Therefore, no impacts related to the presence of hazardous materials presence would occur.

e) Safety Hazards Due to Nearby Airport or Airstrip

Significance Criteria: The Project would have a significant environmental impact if it were located within an airport land use plan (or, where such a plan has not been adopted, within two miles of a public airport or public use airport), and it would result in a safety hazard for people residing or working in the Project area.

The Project site is within the San Mateo County Airport Land Use Commission's (ALUC) and ALUC Plan Area jurisdiction, and approximately 1.8 mi north of San Francisco International Airport. The Project is not within two miles of a private airstrip.

FAA issued a "Determination of No Significant Hazard to Air Navigation" allowing up to a 295 ft height (Aeronautical Study No. 2021-AWP 7644-OF, 09.09.2022). The Project, by law, is required to undergo ALUC review. ALUC is a function of the City/County Association of Governments of San Mateo County (C/CAG). C/CAG board members serve as ALUC board. The City and Project Sponsor were in the process of submitting application to ALUC for review during the preparation of this document.

The Project building, as currently proposed at 295 ft in height, would not result in a safety hazard for people residing or working in the Project area. If the height of the Project building was increased, federal law requires sponsors of proposed projects exceeding specified heights to file a Notice of Construction or Alteration with the FAA before beginning construction. State law prohibits the construction of any object that would be an obstruction and a hazard to air navigation without a permit issued by Caltrans. Therefore, impacts related to aircraft safety would be less than significant.

f) Conflict with Emergency Response Plan or Emergency Evacuation Plan

Significance Criteria: The Project would have a significant environmental impact if it were to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan.

There are no emergency response or evacuation plans in effect in the Project vicinity. The Project site is already developed and would not interfere with emergency evacuations. The Project would have no impact on the implementation of any adopted emergency response plan or emergency evacuation plan.

h) Exposure of People or Structures to Wildland Fires

Significance Criteria: The Project would have a significant environmental impact if it were to expose people or structures to a significant risk of loss, injury or death involving wildland fires.

The Project site is already developed and is in the highly developed downtown area of the City with no wildlands nearby. The closest wildlands area is San Bruno Mountain State & County Park over one-half mile away (p 298 Figure 44 Draft 2040GP). The Project site is not near a Local or State Responsibility area with a Very High Fire Hazard Severity Zone designation. The Project site is not within an Airport

Safety Compatibility Zone according to Exhibit IV-7 (page IV-23) of the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport* (November 2012). Therefore, no impacts would occur related to the exposure of people or structures to significant risk of loss, injury or death involving wildland fires.

Hazards and Hazardous Materials Finding:

(1) The Project would be required to comply with all Federal, State, and local regulations regulating the handling, storage, and transportation of hazardous materials during construction and operations. Construction and operational activities would not create a significant hazard to the public or the environment through routine transport, use, or disposal of hazardous materials or through a reasonably foreseeable upset and accident condition involving the release of hazardous materials in the environment. Therefore, impacts would be less than significant.

(2) The Project site is not within a quarter mile of an existing or proposed school. Therefore, no impacts related to hazardous materials on schools would occur.

(3) Project site is not on a list of hazardous materials site complied pursuant to Government Code section 65962.5 ("Cortese List"). Therefore, no impacts related to the presence of hazardous materials presence would occur.

(4) FAA issued a "Determination of No Significant Hazard to Air Navigation" allowing up to a 295 ft height. The Project building, as currently proposed at 295 ft height would not result in a safety hazard for people residing or working in the Project area. State law prohibits the construction of any object that would be an obstruction and a hazard to air navigation without a permit issued by Caltrans. FAA stipulated theses measures and procedures be complied with which are standard requirements levied by the FAA.

- The structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4, 5 (Red) and 15.
- Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.
- An FAA Form 7460-2, Notice of Actual Construction or Alteration is required to be e-filed within five days after the construction reaches its greatest height (7460-2, Part 2).

Therefore, impacts related to aircraft safety would be less than significant.

(5) There are no emergency response or evacuation plans in effect in the Project vicinity. The Project site is already developed and would not interfere with emergency evacuations. The Project would have no impact on the implementation of any adopted emergency response plan or emergency evacuation plan.

(6) The Project site is already developed and is in the highly developed downtown area of the City with no wildlands nearby. The Project site is not near a Local or State Responsibility area with a Very High Fire Hazard Severity Zone designation. The Project site is not within an Airport Safety Compatibility Zone according to Exhibit IV-7 (page IV-23) of the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport* (November 2012). Therefore, no impacts would occur related to the exposure of people or structures to significant risk of loss, injury or death involving wildland fires.

X. Hydrology and Water Quality *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

INTRODUCTION

This section is based on the Hydrology and Water Quality Assessment prepared for the Project by Sutro Science (Sutro Science, 2022), found in **Appendix A** of this Initial Study. This section provides key physical conditions and regulatory requirements relevant to assessing hydrology and water quality related environmental impacts from implementation of the Project. The existing hydrology and water quality baseline condition relevant to the Project site is described, including consideration of surface water features, existing stormwater collection systems, stormwater runoff, groundwater, flood risks, and water quality. Potential adverse effects to water resources that could result from Project implementation, with consideration of regulatory requirements, are then described and are evaluated based on significance criteria relevant to hydrology and water quality presented in Appendix G of the CEQA Guidelines.

SETTING

ENVIRONMENTAL SETTING

The area surrounding the Project site consists of urbanized land, sloping towards San Francisco Bay. No surface water features, including impoundments, wetlands, natural catch basins, settling ponds, or lagoons, are located on the Project site. The Project is in the Colma Creek watershed and the nearest surface water feature to the Project site is Colma Creek located approximately 0.40-miles to the south. The Project site is approximately 19 feet above msl and is generally flat, sloping gently toward the southeast. The depth of groundwater at the Project site varies from 4.5 to 16 ft below ground level (bgl) across the site and fluctuates seasonally between winter and summer based on rainfall and other factors. Shallow groundwater beneath the Project site is not utilized for domestic purposes. The direction of groundwater flow is toward San Francisco Bay.

Surface water at the Project site is mainly generated by precipitation that cannot be absorbed into the ground in the period following a storm. The majority of the Project site is currently characterized as impervious surface. Stormwater from the Project site drains primarily as sheet flow across the paved surfaces towards storm water drains located throughout the site and in the public right of way. Project site stormwater from roofs, landscaped areas, and paved areas is directed to on-site concrete swales, which drain to the public right of way and to on-site stormwater drains connected to the City's stormwater system which conveys storm runoff to the San Francisco Bay or nearby creeks or channels, such as Colma Creek.

The quality of surface water is primarily a function of land uses in the Project vicinity. Local land uses influence the quality of surface waters through point source discharges (i.e., discrete discharges from discharge pipes) and nonpoint source discharges (e.g., direct storm runoff from slopes). During periods of wet weather, rain carries pollutants and sediments from all parts of a watershed into surface water bodies such as storm drains, streams, rivers, and the San Francisco Bay. In an urban setting, natural drainage patterns have been altered and stormwater runoff, as well as non-storm discharges (irrigation water, accidental spills, washdown water, etc.), pick up sediments and contaminants from land surfaces, and transport these pollutants into surface and groundwater. These diffuse sources of pollutants include parking lots, bare earth at construction sites, and a host of many other sources. Common pollutants of concern from urban stormwater runoff can include pesticides, fertilizers, oils, litter and other debris, and sediment.

Floodplain zones (Special Flood Hazard Areas) are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations, intended to be adopted by the local jurisdictions, for any construction, whether residential, commercial, or industrial, within 100-year floodplains. The 100-year floodplain denotes an area that has a 1 percent chance of being inundated during any 12-month period. The 500-year floodplain denotes an area that has a 0.2 percent chance of being inundated during any 12-month period. The Project site is in Flood Zone X, outside the 100-year or 500-year flood zones.

REGULATORY FRAMEWORK

FEDERAL

Clean Water Act - National Pollution Discharge Elimination System

The federal Clean Water Act prohibits discharging pollutants to receiving waters of the United States unless the discharge is in compliance with a National Pollution Discharge Elimination System

("NPDES") permit. Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. For inland surface waters and enclosed bays and estuaries, the water-quality-based effluent limitations are based on criteria in the National Toxics Rule and the California Toxics Rule, and objectives and beneficial uses defined in the applicable Basin Plan.

STATE

NPDES Construction General Permit

The State of California adopted a Construction General Permit on September 2, 2009 (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (CGP). The CGP regulates construction site stormwater management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of stormwater associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, as well as construction of buildings and linear underground projects, including installation of water pipelines and other utility lines.

The CGP is implemented and enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB), which administers the stormwater permitting program. To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a Stormwater Pollution Prevention Plan (SWPPP), and other compliance-related documents. The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. The BMPs include both sediment and erosion control measures as well as other measures to control potential chemical contaminants. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge controls during certain activities, such as paving operations, and vehicle and equipment washing and fueling. The SWPPP also includes descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs).

The CGP includes requirements for a site-specific risk-level assessment, an active stormwater effluent monitoring and reporting program during construction (for Risk Level II and III sites), rain event action plans for certain higher risk sites, and numeric effluent limitations for pH and turbidity as well as requirements for qualified professionals that prepare and implement the plan. The risk assessment and SWPPP must be prepared by a State-qualified SWPPP Developer (QSD) and implementation of the SWPPP must be overseen by a State-qualified SWPPP Practitioner (QSP).

COUNTY

San Mateo Water Pollution Prevention Program (SMCWPPP)

To comply with the Clean Water Act, San Mateo County and the twenty cities and towns in the County, including the City of South San Francisco, formed the San Mateo Water Pollution Prevention Program (SMCWPPP). SMCWPPP is a partnership of the City/County Association of Governments (C/CAG) which share a common NPDES Permit, also referred to as the Municipal Regional Permit (MRP), from the RWQCB. This common permit allows each of the C/CAG co-permittees to discharge stormwater from their storm drain systems to San Francisco Bay. Under the provisions of the MRP, the City is required to take steps within its area of authority to reduce or eliminate pollutants in stormwater to the maximum extent practical.

An amendment to Provision C.3 of the SMCWPPP MRP requires new and redevelopment projects that result in the addition or replacement of impervious surfaces totaling 10,000 sq ft or more, such as the proposed Project, to include specific construction and post-construction stormwater treatment measures. The goal of Provision C.3 of the MRP is for the municipalities regulated by the permit to use their permitting authority to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from these projects. This goal is primarily accomplished through the implementation of low impact development (LID) techniques. Projects regulated under C.3 requirements must implement BMPs for reducing the volume of runoff and treating all runoff on-site prior to outfall into the drainage system and also incorporate LID source control, site design, and stormwater treatment design.

CITY

South San Francisco Municipal Code

The South San Francisco Municipal Code includes Chapter 14.04 Stormwater Management and Discharge Control (Stormwater Ordinance), for the purpose of ensuring the future health, safety and general welfare of the City's citizens by:

(a) Eliminating nonstormwater discharges to the municipal separate storm sewer;

(b) Controlling the discharge to municipal separate storm sewers from spills, dumping or disposal of materials other than stormwater;

(c) Reducing pollutants in stormwater discharges to the maximum extent practicable.

The intent of the Stormwater Ordinance is to protect and enhance the water quality of our watercourses, water bodies and wetlands in a manner pursuant to and consistent with the Clean Water Act.

IMPACTS

a) Violate Water Quality Standards or Waste Discharge Requirements, or Substantially Degrade Surface or Groundwater Quality

Significance Criteria: The Project would have a significant environmental impact if it would result in the violation of water quality standards or waste discharge requirements, or if it would substantially degrade surface or groundwater quality.

Construction

Construction of the Project would include earthwork activities (i.e., grading, excavation, and other soil-disturbing activities) and the placement of imported engineered soils. Stormwater runoff from disturbed soils associated with construction activities is a common source of pollutants (mainly sediment) to receiving waters. Earthwork activities can render soils and sediments more susceptible to erosion from stormwater runoff and result in the migration of soil and sediment in stormwater runoff to downstream water bodies. Excessive and improperly managed grading or vegetation removal can lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In addition, construction would likely involve the use of various materials typically associated with construction activities such as paint, solvents, oil and grease, petroleum hydrocarbons, concrete and associated concrete wash-out areas. If improperly handled, these materials could result in pollutants being mobilized

and transported offsite by stormwater runoff (nonpoint source pollution) and degrade receiving water quality.

Because the Project exceeds one acre in size, construction activities would be required to comply with NPDES regulations and obtain coverage under the State CGP. Under the CGP, the Applicant or their contractor(s) would be required to implement construction BMPs as set forth in a detailed SWPPP. SWPPPs are a required component of the CGP and must be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP). SWPPPs must describe the specific erosion control and stormwater quality BMPs being implemented to minimize pollutants in stormwater runoff, and detail their placement and proper installation. The BMPs are designed to prevent pollutants from contacting stormwater and to keep all products of erosion and stormwater pollutants associated with construction activities from moving offsite into receiving waters. Typical BMPs to be implemented at construction sites include placement of fiber rolls or gravel barriers to detain small amounts of sediment from disturbed areas, and temporary or permanent covering of stockpiles to prevent rainfall from contacting the stockpiled material. In addition to erosion control BMPs, SWPPPs also include BMPs for preventing the discharge of pollutants other than sediment (e.g. paint, solvents, concrete, petroleum products) to downstream waters. BMPs for pollutants include conducting routine inspections of equipment for leaks, maintaining containers of supplies such that the contents are clearly labeled, the integrity of the containers is not compromised, and ensuring that construction materials are disposed of in accordance with applicable regulations.

Under the provisions of the CGP, the State-certified QSD is responsible for determining site risk level for sediment transport, developing the SWPPP, and managing its implementation. Site risk level is determined using a combination of the sediment risk of the project and the receiving water quality risk. Projects can be characterized as Risk Level 1, Level 2, or Level 3, and the minimum BMPs (stormwater controls) and monitoring that must be implemented during construction are based on the risk level. Under the direction of the QSD, the QSP is required to conduct routine inspections of all BMPs, conduct surface water sampling, when necessary, and report site conditions to the State and/or Regional Water Quality Control Board as part of CGP compliance monitoring and reporting using the Stormwater Multi-Application Reporting and Tracking System (SMARTS). Compliance with the CGP is required by law and has proven effective in protecting water quality at construction sites.

Compliance with the requirements of the CGP and the City's Stormwater Ordinance, including the implementation of associated BMPs as part of the SWPPP, would prevent the discharge of pollutants to surface waters or groundwater and minimize or eliminate potential degradation of surface water or groundwater quality during construction of the Project. Therefore, water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff from construction of the Project would be less than significant.

Post-Construction

The Project would be subject to compliance with the City's stormwater requirements under SMCWPPP for projects that replace over 10,000 square feet of impervious surfaces. As such, the applicant would be required to conform to SMCWPPP Site Design Standards and include post-construction BMPs and LID design measures that would be incorporated into Project plans to reduce stormwater runoff volumes and treat stormwater on-site. As a Regulated Project under SMCWPPP, the Project would be required to provide stormwater treatment through LID treatment measures, including stormwater harvesting and re-use, infiltration, evapotranspiration, or biotreatment. Accordingly, the applicant would be required to design and install adequate LID stormwater treatment controls for the Project, based on the criteria detailed in the C.3 Regulated Projects Guide, as well as ensure that long-term maintenance of the controls is provided. Therefore, water quality impacts related to violation of water quality

standards or degradation of water quality due to discharge of stormwater runoff following completion of Project construction (post-construction) would be less than significant.

b) Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge

Significance Criteria: The Project would have a significant environmental impact if it would result in the depletion of groundwater supplies or interfere substantially with groundwater recharge.

The Project would not involve long-term groundwater extraction. The water supply for the existing developments on the Project site is the municipal water supply system. Project construction would involve subsurface excavation (for utilities and structural support). Groundwater depths vary from 4.5 to 16 ft bgl at the Project site. It is possible that subsurface excavation during Project construction could intercept shallow groundwater tables. Groundwater encountered during excavation activities would have to be pumped out of the construction trench in order to create a dry work area. However, this activity would be temporary and is unlikely to involve extensive dewatering; this activity therefore would not substantially affect groundwater levels in the vicinity of the Project. The majority of the Project site and surrounding urban area is currently covered with impervious surfaces. Under the Project, there would not be a substantial change in impervious surfaces such that groundwater recharge is impeded as compared to existing baseline. The Project would not lower the groundwater table as a result of groundwater extraction or through a reduction in groundwater recharge. Therefore, impacts related to groundwater supply and recharge would be less than significant.

ci and cii) Alter Existing Drainage Pattern Resulting in Substantial Erosion, Siltation, or Flooding

Significance Criteria: The Project would have a significant environmental impact if it would alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion, siltation, or flooding on- or off-site.

As described under Impact a), the Project site is currently developed and the majority covered with impervious surfaces that drain into the existing municipal stormwater collection system. No streams or other surface water bodies traverse the site, and the Project site is not within a natural drainage area. Construction of the Project could temporarily alter local drainage patterns; however, construction activities would be subject to the CGP and City's Stormwater Ordinance, and consequently would implement a SWPPP and associated BMPs designed to control stormwater during construction, minimizing potential temporary changes in erosion, sedimentation, or flood patterns. Following construction, the Project site would generally be paved or landscaped, which would prevent erosion and maintain existing runoff conditions. Furthermore, Project stormwater would drain to the proposed stormwater management system (discussed under Impact ciii, below) and then on to the existing municipal stormwater collection system and would be required to comply with SMCWPPP Site Design Standards to control pollutants, including sediment, in stormwater runoff and conform to the MRP. In addition, as discussed under Impact ciii, below, the Project includes improvements to the existing storm water collection system to increase capacity of onsite stormwater retention and capture pollutants. Therefore, impacts related to erosion, siltation, or flooding as a result of increased stormwater runoff on- and off-site due to altered drainage patterns from implementation of the Project would be less than significant.

ciii) Create or Contribute Runoff Water Exceeding capacity of Existing Stormwater Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff

Significance Criteria: The Project would have a significant environmental impact if it would alter the existing drainage pattern of the site or area in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

The majority of the Project site is currently covered with impervious surfaces that drain into the existing municipal stormwater collection system. Under the Project, the existing 60-inch storm drain would be relocated to the street, but not reduced in conveyance capacity. The location would be approximately parallel to and 45 ft south from the existing location. During construction, the Project would not increase the amount of stormwater runoff to the existing stormwater collection system because areas where construction is proposed are already developed and impervious and the volume and rate of stormwater runoff would be similar to existing baseline conditions. Stormwater runoff would be managed in accordance with the CGP, City's Stormwater Ordinance, and SWPPP construction requirements discussed under Impact a), above, to ensure sediment and other pollutants typically associated with construction activities are not mobilized and/or transported by stormwater runoff.

Following the completion of construction (post-construction), stormwater runoff would be collected, retained onsite, and treated to remove pollutants via the proposed stormwater management system. The proposed storm water management system includes the use of impervious pavers on the building podium to designate the drainage catchment area as self-treating per SMCWPPP C.3 Technical Guidance. The paver section would be designed to store runoff from the design storm within the section voids as recommended by C.3 Technical Guidance. The paver section would also be designed to allow for a collected runoff drawdown time of less than 48 hours as recommended by C.3 Technical Guidance. The podium slab below the paver section would be sloped to drain infiltrated storm water and overflow drains would be located throughout as needed to prevent excessive storage/ponding in the case of extreme storm events. Therefore, impacts related to exceeding the capacity of existing or planned stormwater drainage systems or generating additional polluted runoff would be less than significant.

civ and d). Impede or Redirect Flood Flows or Risk Release of Pollutants

Significance Criteria: The Project would have a significant environmental impact if it impedes or redirects flood flows or risk release of pollutants due to Project inundation in flood hazard, tsunami, or seiche zones.

Implementation of the Project would not result in the alteration of the course of a stream or river and the project site is not within a 100-year or 500-year flood zone nor is it subject to inundation due to tsunami or seiche. On-site stormwater would be captured, treated, and conveyed via the proposed stormwater management system (as described under Impact ciii), above) and would not redirect stormwater flows from large storms in a manner that could redirect flood flows off-site as compared to existing conditions. Therefore, impacts related to impeding or redirecting flood flows, or an increased risk of release of pollutants due to Project inundation would be less than significant.

e) Conflict with Water Quality Control Plan or Sustainable Groundwater Management Plan

Significance Criteria: The Project would have a significant environmental impact if it conflicts with or obstructs implementation of a water quality control plan or sustainable groundwater management plan.

Refer to Impact a) and b), above. No water quality degradation would occur compared to existing baseline conditions. The Project would have a less than significant impact to water quality, including groundwater and surface waters, including Colma Creek and San Francisco Bay, which are subject to

the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) water quality objectives designed to preserve and enhance water quality and protect the beneficial uses of all regional terrestrial surface water bodies (e.g., creeks, rivers, streams, and lakes), groundwaters, coastal drainages, estuaries, coastal lagoons, and enclosed bays within the RWQCB's jurisdictional area. Construction and operation of the Project would comply with the requirements of the NPDES MRP, CGP, and the SMCWPPP C.3 requirements, which are designed to ensure stormwater discharges comply with regulatory requirements and water quality standards, such as the Basin Plan. The Project would not require ongoing groundwater withdrawals or substantially alter groundwater recharge, and therefore would not conflict with or obstruct implementation of a sustainable groundwater management plan. Therefore, impacts relating to conflicting with or obstruction of implementing a water quality control plan or sustainable groundwater management plan would be less than significant.

Hydrology and Water Quality Finding:

(1) As a Regulated Project under SMCWPPP, the Project would be required to provide stormwater treatment through LID treatment measures, including stormwater harvesting and re-use, infiltration, evapotranspiration, or biotreatment. Accordingly, the applicant would be required to design and install adequate LID stormwater treatment controls for the Project, based on the criteria detailed in the C.3 Regulated Projects Guide, as well as ensure that long-term maintenance of the controls is provided. Therefore, water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of stormwater runoff following completion of Project construction (post-construction) would be less than significant.

(2) The Project would not lower the groundwater table as a result of groundwater extraction or through a reduction in groundwater recharge. Therefore, impacts related to groundwater supply and recharge would be less than significant.

(3) Construction of the Project could temporarily alter local drainage patterns; however, construction activities would be subject to the CGP and City's Stormwater Ordinance, and consequently would implement a SWPPP and associated BMPs designed to control stormwater during construction, minimizing potential temporary changes in erosion, sedimentation, or flood patterns. Following construction, the Project site would generally be paved or landscaped, which would prevent erosion and maintain existing runoff conditions. Furthermore, Project stormwater would drain to the proposed stormwater management system and then on to the existing municipal stormwater collection system and would be required to comply with SMCWPPP Site Design Standards to control pollutants, including sediment, in stormwater runoff and conform to the MRP. In addition, as discussed under Impact ciii), above the Project includes improvements to the existing storm water collection system to increase capacity of onsite stormwater retention and capture pollutants. Therefore, impacts related to erosion, siltation, or flooding as a result of increased stormwater runoff on- and off-site due to altered drainage patterns from implementation of the Project would be less than significant.

(4) During construction, the Project would not increase the amount of stormwater runoff to the existing stormwater collection system because areas where construction is proposed are already developed and impervious and the volume and rate of stormwater runoff would be similar to existing baseline conditions. Stormwater runoff would be managed in accordance with the CGP, City's Stormwater Ordinance, and SWPPP construction requirements discussed under Impact a), above, to ensure sediment and other pollutants typically

associated with construction activities are not mobilized and/or transported by stormwater runoff.

Following the completion of construction (post-construction), stormwater runoff would be collected, retained onsite, and treated to remove pollutants via the proposed stormwater management system. Therefore, impacts related to exceeding the capacity of existing or planned stormwater drainage systems or generating additional polluted runoff would be less than significant.

(5) Implementation of the Project would not result in the alteration of the course of a stream or river and the project site is not within a 100-year or 500-year flood zone nor is it subject to inundation due to tsunami or seiche. On-site stormwater would be captured, treated, and conveyed via the proposed stormwater management system (as described under Impact ciii), above) and would not redirect stormwater flows from large storms in a manner that could redirect flood flows off-site as compared to existing conditions. Therefore, impacts related to impeding or redirecting flood flows, or an increased risk of release of pollutants due to Project inundation would be less than significant.

(6) The Project would not require ongoing groundwater withdrawals or substantially alter groundwater recharge, and therefore would not conflict with or obstruct implementation of a sustainable groundwater management plan. Therefore, impacts relating to conflicting with or obstruction of implementing a water quality control plan or sustainable groundwater management plan would be less than significant.

XI. Land Use and Planning *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

SETTING

LAND USE 1976-2014

The Project site, located in the northeastern portion of the City of South San Francisco ("City"), is in an area known as the East of 101. The East of 101 Area has historically been known for industrial land uses.

Over the past 46 years, the East of 101 has transitioned to include life science (i.e., Research and Development, "R&D"), office and visitor serving uses such as hotels while retaining industry in the southern portions of the area. Genentech, a major life science company, ushered in this change by locating in South San Francisco in 1976 (ssf.net accessed March 8, 2022). Now South San Francisco has over 200 life science companies in the East of 101 Area alone and is known as 'The Birthplace of Biotechnology' (ssf.net, accessed March 8, 2022).

The design of the built environment in the Project area is changing from minimally landscaped and industrially developed parcels with surface parking to life science buildings and campuses, hotels, and local- and -visitor serving uses. Architecture, landscape and site design standards have changed over the past 46 years from one to three story buildings with surface parking surrounded by chain-link fencing to multi-story campuses, screened and/or structured parking, bicycle and pedestrian facilities, and an array of community amenities.

REGULATORY FRAMEWORK

LAND USE CHANGES 2014 TO 2040/DOWNTOWN STATION AREA SPECIFIC PLAN

The City adopted the Downtown Station Area Specific Plan (DSASP) and zoning in 2015. The DSASP is an important tool in implementing the City's goals to: (1) provide more opportunities for safe and convenient alternatives to commuting in cars (i.e., mode shift); and (2) increase land use densities around the South San Francisco Caltrain station thereby making mode shift options more convenient and thus responding to Assembly Bill 32 (AB 32) and Senate Bill 375 (SB 375) to reduce Greenhouse Gas Emissions.

As noted in **Chapter 2.3 General Plan and Zoning**, the DSASP envisions high density transit-oriented development within two zones from the Caltrain Station; quarter and a half mile (**See Figure 8 in Chapter 2 Project Description**). The DSASP increased densities in these areas up to 3.5 FAR and allowed conditional approval for higher densities.

The City is in the final steps of approving the Draft 2040GP. Adoption is anticipated in early fall 2022. The plan is to increase densities in the TO/RD zone; page 9 identifies the East of 101 Transit Core envisioned as:

> Transit-oriented community with a walkable street pattern and a vibrant mix of high-density multifamily and employment uses with supportive retail, services, and amenities (minimum FAR from 2.0 up to 8.0 with community benefits; residential densities range from 120 du/ac to 200 du/ac with community benefits).

IMPACTS

a) Physically divide an established community

The Project would not divide an established community; but would assist in creating a community. The Project area has been transitioning to life science since the 1980's. Currently the East of 101 area is home to over 200 life science companies. The DSASP and Draft 2040GP are heralding these changes. The Project is implementing this vision along with other projects undergoing entitlement and legislative review. Please see **Chapter 3.1 Aesthetics** and **Chapter 2 Project Description** for a more detailed discussion on the City's vision. Future projects would continue to be reviewed by the City to insure conformance with the City's goals and objectives.

The Project is building community benefits by developing public plazas and open spaces on the site; committing to maintain the bicycle and pedestrian facility; providing public art; creating visual and safe physical connections between the east and west areas of US 101. The Project proposes to construct and lease space for community services such as grab and go convenience stores; cafes and restaurants; and personal retail services.

The City and Project Sponsor are in the final stages of negotiating the financial constructions incumbent with increased density. These funds would be pooled with other developer fees to realize circulation improvements identified in the Mobility 2020 and the Access Study, both prepared by Fehr & Peers. These studies identify multi-modal travel options, improvements to East Grand Avenue, and intersection signalization. **Chapter 2 Project Description and Chapter 3 Section XVII Transportation** identify many of the measures the Project would implement identified in various City documents.

The Project would assist the City in realizing the following vision statement appearing on page 95 of the Draft 2040GP.

> "The General Plan advances the community vision of maintaining districts for R&D and industrial growth, while creating new neighborhoods that allow residential and supportive amenities and services. This vision allows for the growth and continued success of the life sciences as an economic engine for the city. Life science companies may intensify development north of East Grand Avenue, closer to key transportation corridors, in exchange for community benefits and district improvements. By allowing the life sciences area to grow through intensification rather than expanding its geographic area, the General Plan enables transportation, trade, and industrial uses to retain land area and continue to thrive in East of 101."

The Project site is north of East Grand Avenue, proposing a 7.44 FAR, a maximum height of 295 ft (as proposed 294 ft) and is 200 ft east of access to the Caltrain Station.

The Project assists in the realization of the following goal and implements the following policies (Draft 2040GP, pps 113, 115, 119).

> "East of 101 GOAL SA-16: A new transit-oriented community in East of 101 with a diverse mix of uses, places, and programming to inspire creativity and social interaction that welcome all South San Francisco residents and visitors.

> INTENT: To create an inclusive neighborhood where people of all incomes can live, access transit, and services and amenities.
>
> Policy SA-16.1: Require high-density development near the Caltrain station. Promote density and a mix of transit-oriented uses adjacent to the Caltrain Station and along South Airport Boulevard, including residential, offices, personal services, retail, recreation, and healthcare.
>
> Policy SA-16.2: Implement public realm improvements near the Caltrain station. Implement public realm improvements to improve accessibility to the Caltrain Station, including signage, street trees, landscaping, street furniture, and lighting.
>
> East of 101 GOAL SA-16: A new transit-oriented community in East of 101 with a diverse mix of uses, places, and programming to inspire creativity and social interaction that welcome all South San Francisco residents and visitors
>
> Policy SA-19.4: Implement mobility hubs. Evaluate implementation of "mobility hubs," which are places where different travel networks (including walking, biking, transit, and shared mobility) meet and provide convenient connections to destinations at the Caltrain Station, South San Francisco BART Station, and the South San Francisco Ferry Terminal."

The Project would provide a variety of services and spaces on the site. Food, personal services, open spaces, gathering and seating areas are shown on the site plan. The plazas and first two floors of the building are non-proprietary, providing services and gathering areas to everyone.

The Project was designed to augment the improvements provided by Caltrain. For example, the Project proposes a pick-up and drop-off lane on the east side of Poletti Way that would complement the commuter bus lane recently constructed on the west side of Poletti Way (see **Section XVII Transportation** for more details on multi-modal opportunities on the Project site).

The Project would be high density, proposes a robust landscape and seating plan, and public facilities. The Project would result in no impact in dividing an established community but would assist in the creation of a community.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect

Climate Protection policies are identified in Chapter 14 of the Draft 2040GP. The Project proposes to provide electric car charging stations, a TDM Program targeting a 47.5 % reduction in parking demand by implementing a robust mode shift program and amenities supporting the array of transit options. Bicycle parking includes 49 more spaces that required by code to provide for the Project and other uses in the east of 101.

Six percent of total parking is for electric vehicles and eight percent is reserved for car and vanpool. Commercial parking and delivery vehicle access are separated to avoid pedestrian and vehicular conflicts, as well as vehicular idling times.

The Project is working toward an all-electric building. Landscape watering is proposed in conformance with the City's Climate Action Plan (2014 and draft 2022) and the City's Stormwater Management and Discharge Ordinance (Chapter 15, South San Francisco Municipal Code) and described in **Chapter 2, Project Description** and **Chapter 1 Legislative Framework**. The Project proposes to select building materials and design to reach a LEED Gold rating. All these measures serve to reduce the carbon footprint (see **Chapter 2, Project Description**).

Community Resilience goals and policies appear on p 305 of the Draft 2040GP. These measures address seismic conditions, wetlands, flood zones, sea level rise and wildfire among others that affect the environment. This environmental analysis has not identified a significant unavoidable impact that would result from the Project.

Section VII. Geology and Soils restates the City requirement to provide an updated geotechnical site characterization study and site specific structural design measures to assure safety and buildability.

The Project Sponsor submitted two cultural/tribal/archaeological reports. The reports identified a very low to low probability of culturally significant soils to be located on the Project site. A training and notification measure is identified and proposed as part of the Project. The measures are restated as a mitigation measure. The Project would not result in an impact to or conflict with a plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental impact.

Land Use and Planning Finding: The Project would implement goals and strategies aimed at reducing environmental impacts identified in the Draft 2040GP and would assist in the creation of a high-density transit-oriented research and development neighborhood within the TO/RD District. The Project would have no impacts on land use and planning.

XII. Mineral Resources *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

SETTING

The Project site is located in the East of 101 area. Research of the 1999 GP and the Draft 2040GP found no mention of mineral resources in the City of South San Francisco.

IMPACTS

a) and b) Loss of Mineral Resources

Significance Criteria: The Project would have a significant environmental impact if it were to result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state, or if it were to result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

No mineral resources of value to the region and the residents of the state have been identified in South San Francisco (1999 GP and Draft 2040GP) The Project site has not been delineated as a locally important mineral recovery site in the 1999 GP or Draft 2040GP, on any specific plan, or on any other land use plan. Therefore, the Project would have no impact on any known mineral resource or result in the loss of availability of any locally important resource recovery site.

Minerals Finding: The Project site does not contain any local or regionally significant mineral resources. The Project would not result in an impact or contribute to a cumulative impact to mineral resources.

XIII. Noise *Would the project result in:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☒	☐	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

INTRODUCTION

This section is based on the Noise Technical Report (Noise Report) prepared for the Project by RCH Group, Inc. (2022), found in **Appendix A** of this Initial Study. This section presents background noise information, an overview of existing noise levels measured at the Project site, local noise regulatory framework, and an analysis of potential noise and vibration impacts that would result from construction and operation of the Project.

ENVIRONMENTAL SETTING

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[12]; average day–night 24-hour average sound level (Ldn)[13] with a nighttime increase of 10 dB

[12] The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.

[13] Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.

to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[14], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting.

NOISE ATTENUATION

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, that also depends on ground absorption. Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone.

VIBRATION

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment).

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS), as in RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings. Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures.[15]

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a one-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration.[16] This is based on a reference value of one micro inch/second. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels.

Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate ground-borne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants. Construction vibrations can be transient, random, or continuous. Transient construction

[14] CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

[15] California Department of Transportation (Caltrans). 2002. Transportation Related Earthborne Vibrations.

[16] Federal Transit Administration (FTA). 2018. Transit Noise and Vibration Impact Assessment.

vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

SENSITIVE RECEPTORS

The South San Francisco General Plan Noise Element defines noise-sensitive land uses as residences, schools, churches, and hospitals. According to the General Plan, industrial and commercial land uses are generally not considered noise-sensitive land uses. There are commercial and industrial land uses north, east, and south of the Project site. An existing Caltrain line and Highway 101 are west of the Project site. The nearest sensitive land use to the Project site is an apartment building (Cadence Apartments) located approximately 690 feet west of the Project site on Airport Boulevard. There are no schools within 1,000 feet of the Project site.

REGULATORY FRAMEWORK

CITY

1999 General Plan (1999 GP)

The 1999 GP Noise Element contains the San Mateo Land Use Commission noise/land use compatibility standards for review of development in noise impacted areas. The compatibility standards are specifically applicable to development within the 65 dB, CNEL noise contour of the San Francisco International Airport (Table 9.2-1 Land Use Criteria for Noise Impacted Areas, 1999 GP, page 280). The Project is not within the 65 dB, CNEL noise contour of the San Francisco International airport Insulation Program Area, therefore, the standards are not applicable to the Project.

Draft 2040 General Plan (Draft 2040GP)

The Draft 2040GP Noise Element is designed to provide polices that will guide development in a manner that protects the residents and employees of the City from exposure to unacceptable noise and vibration levels and make the city a healthier place for all. Figure 52, 2019 San Francisco International Airport Noise Exposure Map, of the Draft 2040GP (page 370, Draft 2040GP), shows the Project site inside the 60 dB, CNEL airport noise contour. Thus, existing aircraft noise levels at the Project site are less than 60 dB, CNEL

Noise Ordinance

The City of South San Francisco regulates exterior noise levels through its Noise Ordinance (Chapter 8.32, SSFMC). The Noise Ordinance contains special provisions for construction activities (§ 8.32.050). Construction activities authorized by a valid city permit shall be allowed on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m. and 8:00 p.m., and on Sundays and holidays between the hours of 10:00 a.m. and 6:00 p.m.[17], or at such other hours as may be authorized by the permit, as long as they meet at least one of the following noise limitations:

[17] Construction activities occurring within the allowable hours of construction are exempt from the City's Noise Ordinance (P. Perry, City of South San Francisco Building Division, personal communication, March 20, 2019). As stated in the Downtown Area Specific Plan EIR, "The City considers impacts resulting from construction noise during these hours to be less than significant."

- No individual piece of equipment shall produce a noise level exceeding ninety dB at a distance of twenty-five feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.
- The noise level at any point outside of the property plane of the project shall not exceed ninety dB. (Ord. 1088 § 1, 1990).

According to § 8.32.060 of the Noise Ordinance, if the applicant can show to the city manager, or the manager's designee, that a diligent investigation of available noise abatement techniques indicates that immediate compliance with the requirements of this chapter would be impractical or unreasonable, a permit to allow exception from the provisions contained in this chapter may be issued, with appropriate conditions to minimize the public detriment caused by such exceptions. Any such permit shall be of as short a duration as possible, but in no case for longer than six months. These permits are renewable upon a showing of good cause and shall be conditioned by a schedule for compliance and details of compliance methods in appropriate cases. (Ord. 1088 § 1,1990)

Downtown Station Area Specific Plan (DSASP)

The DSASP EIR indicates that implementation of the Specific Plan has the potential to expose new development to stationary sources of noise and transportation noise levels that exceed the City's normally acceptable compatibility standards (a potentially significant noise impact). The DSASP EIR also indicates that construction activities within the Plan area would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (a potentially significant vibration impact). The DSASP EIR concludes that the implementation of mitigation measures would reduce these potentially significant impacts to a less-than-significant level. The DSASP EIR also indicates a significant and unavoidable impact related to a substantial permanent increase in ambient noise levels due to traffic noise. The following mitigation measures from the DSASP EIR are applicable to the Project and would be required as COA:

Mitigation Measure 4.6-1: HVAC Mechanical Equipment Shielding. Prior to the approval of building permits for non-residential development, the applicant shall submit a design plan for the project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for a designated receiving land use category as specified in Noise Ordinance Section 8.32.030. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical barriers.

Mitigation Measure 4.6-2: Site-Specific Acoustic Analysis – Nonresidential Development. Prior to the approval of building permits for new non-residential land uses where exterior noise level exceeds 70 dBA CNEL, an acoustic analysis shall be performed to determine appropriate noise reduction measures such that exterior noise levels shall be reduced below 70 dBA CNEL, unless a higher noise compatibility threshold (up to 75 dBA CNEL) has been determined appropriate by the City of South San Francisco. The analysis shall detail the measures that will be implemented to ensure exterior noise levels are compatible with the proposed use. Measures that may be implemented to ensure appropriate noise levels include, but are not limited to, setbacks to separate the proposed nonresidential structure from the adjacent roadway, or construction of noise barriers on site.

Mitigation Measure 4.6-4: Construction Vibration. For all construction activities within the study area, the construction contractor shall implement the following measures during construction:

a) The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.

b) Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c) Trucks shall be prohibited from idling along streets serving the construction site.

Mitigation Measure 4.6-5: Rail Line Groundborne Vibration. Implement the current FTA and Federal Railroad Administration (FRA) guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains. Specifically, Category 1 uses (vibration-sensitive equipment) within 300 feet from the rail line, Category 2 uses (residences and buildings where people normally sleep) within 200 feet, and Category 3 uses (institutional land uses) within 155 feet of the rail line shall require a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines prior to obtaining a building permit. Vibration control measures deemed appropriate by the site-specific groundborne vibration analysis to meet 65 VdB, 72 VdB, and 75 VdB respectively for Category 1, Category 2, and Category 3 uses, shall be implemented by the project applicant and approved by the City prior to receiving a building permit.

IMPACTS

a) Generation of a Substantial Temporary or Permanent Increase in Ambient Noise Levels in Excess of Local Standards.

Significance Criteria: The Project would have a significant environmental impact if it were to result in a substantial temporary or permanent increase in ambient noise levels in the Project vicinity in excess of standards established in the 1999 GP, DSASP, or the City Noise Ordinance. Construction noise would have a significant environmental impact if it occurs outside the hours specified in the City Noise Ordinance.

Temporary Construction Noise Impacts

Construction would result in a temporary increase in ambient noise levels in the vicinity of the Project. Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., loaders, etc.) and other construction equipment (e.g., scrapers, dozers, compactors, trucks, etc.). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction. The maximum noise levels for various types of construction equipment that could be used during Project construction are provided in **Noise Table 1** below. Maximum noise levels generated by construction equipment used for the proposed project would range from 77 to 90 dB, Lmax at 50 ft.

As discussed above, the nearest noise-sensitive receptor is an apartment building approximately 690 ft west of the Project site on Airport Boulevard. Project construction noise at these apartments would be masked by rail line and traffic noise from US 101, Grand Avenue, and Airport Boulevard. Construction activities would occur during the adopted construction hours contained in the South San Francisco Noise Ordinance. The Noise Ordinance exempts noise from construction activities that take place on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m.

and 8:00 p.m., and on Sundays and holidays between the hours of 10:00 a.m. and 6:00 p.m. Therefore, Project construction would result in a less-than-significant impact.

NOISE TABLE 1
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dB, Lmax[1] at 50 ft)
Backhoe	78
Dozer	82
Forklift	77
Auger Drill Rig	84
Concrete Saw	90
Crane	81
Excavator	81
Paver	77
Grader	85
Compressor (Air)	78
Generator	81
Roller	80
Vibratory Concrete Mixer	80
Concrete Mixer Truck	79
Front End Loader	79

Source: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

Permanent Operational Noise Impacts

Land Use Noise Compatibility Impacts on the Project

As detailed in the Noise Technical Report, existing 24-hour noise levels at the Project site are 73-74 dB, CNEL (at the southwest corner of the Project site) and 69-70 dB, CNEL (at the northernmost point of the Project site). The Project site is less than 75 dB, CNEL threshold which is considered a Conditionally Acceptable outdoor noise level for non-residential uses (per DSASP EIR, Mitigation Measure 4.6-2). Therefore, the effect of existing noise on the Project would be a less-than-significant impact.

Stationary Noise Impacts from the Project

Operation of the Project would not produce substantial levels of off-site noise. Mechanical equipment would be required to comply with the City's Noise Ordinance § 8.32.030 (DSASP EIR, Mitigation Measure 4.6-1). The Project applicant would be required to submit a design plan for the Project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for adjacent receiving land use categories as specified in Noise Ordinance § 8.32.030. Therefore, noise impacts from Project stationary equipment during operations would result in a less-than-significant impact.

Traffic Noise Impacts from the Project

A doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in

sound level. The Project is located directly east of US 101 and nearby major roadways (Airport Boulevard and Grand Avenue). The DSASP EIR indicates a significant and unavoidable impact related to a substantial permanent increase in ambient noise levels due to traffic noise. However, the Project would not result in a doubling of traffic on nearby roadways and any increase in traffic noise would be negligible compared to the existing noise generated by US 101 and other nearby major roadways. Therefore, noise impacts from Project-related motor vehicles during operations would result in a less-than-significant impact.

b) Generation of Excessive Groundborne Vibration or Groundborne Noise Levels

Significance Criteria: The Project would have a significant environmental impact if it were generate excessive groundborne vibration or groundborne noise levels. Per Mitigation Measure 4.6-5 of the DSASP EIR, vibration exceeding 75 VdB for Category 3 uses (institutional land uses) would be significant.

Temporary Construction Noise Impacts

As discussed, construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Per DSASP EIR Mitigation Measure 4.6-4: Construction Vibration, all construction activities in the Specific Plan area are required to implement the following vibration control measures:

a. The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.

b. Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c. Trucks shall be prohibited from idling along streets serving the construction site.

In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures. Vibrational effects from typical construction activities are only a concern within 25 ft of existing structures.[18] There are no structures within 25 ft of the Project site. Therefore, construction vibration would result in a less-than-significant impact.

Nearby Caltrain Vibration Impacts

According to a study conducted on Caltrain rails, ground vibration from Caltrain passbys measured up to 89 VdB at 25 ft.[19] Based on the Project site plan, the western building façade would be located approximately 140-150 ft east of the outermost track of the Caltrain rail line. At this distance, the VdB from passing commuter rails along the Caltrain rail line would attenuate to approximately 67 VdB. These levels of vibration would be below the 75 VdB threshold established by Mitigation Measure 4.6-5 of the DSASP EIR for rail line vibration. Furthermore, per Mitigation Measure 4.6-5 of the DSASP EIR, a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines would be required for the Project prior to obtaining a building permit. Therefore, vibration from the adjacent Caltrain rail line would result in a less-than-significant impact.

[18] California Department of Transportation (Caltrans). 2002. *Transportation Related Earthborne Vibrations*.

[19] Peninsula Corridor Electrification Project. 2014. *Draft Environmental Report, SCH #2013012079*. Available at: https://www.caltrain.com/projects/caltrain-modernization/calmod-document-library/pcep-deir-2014

c) Aircraft Noise

Significance Criteria: The Project would have a significant environmental impact if it were located within an airport land use plan (or, where such a plan has not been adopted, within two miles of a public airport or public use airport) or in the vicinity of a private airstrip and were to expose people residing or working in the Project area to excessive noise levels.

The Project site is within the San Mateo County ALUC Plan Area jurisdiction, and approximately 1.8 mi north of San Francisco International Airport. The Project is not within two mi of a private airstrip. The Project site is outside of the 65 dB, CNEL airport noise contour, as shown in Exhibit IV-5 (page IV-13) and IV-6 (page IV-15) of the *Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport* (November 2012). The Project site is not within an aircraft insulation area as shown on Figure 9-1 Aircraft Noise and Noise Insulation Program Area (page 279, 1999 GP). The contours indicate the Project site is located outside the 65 dB, CNEL aircraft noise contour. This is consistent with Figure 52 of the Draft 2040GP (page 370, Draft 2040GP), which shows the Project site inside the 60 dB, CNEL airport noise contour. Thus, aircraft noise at the Project site is less than 60 dB, CNEL and would not expose people residing or working in the Project area to excessive noise levels. Therefore, aircraft noise would result in a less-than-significant impact.

Noise Finding:

(1) The Noise Ordinance exempts noise from construction activities that take place on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m. and 8:00 p.m., and on Sundays and holidays between the hours of 10:00 a.m. and 6:00 p.m. Therefore, Project construction would result in a less-than-significant impact.

The Project site is less than 75 dB, CNEL threshold which is considered a Conditionally Acceptable outdoor noise level for non-residential uses (per DSASP EIR, Mitigation Measure 4.6-2). Therefore, the effect of existing noise on the Project would be a less-than-significant impact. Stationary and traffic noise impacts from Operations would also be less than significant.

(2) There are no structures within 25 ft of the Project site, thus construction does not pose vibrational concerns. Caltrain vibration levels would be below applicable significance thresholds specified in the DSASP EIR. Therefore, Construction and operational vibration impacts would be less than significant.

(3) Aircraft noise at the Project site is less than 60 dB, CNEL and would not expose people residing or working in the Project area to excessive noise levels. Aircraft noise impacts would be less than significant.

(4) The following mitigation measures required by the DSASP EIR are required as part of the building permit process. These measures are restated herein.

Mitigation Measure 4.6-1: HVAC Mechanical Equipment Shielding. Prior to the approval of building permits for non-residential development, the applicant shall submit a design plan for the project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for a designated receiving land use category as specified in Noise Ordinance Section 8.32.030. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical barriers.

Mitigation Measure 4.6-2: Site-Specific Acoustic Analysis – Nonresidential Development. Prior to the approval of building permits for new non-residential land uses where exterior noise level exceeds 70 dBA CNEL, an acoustic analysis shall be performed to determine appropriate noise reduction measures such that exterior noise levels shall be reduced below 70 dBA CNEL, unless a higher noise compatibility threshold (up to 75 dBA CNEL) has been determined appropriate by the City of South San Francisco. The analysis shall detail the measures that will be implemented to ensure exterior noise levels are compatible with the proposed use. Measures that may be implemented to ensure appropriate noise levels include, but are not limited to, setbacks to separate the proposed nonresidential structure from the adjacent roadway, or construction of noise barriers on site.

Mitigation Measure 4.6-4: Construction Vibration. For all construction activities within the study area, the construction contractor shall implement the following measures during construction:

a) **The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.**

b) **Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.**

c) **Trucks shall be prohibited from idling along streets serving the construction site.**

Mitigation Measure 4.6-5: Rail Line Groundborne Vibration. Implement the current FTA and Federal Railroad Administration (FRA) guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains. Specifically, Category 1 uses (vibration-sensitive equipment) within 300 feet from the rail line, Category 2 uses (residences and buildings where people normally sleep) within 200 feet, and Category 3 uses (institutional land uses) within 155 feet of the rail line shall require a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines prior to obtaining a building permit. Vibration control measures deemed appropriate by the site-specific groundborne vibration analysis to meet 65 VdB, 72 VdB, and 75 VdB respectively for Category 1, Category 2, and Category 3 uses, shall be implemented by the project applicant and approved by the City prior to receiving a building permit.

XIV. Population and Housing *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

SETTING

The Project would not result in a change of land use envisioned in the TO/RD District and the Draft 2040GP. The area within the TO/RD core is envisioned for high density transit-oriented life science. The Draft 2040GP identifies the Project site and TO/RD area as permitting up to an 8.0 FAR provided certain as-built and financial benefits are realized. The Project is required to provide financial contributions to assist the City in implementing a variety of improvements in the area, as identified in **Chapter 2, Project Description and Chapter 3 Section XI Land Use and Planning**.

The Project Sponsor provided population density projections based upon a 7.44 FAR for the water assessment study. The Project assumes a 50/50 split of research and development/office use. **Population and Housing Table 1** below identifies the employment and use projections. The Project would add 2,339 jobs in South San Francisco. **Aesthetics Chapter 3.1** identifies the Draft 2040GP jobs population projections for 2040 at 137,000. The proposed Project would contribute 1.7% of the total projections.

POPULATION AND HOUSING TABLE 1
PROJECTED PROJECT POPULATION

Use	SQ FT	Persons/SQ FT		Ratio/1000sf
R&D	418,433	500	837	2.00
Office	418,433	300	1,395	3.33
Amenity	107,100	1,000	107	1.0
Total	943,965		2,339	2.48

PH3RE, Michael Gerrity, April 22, 2022

IMPACTS

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

The Project would not require new roads to be constructed. The Project is designed as a 'transit hub' i.e., a project providing multi-modal transit options and is proposing a robust TDM Program designed to achieve a 47.5% mode shift.

The City has been and continues to study and implement solutions to increase densities along major transit corridors, and provide other convenient and safe mode shift options. The Caltrain station relocation is one strategy that was identified and constructed. Other strategies are identified in **Chapter 1 Project Description** and **Chapter 3 Section XVII, Transportation**. The Project would have a less than significant impact directly or indirectly as the result of a 7.44 FAR life science campus, by realizing 1.7%of the total employment projections on the Project site. Moreover, with multi-modal transit options, public amenities and a TDM Program designed to reduce the reliance on single-occupancy vehicular travel the Project would not result in the construction of additional roadways in the area. Therefore, impacts would be less than significant.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

There is no impact with respect to displacement of people or housing that would require construction of replacement housing elsewhere. The Project would replace a hotel. No permanent housing is on the site.

Population and Housing Finding:

(1) The Project would add 2,339 jobs in South San Francisco. Draft 2040GP employment projections for 2040 is 137,000. The proposed Project would contribute 1.7% of the total projections, a less than significant impact.

(2) The Project would not remove or replace housing. The Draft 2040GP is proposing the construction of mixed-use multi-family housing in the East of 101 and other areas throughout the City. This strategy will assist the City in meeting its regional housing needs and develop complete neighborhoods that include mode shift options as envisioned by the Draft 2040GP.

XV. Public Services *a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Fire protection?	☐	☐	☒	☐
2. Police protection?	☐	☐	☒	☐
3. Schools?	☐	☐	☒	☐
4. Parks?	☐	☐	☒	☐
5. Other public facilities?	☐	☐	☒	☐

SETTING

The Project would result in a change of land use envisioned in the TO/RD District and the Draft 2040GP. The Project is required to provide financial contributions to assist the City in implementing a variety of improvements to the area, as identified in **Chapter 2, Project Description and Chapter 3 Section XI Land Use and Planning.**

Project review process is identified in **Chapter 1 Legislative Framework**. In summary, staff members from Planning, Building, Fire, Engineering, and Water Quality review plans pursuant to their areas of expertise, identify modifications required to conform with city requirements and later to identify additional conditions of project approval. This group is referred to as the Technical Advisory Group (TAG). Staffing shortages or the need to improve the service infrastructure were not identified as lacking during the first TAG meeting conducted on February 15, 2022. Additional TAG review, part of the entitlement process, is where specific conditions of project approval are identified. The types and style of conditions of approval are identified in **Chapter 1 Legislative Framework**.

Changes in project design typically occur during project entitlement review. For example, the Project designed fire access based upon input from the Fire Marshal. Circulation improvements were built into the site plan to support and add mode-shift options on site. These changes were in response to various City studies. Modifications are identified in **Chapter 2 Project Description and Chapter 3 Section XVII Transportation**.

Standard conditions of project approval do require the payment of impact fees. Impact fees are based upon a set amount per square foot per land use. The Project proposes a life science (R&D) use. For Office/R&D the fee schedule is as follows:

PUBLIC SERVICES TABLE 1
PUBLIC SERVICES IMPACT FEES

Fee Category	$/Per/SQ FT
Parks and Recreation	3.10 plus administrative fee
Child Care	1.32
Commercial Linkage	16.55
Library	0.13
Citywide Transportation Fee	30.52
Public Safety	1.15
School District	0.61
Public Art	Art contribution payment of not less than 0.5% of construction costs or acquisition and installation of art on site

The community benefits fees are in addition to those identified in **Table 1 Public Services Impact Fees**, above.

IMPACTS

Public Services Finding 1-5: Discretionary projects undergo review by various divisions and departments within the City to identify conditions of Project approval. The conditions of approval and impact fees render impacts to public services less than significant. The proposed Project is also required by the South San Francisco Municipal Code and state planning law to implement conditions of project approval into the design of the Project. The Project was also reviewed by the City's Technical Advisory Group (see Chapter 1, Legislative Framework) in February and June 2022. The Technical Advisory Group did not identify any service impacts associated with the Project. School impact fees are assessed on retail and life science uses. The Project would have a less than significant impact of public services.

XVI. Recreation *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☒	☐

SETTING

The Project proposes four plazas that would provide approximately 46,663 sq ft of open space. Confluence, Poletti Way and East Access plazas contain seating and landscaping totaling 41,485 sq ft (0.95 acre) of open space. Arrival Plaza is bracketed by but void of landscaping and seating. Arrival Plaza is designed to be unobstructed to allow for surges of people disembarking Caltrain and other mode shift options. Jack Drago Park is directly across East Grand Avenue from the Project.

The Draft 2040GP Chapter 10 'Abundant and Accessible Parks and Recreation' identifies existing and planned recreational opportunities. Page 206 identifies the targeted metric for open space per capita. For job generating projects 0.5 acres of open space per 1,000 employees is the target.

Open space and recreational facilities are located at Jack Drago Park, Oyster Point Marina and Park, the Bay Trail and the one-acre City Park parcel providing home to the 'Wind Harp', a 243 ft welded steel sculpture, designed after an aeolian harp. The Wind Harp is located approximately 243 ft above msl and is a walking, bicycling or driving destination.

The City is seeking opportunities for additional parkland for mixed-use residential projects in the East of 101 and Lindenville planning areas (Draft 2040GP Policy PR-2.6, p 222). Colma Creek channel is one opportunity, and unused abandoned railway spurs, dating back to the early industrial uses in the area, are another. Additional open space and recreational opportunities would likely be derived through the development design process and payment of park in lieu and/or community development fees on a project-by-project basis.

IMPACTS

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No substantial deterioration of parks located in the East of 101 planning area are anticipated from realization of the Project. The Project is required to pay park-in-lieu fees and proposes 0.95 acre of landscaped urban open space on site. Impacts to parks and recreation would be less than significant.

Parks and Recreation Finding:

(1) The Project would have a less than significant impact on parks and recreation due to the facilities proposed to be provided onsite, the location of Jack Drago Park 100 ft east of the site, the payment of park in lieu fees and payment of public amenity fees.

(2) Policies in the Draft 2040GP identify programs to include the construction of recreation and open space as part of mixed-use residential projects.

(3) The Project proposes 0.95 acres of landscaped and furnished urban open space, not including the Arrival Plaza in this calculation. The Project would not cause substantial deterioration of any park and would not require expansion of recreational facilities. The Project would add open space and construct a 30 ft wide bicycle and pedestrian facility.

XVII. Transportation *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
d) Result in inadequate emergency access?	☐	☐	☒	☐

INTRODUCTION

The Project is considered a transit-oriented infill employment center project as demonstrated in **Chapter 3 Section I Aesthetics**. CEQA Guidelines section 15064.3, subdivision states "[g]enerally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact". The Project is approximately 200 ft from the entrance to Caltrain. Therefore, the Project is presumed to have a less than significant impact associated with vehicle miles traveled (VMT).

SETTING

EXISTING CONDITIONS

The Project is flanked by Poletti Way to the west and East Grand Avenue to the south and southeast, and Grand Avenue to the north. The site has active street frontage on three sides: west, south, and east. A 20 ft wide service area runs the length of the northern side of the building and is adjacent to the Grand Avenue Overpass. The recently relocated Caltrain station, approximately 200 feet west from the Project site, is an easy walk.

Vehicular Access

Local vehicular access to the Project site from the north is derived from Oyster Point Boulevard Interchange and flyover, and Airport Boulevard (both from the north and south). Access from the south is provided by East Grand Avenue via the Grand Avenue northbound exit from US101. All these roadways connect to US 101. Airport Boulevard also connects to Interstate 380. Grand Avenue/East Grand Avenue provides a surface street connection to the areas east and west of US 101.

Multi-Modal Access

As noted in the Access Study prepared by Fehr & Peers, Commute.org operates two routes connecting the East of 101 area within the South San Francisco Caltrain Station area: Oyster Point Boulevard and Utah Avenue /Grand Avenue. Genentech operates two routes to the Millbrae Caltrain Station, Oyster Point Boulevard and East Grand Avenue, primarily providing connections to bullet trains. These services are largely populated with employees of the businesses that support the facility although they are open to the public.

SamTrans buses connect to the relocated Caltrain Station on the west side of 101, not the east side. SamTrans is currently studying changes to serve the East of 101 area (Reimagine SamTrans study). Bus service is also under consideration along Oyster Point Boulevard and East Grand Avenue.

Access Study notes that shuttle routes will eventually serve the four development corridors envisioned in the Draft 2040GP: Oyster Point-Gateway, East Grand Avenue, Forbes Boulevard, and South Airport Boulevard/Utah Avenue.

As-Built Caltrain Constructed Existing Conditions

Current Caltrain ridership levels in the East of 101 area are around 270 per day. The Caltrain Business Plan (year 2040) indicates an expected 3,000 riders per day. Forecasts derived from the draft 2040GP indicate a ridership in the East of 101 at 4,500 per day (Table 1, Comparison of Land Use and Ridership Forecasts, Access Study, p 10).

The South San Francisco Caltrain Station Improvement Project provided the following changes near and at the eastern entrance to Caltrain (summarized from the Access Study, and confirmed by Daniel Jacobson of Fehr & Peers, Transportation Consultants on May 10, 2022):

- Conversion of Poletti Way to two-way street with a bus-and shuttle-only lane in the southbound direction.
- Construction of a roughly 390-foot shuttle loading zone on the west side of Poletti Way accommodating six 40-foot vehicles (or additional smaller vehicles).
- Construction of a pedestrian hybrid beacon controlling the northbound US-101 offramp activated by pedestrians and bicyclists, accompanied by a stop-controlled crossing for vehicles along southbound Poletti Way and westbound East Grand Avenue and two bypass lanes for right-turning vehicles from US-101 onto East Grand Avenue.
- Construction of a 16-foot-wide underpass connecting to the station platform and downtown, transitioning to a split stairwell and ram entrance each about five feet wide.
- Construction of a 15 ft wide mixed-use bicycle /pedestrian trail on the west side of Poletti Way, connecting to the crosswalk in Poletti Way.

PROPOSED CONDITIONS

City and Partnership Improvements

Through various planning documents, partnerships and funding sources the City has identified improvements to multi-modal options.

- Draft 2040GP Policy SA-16.1: Require high-density development near the Caltrain station. Promote density and a mix of transit-oriented uses adjacent to the Caltrain Station and along South Airport Boulevard, including residential, offices, personal services, retail, recreation, and healthcare.
- Draft 2040GP Policy SA-16.2: Implement public realm improvements near the Caltrain station. Implement public realm improvements to improve accessibility to the Caltrain Station, including signage, street trees, landscaping, street furniture, and lighting.
- The Project is high density. The provides non-proprietary amenities and landscaped public plazas. The Arrival Plaza is an iconic landmark design defining access to the east of 101 from the Caltrain Station.

- Draft 2040GP (analyzed in **Section 3. XI Land Use and Planning**)
- Mobility 2020 East of 101 Transportation Plan, for the City of South San Francisco by Fehr & Peers, 2019 ('Mobility 2020')
- South San Francisco Caltrain Station Eastern Access Study prepared for South San Francisco, Caltrain, Phase 3 Real Estate Partners, by Fehr & Peers and Mark Thomas, 2021 ('Access Study')
- 'Active South San Francisco' the City's draft bicycle and pedestrian master plan. Figure 5 shows improvements to provide a connection to the East of 101 Area including a trail along Poletti Way connecting the station entrance to employment centers to the north (Oyster Point Boulevard, Gateway Boulevard, the Bay Trail, and Sierra Point). Policies include prioritizing safe bike and pedestrian travel and design of facilities and amenities. Share the road signs and provision of services to the traveling public are some of the many items addressed.
- Downtown Station Area Specific Plan Figure 6 shows the priority for a pedestrian priority zone along East Grand Avenue to connect pedestrians to the eastern station entrance as well as provide an extension of downtown South San Francisco into the East of 101 Area.

Some of the measures identified in the various plans identified above are incorporated into various project's as they undergo the City's review process. Others will be implemented area-wide by the City through developer fees, community benefit fees and various grants of funding. City staff are beginning the process of meeting with businesses in the East of 101 Area to prioritize construction of the improvement measures identified in the Access Study.

Improvements Proposed by the Project Sponsor

The following measures and their locations are proposed by the Project Sponsor, as shown in **Transportation Figure 1 Transportation Improvements Incorporated into the Project** and described below.

1. **Arrival Plaza** is designed to replace a 25 sq ft arrival point connecting to the crosswalk in Poletti Way with an arrival area that immediately fans out into a 60 ft wide arc and an unobstructed 5,178 sq ft plaza. While this condition is not currently hazardous, due to low Caltrain ridership, increased ridership levels would result in a 'pinch point' where commuters could bunch up and spill out into Poletti Way.

   Access Plaza is also where a 15 ft wide multipurpose bicycle/pedestrian trail, along the west side of Poletti Way, would convert to a Class IV 30 ft wide separated bicycle and pedestrian facility traveling adjacent to the Project site along East Grand Avenue to Grand Avenue. The pedestrian lane is shown to be located on the Project site and separated from the bicycle lane by landscaping. The bicycle portion of the 30-ft wide facility is proposed within the East Grand Avenue right-of-way and would be separated from the vehicular lane by a structured concrete berms and landscaping. Both facilities would be lighted.

2 a. Poletti Way Plaza would support a covered 30-ft wide and 165 ft long sidewalk that creates a 5,105 sq ft circulation area. The rideshare pick up and drop off lane is identified in the Access Study as a benefit to multi-modal commuting and would complement the Caltrain built shuttle bus lane on the west side of Poletti Way (Figure 9, Access Study 2021, p 15).

2 b. Poletti Way Plaza proposes retail and sitting areas supporting mode shift.

2 c. **Poletti Way Setback** is proposed at 30 ft and was informed by the Mobility 2020 study and the. Access Study. The Mobility 2020 study identifies a potential circulation improvement to elevate the

Grand Avenue offramp and realign it with the Dubuque Avenue overpass (restated in the Access Study, item 3, p 26). Elevation of the off ramp would preclude the ability for zero lot line development. Nonetheless, the activity planned for the area would create a lively pedestrian frontage and a more relaxing one during non-peak hours to wait for a train, visit or engage in a bite to eat or a beverage.

2 d. **Poletti Way Plaza** would provide 140 bicycle parking spaces, 49 more than required by code. The additional bicycle parking is identified as needed in the area to help meet area-wide bicycle parking needs (Figure 9, Access Study 2021, p15).

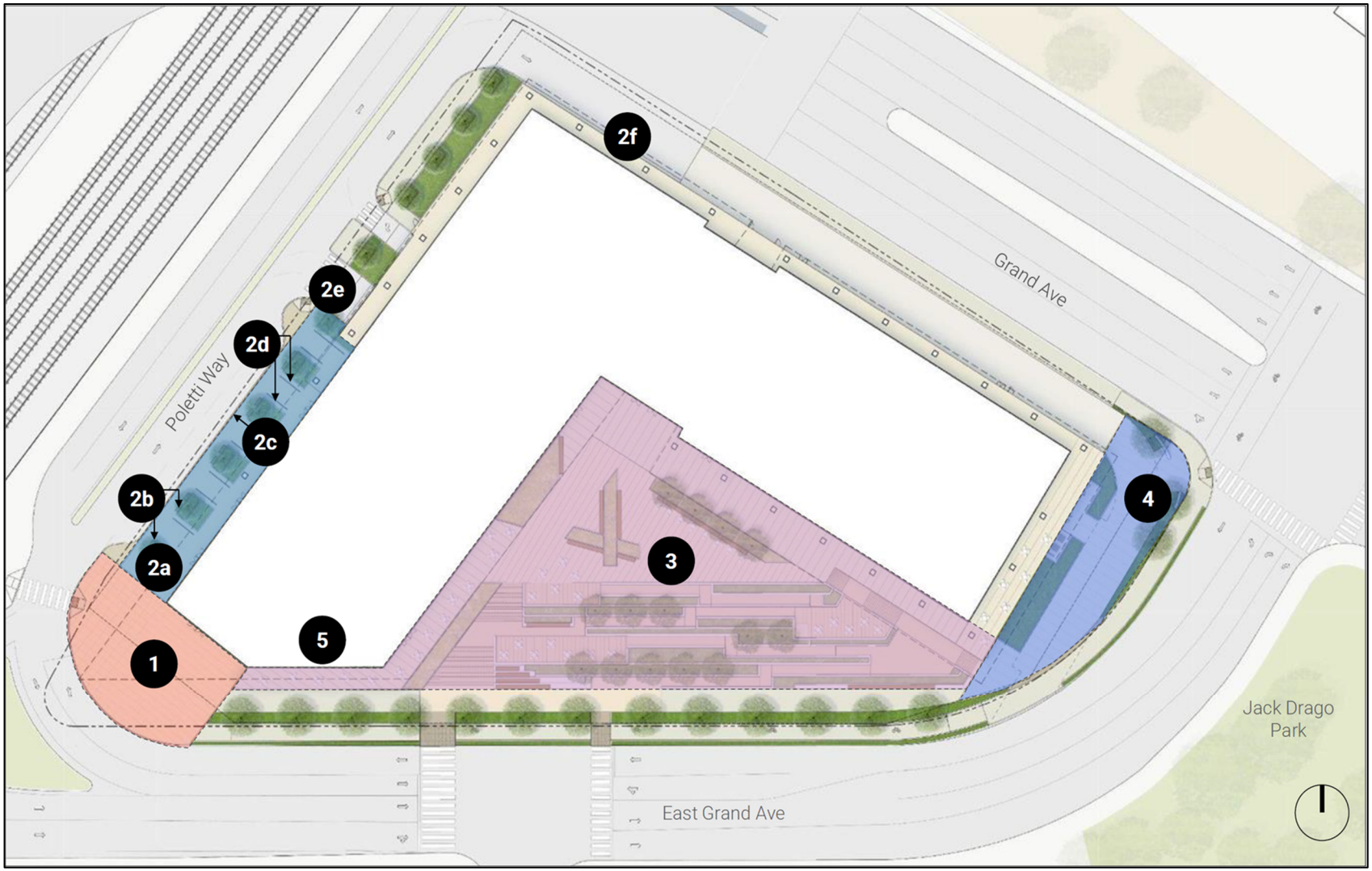
2 e. Poletti Way (mid-western and northern portions) would provide access to the Project parking structure.

2 f. Poletti Way/Grand Avenue Overpass is an area in the northwestern/northern area of the Project site dedicated solely for delivery and service trucks. The service access point is proposed off of Poletti Way, under the Grand Avenue Overpass, at the northern (service alley) area of the Project site. Separating large trucks from vehicular and pedestrian areas to maximum extent feasible is identified as a circulation improvement in the Access Study.

3. **Confluence Plaza** is a 28,000 sq ft landscaped outdoor gathering and seating area that would provide a comfortable social space for people to gather for respite, food, meetings or solitude. The Mobility 2020 study and the Draft 2040GP identify the need to provide circulation and gathering areas in the East of 101. Gathering areas help promote a sense of community and a walkable environment. The bicycle and pedestrian facility continue through this area to the East Access Plaza. There are no curb cuts proposed here or in the East Access Plaza, separating vehicular and pedestrian/bicycle travel for safety. Confluence Plaza and all the plazas and public amenities on the site would implement Draft 2040GP Policy SA-16.1 and Policy SA-16.2. Access Plaza activates the street frontage, and with the lack of curb cuts provides a safe place to gather.

4. **East Access Plaza** provides entry to and exiting from the southern area of the East of 101. The 8,350 sq ft plaza would support a collection of bicyclists and pedestrians entering and exiting the area. East Access Plaza brings the bicycle and pedestrian facility to Grand Avenue.

5. **Amenities** located on Levels 1 and 2 are proposed to provide food and services to encourage people to stay in the area and not commute elsewhere for personal needs. Mode shift requires goods and services nearby to be an effective solution to climate change.



TRANSPORTATION FIGURE 1
TRANSPORTATION IMPROVEMENTS INCORPORATED INTO THE PROJECT

IMPACTS

a) A significant impact would be one that conflicts with a plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

The Project would provide an additional 49 bicycle parking spaces for the community. The Project proposes mode-shift options on site and amenities to support mode shift. The Project, in compliance with Chapter 20 SSFMC, include a Transportation Demand Management Program targeting a 47.5% mode shift. The Project implements recommendations contained in the Access Study 2021, Mobility 2020 and Draft 2040GP Policy SA-16.1 and Policy SA-16.2 to increase safety and desirability of mode-shift options and to provide goods and services to support mode shift. The Project proposes services on site to encourage and support mode shift including but not limited to retail, food and service options, approximately one acre of outdoor space furnished to provide seating and gathering areas, drop-off/pick-up lane, and indoor restaurant and retail services. The Project would have no impact on a plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities because the Project proposes to implement city and state policies that support safe circulation and mode-shift options.

b) A significant impact would result if the project were in conflict or inconsistent with CEQA Guidelines section 15064.3, subdivision (b).

The Project is approximately 200 ft from entrance to Caltrain. CEQA Guidelines section 15064.3, subdivision (b) states "generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact". Moreover, the Project is a 'transportation hub', being a development that proposes and serves a variety of mode-shift options. The Project would have a less than significant impact on CEQA Guidelines section 15064.3. The Project is a transit-oriented infill employment center project.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)

The Project proposes to separate pedestrian and bicyclist activity from vehicles to the maximum extent feasible. Project parking would be accessed along the mid-to-northern side of Poletti Way. Large commercial and service truck access and activity would be restricted to the 20 ft service alley along the northern side of the building, accessed off of Poletti Way underneath the Grand Avenue Overpass.

The Caltrain Station pedestrian access from the west includes a crosswalk in Poletti Way that leads to a 25 sq ft arrival point on the Project site. While this condition is not currently hazardous due to low Caltrain ridership, increased ridership levels would result a 'pinch point' where commuters could bunch up and spill out into Poletti Way. The Access Plaza is designed to replace the 25 sq ft arrival point with an arrival area that immediately fans out into a 60 ft wide arc and an unobstructed 5,178 sq ft plaza.

The Project would result in a less than significant impact associated with geometric design, sharp curves, or dangerous intersections. The Project would improve existing conditions in Poletti Way and East Grand Avenue.

d) A significant impact would result in inadequate emergency access by not providing or blocking areas designated for such access or violating building codes that prescribe safety and access measures.

The Project would provide emergency access. City Fire Marshal Ian Hardage (February 14, 2022) directed the Project Sponsor to provide at grade fire access along all sides of the building ranging from 20 to 26 ft in width. To provide emergency access to the upper floors of the building Fire Marshal Hardage directed the Project Sponsor to limit landscaping to a maximum of 15 ft in height along the façade of the building on the east and west elevations.

The site plan also includes emergency access from East Grand Avenue through the East Access Plaza and limits landscaping accordingly. The Project is required by law to conform to the latest building code and implement the conditions of approval identified by staff. These measures are designed to protect safety and provide emergency access. The Project would have a less than significant impact on emergency services as it is designed in conformance with the recommendations of the City Fire Marshal and shall comply with conditions of project approval and the City building code.

Transportation Finding:

(1) The Project would provide an additional 49 bicycle parking spaces for the community. The Project proposes mode-shift options on site and amenities to support mode shift. The Project, in compliance with Chapter 20 SSFMC, include a Transportation Demand Management Program targeting a 47.5% mode shift. The Project implements recommendations contained in the Access Study 2021, Mobility 2020 and Draft 2040GP Policy SA-16.1 and Policy SA-16.2 to increase safety and desirability of mode-shift options and to provide goods and services to support mode shift. The Project proposes services on site to encourage and support mode shift including but not limited to retail, food and service options, approximately one acre of outdoor space furnished to provide seating and gathering areas, drop-off/pick-up lane, and indoor restaurant and retail services. The Project would have no impact on a plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities because the Project proposes to implement city and state policies that support safe circulation and mode-shift options.

(2) The Project would have a less than significant impact on CEQA Guidelines section 15064.3. The Project is a transit-oriented infill employment center project.

(3) The Project would have no impact associated with geometric design, sharp curves or dangerous intersections. The Project proposes to separate pedestrian and bicyclist activity from vehicles to the maximum extent feasible by providing vehicular activity on the mid-to-northern side of Poletti Way and large commercial and service truck activity on the northern elevation of the building. The Project proposes the pedestrian lane to be located on the Project site and separated from the bicycle lane by landscaping. The bicycle portion of the 30-ft wide facility is proposed within the East Grand Avenue right of way and would be separated from the vehicular lane by a structured concrete berms and landscaping. Both facilities would be lighted.

The Caltrain Station pedestrian access from the west includes a crosswalk in Poletti Way that leads to a 25 sq ft arrival point on the Project site. While this condition is not currently hazardous due to low Caltrain ridership, increased ridership levels would result a 'pinch point' where commuters could bunch up and spill out into Poletti Way. The Access Plaza is

designed to replace the 25 sq ft arrival point with an arrival area that immediately fans out into a 60 ft wide arc and an unobstructed 5,178 sq ft plaza.

The Project would have no impact associated with geometric design, sharp curves or dangerous intersections. The Project would improve existing conditions in Poletti Way and East Grand Avenue.

(4) The Project would have a less than significant impact on emergency services as it is designed in conformance with the recommendations of the City Fire Marshal and shall comply with conditions of project approval and the City building code.

XVIII. Tribal Cultural Resources *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Would the Project Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resource Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

SETTING

Archaeological, cultural and historic resources are vetted in **Chapter 3, Section V** above. This section contains only the Sacred Lands research conducted by BASIN research.

The Native American Heritage Commission (NAHC) was contacted for review of the Sacred Lands File (SLF) on September 9, 2021. The research was conducted by BASIN Resource Associates as part of the cultural resources report.

IMPACTS

No sacred lands listings were identified on the Project site and within a one-mile (minimum) radius surrounding the site (BASIN, 2021, p 2 from Katy Sanchez Native American Heritage Commission research 'Native American Heritage Commission – Response to Request for Review of Sacred Lands Inventory 121 E. Grand Avenue, San Mateo County' September 9, 2021, and on file at Basin Research Associates, San Leandro) ('Sanchez, September 9, 2021').

Tribal Resources Finding: No sacred lands listings were identified on the Project site and within a one-mile minimum radius surrounding the site (BASIN, 2021, p 2 and Sanchez September 9, 2021). No historic resources are located on the Project site as defined by Public Resources Code 5024.1.

XIX. Utilities and Service Systems *Would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☒	☐	☐
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☒	☐	☐
c. 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?	☐	☐	☒	☐
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

SETTING

The Project site is within an urbanized area of the City. The Project would replace a hotel use with a life science use. Utilities and service systems are present and available on the Project site.

REGULATORY AND SERVICE PROVIDER FRAMEWORK

For additional information on utility service providers and the legislative framework thereto please see **Chapter 1, Legislative Framework Section 1.4 and Chapter 3 Sections VI Energy, X Hydrology and Water Quality, and XI Land Use and Planning**.

WATER

State

Water Conservation in Landscaping Act of 1990

Assembly Bill (AB) 325 of 1990 created the Water Conservation in Landscaping Act requiring the Department of Water Resources (DWR) to develop a Model Water Efficient Landscape Ordinance (MWELO). This Model Ordinance was adopted and went into effect January 1, 1993, requiring all local agencies to adopt a water efficient landscape ordinance, unless proven unnecessary, by 1993. In 2004, AB 2717 requested the California Urban Water Conservation Council (CUWCC) to convene a task force in order to evaluate and recommend improving the efficiency of water use in urban irrigated landscapes. The outcome was 43 recommendations, some of which included updates to the Ordinance. In 2006, AB 1881 was enacted requiring DWR to update the Model Water Efficient Landscape Ordinance reflecting the recommendations of the CUWCC task force and public

comment. The updated MWELO went into effect January 1, 2010, was updated again by Executive Order, and has been in effect since December 1, 2015.

California Environmental Quality Act (CEQA)

Section 15155. WATER SUPPLY ANALYSIS (CEQA Guidelines) requires a Lead Agency, in this case the City of South San Francisco (see **Ch 1 Legislative Framework**) to consult with water agencies (in this case Cal Water) if a project is considered a 'Water Demand Project'. A 'Water Demand Project' includes eight categories of use associated with various water demand levels. The 121 E Grand Avenue Project is considered a water demand project because it meets the following criteria:

> (B) A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
>
> (F) A mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.

The City of South San Francisco met with Cal Water and it was decided that a water assessment would be required for the Project (see below).

Local District

Cal Water System and Requirement for a Water Assessment Study

The East of 101 area is served by Cal Water through water purchased from San Francisco's Public Utility Commission Hetch Hetchy System and local groundwater. As noted above a water assessment study (WSA) was required for the Project because the Project would generate more than 1,000 employees and would be greater than 500,000 sq ft (CEQA Guidelines section 15115(a)(1)(B)). The following two documents, incorporated by reference are found in **Appendix A** and are the basis of the water evaluation herein.

- 121 East Grand Avenue South San Francisco-Water Demand Memorandum, Job # 20201781, Lokelani Yee, BKF Project Manager, April 25, 2022. (BKF, 2022)
- Water Supply Assessment for 121 East Grand Avenue Project, South San Francisco District California Water Service, eki environment & water, draft May 2022 (EKI, 2022).

The purpose of a WSA is to evaluate whether a water provider has sufficient water supply to meet the current and planned water demands within its service area, including the demands associated with the Project, during normal and dry hydrologic years over a 20-year time horizon.[20] Given that the SSF District shares its contractual allocation for its primary water source (the City and County of San Francisco's Regional Water System [RWS]) with Cal Water's Bear Gulch and Mid-Peninsula Districts (referred to as the "three Peninsula Districts), the collective projected supplies and demands for all three Peninsula Districts are considered in the WSA prepared by EKI. The WSA includes:

- A summary of the WSA requirements articulated in Water Code §10910-10912 and a description of how they apply to the Project.
- A description and analysis of the current and projected future water demands of the Project through the year 2045.

[20] The Water Code specifies that a WSA must look at supplies and demand on a 20-year horizon (i.e., to 2040), but given the available data, the eki WSA looks beyond that to 2045.

- A description and analysis of the historical and current water demands for the SSF District, and projected future water demands for the three Peninsula Districts' service areas through the year 2045.
- A description and analysis of the current and projected future water supplies for the three Peninsula Districts' service areas through the year 2045.
- A comparison of the water supplies and demands for the three Peninsula Districts' service areas, including the projected water demands associated with the Project.

City

Model Water Efficiency Landscape Ordinance (MWELO)

The City adopted a MWELO ordinance in conformance with state law. Chapter 20.003.007 of the South San Francisco Municipal Code (Zoning) stipulates the review and approval process for landscape plans. The plans are required to (among other items) include prescriptive irrigation, planting specifications and soil treatment methods to reduce water consumption. An applicant is required to complete the Water Efficient Landscape Worksheet contained in Appendix B of the State of California model water efficient landscape ordinance, which contains information on the plant factor, irrigation method, irrigation efficiency, and area associated with each hydrozone. Calculations are then made to show that the evapotranspiration adjustment factor (ETAF) for the landscape project does not exceed a factor of 0.55 for residential areas and 0.45 for non-residential areas, exclusive of special landscape areas. The ETAF for a landscape project is based on the plant factors and irrigation methods selected. The maximum applied water allowance is calculated based on the maximum ETAF allowed (0.55 for residential areas and 0.45 for non-residential areas) and expressed as annual gallons required. The estimated total water use (ETWU) is calculated based on the plants used and irrigation method selected for the landscape design. ETWU must be below the maximum allowable water allowance.

Wastewater

See Chapter 1, Legislative Framework Section 1.5.5 and Chapter 3 Section X Hydrology and Water Quality for the legislative framework.

City of South San Francisco Water Quality Control Plant

The City's Water Quality Control Plant (wastewater treatment) is located on Belle Air Road in South San Francisco. The facility provides secondary wastewater treatment for the cities of South San Francisco, San Bruno, and Colma. The plant also provides the dichlorination treatment of chlorinated effluent for the cities of Burlingame, Millbrae, and the San Francisco International Airport prior to discharging the treated wastewater into San Francisco Bay. The average dry weather flow through the facility is 9 million gallons per day (MGD). Peak wet weather flows can exceed 60 MGD.

The City's Water Quality Control Plan operator requires compliance with local, state and federal regulations addressing treatment and discharge of wastewater. The Water Quality Control Plant operates the following programs to remain in compliance with local, state and federal mandates (https://www.ssf.net/departments/public-works/water-quality-control-plant/environmental-compliance, accessed on May 12, 2022).

Pretreatment Program: The pretreatment program exists to limit the impacts to the wastewater collection system by residential, commercial, and industrial users.

Pretreatment Resources

- Local Discharge Limits
- Grease Trap Maintenance Log Sheet
- Grease Waste Hauler List
- Groundwater Well Discharge Sites Permit Application
- Groundwater Well Discharge Permit Application Requirements
- General Dewatering Discharge Permit Application
- General Dewatering Discharge Permit Application Requirements
- Industrial Waste Discharge Permit Application
- Pretreatment Fee Schedule
- Retail Food Facility Permit Application
- Slug Discharge Guidance Manual
- Waste Hauler Discharge Permit- Example
- Waste Hauler Discharge Permit Application

Pollution Prevention Program. The Pollution Prevention Program focuses ways to reduce or eliminate waste by promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than putting them into the waste stream.

Pollution Prevention Resources

- Automotive Services Best Management Practices
- Bay Area Pollution Prevention Group
- California Fats, Oils & Grease Workgroup
- Dental Inspection and Survey Form
- Dental Facility Accepted Amalgam Separator List
- Hazardous & Medical Waste Haulers
- Medication Disposal
- Mercury Assessment Checklist
- Pesticides & Pests
- US EPA Pollution Prevention Pays (P2
- Solution to Water Pollution
- Zero Waste California - All fluorescent lamps and tubes should be recycled or disposed of as hazardous waste.
- Universal Waste Guidelines

Stormwater Pollution Prevention Program Resources

- South San Francisco Storm Drain System (MS4) Map
- Car Washing Guidelines
- Construction Activity Best Management Practices
- Construction Site Stormwater Inspection Form
- How Your Business Can Prevent Stormwater Pollution
- List of Outdoor Vehicle Wash Systems
- Mobile Surface Cleaner Guidelines
- Stormwater Inspection Form

- Vehicle Service Facility Best Management Practices

The Project Sponsor or designated representative is required by ordinance to apply for and obtain an approved 'Industrial Waste Discharge Permit'. The application process identifies the types of chemicals and materials of concern to be used on site and methods to reduce the toxicity to acceptable levels identified by the California Water Quality Board and other regulatory agencies.

STORMWATER

Chapter 1, Legislative Framework Section 1.5.5 and Chapter 3 Section X Hydrology and Water Quality for the legislative framework.

Chapter 1, Legislative Framework identifies the types of conditions of approval that are required by ordinance to be implemented into Project design and operations. There are 25 to 30 requirements levied on a project to assure stormwater impacts are not significant and comply with local, state and federal regulations.

The Project would be required to prepare a stormwater management plan and obtain a General Construction Activity Stormwater Permit, Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) prior to issuance of any building, grading, and/or demolition permits.

WASTE DIVERSION

State

See Chapter 1, Legislative Framework Section 1.5.7 for a description of the California Green Building Code that addresses a plethora of environmental mitigation measures including waste diversion.

City

The City of South San Francisco is mandated by the State of California to divert sixty-five percent (65%) of all solid waste from landfills either by reusing or recycling. The City adopted an ordinance to assist in meeting this state mandated requirement. Through conditions of project approval, the City requires completion of and compliance thereto of a Waste Management Plan ("WMP") for covered building projects, such as the Project. The WMP shall identify the methods by which at least sixty-five percent (65%) of non-inert project waste materials and one hundred percent (100%) of inert materials ("65/100") will be diverted from the landfill through recycling and salvage. Preparation and approval of the WMP is required prior to issuance of building, grading and/or demolition permits.

The implementing legislation is contained in Chapter 15.60.030 Diversion and Requirements (South San Francisco Municipal Code). The Ordinance is in compliance with Section 4.408 of Chapter 4 of the California Green Building Standards Code (CALGreen). The City ordinance stipulates projects shall be in conformance with CALGreen, as it may be amended from time to time.

The diversion requirements of the ordinance shall be met by submitting and following a waste management plan that includes the following:

(1) Deconstructing and salvaging all or part of the structure as practicable; and

(2) Directing one hundred percent of inert solids to reuse or recycling facilities approved by the city; and

(3) Either:

(a) Taking all mixed construction and demolition debris to mixed construction and demolition debris recycling facilities approved by the city and taking all sorted or crushed construction and demolition debris to approved facilities, or

(b) Source separating noninert materials such as cardboard and paper, wood, metals, green waste, new gypsum wallboard, tile, porcelain fixtures, and other easily recycled materials, and directing them to recycling facilities approved by the city and taking the remainder to a facility for disposal. In this option, calculations must be provided to show that the minimum amount of debris as specified by Section 4.408 of Chapter 4 of CALGreen has been diverted. (Ord. 1532 § 1, 2017)

The ordinance is regulated through conditions of project approval and the building permit and inspection process.

ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATIONS FACILITIES

Pacific Gas and Electric (PG&E), telephone and internet services are currently provided on the Project site. See Chapter 3 Section VI Energy for a discussion of this utility provider.

REQUIRED WATER REPORT PREPARED BY EKI, 2022

The information contained in the WSA is based primarily on Cal Water's SSF, Bear Gulch, and Mid-Peninsula Districts 2020 Urban Water Management Plans (UWMPs), except as updated with relevant water demand and supply reliability and other information provided by Cal Water, Department of Water Resources (DWR), the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA). The findings of the WSA are contingent upon the successful development of supplemental water supplies and/or the implementation of conservation/demand management measures to offset any net new demands from qualifying projects in specified Cal Water's districts under Cal Water's Water Neutral Development Policy.

Cal Water began development of a Water Neutral Development Policy in July 2021(Policy) for its three Peninsula Districts, which share the same SFPUC supply allocation. The purpose of the policy is to ensure that there is enough water at all times to meet the basic needs of the community and increase drought resiliency, among other things. The findings of the WSA prepared by EKI are contingent upon the successful development of supplemental water supplies and/or the implementation of conservation/demand management measures to offset any net new demands from qualifying projects in specified Cal Water's districts under the Policy.

The Policy, as currently drafted, will require any new residential, commercial, or industrial development within the SSF District that is expected to exceed a specified amount of new demand to offset its net increase in water demand. The net increase in water demand associated with any new development is calculated as the expected total water use due to the proposed development and/or expansion, minus the amount of existing water use, onsite credits (if available), and/or alternative sources of water supply. Alternative sources may include but are not limited to: (1) reused graywater, (2) reused blackwater, (3) reused mixed gray/blackwater, (4) captured rainwater / stormwater, and (5) air conditioning condensate.

The offset amount is determined using a detailed projection of total annual water demand resulting from the proposed development, excluding temporary demands such as those required for landscape establishment. An applicant may choose to comply with the defined offset amount by: (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy. Cal Water will verify compliance with this Water Neutral Development Policy (i.e., ensure that all payments for offsets and/or conservation offset measures are completed) prior to establishing a water service connection.

Projected Project Water Demand

The Project would replace a three-story motel historically using between 14 to 21-acre feet per year (AFY) (EKI 2022, p 10). Average annual water demand for the Project was provided by BKF Engineers (BKF Engineers, 2022; see **Appendix A**). These estimates were reviewed by EKI relative to current water use by similar uses in the Cal Water SSF District. Similar uses within the Cal Water SSF District are based on the Cal Water WSA Water Factor Tool, which was developed based on 2016-2018 water use data for the SSF District. Water demand for the Project is projected to be 181 AFY from 2030 to 2045 (EKI 2022, p 12; **Appendix A**). EKI assumed Project buildout to be the year 2030.

Projected water use is derived by an industry assumed amount of water use (i.e., demand factor per use) in square feet and type of land use (i.e., office, café, research and development). Water use is also derived from the number of residents or employees associate with a project. As identified in the Population and Housing section of this document, (**Section 3.XIV**) 2,239 employees are anticipated for the Project. Based upon the water demand memorandum provided by BKF Engineers (see attachment A) and a reviewed and analyzed by EKI water demand for the Project is shown below.

Indoor Water Use: The Project is anticipated to require 169,974 gallons per day (GPD), or approximately 190 acre feet per year (AFY). The projection is based upon:

- Office Space: 0.13 gallons per day/square foot (GPD/SF),
- Research and Development: 0.21 GPD/SF for R&D,
- Amenities: Ranging 0.10 GPD/SF and 0.80 GPD/SF
- Employees: 73 GPD/employee

EKI notes all unit demand factors were sourced from published Redwood City water demand assumptions[21], as recommended by the City. EKI also notes the estimated the number of employees is substantially higher than the 20-35 GPD/employee estimate for commercial and industrial settings, per the EPA Lean & Water Toolkit (USEPA, 2021). Based on Cal Water's WSA Water Demand Factor Tool, non-residential uses within the SSF District (based on 2016-2018 data), are 0.063 GPD/SF. Therefore, if this demand factor were applied to the Project, demands would be estimated as 67 AFY. EKI notes the water demand estimates provided by the Project Proponent are expected to be conservative and reflect a higher intensity of water use than typical office and commercial uses (EKI 2022, p 17**)**.

Outdoor Water Use: 818 GPD or approximately 0.92 AFY 0.07 GPD/SF based upon 11,700 sq ft of irrigated landscape area.

EKI notes, the Project will be required to comply with South San Francisco's water efficient landscaping ordinance, which is consistent with the Model Water Efficient Landscaping Ordinance. Based on MWELO, the Maximum Applied Water Allowance (MAWA; DWR, 2015) is 0.43 AFY,[22] less than half of that estimated by BKF Engineers. Given that the outdoor irrigation demand estimates provided by the Project are higher and thus more conservative, and the exact landscape designs are not currently known, an estimate of 0.92 AFY is used.

Total Water Use: Based on the above methodologies and assumptions and adjusting for the existing water use at the site, the incremental increase in water demand associated with the Project at full buildout

[21] 2019 Engineering Standards for the City of Redwood City Attachment Q: Water Demand Projection Worksheet.

[22] MAWA demands were calculated by multiplying the Reference Evapotranspiration rate of 42.8 inches per year for Redwood City, an Evapotranspiration Adjustment Factor of .45 for non-residential areas, a conversion factor of .62, and the total project square footage, for a total of .92 AFY, per DWR, 2015.

and occupancy is estimated to be 181 AFY. However, as discussed above, in accordance with the SSF District's Water Neutral Development Policy, the offset amount for the Project is equal to the associated incremental increase in water demand. Thus, the Project will be required to offset a total of 181 AFY and is therefore not expected to result in a net increase in water demands to Cal Water's SSF District.

Th EKI study concludes (p 18)

> Consistent with the UWMP Act (Water Code §10610-10656), the 2020 UWMPs for the three Peninsula Districts present estimates of projected future water demand for each respective District service area in five-year increments, between the years 2025 and 2045 (Cal Water, 2021a, 2021b, 2021c).
>
> The projections include all existing demands within the SSF District, as well as for other large projects for which Cal Water has prepared WSAs in the last five years (i.e., 201 Haskins Way, South SFPUC Site, South San Francisco Downtown Station, Oyster Point Development, the 2017 Genentech Master Plan Update, and the Southline Specific Plan).
>
> While the 2020 UWMP water demand projections account for growth within the current SSF District, the proposed Project is not explicitly included in these projections, and the projected demand associated with the proposed Project is higher than the projected demand growth anticipated by the 2020 UWMP. Therefore, for the purposes of this WSA, it is conservatively assumed that no portion of the water demand associated with the proposed Project is included in the projected SSF District water demands. Notwithstanding, through implementation of the Water Neutral Development Policy, the proposed Project will not result in an increase in demands for the SSF District relative to those projected in the 2020 UWMP.[23] All other new developments that are expected to exceed a specified amount of demand within the three Peninsula Districts will also be required to comply with the Water Neutral Development Policy and thus will result in no incremental increase in demand on the system.

The Project as a matter of securing water service from Cal Water is require to offset a total of 181 AFY of water. The offset amount was determined using a detailed projection of total annual water demand resulting from the proposed development, excluding temporary demands such as those required for landscape establishment. An applicant may choose to comply with the defined offset amount by: (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy. With implementation of this requirement the project is not expected to result in a net increase in water demands to Cal Water's SSF District.

The EKI 2022 (p 52) concludes:

Therefore, this WSA concludes that, through the (1) development of supplemental water supplies and/or (2) implementation of conservation or demand management measures equal to the Project's estimated net new demands consistent with the Cal Water's Water Neutral Development Policy, the proposed Project will not affect water supply reliability within the South San Francisco District. Based on currently available information and conservative estimates of projected demand, Cal Water expects to be able to meet all future demands within its existing South San Francisco District service area (as well as the Mid-Peninsula and Bear Gulch Districts), inclusive of the proposed Project in normal

[23] Demand estimates for the District's service area through 2045 were developed using Cal Water's demand forecast model, which estimates future demands based on current water use for the District, anticipated growth based on projections by the Association of Bay Area Governments (ABAG), projected water conservation efforts, and anticipated passive conservation savings.

hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the South San Francisco District Water Shortage Contingency Plan (WSCP). In addition, as described herein and in Cal Water's 2020 UWMP, BAWSCA, Cal Water, and SFPUC are pursuing the development of additional water supplies to improve the RWS and South San Francisco District supply reliability.

Implementation of Utility and Service Systems Mitigation Measure 1 which is a restatement of Cal Water's Net Neutral Policy would reduce water impacts associated with the Project to less than significant.

Utility and Service Systems Mitigation Measure 1: The Project Sponsor/designated representative shall implement Cal Water's Net Neutral Policy by either (1) paying to the SSF District of CalWater the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy.

IMPACTS

a and b) A significant impact to water resources would occur if the project would require or result in the relocation or construction of new or expanded water; and not have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.

The Project as a matter of securing water service from Cal Water is require to offset a total of 181 AFY of water. The offset amount was determined using a detailed projection of total annual water demand resulting from the proposed development, excluding temporary demands such as those required for landscape establishment. An applicant may choose to comply with the defined offset amount by: (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy. With implementation of this requirement the project is not expected to result in a net increase in water demands to Cal Water's SSF District.

As noted above, the EKI Report (p 52) concluded that through the (1) development of supplemental water supplies and/or (2) implementation of conservation or demand management measures equal to the Project's estimated net new demands consistent with the Cal Water's Water Neutral Development Policy, the Project will not affect water supply reliability within the South San Francisco District. Based on currently available information and conservative estimates of projected demand, Cal Water expects to be able to meet all future demands within its existing South San Francisco District service area (as well as the Mid-Peninsula and Bear Gulch Districts), inclusive of the proposed Project in normal hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the South San Francisco District Water Shortage Contingency Plan (WSCP). In addition, as described herein and in Cal Water's 2020 UWMP, BAWSCA, Cal Water, and SFPUC are pursuing the development of additional water supplies to improve the RWS and South San Francisco District supply reliability.

Implementation of Utility and Service Systems Mitigation Measure 1 which is a restatement of Cal Water's Net Neutral Policy would reduce water impacts associated with the Project to less than significant.

Utility and Service Systems Mitigation Measure 1 WATER: The Project Sponsor/designated representative shall implement Cal Water's Net Neutral Policy by either (1) paying to the SSF District of Cal Water the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy.

The Project is required by law to comply with City and State water reduction measures. The Project proposes a LEED Gold approach to building construction and operations all of which serve to reduce water use.

a, c, d and e) A significant impact would result in the relocation or construction of new or expanded wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction which would result in a significant impact, or 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 City Water Quality Control Plant has not identified issues with providing wastewater treatment services. The permitting process would reduce discharge to levels identified as compliant with local, state and federal law. The Environmental Compliance Program administers the Pretreatment Program, Pollution Prevention Program, and Stormwater Pollution Prevention Programs mandated by the State of California. The programs regulate and control concentrations of wastewater and stormwater pollutants discharged by industrial, commercial, and residential discharges. Impacts associated with the operations and capacity of the Water Quality Control Plant would be less than significant.

Storm water drainage is considered less than significant with implementation of the conditions of approval that are required by ordinance to be implemented into project design and operations. There are 25 to 30 requirements levied on a project to assure stormwater impacts are not significant and comply with local, state and federal regulations.

The Project would be required to prepare a stormwater management plan and obtain a General Construction Activity Stormwater Permit, Notice of Intent and SWPPP prior to issuance of any building, grading, and/or demolition permits. Wastewater and stormwater impacts would be less than significant.

PG&E currently provides service to the Project site. Telephone and internet services are provided at 121 East Grand Avenue. Impacts would be less than significant.

The City of South San Francisco is mandated by the State of California to divert sixty-five percent (65%) of all solid waste from landfills either by reusing or recycling. The City adopted an ordinance to assist in meeting this state mandated requirement. Through conditions of project approval (identified in **Chapter 1 Legislative Framework'** the City requires completion of and compliance thereto of a Waste Management Plan ("WMP") for covered building projects, such as the Project. Solid waste impacts would be less than significant.

Utilities and Service Systems Finding:

(1) Implementation of Utility and Service Systems Mitigation Measure 1 which is a restatement of Cal Water's Net Neutral Policy would reduce water impacts associated with the Project to less than significant.

Utility and Service Systems Mitigation Measure 1: The Project Sponsor shall implement Cal Water's net neutral policy by either (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy.

The Project is required by law to comply with City and State water reduction measures. The Project proposes a LEED Gold approach to building construction and operations all of which serve to reduce water use.

(2) The City Water Quality Control Plant has not identified issues with providing wastewater treatment services. The permitting process would reduce discharge to levels identified as compliant with local, state and federal law. The Environmental Compliance Program administers the Pretreatment Program, Pollution Prevention Program, and Stormwater Pollution Prevention Programs mandated by the State of California. The programs regulate and control concentrations of wastewater and stormwater pollutants discharged by industrial, commercial, and residential discharges. Impacts associated with the operations and capacity of the Water Quality Control Plant would be less than significant.

(3) Storm water drainage is considered less than significant with implementation of the conditions of approval that are required by ordinance to be implemented into project design and operations. There are 25 to 30 requirements levied on a project to assure stormwater impacts are not significant and comply with local, state and federal regulations.

(4) The Project would be required to prepare a stormwater management plan and obtain a General Construction Activity Stormwater Permit, Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) prior to issuance of any building, grading, and/or demolition permits. Wastewater and stormwater impacts would be less than significant.

(5) Pacific Gas and Electric (PG&E) currently provide service to the Project site. Telephone and internet services are provided at 121 East Grand Avenue. Impacts would be less than significant.

(6) The City of South San Francisco is mandated by the State of California to divert sixty-five percent (65%) of all solid waste from landfills either by reusing or recycling. The City adopted an ordinance to assist in meeting this state mandated requirement. Through conditions of project approval (identified in Chapter 1 Legislative Framework' the City requires completion of and compliance thereto of a Waste Management Plan ("WMP") for covered building projects, such as the proposed Project. Solid waste impacts would be less than significant.

XX. Wildfire *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

SETTING

The Project site is relatively flat, as identified in **Chapter 2 Project Description** and **Chapter 3 Section VI Geology and Soils**. The site is in an urbanized area. No slopes surround the Project site or area. There are no dense stands of trees, understory or ladder fuels in the area.

REGULATORY FRAMEWORK

The Project site, as well as the City of South San Francisco, is not located in Very High Fire Hazard Severity Zone (VHFHSZ) as mapped by CalFire and shown on their Fire Survey Maps (osfm.fire.ca.gov/media6800/fhszl_map41.pdf). Cities from Burlingame, located north of Interstate 280, up the Peninsula to San Francisco are not in a VHFHSZ.

The Draft 2040GP, Figure 44 California Fire Hazard Severity Zones (FHSZ) does identify San Bruno Mountain State and County Park, located in San Mateo County (SBMCP), and adjacent to the northern South San Francisco boundary as being within a California Fire Hazard Severity Zone. SBMCP is located 0.5 mi northwest of the Project site.

IMPACTS

a-d) A significant impact would occur if a project would substantially impede an adopted emergency response plan or emergency evacuation plan; be located in an area associated with wildland fire risks; require the installation and maintenance of road, firebreaks, etc and expose people of structures to significant risks

There would be no impacts associated with a Very High Fire Hazard Severity Zone (VHFHSZ) as mapped by CalFire as shown on their Fire Survey Maps. The site and City are not identified on the Department of Forestry and Fire Protection San Mateo County Fire Hazard Severity Zones in State Responsibility Area (https://osfm.fire.ca.gov/divisions/wildfire-planning-engineering-/wildland-hazards-building-codes/fire-hazard-severity-zonesmaps/)or the San Mateo County Very High Fire

Severity Zones in Local Responsibility Area, November 24, 2008 available at https://osfm.fire.ca.gov/media/6800/fhszl_map41.pdf. The Draft 2040GP does identify San Bruno Mountain State and County Park, 0.5 mi northwest of the Project site as being a California Fire Hazard Severity Zone. The Project site is not within a Very High Fire Hazard Severity Zone

Wildfire Finding: The Project site is not located in a Very High Fire Hazard Severity Zone. The site is in an urbanized area. No slopes surround the Project site or area. There are no dense stands of trees, understory or ladder fuels in the area There is no need to construct wildland fire fighting measures such as roads, fire breaks or additional water sources. There are no impacts associated with wildfire.

XXI. Mandatory Finding of Significance	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) Environmental Quality: Implementation of the mitigation measures below would reduce impacts to biological (nesting birds) and archaeological (cultural) to less than significant.

Tree removal permits are required by City ordinance and restated below. The Project Sponsor has agreed to and/or proposed the following measures as part of the Project (see Appendix A, letter from M Gerrity the Project Sponsor dated May 3, 2022) the following is restated herein:

Biology Impact 1: Tree removal during nesting season could result in a significant impact if active nests are disturbed or destroyed.

Biology Mitigation 1

Bio 1.A.1: Tree Removal Within Nesting Season (approximately March 1 to August 31). No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the following protocol is met.

The Project Sponsor, or designated representative shall retain a licensed biologist to conduct a preconstruction survey for protected birds on the site and in the immediate vicinity if any Project construction activities occur during nesting season. The survey shallbe done no more than 15 days prior to the initiation of tree removal and grading and other construction activities. In the event that nesting birds are found on the Project site or in the immediate vicinity, Project Sponsor, or designated representative shallnotify the City, locate and map the nest site(s) within three (3) days, submit a report to the City and the California Department of Fish and Wildlife ("CDFW"), establish a no-disturbance buffer of 250-ft, and conduct on-going weekly surveys to ensure the no-disturbance buffer is maintained. In the event of destruction of a nest with eggs, or if a juvenile or adult raptor should become stranded from the nest, injured or killed, the qualified biologist shall immediately notify the CDFW. The licensed biologist shall coordinate with the CDFW to have the injured bird either

transferred to a raptor recovery center or, in the case of mortality, transfer it to the CDFW within 48 hours of notification.

A tree permit per South San Francisco Municipal Code Section 13.30.030 (Tree Preservation Ordinance), shall be required prior to removal of a Protected Tree, defined in section 13.30.020 as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representativ shall contact the Parks Division to determine if a removal permit is needed. The Project Sponsor, or designated representative shall obtain City issued tree removal permits prior to commencing any tree removal activities; **or**,

Bio 1.B.1: Tree Removal Outside Nesting Season (approximately September 1 to February 28). No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the following protocol is met.

Tree removal outside of nesting season would preclude the need for the measures identified in 1.A.1, above. A tree permit shall be required per South San Francisco Municipal Code Section 13.30.030 (Tree Preservation Ordinance)prior to removal of a Protected Tree, defined in section 13.30.020 as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representative shall contact the Parks Division to determine if a removal permit is needed. The Project Sponsor, or designated representative shall obtain City issued tree removal permits prior to commencing any tree removal activities.

The Project would have a less than significant impact on biological resources with regard to native wildlife movement opportunities or nursery sites because the Project Sponsor would either remove trees outside of nesting season or follow the established protocol and mitigation measure during nesting season.

Archaeology Impact 1: There is a remote possibility that culturally significant soils, those containing artifacts or remains, could be located in subsurface areas of the site. Disturbance of these soils could result in a significant impact.

Archaeology Mitigation 1

Arch 1.A.1a: Employee Training and Awareness. Prior to the start of ground disturbing grading, demolition or construction, the Project Sponsor/designated representative shall ensure that a *Worker Awareness Environmental Training* (WAET) is conducted by a licensed archaeologist (Archaeologist) in the state of California. Training shall be scheduled in consultation with the Project Sponsor/designated representative, construction manager and other key site personnel, and the City of South San Francisco. WAET training shall be required for all personnel participating in ground disturbing construction to alert them to the archaeological sensitivity of the Project area and provide protocols to follow in the event of a discovery of archaeological materials. The Project Sponsor/designated representative shall also ensure the occurrence of the following:

1.A.1.b: Archaeologist shall be on an "on-call" basis to review and identify any potential archaeological discoveries during ground disturbing grading, demolition and excavation operations and work shall stop within 50 feet of the find. Archaeologist shall be contacted for identification, evaluation and further recommendations consistent with California Environmental Quality Act and City of South San Francisco requirements.

1.A.1c: Grading, demolition and any other plans that require soil disturbance shall note that there is a potential for exposing buried cultural resources including prehistoric Native American burials on the site.

1.A.1.d: Archaeologist shall develop and distribute for job site posting an "ALERT SHEET" summarizing potential finds that could be exposed and the protocols to be followed as well as points of contact to alert in the event of a discovery.

Arch 1.B.1: Protocol in the Event of Discovery of Potentially Culturally Significant Soils, Objects or Remains

1.B.1.a: Stop work and contact the on-call archaeologist.

1.B.1.b: Should Archaeologist determine that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource under CEQA, Archaeologist shall notify the appropriate parties of the evaluation and recommend mitigation measures to mitigate to a less-than significant impact in accordance with California Public Resources Code Section 15064.5. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal *Archaeological Monitoring Plan* (AMP) and/or *Archaeological Treatment Plan* (ATP) that may include data recovery may be recommended by the Professional Archaeologist if significant archaeological deposits are exposed during ground disturbing construction. Development and implementation of the AMP and ATP and treatment of significant cultural resources will be determined by the project proponent in consultation with any regulatory agencies.

The treatment of human remains, and any associated or unassociated funerary objects discovered during any soil-disturbing activity within the Project site shall follow the requirements of section 5097.99 of the Public Resources Code). This shall include immediate notification of the appropriate county Coroner/Medical Examiner, Project Sponsor and the City of South San Francisco.

1.B.1c: *A Monitoring Closure Report* shall be filed with the Applicant/Project Sponsor/designated representative and the City at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.

b) Cumulative Impacts: The Project would not result in adverse impacts that are individually less than significant but cumulatively considerable. The analysis considered area wide development know at the time of preparation and forecasted development in the East of 101 area contained in the Draft 2040GP, and various circulation studies prepared for the Project area.

c) Adverse Effects on Human Beings: The Project would not result in substantial adverse effects on human beings. Geology and Soils Mitigation 1 would reduce potential impacts to less than significant. The restated Noise mitigations from the DSASP EIR, identified and restated in Chapter 3.XIII Noise, would reduce noise and vibration impacts to less than significant.

Although required by the City as part of the building permit process, the following is required of the Project and is restated herein:

Geology and Soils Mitigation 1: An updated geotechnical report(s) shall be provided to the City for peer review prior to any issuance of building, grading, grubbing or tree removal permits. The updated report(s) shall address the revised Project description and include all design measures requisite to be compliant with the California Building Code. The updated report(s) shall include at a minimum, structural design and construction specifications, including but not limited to, undergrounding of utilities addressing any construction requirements for potentially and/or corrosive soils, grading, site stabilization, drainage, utility and infrastructure design and placement, foundation design, retaining wall specifications, and soil compaction requirements and design. The report(s) shall be peer reviewed by the City's consultant and revised accordingly until determined complete by the City.

Although required as a part of the Federal Aviation Administration permitting process the following is required of the Project and restated herein:

1. The structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4, 5 (Red) and 15.

2. Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

3. An FAA Form 7460-2, Notice of Actual Construction or Alteration is required to be e-filed within five days after the construction reaches its greatest height (7460-2, Part 2).

Although required as part of the Building Permit process the following noise mitigations are restated herein:

DSASP Mitigation Measure 4.6-1: HVAC Mechanical Equipment Shielding. Prior to the approval of building permits for non-residential development, the applicant shall submit a design plan for the project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for a designated receiving land use category as specified in Noise Ordinance Section 8.32.030. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical barriers.

DSASP Mitigation Measure 4.6-2: Site-Specific Acoustic Analysis – Nonresidential Development. Prior to the approval of building permits for new non-residential land uses where exterior noise level exceeds 70 dBA CNEL, an acoustic analysis shall be performed to determine appropriate noise reduction measures such that exterior noise levels shall be reduced below 70 dBA CNEL, unless a higher noise compatibility threshold (up to 75 dBA CNEL) has been determined appropriate by the City of South San Francisco. The analysis shall detail the measures that will be implemented to ensure exterior noise levels are compatible with the proposed use. Measures that may be implemented to ensure appropriate noise levels include, but are not limited to, setbacks to separate the proposed nonresidential structure from the adjacent roadway, or construction of noise barriers on site.

DSASP Mitigation Measure 4.6-4: Construction Vibration. For all construction activities within the study area, the construction contractor shall implement the following measures during construction:

a) The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.

b) Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c) Trucks shall be prohibited from idling along streets serving the construction site.

DSASP Mitigation Measure 4.6-5: Rail Line Groundborne Vibration. Implement the current FTA and Federal Railroad Administration (FRA) guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains. Specifically, Category 1 uses (vibration-sensitive equipment) within 300 feet from the rail line, Category 2 uses (residences and buildings where people normally sleep) within 200 feet, and Category 3 uses (institutional land uses) within 155 feet of the rail line shall require a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines prior to obtaining a building permit. Vibration control measures deemed appropriate by the site-specific groundborne vibration analysis to meet 65 VdB, 72 VdB, and 75 VdB respectively for Category 1, Category 2, and Category 3 uses, shall be implemented by the project applicant and approved by the City prior to receiving a building permit.

Although the following Cal Water Net Neutral Policy is a requirement levied by Cal Water as a condition of receiving water service it is restated as a mitigation measure:

Utility and Service Systems Mitigation Measure 1: The Project Sponsor shall implement Cal Water's Net Neutral Policy by either (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy.

4

APPENDIX A

AIR QUALITY

Air Quality and Greenhouse Gas Assessment, 121 East Grand Avenue Project, City of South Francisco, California, ECORP Consulting, Inc. April 2022.

CULTURAL AND TRIBAL RESOURCES

Cultural Resource Services-In Support of 121 E. Grand Avenue, South San Francisco, San Mateo County Basin Research, Colin Busby, Ph.D, RPA, Principal. February 21, 2022.

Archaeological Resources Study of 121 E. Grand Ave., South San Francisco, Leann Taagepera, Cultural and Historic Resource Planning, Principal. June 24, 2021

BIOLOGICAL RESOURCES

Tree Inventory Report, HortScience/Bartlett Construction, May 5, 2021. "Tree Inventory, 2021"

GEOLOGY AND SOILS

Preliminary Geotechnical Investigation 121 East Grand Avenue, South San Francisco, California, Project No. 8961-04-02, March 2021 and April 2021.

Geotechnical Peer Review 121 East Grand Avenue South San Francisco, California Project # 40396 7001, March 24 and April 28, 2021, Ninyo & Moore.

Seismic Risk Assessment SF Bay Development 121 East Grand Avenue, South San Francisco, CA, Partners Project # 20-281457.2, June 8, 2020.

Basis of Design 121 East Grand Avenue South San Francisco, CA, Magnusson Klemenic Associates, Structural Engineers, March 3, 2022.

ENERGY

Air Quality and Greenhouse Gas Assessment, 121 East Grand Avenue Project, City of South Francisco, California, ECORP Consulting, Inc. April 2022.

GREENHOUSE GAS EMISSIONS

Air Quality and Greenhouse Gas Assessment, 121 East Grand Avenue Project, City of South Francisco, California, ECORP Consulting, Inc. April 2022.

HAZARDS AND HAZARDOUS MATERIALS

Draft Phase I Environmental Site Assessment for 121 East Grand Avenue South San Francisco California 94080, Project Number WR3122, Apri120, 2022. **Report only, appendices not included due to file size limitations.**

Determination of No Significant Hazard to Air Navigation, Federal Aviation Administration, Aeronautical Study No. 2021-AWP 7652-OE, September 9, 2021.

HYDROLOGY AND WATER QUALITY

Hydrology and Water Quality Assessment, 121 East Grand Avenue Development Project, 121 East Grand Avenue, City of South San Francisco, California. Sutro Science. April 28, 2022.

LAND USE AND PLANNING

Documents Incorporated by Reference Available on City Website Not Included Herein:

South San Francisco General Plan (Adopted October 1999)

Draft 2040 South San Francisco General Plan

Southline Environmental Impact Report (SCH No. 20220050452)

Downtown Station Area Specific Plan (Adopted February 2015)

Downtown Station Area Specific Plan Environmental Impact Report (SCH No. 2013102001)

NOISE

Noise Technical Report, South San Francisco 121 East Grand Avenue Project, RCH Group. May 2022.

TRANSPORTATION

Documents Incorporated by Reference Available on City Website Not Included Herein:

South San Francisco Caltrain Station Eastern Access Study prepared for South San Francisco, Caltrain, Phase 3 Real Estate Partners. October 2021, Fehr & Peers and Mark Thomas ('Access Study')

Mobility 2020 East of 101 Transportation Plan Mobility prepared for the City of South San Francisco. Fehr & Peers, 2019 ('Mobility 2020')

Included as an attachment

Draft Transportation Demand Management Plan, TDM Specialists Inc, June 2, 2022.

UTILITIES/SERVICE SYSTEMS

121 East Grand Avenue South San Francisco-Water Demand Memorandum, Job # 20201781, Lokelani Yee, BKF Project Manager, April 25, 2022.

Water Supply Assessment for 121 East Grand Avenue Project, South San Francisco District California Water Service, eki environment & water, draft May 2022.

APPLICANT'S LETTER

Michael Gerrity, President Phase 3 Real Estate, letter to Billy Gross and Allison Knapp dated May 26, 2022.

Air Quality & Greenhouse Gas Emissions Assessment
121 East Grand Avenue Project

City of South San Francisco, California

Prepared For:

RCH GROUP
planning & environmental consulting

Prepared By:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
55 Hanover Lane
Chico, CA 95926

April 2022

TABLE OF CONTENTS

1 INTRODUCTION 1

2 AIR QUALITY 3

2.1.3 Toxic Air Contaminants 7

2.1.4 Ambient Air Quality 8

2.1.5 Sensitive Receptors 9

2.2 Regulatory Framework 10

2.2.1 Federal 10

2.2.2 State 10

2.2.3 Local 12

2.3 Air Quality Emissions Impact Assessment 16

2.3.1 Threshold of Significance 16

2.3.2 Methodology 19

2.3.3 Impact Analysis 20

3 GREENHOUSE GAS EMISSIONS 33

3.1 Greenhouse Gas Setting 33

3.1.1 Sources of Greenhouse Gas Emissions 34

3.2 Regulatory Framework 35

3.2.1 State 35

3.2.2 Local 36

3.3 Greenhouse Gas Emissions Impact Assessment 37

3.3.1 Thresholds of Significance 37

3.3.2 Impact Analysis 40

LIST OF TABLES

Table 1-1. Project Characteristics 2

Table 2-1. Summary of Criteria Air Pollutants Sources and Effects 5

Table 2-2. Summary of Ambient Air Quality Data 8

Table 2-3. Attainment Status of Criteria Pollutants in the San Mateo County Portion of the SFBAAB 9

Table 2-4. BAAQMD Basic and Additional Construction Mitigation Measures 14

Table 2-5. BAAQMD Significance Thresholds 18

Table 2-6. Construction-Related Criteria Air Polluant Emissions 21

Table 2-7. Operational Criteria Air Polluant Emissions 213

Table 2-8. Maximum Cancer Risk Summary 219

Table 2-9. Maximum Non Cancer Risk Summary 30

Table 3-1. Summary of Greenhouse Gases 34

Table 3-2. Construction Related Greenhouse Gas Emissions 40

Table 3-3. Operational-Related Greenhouse Gas Emissions 41

Table 3-4. Climate Action Plan Measure for New Development 41

LIST OF ATTACHMENTS

Attachment A – CalEEMod Output File for Air Quality Emissions

Attachment B – Health Risk Analysis Output Files

Attachment C – CalEEMod Output File for Greenhouse Gas Emissions

LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ASF	Age sensitivity factor
AT	Averaging time
BAAQMD	Bay Area Air Quality Management District
BR	Beathing Rate
BW	Body Weight
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CEQA	California Environmental Quality Act
CPF	Cancer potency factor
CH_4	Methane
City	South San Francisco
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalents
DPM	Diesel particulate matter
DEIR	Draft Environmental Impact Report
ED	Exposure duration
EF	Exposure factor
EO	Executive Order
FAH	Fraction of time at home
GHG	Greenhouse gas emissions
GLC	Ground level concentration
HRA	Health Risk Assessment
hp	Horsepower
IPCC	Intergovernmental Panel on Climate Change
$\mu g/m^3$	Micrograms per cubic meter
lbs	Pounds
L/kg	Liter per kilogram
MEIR	Maximumly Exposed Individual Resident
MEIW	Maximumly Exposed Individual Worker
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NO_x	Nitrous oxides
OEHHA	Office of Environmental Health Hazard Assessment
O_3	Ozone
parts per million	ppm
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
PMI	Point of Maximum Impact

ppb	Parts per billion
Project	121 East Grand Avenue Project
REL	Reference Exposure Level
ROG	Reactive organic gases
R&D	Research and Development
SB	Senate Bill
SF	Square Feet
SFBAAB	San Francisco Bay Area Air Basin
SIP	State Implementation Plan
SO_2	Sulfur dioxide
TACs	Toxic air contaminants
tpy	Tons per year
USEPA	U.S. Environment Protection Agency
VMT	Vehicle Miles Traveled

1 INTRODUCTION

This report documents the results of an Air Quality, Health Risk, and Greenhouse Gas (GHG) Emissions Assessment completed for the 121 East Grand Avenue Project (Project), which includes the construction of a 17-story research and development (R & D) building on a 2.91- acre site in the City of South San Francisco (City). This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the Bay Area Air Quality Management District (BAAQMD). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants, health risk and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment. Significance levels set forth by BAAQMD are utilized to compare modeled project emissions and determine significance.

1.1 Project Location and Description

The Project Site, located in the City of South San Francisco, is a 2.91-acre property located west of Poletti Way, south and southeast of East Grand Avenue and north of Grand Avenue. Under existing conditions, the Project Site accommodates a 169-room Comfort Inn & Suites with associated features that is proposed for demolition. The Site is generally bound by industrial uses to the south and office uses to the northeast.

The Project is proposing the construction of two 17-story R & D building "wings" and associated features. The first two floors of the building would provide public amenities and floors 3 through 17 would include R & D and office uses. Table 1-1 provides a detailed summary of the various Project characteristics.

Table 1-1. Project Characteristics	
Building Characteristics	
Floor	**Anticipated Use Types and Area**
1	Lobby: 7,696 square feet Retail Space: 8,500 square feet
2	Fitness/Wellness Center: 17,691 square feet Lobby: 4,349 square feet Pre-Function Space: 5,025 square feet Conference Center: 14,300 square feet Restaurant: 4,600 square feet Café: 2,300 square feet Kitchen (that serves the entire level): 2,500 square feet
3 - 17	R & D / Office: 836,865 square feet
Associated Features	**Anticipated Use Types and Area**
Two below ground parking levels	229,216 square feet
Surface level parking (1,413 spaces)	26,191 square feet
Pedestrian/ bike path	1,000 feet
Long term bike parking	142 spaces
Short term bike parking	108 spaces
Enclosed loading area	4,927 square feet
Mechanical, storage and lab support areas	30,649 square feet
Traffic light installation	N/A

Construction of the Project is anticipated to commence in January of 2024 and last approximately five years. Construction activities associated with the Proposed Project would include demolition of the existing building on the Project Site, site preparation, grading, building construction, paving and architectural coating. Approximately 175,000 cubic yards of dirt as well as 57,000 square feet of building material will be removed from the Project Site.

2 AIR QUALITY

2.1 Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the San Francisco Bay Area Air Basin (SFBAAB), which encompasses the Project Site, pursuant to the regulatory authority of the BAAQMD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project Area.

2.1.1 *San Francisco Bay Air Basin*

The California Air Resources Board (CARB) divides the state into air basins that share similar meteorological and topographical features. The Project Site is located in the City of South San Francisco, located in San Mateo County, which is located in the SFBAAB. The SFBAAB is approximately 5,600 square miles in area and consists of nine counties that surround the San Francisco Bay, including all of Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa Counties; the southwestern portion of Solano County; and the southern portion of Sonoma County.

The topography of the SFBAAB is characterized by complex terrain, consisting of coastal mountain ranges, inland valleys and bays. This complex terrain, especially the higher elevations, distorts the normal wind flow patterns in the SFBAAB. The greatest distortions occur when low-level inversions are present and the air beneath the inversion flows independently of air above the inversion, a condition that is common in the summertime (BAAQMD 2017).

The air flowing in from the coast to the Central Valley, called the sea breeze, begins developing at or near ground level along the coast in late morning or early afternoon. As the day progresses, the sea breeze layer deepens and increases in velocity while spreading inland. The depth of the sea breeze depends in large part upon the height and strength of the inversion. If the inversion is low and strong, and hence stable, the flow of the sea breeze will be inhibited and stagnant conditions are likely to result (BAAQMD 2017).

Summertime temperatures in the SFBAAB are determined by the effect of differential heating between land and water surfaces. Because land tends to heat up and cool off more quickly than water, a large-scale gradient (differential) in temperature is often created between the coast and the Central Valley, and small-scale local gradients are often produced along the shorelines of the ocean and bays (BAAQMD 2017).

During the summer, winds flowing from the northwest are drawn inland through the Golden Gate and over the lower portions of the San Francisco Peninsula. Immediately south of Mount Tamalpais, the northwesterly winds accelerate considerably and come more directly from the west as they stream

through the Golden Gate. This channeling of wind through the Golden Gate produces a jet that sweeps eastward and splits off to the northwest toward Richmond and to the southwest toward San Jose when it meets the East Bay hills. Wind speeds may be strong locally in areas where air is channeled through a narrow opening, such as the Carquinez Strait, the Golden Gate, or the San Bruno Gap.

An inversion is a layer of warmer air over a layer of cooler air. Inversions affect air quality conditions significantly because they influence the mixing depth, i.e., the vertical depth in the atmosphere available for diluting air contaminants near the ground. The highest air pollutant concentrations in the SFBAAB generally occur during inversions. The areas having the highest air pollution potential tend to be those that experience the highest temperatures in the summer and the lowest temperatures in the winter. The coastal areas are exposed to the prevailing marine air, creating cooler temperatures in the summer, warmer temperatures in winter, and stratus clouds all year. The inland valleys are sheltered from the marine air and experience hotter summers and colder winters. Thus, the topography of the inland valleys creates conditions conducive to high air pollution potential.

2.1.2 *Criteria Air Pollutants*

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Summary of Criteria Air Pollutants Sources and Effects

Pollutant	Major Manmade Sources	Huma Health and Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
$PM_{2.5}$ & PM_{10}	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.

Source: California Air Pollution Control Offices Association (CAPCOA 2013)

Carbon Monoxide

CO, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most sever meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances (i.e., up to 600 feet or 185 meters) of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NOx). Motor vehicle emissions are the main source of NOx in urban areas. NOx is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NOx increases

susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NOx, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

Ozone (O_3) is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) also known as reactive organic gases (ROG) and NOx undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Sulfur Dioxide

SO_2 is a colorless gas with a pungent odor, however sulfur dioxide can react with other particulates in the atmosphere to for particulates which contribute to the haze effect. SO_2 standards have been developed by the EPA to regulate all sulfur oxides, however SO_2 is by far the most abundant sulfur oxide in the atmosphere. Currently, SO_2 is primarily a result of the burning of fossil fuels for power generation and other industrial sources. Modern regulations on diesel fuel have greatly reduced the amount of SO_2 in the atmosphere and there are currently no areas in California that have levels of SO_2 that are not acceptable by state or federal standards.

Particulate Matter

Particulate matter includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NOx, sulfur oxides (SOx) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.3 *Toxic Air Contaminants*

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis. Carcinogenic TACs can also have noncarcinogenic health hazard levels.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

2.1.4 *Diesel Exhaust*

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause

coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.5 *Ambient Air Quality*

Ambient air quality at the Project Site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. The San Francisco-Arkansas Street air quality monitoring station, located at 10 Arkansas Street approximately 8 miles north of the Project Site, monitors ambient concentrations of O_3, $PM_{2.5}$ and PM_{10}. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project Area.

Table 2-2 summarizes the published data concerning O_3, $PM_{2.5}$ and PM_{10} since 2018 for each year that the monitoring data is provided.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Scenario	2018	2019	2020
O_3			
Max 1-hour concentration (ppm)	0.065	0.091	0.088
Max 8-hour concentration (ppm) (state/federal)	0.049 / 0.049	0.074 / 0.073	0.056 / 0.055
Number of days above 1-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	0 / 0	1 / 1	0 / 0
PM_{10}			
Max 24-hour concentration (µg/m3) (state/federal)	43.0 / 40.9	42.0 / 42.1	105.0 / 102.3
Number of days above 24-hour standard (state/federal)	* / 0	0 / 0	23 / 0
$PM_{2.5}$			
Max 24-hour concentration (µg/m3) (state/federal)	177.4 / 177.4	25.4 / 25.4	147.3 / 147.3
Number of days above federal 24-hour standard	14.6	0	8

Notes: * = Insufficient data available
µg/m3 = micrograms per cubic meter; ppm = parts per million
(2) A bold value signifies that this category is above the applicable standard.
Sources: CARB 2021

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. Acceptable exceedances of the maximum value vary for the National Ambient Air Quality Standards (NAAQS) from 4th highest concentration for the 8-hour O_3 standard to 99th percentile to the SO_2 standard. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are

not to be exceeded during a three-year period. The attainment status for the San Mateo County portion of the SFBAAB, which encompasses the Project Site, is included in Table 2-3.

Table 2-3. Attainment Status of Criteria Pollutants in the San Mateo County Portion of the SFBAAB

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2019

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The San Mateo County region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ (CARB 2019).

2.1.6 *Sensitive Receptors*

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The nearest sensitive land uses to the Project Site is an apartment building located approximately 0.13 mile west of the Project Site on Airport Boulevard.

2.2 Regulatory Framework

2.2.1 *Federal*

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO_2) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the San Mateo County portion of the SFBAAB for the criteria pollutants.

2.2.2 *State*

California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and

control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The SFBAAB currently has four air quality plans in place, discussed below, which collectively constitute the SFBAAB SIP elements.

- **2001 Ozone Attainment Plan**. The 2001 Ozone Attainment Plan was developed for compliance with the NAAQS for the 1-hour O_3 standard. In June 2005, the USEPA revoked the standard for 1-hour O_3; however, the state standard for 1-hour O_3 remains. Therefore, BAAQMD continues to implement the strategies outlined in the 2001 Ozone Attainment Plan.
- **2005 Bay Area Ozone Strategy**. The 2005 Bay Area Ozone Strategy served as an update to the 2001 Ozone Attainment Plan and expanded on strategies to achieve compliance with the state 1-hour O_3 standard.
- **2010 Clean Air Plan**. The 2010 Clean Air Plan addresses various pollutants including O_3, PM, and air toxics, as well as GHG emissions within the SFBAAB. It serves to update the Bay Area 2005 Ozone Strategy in accordance with the requirements of the CCAA to implement all feasible measures, to reduce O_3, and to consider the impacts of O_3 control measures on particulate matter, air toxics, and greenhouse gas emissions in a single, integrated plan and review progress in improving air quality in recent years.
- **2017 Clean Air Plan**. In April 2017, BAAQMD adopted the 2017 Clean Air Plan, whose primary goals are to protect public health and to protect the climate. The 2017 Clean Air Plan updates the Bay Area 2010 Clean Air Plan and complies with state air quality planning requirements, as codified in the California Health and Safety Code (although the 2017 plan was delayed beyond the three-year update requirement of the code). State law requires the Clean Air Plan to include all feasible measures to reduce emissions of O_3 precursors and to reduce the transport of O_3 precursors to neighboring air basins. The 2017 Clean Air Plan contains 85 measures to address reduction of several pollutants: O_3 precursors, PM, air toxics, and GHGs. Other measures focus on a single type of pollutant: super GHGs such as methane and black carbon that consists of harmful fine particles that affect public health. These control strategies are grouped into the following categories:
    a. Stationary Source Measures
    b. Transportation Control Measures
    c. Energy Control Measures
    d. Building Control Measures
    e. Agricultural Control Measures
    f. Natural and Working Lands Control Measures

g. Waste Management Control Measures

h. Water Control Measures

i. Super GHG Control Measures

Tanner Air Toxics Act & Air Toxics "Hot Spot" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 *Local*

Bay Area Air Quality Management District

The BAAQMD is designated by law to adopt and enforce regulations to achieve and maintain ambient air quality standards. The BAAQMD responsibilities include preparing plans for the attainment of ambient air quality standards, adopting and enforcing air pollution rules, issuing permits for and inspecting stationary air pollution sources, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, and implementing state and federal programs and regulations. The BAAQMD has also adopted various rules and regulations that are designed to reduce and control pollutant emissions from project's construction and operational activities. The following provisions are applicable to the Proposed Project are summarized as follows:

- **Regulation 2, Rule 1, General Permit Requirements:** Includes criteria for issuance or denial of permits, exemptions, appeals against decisions of the Air Pollution Control Officer (APCO) and BAAQMD actions on applications.
- **Regulation 2, Rule 2, New Source Review:** Applies to new or modified sources and contains requirements for Best Available Control Technology and emission offsets. Rule 2 implements federal New Source Review and Prevention of Significant Deterioration requirements.

- **Regulation 6, Rule 1, General Requirements:** Limits the quantity of particulate matter in the atmosphere by controlling emission rates, concentration, visible emissions and opacity.
- **Regulation 6, Rule 6, Prohibition of Trackout:** Controls trackout of solid material onto public paved roads from three types of sites: large bulk material sites, large construction sites, and large disturbed area sites. Under this regulation, the owners and operators of a construction site are required to clean up trackout on public roadways within four hours of identification and at the conclusion of each workday. The rule also includes requirements regarding the emission of fugitive dust during cleanup of trackout, and requirements for monitoring and reporting trackout at regulated sites
- **Regulation 7, Odorous Substances:** Regulation 7 places general limitations on odorous substances and specific emission limitations on certain odorous compounds. A person (or facility) must meet all limitations of this regulation but meeting such limitations shall not exempt such person from any other requirements of BAAQMD, state, or national law. The limitations of this regulation shall not be applicable until BAAQMD receives odor complaints from ten or more complainants within a 90-day period, alleging that a person has caused odors perceived at or beyond the property line of such person and deemed to be objectionable by the complainants in the normal course of their work, travel, or residence. When the limits of this regulation become effective, as a result of citizen complaints described above, the limits shall remain effective until such time as no citizen complaints have been received by BAAQMD for one year. The limits of this Regulation shall become applicable again if BAAQMD receives odor complaints from five or more complainants within a 90-day period. BAAQMD staff investigate and track all odor complaints it receives and make attempts to visit the site and identify the source of the objectionable odor and assist the owner or facility in finding a way to reduce the odor.

BAAQMD Construction Mitigation Measures

The BAAQMD recommends quantifying a proposed project's construction-generated emissions by implementing the Basic Construction Mitigation Measures as mitigation for dust and exhaust construction impacts in California Environmental Quality Act (CEQA) compliance documentation. If additional construction measures are required to reduce construction-generated emissions, the Additional Construction Mitigation Measures should then be applied. Table 2-4 identifies the Basic and Additional Construction Mitigation Measures. In addition, all projects must implement any applicable air toxic control measures. For example, projects that have the potential to disturb asbestos (from soil or building materials) must comply with all the requirements of CARB's air toxic control measures for construction, grading, quarrying, and surface mining operations.

Table 2-4. BAAQMD Basic and Additional Construction Mitigation Measures
BAAQMD Basic Construction Mitigation Measures
All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
All vehicle speeds on unpaved roads shall be limited to 15 mph.
All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified visible emissions evaluator.
Post a publicly visible sign with the telephone number and person to contact at the lead agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The air district's phone number shall also be visible to ensure compliance with applicable regulations.
BAAQMD Additional Construction Mitigation Measures
All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe.
All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the number of disturbed surfaces at any one time.
All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
Site accesses to a distance of 100 feet from the paved road shall be treated with a 6- to 12-inch compacted layer of wood chips, mulch, or gravel.
Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent.
Minimizing the idling time of diesel-powered construction equipment to 2 minutes.
The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NOx reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products,
Use low VOC (i.e., ROG) coatings beyond the local requirements (i.e., Regulation 8, Rule 3: Architectural Coatings).
Requiring that all construction equipment, diesel trucks, and generators be equipped with Best Available Control Technology for emission reductions of NOx and PM.

Table 2-4. BAAQMD Basic and Additional Construction Mitigation Measures
Requiring all contractors use equipment that meets CARB's most recent certification standard for off-road heavy-duty diesel engines.

City of South San Francisco Downtown Station Area Specific Plan

The City of South San Francisco Downtown Station Area Specific Plan (2014) guides the City in its planning efforts to create a vibrant, transit-supportive, diverse Downtown, particularly the area surrounding the City's Caltrain commuter rail station. The Downtown Station Area Specific Plan (Specific Plan) crafts a vision for the Downtown core and identifies an implementation process to achieve City and community goals, including design standards and regulations for future development. The Project Site is located in an area identified in the Specific Plan as being intended for transit offices/ research & development core. The Specific Plan Draft Environmental Impact Report (DEIR) identifies various mitigation measures that all projects taking place in the Specific Plan Area must abide by. The following mitigation measure are applicable to the Proposed Project.

Mitigation Measure 4.2-1: Construction emissions for all future development under the Specific Plan shall be quantified prior to the start of construction. For projects where construction emissions are anticipated to exceed the most recent City-adopted thresholds, in addition to the BAAQMD Basic Construction Mitigation Measures, construction activities shall implement the BAAQMD Additional Construction Mitigation Measures to reduce construction emissions of criteria air pollutants to below significant criteria. Mitigation reduction shall be quantified prior to the start of construction to demonstrate that adequate measures have been identified to reduce project emissions. The Additional Construction Mitigation Measures include the following:

1. All exposed surfaces shall be watered at a frequency adequate to maintain minimal soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probes.
2. All excavating, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
3. Wind breaks (e.g., trees, fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have a maximum 50 percent air porosity.
4. Vegetative ground cover (e.g., fast-germinating native grass seeds)shall be planted in disturbed areas as soon as possible and watered appropriately until vegetation is established.
5. The simultaneous occurrence of excavation, grading and ground-disturbing construction activities on the same area at any one time shall be limited. Activates shall be phased to reduce the amount of disturbed surfaces an any one time.
6. All trucks and equipment, including their tires, shall be washed off prior to leaving the site.
7. Site access to a distance of 100 feet from the paved road shall be treated with a 6-to-12-inch compacted layer of wood chips, mulch, or gravel.

8. Sandbags or other erosion control measure shall be installed to prevent silt runoff to public roadways from sites with a slope greater than 1 percent.
9. Minimizing the idling time of diesel powered construction equipment to two minutes.
10. The project shall develop a plan demonstrating that the off-road equipment (more than 50 horsepower) to be used in the construction project (i.e., owned, leased, and subcontractor vehicles) would achieve a project wide fleet-average 20 percent NO_x reduction and 45 percent PM reduction compared to the most recent CARB fleet average. Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retro fit technologies, after-treatment products, add-on devices such as particulate filters, and/or other options as such become available.
11. Use low-ROG coating beyond local requirements (i.e., Regulation 8, Rule 3: Architectural Coating).
12. All construction equipment, diesel trucks, and generators shall be equipped with Best Available Control Technologies for emission reduction of NO_x and PM.
13. All contractors shall use equipment that meets CARB's most recent certification standards for off-road heavy-duty diesel engines.

Mitigation Measure 4.2-2: Prior to issuance of a building permit for future development projects under the Specific Plan, the applicant shall demonstrate implementation of recommended BAAQMD operational mitigation measures as necessary to reduce operational emissions of criteria air pollutants to below significance criteria. Operational emissions and mitigation reductions will be quantified prior to issuance of the building permit to demonstrate that adequate measure shave been identified to reduce project emissions. The recommended measures include, but are not limited to, any of the following:

1. Increase on-street parking fees.
2. Daily parking charge for employees.
3. Provide a parking "cash-out" incentive for employees who use alternative transportation to commute.
4. Provide subsidized or free transit passes to employees.
5. Encourage alternative compressed work schedules and telecommuting.
6. Provide a ridesharing program.

2.3 Air Quality Emissions Impact Assessment

2.3.1 *Threshold of Significance*

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

To assist local jurisdictions in the evaluation of air quality impacts under CEQA, the BAAQMD has published a guidance document for the preparation of the air quality portions of environmental documents that include thresholds of significance to be used in evaluating land use proposals. Thresholds of significance are based on a source's projected impacts and are a basis from which to apply mitigation measures. BAAQMD's CEQA thresholds have also been used to determine air quality impacts in this analysis. If a project's individual emissions exceed its identified significance thresholds, the Project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

The BAAQMD's established thresholds of significance for air quality for construction and operational activities of land use development projects are shown in Table 2-5.

Table 2-5. BAAQMD Significance Thresholds

Construction Related		
Air Pollutant	Average Daily Emissions (pounds per day)	
ROG	54	
NO_x	54	
PM_{10} (exhaust)	82	
$PM_{2.5}$ (exhaust)	54	
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	
Local CO	None	
Operational Related		
Air Pollutant	Average Daily Emissions (pounds per day)	Maximum Annual Emissions (tons per year)
ROG	54	10
NO_x	54	10
PM_{10} (exhaust)	82	15
$PM_{2.5}$ (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	None	None
Local CO	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)	

Source: BAAQMD 2017

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulatively considerable.

In addition to the emission of criteria air pollutants, this Projects evaluates the health risk from construction and operations of the Proposed Project. Specifically, the potential exposure of nearby existing residents to DPM emissions from heavy-duty trucks, R & D vented lab emissions and emergency generator emissions.

The BAAQMD thresholds for what constitute an exposure of substantial air toxics are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of 1 in one million.

Cancer risk is expressed in terms of expected incremental incidence per million population. The BAAQMD has established an incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk due to TAC exposure. This threshold serves to determine whether or not a given project has a potentially significant development-specific and cumulative impact. The 10-in-one-million standard is a very health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of TACs over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics. To put this risk in perspective, the risk of dying from accidental drowning is 1,000 in a million, which is 100 times more than the BAAQMD's threshold of 10 in one million.

The BAAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at, or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

2.3.2 *Methodology*

Air quality impacts were assessed in accordance with methodologies recommended by the BAAQMD. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were calculated using CalEEMod model defaults for San Mateo County and information provided by the Project proponent such as the construction equipment and duration. Operational air pollutant emissions were calculated based on specific Project Site plans.

For the purposes of this analysis, projected emissions associated with proposed operations are compared to the existing baseline, which includes an existing 169-room, 57,623 square foot, Comfort Inn and Suites.

Additionally, DPM concentrations and associated dispersion generated from both construction off-road equipment and construction haul trucks during construction, as well as heavy-duty trucks for Project operations and operational emissions from R& D lab vents (assumed to be located on the roof) and emergency generators were modeled using the HARP2 modeling program provided by CARB, with regulatory default settings, to perform the dispersion and health risk modeling for this analysis. HARP2 implements the latest regulatory guidance to develop inputs to the U.S. EPA AERMOD dispersion model for dispersion and as the inputs for calculations for the various health risk levels. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The resultant concentration values at vicinity sensitive receptors were then used to calculate chronic and carcinogenic health risk using the standardized equations contained in the Office of

Environment Health Hazard Assessment (OEHHA) Guidance Manual for Preparation of Health Risk Assessments (2015).

2.3.3 *Impact Analysis*

Project Construction-Generated Criteria Air Quality Emissions

Emissions associated with Project construction would be temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., tractors, forklifts, pavers), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving and coating activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation.

Construction-generated emissions associated the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2-6. Construction-generated emissions are short-term and of temporary duration, lasting only if construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the BAAQMD's thresholds of significance.

Table 2-6. Construction-Related Criteria Air Pollutant Emissions

Construction Year	Pollutant (maximum pounds per day)					
	ROG	**NO_X**	**PM_{10} (exhaust)**	**$PM_{2.5}$ (exhaust)**	**PM_{10} (fugitive dust)**	**$PM_{2.5}$ (fugitive dust)**
Construction First Year	1.19	21.26	0.21	0.20	2.17	0.56
Construction Second Year	0.67	15.87	0.15	0.14	1.79	0.48
Construction Third Year	21.05	14.18	0.17	0.16	5.54	1.50
Construction Fourth Year	20.91	13.45	0.16	0.16	5.54	1.50
Construction Fifth Year	1.40	11.97	0.10	0.10	4.74	1.28
BAAQMD Potentially Significant Impact Threshold	*54 pounds/day*	*54 pounds/day*	*82 pounds/day*	*54 pounds/day*	*Basic Construction Mitigation Measures*	*Basic Construction Mitigation Measures*
Exceed BAAQMD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0 Refer to Attachment A for Model Data Outputs.

Notes: Construction emissions taken from the season (summer or winter) with the highest output. Building construction, paving, and architectural coating assumed to occur simultaneously. Emission calculations account for the movement and export of 175,000 cubic yards of soil as well as the demolition and export of 57,000 square feet of demolished material.

All construction Projects South San Francisco are required to implement the BAAQMD's Basic Construction Mitigation Measures as a condition of project approval. Emissions estimates account for the quantifiable components of the BAAQMD's Basic Construction Mitigation Measures, specifically watering unpaved portions of the construction site twice daily, limiting off-road equipment to speeds of 15 mph, and removing dirt track-out on adjacent public roads with a wet power vacuum once daily. Additionally, Tier 4 mitigation for all pieces of construction equipment was implemented to account for Mitigation Measure 4.2-1 in the Downtown Station Area Specific Plan.

As shown in Table 2-6, emissions generated during Project construction would not exceed the BAAQMD's thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

Project Operations Criteria Air Quality Emissions

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as O_3 precursors such as ROG and NO_X. As previously described, projected emissions associated with proposed operations are compared to the existing baseline, which includes the current operation of an existing 169-room, 57,623 square foot, Comfort Inn and Suites. Predicted maximum daily operational-generated emissions of criteria air pollutants for the Proposed

Project are summarized in Table 2-7 and compared to the operational significance thresholds promulgated by the BAAQMD.

Table 2-7. Operational Criteria Air Pollutant Emissions						
Emission Source	**Pollutant**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Proposed Project - 17-Story Research and Development Building with Associated Feature						
Summer Emissions (Pounds per Day)						
Proposed Project	40.17	17.66	135.41	0.32	33.06	9.27
Winter Emissions (Pounds per Day)						
Proposed Project	38.92	19.45	151.76	0.31	33.06	9.27
Annual Emissions (Tons per Year)						
Proposed Project	6.39	2.91	19.79	0.04	4.39	1.25
Existing Conditions - 169 Room Comfort Inn and Suites						
Summer Emissions (Pounds per Day)						
Existing Baseline	4.57	3.08	23.53	0.04	4.65	1.29
Winter Emissions (Pounds per Day)						
Existing Baseline	4.37	3.48	26.32	0.04	4.65	1.29
Annual Emissions (Tons per Year)						
Existing Baseline	0.76	0.58	4.27	0.00	0.77	0.21
Difference						
Summer Emissions (Pounds per Day)						
Difference	**+35.6**	**+14.58**	**+111.88**	**+0.28**	**+28.41**	**+7.98**
BAAQMD Daily Significance Threshold	*54 pounds/day*	*54 pounds/day*	*None*	*None*	*82 pounds/day*	*54 pounds/day*
Exceed BAAQMD Daily Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions (Pounds per Day)						
Difference	**+34.55**	**+15.97**	**+125.44**	**+0.27**	**+28.41**	**+7.98**
BAAQMD Daily Significance Threshold	*54 pounds/day*	*54 pounds/day*	*None*	*None*	*82 pounds/day*	*54 pounds/day*
Exceed BAAQMD Daily Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Annual Emissions (Tons per Year)						
Difference	**+5.63**	**+2.33**	**+15.52**	**+0.04**	**+3.62**	**+1.04**
BAAQMD Annual Significance Threshold	*10 tons/year*	*10 tons/year*	*None*	*None*	*15 tons/year*	*10 tons/year*
Exceed BAAQMD Daily Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2020.4.0. Refer to Attachment A for Model Data Outputs.

Notes: Operational emissions for the Proposed Project accounts for the testing for four 2,000 horsepower Tier 4 generators five days per year.

As shown in Table 2-7, the Project's emissions would not exceed any BAAQMD thresholds for any criteria air pollutants during operations.

Project Consistency with Air Quality Planning

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the federal and state ambient air quality standards. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously described, the BAAQMD is the agency responsible for enforcing many federal and state air quality requirements and for establishing air quality rules and regulations. The BAAQMD attains and maintains air quality conditions in San Mateo County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air quality issues. The most recently adopted air quality plan is the BAAQMD's 2017 Clean Air Plan, the primary goals of which are to protect public health and the climate. The 2017 Clean Air Plan includes a wide range of control measures and actions to reduce combustion-related activities, decrease combustion of fossil fuels, improve energy efficiency, and reduce emissions of potent greenhouse gases. Several measures address the reduction of multiple pollutants such as O_3 precursors, PM, air toxics, and GHG emissions.

Determination of whether a project supports the goals in the 2017 Clean Air Plan is achieved by a comparison of project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project is consistent with the goals of the 2017 Clean Air Plan. As shown in Table 2-5 and Table 2-6, emissions generated during Project construction and operations would not exceed the BAAQMD's significance thresholds. Therefore, the Project would not conflict with or obstruct reduction measures presented in the 2017 Clean Air Plan.

Additionally, the Project Site can be identified for its "location efficiency". Location efficiency describes the location of the Project Site relative to the type of urban landscape its proposed to fit within, such as an 'urban area', 'compact infill', or 'suburban center'. In general, compared to the statewide average, a project could realize vehicle miles traveled (VMT) reductions up to 65 percent in an urban area, up to 30 percent in a compact infill area, or up to 10 percent in a suburban center (CAPCOA 2021), and thus reductions in air pollutant emissions, a primary goal of the 2017 Clean Air Plan. The Project Site represents an urban/compact infill location within the central portion of South San Francisco. The Project Site is served by existing public transportation. Additionally, the Project is in proximity to surrounding nonresidential land uses. The increases in land use diversity and mix of uses in the Project Area would reduce vehicle trips and VMT by encouraging walking and non-automotive forms of transportation, which would result in corresponding reductions in transportation-related emissions, a primary goal of the 2017 Clean Air Plan.

Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive land uses to the Project Site is an apartment building located approximately 0.13 mile west of the Project Site on Airport Boulevard.

Health Risk Assessment

A HRA was performed to determine the health risk associated with construction and operations of the Proposed Project. The HRA analyzed cancer and chronic non-cancer risk calculated for 70-year, 30-year, 25-year and 9-year exposure scenarios for operational emissions and 5-years for construction emissions. Per OEHHA guidance, the 25-year scenario was used to model the health risk for workers at business locations and the 70-, 30-, and 9-year scenarios were used for residents in residential areas. In addition, the maximum annual $PM_{2.5}$ concentration was modeled for comparison with BAAQMD thresholds.

Construction Emission Sources

All onsite and offsite diesel truck traffic related emissions were generated using EMFAC2021 for construction beginning in the year 2024 and conservatively utilized throughout the proposed period of construction. Construction off-road equipment for onsite activities was modeled as eleven-line volume sources places along the permitter of the Project Site totaling 0.28 mile. Construction off-road equipment for offsite activities was modeled as fourteen-line volume sources traversing East Grand Avenue, onto Grand Avenue and to the nearest Highway 101 freeway entrance totaling 0.36 mile. Annual off-road PM_{10} exhaust emissions generated using the CalEEMod model were used to represent emissions from onsite off-road diesel equipment used throughout construction. The annual emissions for all phases and years of construction were used to conservatively estimate annual construction emissions for the estimated Project construction duration of five years. $PM_{2.5}$ emissions were modeled as total on and offsite $PM_{2.5}$ emissions during the highest emission year as calculated by EMFAC2021. Detailed calculations for construction emissions can be found in Attachment A and B of this document.

Operational Emission Sources

Project related onsite and offsite roadway sources were entered into AERMOD as fourteen-line volume sources traversing East Grand Avenue, onto Grand Avenue and to the nearest Highway 101 freeway entrance totaling 0.36 mile. Roadway sources all have a width of 3.7 meters using standard line sizing and an estimated one lane. Daily truck trips were estimated from Project Site plans assuming four truck trips over a ten-hour day, conservatively totaling 40 daily truck trips. Emissions from the R & D lab were modeled as a point source located on top of the proposed building with a release height of 265 feet. A chemical profile from a similar project (University of California at San Francisco 2011) and conservatively scaled to the total square footage of the maximum lab area (836,865 square feet). Emergency generator

emissions were calculated using a standard load factor and a generator rating and 100 hours per year per BAAQMD guidance (BAAQMD 2019). Detailed calculations for operational emissions can be found in Attachment B of this document.

Dispersion Modeling

The air dispersion modeling for the HRA was performed using the USEPA AERMOD Version 21112 dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources. The alberhill30m.dem file found at CARB's website for HARP Digital Elevation Model Files was used for elevation data for all sources and receptors in the Project domain. All regulatory defaults were used for dispersion modeling as configured in the latest version of HARP2.

AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Pre-processed meteorological data files provided by BAAQMD using USEPA's AERMET program, designed to create AERMOD input files for the San Francisco International Airport monitoring station, were selected as being the most representative meteorology based on proximity. The unit emission rate of one gram per second was utilized in AERMOD to create plot files containing the dispersion factor (X/Q) for each source group. Emissions for each source group as described above were input into HARP2 to calculate the ground level concentrations (GLCs) related to Project operations. AERMOD summary files, calculations and figures can be found in Attachment B.

A uniform grid was placed over the Project Area with a spacing of 50 meters by 50 meters encompassing 0.9 mile and including 900 receptors. The grid was placed primarily over the residential area to the west of the Project Site to include all necessary sensitive receptors.

Risk during construction and operations was also modeled utilizing worker factors and residential factors to find the Maximumly Exposed Individual Resident (MEIR), Maximumly Exposed Individual Resident (MEIW) and maximumly exposed school child. The chronic and carcinogenic health risk calculations are based on the standardized equations contained in the OEHHA Guidance Manual (2015) as implemented in CARB's HARP2 program (CARB 2020). The risk associated with traffic emissions related to Project operations was assessed as risk associated with future Project operations.

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average TAC concentrations is calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home, and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. Cancer risk must be separately calculated for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kg body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation (Dose-air) is a function the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so Dose-air is calculated for each of these age groups, 3rd trimester, 0<2, 2<9, 2<16,

16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\textbf{Dose-air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6})$$

Where:

Dose-air = dose through inhalation (mg/kg/day)

C_{air} = air concentration ($\mu g/m^3$) from air dispersion model

{BR/BW} = daily breathing rate normalized to body weight (L/kg body weight – day) (361 L\kg BW-day for 3rd Trimester, 1,090 L/kg BW-day for 0<2 years, 861 L/kg BW-day for 2<9 years, 745 L/kg BW-day for 2<16 years, 335 L/kg BW-day for 16<30 years, and 290 L/kg BW-day 16<70 years)

A = Inhalation absorption factor (unitless [1])

EF = exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])

10^{-6} = conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to take into account the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age 2 years, an ASF of 3 for ages 2 through 15 years to account for potential increased sensitivity to carcinogens during childhood and an ASF of 1 for ages 16 through 70 years.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to age <2 years, 85 percent of time is spent at home; from age 2 through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$$\textbf{Risk}_{\textbf{inh-res}} = (\textbf{Dose}_{\textbf{air}} * \textbf{CPH} * \textbf{ASF} * \textbf{ED/AT} * \textbf{FAH})$$

Where:

$Risk_{inh-res}$ = residential inhalation cancer risk (potential chances per million)

$Dose_{air}$ = daily dose through inhalation (mg/kg-day)

CPF = inhalation cancer potency factor ($mg/kg\text{-}day^{-1}$)

ASF = age sensitivity factor for a specified age group (unitless)

ED = exposure duration (in years) for a specified age group (0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70)

AT = averaging time of lifetime cancer risk (years)

FAH = fraction of time spent at home (unitless)

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure Level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

Hazard Quotient = Ci/RELi

Where:

Ci = Concentration in the air of substance i (annual average concentration in $\mu g/m^3$)

RELi = Chronic noncancer Reference Exposure Level for substance i ($\mu g/m^3$)

Cancer Risk

Operational cancer risk calculations for existing residential receptors are based on 70-, 30-, and 9-year exposure periods and worker receptors are based on a 25-year exposure period to for operations with a 5-year exposure period used for construction. The calculated cancer risk accounts for 350 days per year of exposure to residential receptors. While the average American spends 87 percent of their life indoors (USEPA 2001), neither the pollutant dispersion modeling nor the health risk calculations account for the reduced exposure structures provide. Instead, health risk calculations account for the equivalent exposure of continual outdoor living. The calculated carcinogenic risk at Project vicinity receptors is depicted in Table 2-8.

Table 2-8. Maximum Cancer Risk Summary	
Maximum Exposure Scenario	Total Maximum Risk
Project Operations	
70-Year Exposure Resident	2.027
30-Year Exposure Resident	1.078
9-Year Exposure Resident	1.187
25-Year Exposure Worker	1.702
Project Construction	
5-Year Exposure Resident	4.68
5-Year Exposure Worker	0.70
Significance Threshold	*10*
Exceed Threshold?	No

Source: ECORP Consulting 2022. See Attachment B.

As shown, impacts related to cancer risk for all modeled scenarios would be below the 10 in one million threshold for both operations and construction. These calculations do not account for any pollutant-reducing remedial components inherent to the Project or the Project site.

For construction and operational emissions, the Maximumly Exposed Individual Resident (MEIR) is an apartment building located off Airport Boulevard approximately 0.13 miles west of the Project Site while the Maximumly Exposed Individual Worker (MEIW) is located directly to the north of the Project Site, within the existing roadway of Grand Avenue. The offsite Point of Maximum Impact (PMI) is located on the northwestern section of the Project boundary. All of the above listed points were found to be the same for operation and construction scenarios and are presented in Appendix B of this document.

Non-Carcinogenic Hazards

In addition to cancer risk, the significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts.

An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the REL. The highest maximum chronic hazard indexes for residents and workers at the Proposed Project Site as a result of DPM from mobile sources and emergency generators and the R & D lab emission exposure is shown in Table 2-9. No acute risk was analyzed for construction or operations as DPM from the truck trips and generators as well as the TACs associated with R & D lab emissions have no identified acute risk.

Table 2-9. Maximum Non-Carcinogenic Health Risk Summary

Exposure Scenario	Chronic Hazard Values			Maximum $PM_{2.5}$ Annual Concentration ($\mu g/m^3$)
	Maximum Residential Hazard	Maximum Worker Hazard	Maximum Sensitive Receptor Hazard	
Operation	0.001	0.003	0.001	0.008
Construction	0.01	0.01	1.0e-02	0.068
Significance Threshold	*1*	*1*	*1*	*0.3*
Exceed Threshold?	No	No	No	No

Source: ECORP Consulting 2022. See Attachment B.

As shown in Table 2-8, impacts related to non-cancer risk (chronic hazard index) as a result of the Project site would not surpass significance thresholds.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hotspots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams/mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SFBAAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively.

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The BAAQMD concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single

intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact.

According to Institute of Transportation Engineers' 10th Edition Trip Generation Manual (2017), the Project would result in approximately 9,147 trips per weekday, 2,075 trips each Saturday, and 660 trips each Sunday. Thus, the Proposed Project would not generate traffic volumes at any intersection of more than 44,000 vehicles per day and there is no likelihood of the Project traffic exceeding CO values.

Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

During construction, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the site. However, these emissions are short-term in nature and will rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the construction area. Therefore, construction odors would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses as being associated with odors.

However, as previously described, the ability to detect odors varies considerably among the population and is inherently subjective in nature. For instance, the Project proposes a 17-story R & D building, which has the potential to be a source of odors that may affect certain people. The specific types of laboratories proposed are currently unknown. However, the Project would be subject to the BAAQMD Regulation 7. Regulation 7, Odorous Substances, places general limitations on odorous substances and specific emission limitations on certain odorous compounds. Thus, the Project would not be a source of operational odors.

3 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2

emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Summary of Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about 12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: (1) USEPA 2016a; (2) USEPA 2016b; (3) USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 *Sources of Greenhouse Gas Emissions*

In 2021, CARB released the 2021 edition of the California GHG inventory covering calendar year 2019 emissions. In 2019, California emitted 418.2 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2019, accounting for approximately 40 percent of total GHG emissions in the State. When emissions from extracting, refining and moving transportation fuels in California are included, transportation is responsible for over 50 percent of statewide emissions in 2019. Continuing the downward trend from 2018, transportation emissions decreased 3.5 million metric tons of CO_2e in 2019, only being outpaced by electricity, which reduced emissions by 4.3 million metric tons of CO_2e in 2019. Emissions from the electricity sector account for 14 percent of the inventory and have shown a substantial

decrease in 2019 due to increases in renewables. California's industrial sector accounts for the second largest source of the State's GHG emissions in 2019, accounting for 21 percent (CARB 2021b).

3.2 Regulatory Framework

3.2.1 *State*

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 required CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlined measures to meet the 2020 GHG reduction goals. California exceeded the target of reducing GHG emissions to 1990 levels by the year 2017.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the State, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

In 2018, SB 100 was signed codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

2019 Building Energy Efficiency Standards for Residential and Nonresidential Buildings

The Building and Efficiency Standards (Energy Standards) were first adopted and put into effect in 1978 and have been updated periodically in the intervening years. These standards are a unique California asset that have placed the State on the forefront of energy efficiency, sustainability, energy independence and climate change issues. The 2019 Building Energy Efficiency Standards improve upon the 2016 Energy Standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 update to the Building Energy Efficiency Standards focuses on several key areas to improve the energy efficiency of newly constructed buildings and additions and alterations to existing buildings. The 2019 standards are a major step toward meeting Zero Net Energy. The most significant efficiency improvement to the residential Standards includes the introduction of photovoltaic into the perspective package, improvements for attics, walls, water heating and lighting. Buildings permitted on or after January 1, 2020, must comply with the 2019 Standards.

In 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CalGreen Building Standard (CalGreen) and establishes voluntary and mandatory standards pertaining to the planning and design of sustainable site development, energy efficiency, water conservation, material conservation, and interior air quality. Like Part 6 of Title 24, the CalGreen standards are periodically updated, with increasing energy savings and efficiencies associated with each code update. CalGreen contains voluntary "Tier 1" and "Tier 2" standards that are not mandatory statewide but could be required by a City or County. These are 'reach' standards that can be adopted by local jurisdictions and may be incorporated as mandatory standards in future code cycles

3.2.2 *Local*

Bay Area Air Quality Management District

To provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, BAAQMD CEQA Guidelines include guidance on assessing GHGs and climate change impacts as required under CEQA Section 15183.5(b). On April 20, 2022, the Draft Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans (2022) was adopted. This document presents a project-level operational threshold of significance for GHG emissions based on compliance with a Qualified GHG Reduction Strategy or adherence to a suite of BAAQMD performance standards for land uses projects directly related to building design, transportation and consistency with the CEQA Guidelines Section 15183.5(b).

The previous BAAQMD CEQA Air Quality Guidelines (2017) were established to "attribute an appropriate share of greenhouse gas emission reductions necessary to reach AB 32 goals to new land use development projects in the BAAQMD's jurisdiction that are evaluated pursuant to CEQA" (BAAQMD

2017). The BAAQMD project-level operational threshold of significance for GHG emissions is the project generation of 1,100 metric tons of CO_2e per year during operations (bright-line numeric threshold); or the project generation of 4.6 metric tons of CO_2e per service population (employees + residents) per year during operations (efficiency-based threshold); or compliance with a Qualified GHG Reduction Strategy.

City of South San Francisco GHG-Reduction Program

2014 Climate Action Plan

The City Climate Action Plan (CAP), adopted in 2014, includes goals, policies, and strategies to reduce the City's GHG emissions, in compliance with AB 32. GHG reduction strategies identified in the CAP include a development checklist to identify applicable plan measures for discretionary projects. The City's CAP was adopted, with the purpose of reducing GHGs community-wide to achieve a reduction target of 15 percent below 2005 emission levels by 2020. The CAP identifies GHG reduction measures to reduce GHG emissions within the City. Strategies include implementation of transportation demand management plans, expanding active transportation alternatives, maximizing energy efficiency in the build environment, developing a waste reduction strategy to increase recycling and reuse of materials, and reducing water demand. The City's CAP is currently being updated, as part of the General Plan Update. The City's CAP was adopted with the intention of supporting AB 32 while also protecting the unique resource of the community through goals, policies, and strategies that can be built on for future GHG reduction.

City of South San Francisco Draft Climate Action Plan

The City of South San Francisco is currently updating the original 2014 CAP to align with new State regulations and targets related to climate change. The 2014 CAP set an emissions target for 2020 and this updated CAP extends the horizon year to 2040 while also setting a long-term goal of carbon neutrality by 2045, consistent with State targets. The Draft 2022 CAP update outlines how the City of South San Francisco will create new policies, programs, and services that will support the community in taking strong action to reduce GHG emissions. Although the City implemented many policies and programs identified in the 2014 CAP, the City experienced steady economic and population growth over that time period. By updating its existing CAP, the City of South San Francisco reaffirms its commitment to leading the way to a more sustainable future. The City has set bold targets and developed strategies for reducing GHG emissions while increasing the City's resilience to climate change impacts. The Draft 2022 CAP identifies 62 actions to achieve the GHG reduction targets and has reduction targets of 40 percent below 1990 levels by 2030 (SB 32), 80 percent reduction by 2040 and carbon net neutrality by 2045.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 *Thresholds of Significance*

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The Appendix G thresholds for GHG's do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines § 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines § 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or

maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines § 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions.

The local air quality agency regulating the SFBAAB, including the Project Site, is the BAAQMD, the regional air pollution control officer for the basin. As previously stated, the BAAQMD recently approved the Draft Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans (2022) in April of 2022. The Air District developed these thresholds of significance based on typical residential and commercial land use projects. As such, these thresholds may not be appropriate for other types of projects that do not fit into the mold of a typical residential or commercial project. A lead agency does not necessarily need to use a threshold of significance if the analysis and justifications that were used to develop the threshold do not reflect the particular circumstances of the project under review. Accordingly, a lead agency should not use these thresholds if it is faced with a unique or unusual project for which the analyses supporting the thresholds as described in this report do not squarely apply. In such cases, the lead agency should develop an alternative approach that would be more appropriate for the particular project before it, considering all of the facts and circumstances of the project on a case-by-case basis. The 2014 CAP is the most recent adopted City document addressing GHG emissions. While this document was intended to reduce Citywide GHG emissions consistent with Statewide reduction goals for the year 2020, the City's GHG-reduction program, as promulgated by the City's CAP process, is currently being updated as part of the General Plan Update. The Draft 2022 CAP, which is anticipated to be adopted in the near future, extends the horizon year to 2040 and sets a long-term goal of carbon neutrality by 2045 to align with State targets. The City's climate action program, as encapsulated in both the 2014 CAP and Draft 2022 CAP set bold targets and developed strategies for reducing GHG emissions while increasing the City's resilience to climate change impacts.

Due to the timing of this document in correlation with the adoption of the updated CAP and BAAQMD Justification Report, and the ability for a lead agency to choose, at its discretion, methods of analyzation supported by substantial evidence, this Project is analyzed for consistency with the GHG reduction measures contained in both the 2014 CAP and Draft 2022 CAP.

Methodology

Operations of the Proposed Project are compared for consistency with the overall Citywide GHG-reduction program encapsulated in both the 2014 CAP and Draft 2022 CAP. Emissions were modeled using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were calculated using CalEEMod model defaults for San Mateo County and information provided by the Project proponent such as the construction equipment and duration. Operational GHG emissions were calculated based on specific Project Site plans.

3.3.2 *Impact Analysis*

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 3-2. Construction Related Greenhouse Gas Emissions

Description	CO_2e Emissions (Metric Tons/Year)
Construction First Year	1,126
Construction Second Year	109
Construction Third Year	1,689
Construction Fourth Year	1,671
Construction Fifth Year	0
Total Construction Emissions	**4,595**

Sources: CalEEMod version 2020.4.0. Refer to Attachment C for Model Data Outputs

As shown in Table 3-2, Project construction would result in the generation of a maximum of approximately 4,595 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. Furthermore, GHG emissions generated by the construction sector have been declining in recent years. For instance, construction equipment engine efficiency has continued to improve year after year. The first federal standards (Tier 1) for new off-road diesel engines were adopted in 1994 for engines over 50 horsepower (hp) and were phased in from 1996 to 2000. In 1996, a Statement of Principles pertaining to off-road diesel engines was signed between the USEPA, CARB, and engine makers (including Caterpillar, Cummins, Deere, Detroit Diesel, Deutz, Isuzu, Komatsu, Kubota, Mitsubishi, Navistar, New Holland, Wis-Con, and Yanmar). On August 27, 1998, the USEPA signed the final rule reflecting the provisions of the Statement of Principles. The 1998 regulation introduced Tier 1 standards for equipment under 50 hp and increasingly more stringent Tier 2 and Tier 3 standards for all equipment with phase-in schedules from 2000 to 2008. As a result, all off-road, diesel-fueled construction equipment manufactured in 2006 or later has been manufactured to Tier 3 standards. Tier 3 engine standards reduce precursor and subset GHG emissions such as nitrogen oxide by as much as 60 percent. On May 11, 2004, the USEPA signed the final rule introducing Tier 4 emission standards, which were phased in over the period of 2008-2015. The Tier 4 standards require that emissions of nitrogen oxide be further reduced by about 90 percent. All off-road, diesel-fueled construction equipment manufactured in 2015 or later will be manufactured to Tier 4 standards.

In addition, the California Energy Commission recently released the 2019 Building Energy Efficiency Standards contained in the California Code of Regulations, Title 24, Part 6 (also known as the California Energy Code). Both the 2016 and 2019 updates to the Building Energy Efficiency Standards focus on several key areas to improve the energy efficiency of newly constructed buildings and additions, and

alterations to existing buildings. For instance, effective January 1, 2017, owners/builders of construction projects have been required to divert (recycle) 65 percent of construction waste materials generated during the project construction phase. This requirement greatly reduces the generation of GHG emissions by reducing decomposition at landfills, which is a source of CH_4, and reducing demand for natural resources.

Long-term operational GHG emissions attributable to the Project are identified in Table 3-3.

Table 3-3. Operational-Related Greenhouse Gas Emissions

Description	CO_2e Emissions (Metric Tons/Year)
Proposed Project - 17-Story Research and Development Building with Associated Feature	
Area Source Emissions	7
Energy Emissions	1,293
Mobile Source Emissions	3,458
Waste Emissions	206
Water Emissions	16
Proposed Project Operations Total	**4,980**
Existing Conditions - 169 Room Comfort Inn and Suites	
Area Source Emissions	0
Energy Emissions	112
Mobile Source Emissions	713
Waste Emissions	46
Water Emissions	5
Existing Operations Total	**876**
Difference	
Difference	**+4,104**

Sources: CalEEMod 2020.0.4.0
Notes: Emission projections are predominantly based on CalEEMod model Defaults for San Mateo County. Area source emissions account for the testing for four 2,000 horsepower Tier 4 generators five days per year.

As shown in Table 3-3 Project operations would result in the increased generation of 4,104 metric tons of CO_2e per year beyond existing conditions.

Generation of Greenhouse Gas Emissions Resulting in Conflicts with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

City of South San Francisco 2014 Climate Action Plan

The Developmental Review Checklist, included as Appendix E of the 2014 CAP, identifies applicable CAP measures and serves as a tool to track project-level contribution to the CAP reduction targets. Table 3-4 presents the appreciable reduction measures identified in the CAP for the Proposed Project.

Table 3-4. Climate Action Plan Measures for New Development	
Measure	**Explanation**
Does the Project include bicycle facilities (e.g., bicycle lanes, parking, lockers)?	The Project is proposing the construction of a 700-foot long lighted and landscaped bicycle/ pedestrian lane that would traverse the Site from Poletti Way, along the western, southern, and eastern frontages of the Project Site to Grand Avenue and East Grand Avenue. An additional 300 feet of pedestrian paths are proposed on the Project Site as well. Additionally, the Project would include 142 short-term bike parking spaces along the Poletti Way sidewalk, 108 long-term bike parking spaces within an enclosed storage area accessed from the Arrival Plaza lobby and 51 long term bike parking spaces.
Will the project support bike sharing/ rental programs?	As stated above, the Project proposes to implement approximately 1,000 feet of bicycle lanes and 301 bicycle parking/ locker facilities.
Will there be a commute shuttle or public transportation stop on-site or within 500 feet?	The Project is located in the Transit Office / Research & Development Core. The Project Site is located just east of the Caltrain tracks and the recently relocated Caltrain station is approximately 200 feet west from the Project Site.
Is the Project within ¼ mile of a Caltrans or BART stop?	The Project Site is located just east of the Caltrain tracks and the recently relocated Caltrain station is approximately 200 feet west from the Project Site.
Will the Project include high-density housing and a diverse range of housing?	The Project is proposing two 17-story R & D building wings with the first two floors providing public amenities.
Will the Project provide traffic calming treatments?	The Project is located approximately 200 feet from the recently relocated Caltrain station. Additionally, the Project is proposing bicycle/ pedestrian lanes and bicycle parking/storage.
Is the Project paying a traffic impact fee to fund bicycle and pedestrian improvements?	The Project is proposing the construction of a 700-foot long lighted and landscaped bicycle/ pedestrian lane that would traverse the Site from Poletti Way, along the western, southern, and eastern frontages of the Project Site to Grand Avenue and East Grand Avenue. An additional 300 feet of pedestrian paths are proposed on the Project Site. Additionally, the Project would include 142 short-term bike parking spaces along the Poletti Way sidewalk, 108 long-term bike parking spaces within an enclosed storage area accessed from the Arrival Plaza lobby and 51 long term bike parking spaces.
Will the Project provide shared or reduce parking?	The Project is proposing the construction of two 17-story R & D building "wings" and associated features, which would be leased to various business, institutions, and other entities that would share parking in the proposed subterranean parking structure and surface parking lot.

Will the Project provide designated parking spaces for electric vehicles, carpool vehicles, or low emission vehicles?	Vehicular parking is proposed to be accommodated primarily in a subterranean parking structure consisting of 229,216 square feet and an at-grade parking area with accessible parking stalls and valet assist pick-up areas spanning approximately 26,191 square feet. These parking areas will include electric vehicle charging stations consistent with the 2019 Building Energy Efficiency Standards.
Will the Project have any ground level commercial space?	The first two floors of the two 17-story R & D building wings would be dedicated to public amenities, including 8,500 square feet of retail space, 4,600 square feet of restaurant and a 2,500 square foot café.
Does the Project include any alternative-fuel stations?	These parking areas will include electric vehicle charging stations consistent with the 2019 Building Energy Efficiency Standards.
Will the Project have any pre-wiring or conduit construction to easily add electric vehicle charging stations or alternative energy facilities as a later date?	According to information provided in the 121 East Grand Conservation Measures and Sustainable Design document provided by the Project proponent, the Project is proposing installation of conduit for the addition of electric vehicle charging stations.
If this project is replacing an existing building, is the building being replaced more than 30 years old?	The Project proposes the redevelopment of an existing urban environment. As previously described, the Project Site currently accommodates a 169-room Comfort Inn & Suites with associated features that is proposed for demolition. The Project is considered "infill development" as it proposes to redevelop a build-out property and enhance the physical design of the urban environment. Under Public Resources Code (PRC) section 21061.3, an "infill site" is defined as a site that "has been previously developed for qualified urban uses." In turn, a "qualified urban use" is defined, pursuant to PRC section 21072, as "a residential, commercial, or public institutional, transit or transportation passenger facility, or retail use, or any combination of those uses." Additionally, the Project Site is located in an "urbanized area," which is defined under PRC section 21071 as "an incorporated city" that meets the criteria of having a population of at least 100,000 persons. These aspects of the Project would result in the generation of a reduced amount of GHG emissions. According to the USEPA, redevelopments (namely at brownfield sites such as the Project Site) produce 32 to 57 percent less emissions per capita relative to conventional developments (USEPA 2011); this is because the number of daily vehicle trips and daily VMT associated with the redevelopment tend to be lower compared with development on vacant land. As a result, the Proposed Project would not conflict with the identified transportation and mobile source control measures of the Clean Air Plan.

Will certification of the building be sought under LEED or other green building criteria?	The Project is targeting LEED Gold certification and will coordinate with the City to meet these standards.
Will the Project include any high-reflectivity ("cool") roof or surface paving?	The Project would reduce its heat island effect through the use of high-albedo surfaces and/ or similar technologies.
Will there be a net increase in the number of mature trees on-site once the Project is complete?	The Project is proposing the removal of 69 trees however would provide landscaping with native vegetation.
Will any renewable energy systems be installed as part of this Project?	All buildings on the Project Site would be built with solar-ready wiring.
Is the Project a nonresidential condition space of 5,000 square feet or more?	The Project is proposing two 17-story R & D building wings with the first two floors dedicated to public amenities.
Will the Project use renewable energy generate off-site?	The Proposed Project would purchase at least 50 percent of building energy use as calculated by the Title 24 energy consumption model from off-site renewables.
Will there be composting collection on-Site?	All common areas amenities (confrere room, lounge, etc..) would have designated bins for each waste stream.
Will any water fixtures exceed CALGreen standards?	All fixtures will, at a minimum, meet CALGreen standards and all water features would have an established variable-speed pump exchange.
Will the Project incorporate low-impact (LID) practices?	The Project would incorporate LID practices through the reduction of impervious surfaces and the use of native plants in landscaping.
Will any xeriscaping be installed?	All landscaping on the Project Site would be with native, water-efficient plants.
Will captured rainwater or graywater be used for irrigation?	All landscaping on the Project Site would be with native, water-efficient plants that require limited irrigation. Drip irrigation system will be installed.

Sources: South San Francisco 2014.

2022 Draft City of South San Francisco Climate Action Plan

As previously discussed, the City is currently updating the 2022 CAP to align with new State regulations and targets related to climate change while also extending the horizon year to 2040 while setting a long-term goal of carbon neutrality by 2045. The Draft CAP identifies 62 actions to achieve Citywide GHG reduction. The reduction measures that are currently applicable to the Project based on information provided by the Project proponent and Project Site plans are presented below:

- **BNC 1.1 Improve the energy efficiency of new construction:** Provide a combination of financial and development process incentives (e.g., expedited permitting, floor area ratio increases, etc.) to encourage new development to exceed Title 24 energy efficiency standard.
- **BNC 2.1 Adopt an all-electric reach code for nonresidential new construction:** Implement residential all-electric reach code and adopt all-electric reach code for nonresidential new construction. Exempt occupancies must install electric building systems (e.g., space and water

heating equipment) where feasible. Until the adoption of the nonresidential all-electric reach code, require any new nonresidential conditioned space of 5,000 square feet or more, or the conversion of unconditioned space 5,000 square feet or more to comply with CALGreen Tier 2 energy efficiency requirements to exceed mandatory energy efficiency requirements by 20 percent or more. For additions to existing development of 5,000 square feet or more, CALGreen Tier 2 shall be calculated as part of the Title 24 compliance process. Existing building space already permitted shall not be subject to CALGreen Tier 2 requirements.

- **TL 1.2 Electric Vehicle Chargers at Municipal Facilities:** Seek opportunities to install additional electric vehicle chargers at suitable public facilities, including Downtown parking structures and community and regional parks.
- **TL 2.2 Transportation Demand Management Program:** Implement, monitor, and enforce compliance with the City's Transportation Demand Management Ordinance.
- **TL 2.4 Parking Demand Management Strategy:** Incorporate maximum parking requirements for new residential and office/R&D projects.
- **TL 2.5 Development along Transit Corridors:** For all new land use and transportation projects, adhere to the City's vehicle miles traveled Analysis Guidelines and qualitatively assess the project's effect on multimodal access. Use the development review process to identify opportunities to enhance bicycle, pedestrian, and transit connectivity.
- **TL 2.8 Improve Transit Station Access:** Leverage public-private partnerships to increase transit ridership and improve transit station access by incorporating first/last mile bus, shuttle, and active transportation connections between employment hubs and regional transit stations.
- **WW 1.1 Landscaping Water Requirements:** Achieve greater water use reductions than WELO by requiring all landscapes obtain a landscape permit, decreasing the size threshold to capture all landscape renovations, adding prescriptive irrigation plant lists, or water budget requirements.
- **WW 1.4 Landscaping Plant List:** Develop a plant list, landscaping palette for efficiency and habitat/wildlife for new development and landscape retrofits.
- **WW 2.1 Indoor Water Efficiency Standards:** Require high-efficiency fixtures in all new construction and major renovations, comparable to CALGreen Tier 1 or 2 standards.
- **CL 1.1 Minimum LEED certification or equivalent for new buildings:** Require all new municipal buildings and facilities to meet a minimum LEED silver standards as outlined by the US Green Building Council or equivalent green building rating system. Require feasibility studies for zero net energy use, on-site renewable energy generation, and on-site batteries.

All development in the City, including the Project, is required to adhere to all applicable City-adopted policy provisions supporting its GHG-reduction program, including those contained in the 2014 CAP and Draft 2022 CAP. The Project applicant must complete a Developmental Review Checklist to confirm consistency with the CAP measures to the satisfaction of City staff. The City ensures all provisions of the CAP are incorporated into projects and their permits through development review and applications of conditions of approval as applicable. All of the applicable and feasible provisions of the City GHG-reduction program as promulgated by its CAP documents will be incorporated into the Proposed Project.

4 REFERENCES

BAAQMD (Bay Area Air Quality Management District). 2022. Draft Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans.

_____. 2019. Calculating Potential to Emit for Emergency Backup Power Generators

_____. 2017. Bay Area Air Quality Management District CEQA Air Quality Guidelines.

CAPCOA. 2021. California Emissions Estimator Model (CalEEMod), version 2020.0.4.0.

_____. 2013. Health Effects. http://www.capcoa.org/health-effects/.

CARB. 2021a. Air Quality Data Statistics. http://www.arb.ca.gov/adam/index.html.

_____. 2021b. California Greenhouse Gas Emission Inventory 2021 Edition. https://ww2.arb.ca.gov/ghg-inventory-data

_____. 2019. State and Federal Area Designation Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

_____. 2008. Climate Change Scoping Plan Appendices (Appendix F).

Institute of Transportation Engineers. 2017. 10th Edition Trip Generation Manual.

IPCC. 2014. Climate Change 2014 Synthesis Report: Approved Summary for Policymakers. http://www.ipcc.ch/.

_____. 2013. Carbon and Other Biogeochemical Cycles. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. http://www.climatechange2013.org/ images/report/WG1AR5_ALL_FINAL.pdf.

OEHHA. 2015. Guidance Manual for Preparation of Health Risk Assessments.

South San Francisco. City of. 2014. City of South San Francisco 2014 Climate Action Plan.

_____. 2022. Draft Climate Action Plan.

University of California at San Francisco. 2011. San Francisco Mission Bay Site Genentech Hall Fume Hood Risk Screen.

USEPA. 2001. National Human Activity Pattern Survey.

_____. 2018a. Status of SIP Required Elements for California Designated Areas.

_____. 2018b. Nonattainment Areas for Criteria Pollutants.

_____. 2016a. Climate Change – Greenhouse Gas Emissions: Carbon Dioxide. http://www.epa.gov/climatechange/emissions/co2.html.

_____. 2016b. Methane. https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

_____. 2016c. Nitrous Oxide. https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html.

_____. 2011. Air and Water Quality Impacts of Brownfields Redevelopment. https://www.epa.gov/sites/default/files/2015-09/documents/bfenvironimpacts042811.pdf.

_____. 2002. Health Assessment Document for Diesel Engine Exhaust. https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=300055PV.TXT.

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutants

121 East Grand Avenue - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

121 East Grand Avenue

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	836.87	1000sqft	0.00	836,865.00	0
Library	23.67	1000sqft	0.00	23,674.00	0
General Light Industry	35.25	1000sqft	0.97	35,249.00	0
Enclosed Parking Structure	229.22	1000sqft	0.00	229,216.00	0
Parking Lot	26.19	1000sqft	0.97	26,191.00	0
Health Club	17.69	1000sqft	0.00	17,691.00	0
High Turnover (Sit Down Restaurant)	9.40	1000sqft	0.00	9,400.00	0
Free-Standing Discount store	16.20	1000sqft	0.97	16,196.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2028
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage updated to only account for uses on the ground floor.

Construction Phase - Building construction, paving and painting assumed to occur simultaneously. Information updated to match that provided by the applicant.

121 East Grand Avenue - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment -

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Demolition -

Grading - Material to be exported divided between phases based on number of days

Vehicle Trips - Operational trips updated for that of “general office” to account for the actual usage of the site/ No traffic report was provided as the site is in close proximity to transit.

Energy Use - All nontitle-24 electricity usage was reduced by 50%. Per the ‘121. E Grand Conservation Measures and Sustainable Design’ sheet provided by the applicant.

Water And Wastewater - Indoor water use provided by applicant. Usage was evenly distributed between all uses.

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Tier 4 imposed for mitigation measure 4.2-1 in Downtown Station Area Specific Plan. Additional mitigation per the BAAQMD’s Basic Construction Mitigation Measures.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Water Mitigation -

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - conversion of 1kw=1.341 hp

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	3.00	20.00
tblConstructionPhase	NumDays	6.00	220.00
tblConstructionPhase	NumDays	220.00	522.00
tblConstructionPhase	NumDays	10.00	522.00
tblConstructionPhase	NumDays	10.00	522.00
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	20.97	10.48
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblGrading	AcresOfGrading	110.00	6.00
tblGrading	AcresOfGrading	0.00	4.50
tblGrading	MaterialExported	0.00	159,250.00
tblGrading	MaterialExported	0.00	15,750.00
tblLandUse	LandUseSquareFeet	836,870.00	836,865.00
tblLandUse	LandUseSquareFeet	23,670.00	23,674.00
tblLandUse	LandUseSquareFeet	35,250.00	35,249.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LandUseSquareFeet	229,220.00	229,216.00
tblLandUse	LandUseSquareFeet	26,190.00	26,191.00
tblLandUse	LandUseSquareFeet	17,690.00	17,691.00
tblLandUse	LandUseSquareFeet	16,200.00	16,196.00
tblLandUse	LotAcreage	19.21	0.00
tblLandUse	LotAcreage	0.54	0.00
tblLandUse	LotAcreage	0.81	0.97
tblLandUse	LotAcreage	5.26	0.00
tblLandUse	LotAcreage	0.60	0.97
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	0.22	0.00
tblLandUse	LotAcreage	0.37	0.97
tblOffRoadEquipment	HorsePower	80.00	16.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblVehicleTrips	ST_TR	70.76	2.21
tblVehicleTrips	ST_TR	1.99	2.21
tblVehicleTrips	ST_TR	20.87	2.21

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	122.40	2.21
tblVehicleTrips	ST_TR	80.09	2.21
tblVehicleTrips	ST_TR	1.90	2.21
tblVehicleTrips	SU_TR	60.21	0.70
tblVehicleTrips	SU_TR	5.00	0.77
tblVehicleTrips	SU_TR	26.73	0.70
tblVehicleTrips	SU_TR	142.64	0.70
tblVehicleTrips	SU_TR	42.09	0.70
tblVehicleTrips	SU_TR	1.11	0.70
tblVehicleTrips	WD_TR	53.12	9.74
tblVehicleTrips	WD_TR	4.96	9.74
tblVehicleTrips	WD_TR	32.93	9.74
tblVehicleTrips	WD_TR	112.18	9.74
tblVehicleTrips	WD_TR	72.05	9.74
tblVehicleTrips	WD_TR	11.26	9.74
tblWater	IndoorWaterUseRate	1,199,974.85	2,597,035.00
tblWater	IndoorWaterUseRate	8,151,562.50	2,597,035.00
tblWater	IndoorWaterUseRate	1,046,242.22	2,597,035.00
tblWater	IndoorWaterUseRate	2,853,216.90	2,597,035.00
tblWater	IndoorWaterUseRate	740,608.46	2,597,035.00
tblWater	IndoorWaterUseRate	411,483,913.60	2,597,035.00

2.0 Emissions Summary

121 East Grand Avenue - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	2.9743	40.2471	40.2413	0.1337	2.3547	1.1843	3.5390	0.5915	1.1021	1.6936	0.0000	14,214.6575	14,214.6575	2.7684	1.1770	14,634.6098
2025	1.7730	27.5022	23.1486	0.0928	1.8515	0.6643	2.5158	0.4907	0.6220	1.1127	0.0000	10,142.4977	10,142.4977	1.6751	1.0586	10,499.8212
2026	23.6629	42.6891	46.4911	0.1381	5.5475	1.5434	7.0910	1.5013	1.4355	2.9368	0.0000	14,174.9983	14,174.9983	2.2146	0.7041	14,440.1761
2027	23.6221	42.5369	46.1389	0.1363	5.5477	1.5420	7.0897	1.5014	1.4341	2.9355	0.0000	14,021.6964	14,021.6964	2.2150	0.6882	14,282.1495
2028	2.5607	24.5406	26.9713	0.0933	4.7428	0.7828	5.5256	1.2879	0.7241	2.0120	0.0000	9,829.4084	9,829.4084	1.3341	0.6620	10,060.0342
Maximum	**23.6629**	**42.6891**	**46.4911**	**0.1381**	**5.5477**	**1.5434**	**7.0910**	**1.5014**	**1.4355**	**2.9368**	**0.0000**	**14,214.6575**	**14,214.6575**	**2.7684**	**1.1770**	**14,634.6098**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.1925	20.4583	49.4478	0.1337	2.1745	0.2138	2.3883	0.5699	0.2093	0.7793	0.0000	14,214.6575	14,214.6575	2.7684	1.1770	14,634.6098
2025	0.6771	15.1439	27.6628	0.0928	1.7906	0.1509	1.9414	0.4821	0.1468	0.6289	0.0000	10,142.4977	10,142.4977	1.6751	1.0586	10,499.8212
2026	20.9564	13.6097	53.1865	0.1381	5.5475	0.1709	5.7185	1.5013	0.1675	1.6688	0.0000	14,174.9983	14,174.9983	2.2146	0.7041	14,440.1761
2027	20.9157	13.4576	52.8343	0.1363	5.5477	0.1695	5.7172	1.5014	0.1662	1.6675	0.0000	14,021.6964	14,021.6964	2.2150	0.6882	14,282.1495
2028	1.3187	11.4424	29.8542	0.0933	4.7428	0.1095	4.8523	1.2879	0.1065	1.3944	0.0000	9,829.4084	9,829.4084	1.3341	0.6620	10,060.0342
Maximum	**20.9564**	**20.4583**	**53.1865**	**0.1381**	**5.5477**	**0.2138**	**5.7185**	**1.5014**	**0.2093**	**1.6688**	**0.0000**	**14,214.6575**	**14,214.6575**	**2.7684**	**1.1770**	**14,634.6098**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**17.46**	**58.25**	**-16.39**	**0.00**	**1.20**	**85.75**	**19.97**	**0.56**	**85.03**	**42.58**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Energy	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298
Mobile	19.5100	14.7129	172.7132	0.3847	47.2440	0.2268	47.4708	12.5780	0.2107	12.7887		40,878.9692	40,878.9692	2.3587	1.5440	41,398.0584
Total	**43.1320**	**21.1853**	**178.2708**	**0.4236**	**47.2440**	**0.7191**	**47.9630**	**12.5780**	**0.7030**	**13.2810**		**48,644.8135**	**48,644.8135**	**2.5082**	**1.6864**	**49,210.0666**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Energy	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298
Mobile	16.5530	11.1906	129.8597	0.2671	32.4094	0.1649	32.5743	8.6285	0.1531	8.7816		28,380.4271	28,380.4271	1.8424	1.1776	28,777.4139
Total	**40.1751**	**17.6630**	**135.4173**	**0.3059**	**32.4094**	**0.6572**	**33.0665**	**8.6285**	**0.6454**	**9.2739**		**36,146.2713**	**36,146.2713**	**1.9919**	**1.3200**	**36,589.4222**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.86**	**16.63**	**24.04**	**27.78**	**31.40**	**8.61**	**31.06**	**31.40**	**8.19**	**30.17**	**0.00**	**25.69**	**25.69**	**20.58**	**21.73**	**25.65**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	3/1/2024	5	45	
2	Site Preparation	Site Preparation	3/2/2024	3/31/2024	5	20	
3	Grading	Grading	4/1/2024	2/1/2025	5	220	
4	Building Construction	Building Construction	1/1/2026	1/1/2028	5	522	
5	Paving	Paving	1/1/2026	12/31/2027	5	522	
6	Architectural Coating	Architectural Coating	1/1/2026	12/31/2027	5	522	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 6

Acres of Paving: 0.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,408,613; Non-Residential Outdoor: 469,538; Striped Parking Area: 15,324 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Signal Boards	2	2.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	65	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Bore/Drill Rigs	2	8.00	221	0.50
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	1	7.00	158	0.38
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Other Construction Equipment	3	7.00	172	0.42
Site Preparation	Rollers	1	8.00	16	0.38
Site Preparation	Rough Terrain Forklifts	2	8.00	100	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Skid Steer Loaders	2	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	1	8.00	187	0.41
Grading	Pavers	1	8.00	130	0.42
Grading	Paving Equipment	1	8.00	132	0.36
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	262.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	38.00	0.00	1,969.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	19,906.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	416.00	196.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2605	0.0000	1.2605	0.1909	0.0000	0.1909			0.0000			0.0000
Off-Road	0.5954	5.2601	10.3007	0.0159		0.2382	0.2382		0.2197	0.2197		1,527.5215	1,527.5215	0.4886		1,539.7369
Total	**0.5954**	**5.2601**	**10.3007**	**0.0159**	**1.2605**	**0.2382**	**1.4987**	**0.1909**	**0.2197**	**0.4106**		**1,527.5215**	**1,527.5215**	**0.4886**		**1,539.7369**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0137	0.8697	0.3072	3.6600e-003	0.1014	6.0000e-003	0.1074	0.0278	5.7400e-003	0.0335		429.6668	429.6668	0.0450	0.0693	451.4422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0309	0.0167	0.2855	9.8000e-004	0.1232	5.4000e-004	0.1238	0.0327	5.0000e-004	0.0332		100.7141	100.7141	2.0800e-003	2.0900e-003	101.3883
Total	**0.0446**	**0.8864**	**0.5927**	**4.6400e-003**	**0.2246**	**6.5400e-003**	**0.2312**	**0.0604**	**6.2400e-003**	**0.0667**		**530.3809**	**530.3809**	**0.0471**	**0.0714**	**552.8305**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5672	0.0000	0.5672	0.0859	0.0000	0.0859			0.0000			0.0000
Off-Road	0.2160	1.8774	11.7475	0.0159		0.0254	0.0254		0.0254	0.0254	0.0000	1,527.5215	1,527.5215	0.4886		1,539.7369
Total	**0.2160**	**1.8774**	**11.7475**	**0.0159**	**0.5672**	**0.0254**	**0.5926**	**0.0859**	**0.0254**	**0.1113**	**0.0000**	**1,527.5215**	**1,527.5215**	**0.4886**		**1,539.7369**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0137	0.8697	0.3072	3.6600e-003	0.1014	6.0000e-003	0.1074	0.0278	5.7400e-003	0.0335		429.6668	429.6668	0.0450	0.0693	451.4422
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0309	0.0167	0.2855	9.8000e-004	0.1232	5.4000e-004	0.1238	0.0327	5.0000e-004	0.0332		100.7141	100.7141	2.0800e-003	2.0900e-003	101.3883
Total	**0.0446**	**0.8864**	**0.5927**	**4.6400e-003**	**0.2246**	**6.5400e-003**	**0.2312**	**0.0604**	**6.2400e-003**	**0.0667**		**530.3809**	**530.3809**	**0.0471**	**0.0714**	**552.8305**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3277	0.0000	0.3277	0.0393	0.0000	0.0393			0.0000			0.0000
Off-Road	2.6647	25.4982	34.3238	0.0693		1.0814	1.0814		1.0037	1.0037		6,694.1281	6,694.1281	2.0015		6,744.1655
Total	**2.6647**	**25.4982**	**34.3238**	**0.0693**	**0.3277**	**1.0814**	**1.4091**	**0.0393**	**1.0037**	**1.0430**		**6,694.1281**	**6,694.1281**	**2.0015**		**6,744.1655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2313	14.7065	5.1942	0.0619	1.7149	0.1015	1.8164	0.4695	0.0971	0.5666		7,265.3870	7,265.3870	0.7616	1.1717	7,633.5939
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0783	0.0423	0.7233	2.4700e-003	0.3122	1.3800e-003	0.3135	0.0828	1.2700e-003	0.0841		255.1424	255.1424	5.2800e-003	5.2900e-003	256.8503
Total	**0.3095**	**14.7489**	**5.9175**	**0.0644**	**2.0270**	**0.1029**	**2.1299**	**0.5523**	**0.0984**	**0.6507**		**7,520.5294**	**7,520.5294**	**0.7669**	**1.1770**	**7,890.4443**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1475	0.0000	0.1475	0.0177	0.0000	0.0177			0.0000			0.0000
Off-Road	0.8830	5.7095	43.5303	0.0693		0.1109	0.1109		0.1109	0.1109	0.0000	6,694.1281	6,694.1281	2.0015		6,744.1655
Total	**0.8830**	**5.7095**	**43.5303**	**0.0693**	**0.1475**	**0.1109**	**0.2584**	**0.0177**	**0.1109**	**0.1286**	**0.0000**	**6,694.1281**	**6,694.1281**	**2.0015**		**6,744.1655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2313	14.7065	5.1942	0.0619	1.7149	0.1015	1.8164	0.4695	0.0971	0.5666		7,265.3870	7,265.3870	0.7616	1.1717	7,633.5939
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0783	0.0423	0.7233	2.4700e-003	0.3122	1.3800e-003	0.3135	0.0828	1.2700e-003	0.0841		255.1424	255.1424	5.2800e-003	5.2900e-003	256.8503
Total	**0.3095**	**14.7489**	**5.9175**	**0.0644**	**2.0270**	**0.1029**	**2.1299**	**0.5523**	**0.0984**	**0.6507**		**7,520.5294**	**7,520.5294**	**0.7669**	**1.1770**	**7,890.4443**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1108	0.0000	0.1108	0.0155	0.0000	0.0155			0.0000			0.0000
Off-Road	1.6674	16.1944	18.0277	0.0360		0.6738	0.6738		0.6287	0.6287		3,470.5516	3,470.5516	0.9589		3,494.5247
Total	**1.6674**	**16.1944**	**18.0277**	**0.0360**	**0.1108**	**0.6738**	**0.7846**	**0.0155**	**0.6287**	**0.6442**		**3,470.5516**	**3,470.5516**	**0.9589**		**3,494.5247**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2126	13.5162	4.7738	0.0569	1.5761	0.0933	1.6694	0.4315	0.0893	0.5207		6,677.3532	6,677.3532	0.7000	1.0769	7,015.7588
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0412	0.0223	0.3807	1.3000e-003	0.1643	7.3000e-004	0.1650	0.0436	6.7000e-004	0.0443		134.2855	134.2855	2.7800e-003	2.7800e-003	135.1844
Total	**0.2537**	**13.5385**	**5.1545**	**0.0582**	**1.7404**	**0.0940**	**1.8344**	**0.4750**	**0.0899**	**0.5650**		**6,811.6387**	**6,811.6387**	**0.7028**	**1.0797**	**7,150.9432**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0499	0.0000	0.0499	6.9800e-003	0.0000	6.9800e-003			0.0000			0.0000
Off-Road	0.4277	1.8535	22.4156	0.0360		0.0570	0.0570		0.0570	0.0570	0.0000	3,470.5516	3,470.5516	0.9589		3,494.5247
Total	**0.4277**	**1.8535**	**22.4156**	**0.0360**	**0.0499**	**0.0570**	**0.1069**	**6.9800e-003**	**0.0570**	**0.0640**	**0.0000**	**3,470.5516**	**3,470.5516**	**0.9589**		**3,494.5247**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2126	13.5162	4.7738	0.0569	1.5761	0.0933	1.6694	0.4315	0.0893	0.5207		6,677.3532	6,677.3532	0.7000	1.0769	7,015.7588
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0412	0.0223	0.3807	1.3000e-003	0.1643	7.3000e-004	0.1650	0.0436	6.7000e-004	0.0443		134.2855	134.2855	2.7800e-003	2.7800e-003	135.1844
Total	**0.2537**	**13.5385**	**5.1545**	**0.0582**	**1.7404**	**0.0940**	**1.8344**	**0.4750**	**0.0899**	**0.5650**		**6,811.6387**	**6,811.6387**	**0.7028**	**1.0797**	**7,150.9432**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1108	0.0000	0.1108	0.0155	0.0000	0.0155			0.0000			0.0000
Off-Road	1.5236	14.2119	17.9014	0.0360		0.5704	0.5704		0.5322	0.5322		3,470.4975	3,470.4975	0.9568		3,494.4180
Total	**1.5236**	**14.2119**	**17.9014**	**0.0360**	**0.1108**	**0.5704**	**0.6812**	**0.0155**	**0.5322**	**0.5478**		**3,470.4975**	**3,470.4975**	**0.9568**		**3,494.4180**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2101	13.2701	4.8881	0.0555	1.5764	0.0931	1.6696	0.4316	0.0891	0.5207		6,540.9310	6,540.9310	0.7157	1.0559	6,873.4912
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0392	0.0202	0.3591	1.2600e-003	0.1643	7.0000e-004	0.1650	0.0436	6.4000e-004	0.0442		131.0692	131.0692	2.5200e-003	2.6200e-003	131.9121
Total	**0.2493**	**13.2903**	**5.2472**	**0.0568**	**1.7407**	**0.0938**	**1.8345**	**0.4752**	**0.0897**	**0.5649**		**6,672.0002**	**6,672.0002**	**0.7183**	**1.0586**	**7,005.4033**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0499	0.0000	0.0499	6.9800e-003	0.0000	6.9800e-003			0.0000			0.0000
Off-Road	0.4277	1.8535	22.4156	0.0360		0.0570	0.0570		0.0570	0.0570	0.0000	3,470.4975	3,470.4975	0.9568		3,494.4180
Total	**0.4277**	**1.8535**	**22.4156**	**0.0360**	**0.0499**	**0.0570**	**0.1069**	**6.9800e-003**	**0.0570**	**0.0640**	**0.0000**	**3,470.4975**	**3,470.4975**	**0.9568**		**3,494.4180**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2101	13.2701	4.8881	0.0555	1.5764	0.0931	1.6696	0.4316	0.0891	0.5207		6,540.9310	6,540.9310	0.7157	1.0559	6,873.4912
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0392	0.0202	0.3591	1.2600e-003	0.1643	7.0000e-004	0.1650	0.0436	6.4000e-004	0.0442		131.0692	131.0692	2.5200e-003	2.6200e-003	131.9121
Total	**0.2493**	**13.2903**	**5.2472**	**0.0568**	**1.7407**	**0.0938**	**1.8345**	**0.4752**	**0.0897**	**0.5649**		**6,672.0002**	**6,672.0002**	**0.7183**	**1.0586**	**7,005.4033**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6489	15.8035	17.1028	0.0324		0.7242	0.7242		0.6685	0.6685		3,099.6002	3,099.6002	0.9808		3,124.1205
Total	**1.6489**	**15.8035**	**17.1028**	**0.0324**		**0.7242**	**0.7242**		**0.6685**	**0.6685**		**3,099.6002**	**3,099.6002**	**0.9808**		**3,124.1205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1939	8.6150	3.2664	0.0385	1.3251	0.0473	1.3724	0.3813	0.0452	0.4266		4,332.9253	4,332.9253	0.3017	0.6402	4,531.2410
Worker	0.7827	0.3861	7.1117	0.0254	3.4173	0.0138	3.4311	0.9064	0.0127	0.9191		2,669.0260	2,669.0260	0.0480	0.0517	2,685.6350
Total	**0.9766**	**9.0011**	**10.3782**	**0.0639**	**4.7425**	**0.0610**	**4.8035**	**1.2878**	**0.0579**	**1.3457**		**7,001.9512**	**7,001.9512**	**0.3497**	**0.6919**	**7,216.8760**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4070	2.7054	19.9856	0.0324		0.0509	0.0509		0.0509	0.0509	0.0000	3,099.6001	3,099.6001	0.9808		3,124.1205
Total	**0.4070**	**2.7054**	**19.9856**	**0.0324**		**0.0509**	**0.0509**		**0.0509**	**0.0509**	**0.0000**	**3,099.6001**	**3,099.6001**	**0.9808**		**3,124.1205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1939	8.6150	3.2664	0.0385	1.3251	0.0473	1.3724	0.3813	0.0452	0.4266		4,332.9253	4,332.9253	0.3017	0.6402	4,531.2410
Worker	0.7827	0.3861	7.1117	0.0254	3.4173	0.0138	3.4311	0.9064	0.0127	0.9191		2,669.0260	2,669.0260	0.0480	0.0517	2,685.6350
Total	**0.9766**	**9.0011**	**10.3782**	**0.0639**	**4.7425**	**0.0610**	**4.8035**	**1.2878**	**0.0579**	**1.3457**		**7,001.9512**	**7,001.9512**	**0.3497**	**0.6919**	**7,216.8760**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6489	15.8035	17.1028	0.0324		0.7242	0.7242		0.6685	0.6685		3,099.6002	3,099.6002	0.9808		3,124.1205
Total	**1.6489**	**15.8035**	**17.1028**	**0.0324**		**0.7242**	**0.7242**		**0.6685**	**0.6685**		**3,099.6002**	**3,099.6002**	**0.9808**		**3,124.1205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1898	8.4973	3.2762	0.0376	1.3253	0.0469	1.3722	0.3814	0.0449	0.4262		4,240.4111	4,240.4111	0.3067	0.6270	4,434.9283
Worker	0.7530	0.3583	6.8188	0.0248	3.4173	0.0129	3.4303	0.9064	0.0119	0.9183		2,619.8281	2,619.8281	0.0443	0.0495	2,635.6875
Total	**0.9428**	**8.8555**	**10.0950**	**0.0623**	**4.7426**	**0.0598**	**4.8024**	**1.2878**	**0.0567**	**1.3446**		**6,860.2392**	**6,860.2392**	**0.3510**	**0.6765**	**7,070.6158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4070	2.7054	19.9856	0.0324		0.0509	0.0509		0.0509	0.0509	0.0000	3,099.6001	3,099.6001	0.9808		3,124.1205
Total	**0.4070**	**2.7054**	**19.9856**	**0.0324**		**0.0509**	**0.0509**		**0.0509**	**0.0509**	**0.0000**	**3,099.6001**	**3,099.6001**	**0.9808**		**3,124.1205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1898	8.4973	3.2762	0.0376	1.3253	0.0469	1.3722	0.3814	0.0449	0.4262		4,240.4111	4,240.4111	0.3067	0.6270	4,434.9283
Worker	0.7530	0.3583	6.8188	0.0248	3.4173	0.0129	3.4303	0.9064	0.0119	0.9183		2,619.8281	2,619.8281	0.0443	0.0495	2,635.6875
Total	**0.9428**	**8.8555**	**10.0950**	**0.0623**	**4.7426**	**0.0598**	**4.8024**	**1.2878**	**0.0567**	**1.3446**		**6,860.2392**	**6,860.2392**	**0.3510**	**0.6765**	**7,070.6158**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6489	15.8035	17.1028	0.0324		0.7242	0.7242		0.6685	0.6685		3,099.6002	3,099.6002	0.9808		3,124.1205
Total	**1.6489**	**15.8035**	**17.1028**	**0.0324**		**0.7242**	**0.7242**		**0.6685**	**0.6685**		**3,099.6002**	**3,099.6002**	**0.9808**		**3,124.1205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1869	8.4017	3.2958	0.0367	1.3254	0.0466	1.3720	0.3814	0.0446	0.4260		4,152.6564	4,152.6564	0.3123	0.6143	4,343.5244
Worker	0.7248	0.3353	6.5727	0.0242	3.4173	0.0120	3.4294	0.9064	0.0111	0.9175		2,577.1518	2,577.1518	0.0411	0.0477	2,592.3893
Total	**0.9117**	**8.7370**	**9.8685**	**0.0609**	**4.7428**	**0.0586**	**4.8014**	**1.2879**	**0.0556**	**1.3435**		**6,729.8082**	**6,729.8082**	**0.3533**	**0.6620**	**6,935.9137**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4070	2.7054	19.9856	0.0324		0.0509	0.0509		0.0509	0.0509	0.0000	3,099.6001	3,099.6001	0.9808		3,124.1205
Total	**0.4070**	**2.7054**	**19.9856**	**0.0324**		**0.0509**	**0.0509**		**0.0509**	**0.0509**	**0.0000**	**3,099.6001**	**3,099.6001**	**0.9808**		**3,124.1205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1869	8.4017	3.2958	0.0367	1.3254	0.0466	1.3720	0.3814	0.0446	0.4260		4,152.6564	4,152.6564	0.3123	0.6143	4,343.5244
Worker	0.7248	0.3353	6.5727	0.0242	3.4173	0.0120	3.4294	0.9064	0.0111	0.9175		2,577.1518	2,577.1518	0.0411	0.0477	2,592.3893
Total	**0.9117**	**8.7370**	**9.8685**	**0.0609**	**4.7428**	**0.0586**	**4.8014**	**1.2879**	**0.0556**	**1.3435**		**6,729.8082**	**6,729.8082**	**0.3533**	**0.6620**	**6,935.9137**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7119	16.6480	15.5257	0.0328		0.7035	0.7035		0.6546	0.6546		3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7167**	**16.6480**	**15.5257**	**0.0328**		**0.7035**	**0.7035**		**0.6546**	**0.6546**		**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0282	0.0139	0.2564	9.2000e-004	0.1232	5.0000e-004	0.1237	0.0327	4.6000e-004	0.0331		96.2389	96.2389	1.7300e-003	1.8600e-003	96.8378
Total	**0.0282**	**0.0139**	**0.2564**	**9.2000e-004**	**0.1232**	**5.0000e-004**	**0.1237**	**0.0327**	**4.6000e-004**	**0.0331**		**96.2389**	**96.2389**	**1.7300e-003**	**1.8600e-003**	**96.8378**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3885	1.6835	19.3150	0.0328		0.0518	0.0518		0.0518	0.0518	0.0000	3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3934**	**1.6835**	**19.3150**	**0.0328**		**0.0518**	**0.0518**		**0.0518**	**0.0518**	**0.0000**	**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0282	0.0139	0.2564	9.2000e-004	0.1232	5.0000e-004	0.1237	0.0327	4.6000e-004	0.0331		96.2389	96.2389	1.7300e-003	1.8600e-003	96.8378
Total	**0.0282**	**0.0139**	**0.2564**	**9.2000e-004**	**0.1232**	**5.0000e-004**	**0.1237**	**0.0327**	**4.6000e-004**	**0.0331**		**96.2389**	**96.2389**	**1.7300e-003**	**1.8600e-003**	**96.8378**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7119	16.6480	15.5257	0.0328		0.7035	0.7035		0.6546	0.6546		3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7167**	**16.6480**	**15.5257**	**0.0328**		**0.7035**	**0.7035**		**0.6546**	**0.6546**		**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0272	0.0129	0.2459	8.9000e-004	0.1232	4.7000e-004	0.1237	0.0327	4.3000e-004	0.0331		94.4650	94.4650	1.6000e-003	1.7900e-003	95.0368
Total	**0.0272**	**0.0129**	**0.2459**	**8.9000e-004**	**0.1232**	**4.7000e-004**	**0.1237**	**0.0327**	**4.3000e-004**	**0.0331**		**94.4650**	**94.4650**	**1.6000e-003**	**1.7900e-003**	**95.0368**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3885	1.6835	19.3150	0.0328		0.0518	0.0518		0.0518	0.0518	0.0000	3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3934**	**1.6835**	**19.3150**	**0.0328**		**0.0518**	**0.0518**		**0.0518**	**0.0518**	**0.0000**	**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0272	0.0129	0.2459	8.9000e-004	0.1232	4.7000e-004	0.1237	0.0327	4.3000e-004	0.0331		94.4650	94.4650	1.6000e-003	1.7900e-003	95.0368
Total	**0.0272**	**0.0129**	**0.2459**	**8.9000e-004**	**0.1232**	**4.7000e-004**	**0.1237**	**0.0327**	**4.3000e-004**	**0.0331**		**94.4650**	**94.4650**	**1.6000e-003**	**1.7900e-003**	**95.0368**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**19.1362**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1562	0.0770	1.4189	5.0700e-003	0.6818	2.7500e-003	0.6846	0.1809	2.5300e-003	0.1834		532.5220	532.5220	9.5700e-003	0.0103	535.8358
Total	**0.1562**	**0.0770**	**1.4189**	**5.0700e-003**	**0.6818**	**2.7500e-003**	**0.6846**	**0.1809**	**2.5300e-003**	**0.1834**		**532.5220**	**532.5220**	**9.5700e-003**	**0.0103**	**535.8358**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**18.9951**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1562	0.0770	1.4189	5.0700e-003	0.6818	2.7500e-003	0.6846	0.1809	2.5300e-003	0.1834		532.5220	532.5220	9.5700e-003	0.0103	535.8358
Total	**0.1562**	**0.0770**	**1.4189**	**5.0700e-003**	**0.6818**	**2.7500e-003**	**0.6846**	**0.1809**	**2.5300e-003**	**0.1834**		**532.5220**	**532.5220**	**9.5700e-003**	**0.0103**	**535.8358**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**19.1362**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1502	0.0715	1.3605	4.9400e-003	0.6818	2.5800e-003	0.6844	0.1809	2.3700e-003	0.1832		522.7061	522.7061	8.8300e-003	9.8800e-003	525.8704
Total	**0.1502**	**0.0715**	**1.3605**	**4.9400e-003**	**0.6818**	**2.5800e-003**	**0.6844**	**0.1809**	**2.3700e-003**	**0.1832**		**522.7061**	**522.7061**	**8.8300e-003**	**9.8800e-003**	**525.8704**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**18.9951**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1502	0.0715	1.3605	4.9400e-003	0.6818	2.5800e-003	0.6844	0.1809	2.3700e-003	0.1832		522.7061	522.7061	8.8300e-003	9.8800e-003	525.8704
Total	**0.1502**	**0.0715**	**1.3605**	**4.9400e-003**	**0.6818**	**2.5800e-003**	**0.6844**	**0.1809**	**2.3700e-003**	**0.1832**		**522.7061**	**522.7061**	**8.8300e-003**	**9.8800e-003**	**525.8704**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	16.5530	11.1906	129.8597	0.2671	32.4094	0.1649	32.5743	8.6285	0.1531	8.7816		28,380.4271	28,380.4271	1.8424	1.1776	28,777.4139
Unmitigated	19.5100	14.7129	172.7132	0.3847	47.2440	0.2268	47.4708	12.5780	0.2107	12.7887		40,878.9692	40,878.9692	2.3587	1.5440	41,398.0584

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Free-Standing Discount store	157.79	35.80	11.34	186,239	127,760
General Light Industry	343.34	77.90	27.14	759,790	521,216
Health Club	172.30	39.09	12.38	225,332	154,578
High Turnover (Sit Down Restaurant)	91.56	20.77	6.58	80,412	55,163
Library	230.55	52.31	16.57	295,779	202,904
Parking Lot	0.00	0.00	0.00		
Research & Development	8,151.11	1,849.48	585.81	15,463,854	10,608,204
Total	9,146.64	2,075.37	659.82	17,011,407	11,669,825

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Free-Standing Discount store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Free-Standing Discount store	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
General Light Industry	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Health Club	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
High Turnover (Sit Down Restaurant)	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Library	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Parking Lot	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Research & Development	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

121 East Grand Avenue - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298
NaturalGas Unmitigated	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	202.339	2.1800e-003	0.0198	0.0167	1.2000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003		23.8046	23.8046	4.6000e-004	4.4000e-004	23.9461
General Light Industry	2372.79	0.0256	0.2326	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.1516	279.1516	5.3500e-003	5.1200e-003	280.8105
Health Club	1190.87	0.0128	0.1168	0.0981	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1025	140.1025	2.6900e-003	2.5700e-003	140.9350
High Turnover (Sit Down Restaurant)	4314.21	0.0465	0.4230	0.3553	2.5400e-003		0.0322	0.0322		0.0322	0.0322		507.5546	507.5546	9.7300e-003	9.3100e-003	510.5707
Library	1593.62	0.0172	0.1562	0.1312	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.4843	187.4843	3.5900e-003	3.4400e-003	188.5985
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	56333.6	0.6075	5.5229	4.6392	0.0331		0.4197	0.4197		0.4197	0.4197		6,627.4853	6,627.4853	0.1270	0.1215	6,666.8691
Total		**0.7119**	**6.4713**	**5.4359**	**0.0388**		**0.4918**	**0.4918**		**0.4918**	**0.4918**		**7,765.5829**	**7,765.5829**	**0.1489**	**0.1424**	**7,811.7298**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	0.202339	2.1800e-003	0.0198	0.0167	1.2000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003		23.8046	23.8046	4.6000e-004	4.4000e-004	23.9461
General Light Industry	2.37279	0.0256	0.2326	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.1516	279.1516	5.3500e-003	5.1200e-003	280.8105
Health Club	1.19087	0.0128	0.1168	0.0981	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1025	140.1025	2.6900e-003	2.5700e-003	140.9350
High Turnover (Sit Down Restaurant)	4.31421	0.0465	0.4230	0.3553	2.5400e-003		0.0322	0.0322		0.0322	0.0322		507.5546	507.5546	9.7300e-003	9.3100e-003	510.5707
Library	1.59362	0.0172	0.1562	0.1312	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.4843	187.4843	3.5900e-003	3.4400e-003	188.5985
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	56.3336	0.6075	5.5229	4.6392	0.0331		0.4197	0.4197		0.4197	0.4197		6,627.4853	6,627.4853	0.1270	0.1215	6,666.8691
Total		**0.7119**	**6.4713**	**5.4359**	**0.0388**		**0.4918**	**0.4918**		**0.4918**	**0.4918**		**7,765.5829**	**7,765.5829**	**0.1489**	**0.1424**	**7,811.7298**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Unmitigated	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	20.1867					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0112	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Total	**22.9102**	**1.1000e-003**	**0.1216**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**		**0.2614**	**0.2614**	**6.8000e-004**		**0.2784**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	20.1867					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0112	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Total	**22.9102**	**1.1000e-003**	**0.1216**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**		**0.2614**	**0.2614**	**6.8000e-004**		**0.2784**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Use Water Efficient Landscaping

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

121 East Grand Avenue - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

121 East Grand Avenue

San Mateo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	836.87	1000sqft	0.00	836,865.00	0
Library	23.67	1000sqft	0.00	23,674.00	0
General Light Industry	35.25	1000sqft	0.97	35,249.00	0
Enclosed Parking Structure	229.22	1000sqft	0.00	229,216.00	0
Parking Lot	26.19	1000sqft	0.97	26,191.00	0
Health Club	17.69	1000sqft	0.00	17,691.00	0
High Turnover (Sit Down Restaurant)	9.40	1000sqft	0.00	9,400.00	0
Free-Standing Discount store	16.20	1000sqft	0.97	16,196.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2028
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage updated to only account for uses on the ground floor.

Construction Phase - Building construction, paving and painting assumed to occur simultaneously. Information updated to match that provided by the applicant.

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment -

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Demolition -

Grading - Material to be exported divided between phases based on number of days

Vehicle Trips - Operational trips updated for that of “general office” to account for the actual usage of the site/ No traffic report was provided as the site is in close proximity to transit.

Energy Use - All nontitle-24 electricity usage was reduced by 50%. Per the ‘121. E Grand Conservation Measures and Sustainable Design’ sheet provided by the applicant.

Water And Wastewater - Indoor water use provided by applicant. Usage was evenly distributed between all uses.

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Tier 4 imposed for mitigation measure 4.2-1 in Downtown Station Area Specific Plan. Additional mitigation per the BAAQMD’s Basic Construction Mitigation Measures.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Water Mitigation -

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - conversion of 1kw=1.341 hp

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	3.00	20.00
tblConstructionPhase	NumDays	6.00	220.00
tblConstructionPhase	NumDays	220.00	522.00
tblConstructionPhase	NumDays	10.00	522.00
tblConstructionPhase	NumDays	10.00	522.00
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	20.97	10.48
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblGrading	AcresOfGrading	110.00	6.00
tblGrading	AcresOfGrading	0.00	4.50
tblGrading	MaterialExported	0.00	159,250.00
tblGrading	MaterialExported	0.00	15,750.00
tblLandUse	LandUseSquareFeet	836,870.00	836,865.00
tblLandUse	LandUseSquareFeet	23,670.00	23,674.00
tblLandUse	LandUseSquareFeet	35,250.00	35,249.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LandUseSquareFeet	229,220.00	229,216.00
tblLandUse	LandUseSquareFeet	26,190.00	26,191.00
tblLandUse	LandUseSquareFeet	17,690.00	17,691.00
tblLandUse	LandUseSquareFeet	16,200.00	16,196.00
tblLandUse	LotAcreage	19.21	0.00
tblLandUse	LotAcreage	0.54	0.00
tblLandUse	LotAcreage	0.81	0.97
tblLandUse	LotAcreage	5.26	0.00
tblLandUse	LotAcreage	0.60	0.97
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	0.22	0.00
tblLandUse	LotAcreage	0.37	0.97
tblOffRoadEquipment	HorsePower	80.00	16.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblVehicleTrips	ST_TR	70.76	2.21
tblVehicleTrips	ST_TR	1.99	2.21
tblVehicleTrips	ST_TR	20.87	2.21

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	122.40	2.21
tblVehicleTrips	ST_TR	80.09	2.21
tblVehicleTrips	ST_TR	1.90	2.21
tblVehicleTrips	SU_TR	60.21	0.70
tblVehicleTrips	SU_TR	5.00	0.77
tblVehicleTrips	SU_TR	26.73	0.70
tblVehicleTrips	SU_TR	142.64	0.70
tblVehicleTrips	SU_TR	42.09	0.70
tblVehicleTrips	SU_TR	1.11	0.70
tblVehicleTrips	WD_TR	53.12	9.74
tblVehicleTrips	WD_TR	4.96	9.74
tblVehicleTrips	WD_TR	32.93	9.74
tblVehicleTrips	WD_TR	112.18	9.74
tblVehicleTrips	WD_TR	72.05	9.74
tblVehicleTrips	WD_TR	11.26	9.74
tblWater	IndoorWaterUseRate	1,199,974.85	2,597,035.00
tblWater	IndoorWaterUseRate	8,151,562.50	2,597,035.00
tblWater	IndoorWaterUseRate	1,046,242.22	2,597,035.00
tblWater	IndoorWaterUseRate	2,853,216.90	2,597,035.00
tblWater	IndoorWaterUseRate	740,608.46	2,597,035.00
tblWater	IndoorWaterUseRate	411,483,913.60	2,597,035.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	2.9723	41.0577	40.2644	0.1336	2.3547	1.1846	3.5393	0.5915	1.1024	1.6939	0.0000	14,203.2408	14,203.2408	2.7683	1.1785	14,623.6333
2025	1.7680	28.2326	23.1683	0.0927	1.8515	0.6645	2.5160	0.4907	0.6222	1.1129	0.0000	10,137.8845	10,137.8845	1.6747	1.0596	10,495.5186
2026	23.7656	43.2631	46.6097	0.1364	5.5475	1.5437	7.0912	1.5013	1.4357	2.9370	0.0000	13,999.1070	13,999.1070	2.2225	0.7147	14,267.6361
2027	23.7256	43.0992	46.2631	0.1347	5.5477	1.5422	7.0899	1.5014	1.4344	2.9357	0.0000	13,849.4965	13,849.4965	2.2223	0.6984	14,113.1633
2028	2.6438	25.0753	27.0913	0.0920	4.7428	0.7830	5.5258	1.2879	0.7243	2.0122	0.0000	9,693.2359	9,693.2359	1.3395	0.6702	9,926.4330
Maximum	**23.7656**	**43.2631**	**46.6097**	**0.1364**	**5.5477**	**1.5437**	**7.0912**	**1.5014**	**1.4357**	**2.9370**	**0.0000**	**14,203.2408**	**14,203.2408**	**2.7683**	**1.1785**	**14,623.6333**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2024	1.1905	21.2690	49.4709	0.1336	2.1745	0.2141	2.3886	0.5699	0.2096	0.7795	0.0000	14,203.2408	14,203.2408	2.7683	1.1785	14,623.6333
2025	0.6722	15.8742	27.6825	0.0927	1.7906	0.1511	1.9417	0.4821	0.1470	0.6292	0.0000	10,137.8845	10,137.8845	1.6747	1.0596	10,495.5186
2026	21.0592	14.1837	53.3051	0.1364	5.5475	0.1712	5.7187	1.5013	0.1678	1.6691	0.0000	13,999.1070	13,999.1070	2.2225	0.7147	14,267.6361
2027	21.0192	14.0198	52.9585	0.1347	5.5477	0.1697	5.7174	1.5014	0.1664	1.6678	0.0000	13,849.4964	13,849.4964	2.2223	0.6984	14,113.1633
2028	1.4019	11.9771	29.9742	0.0920	4.7428	0.1097	4.8525	1.2879	0.1067	1.3946	0.0000	9,693.2359	9,693.2359	1.3395	0.6702	9,926.4330
Maximum	**21.0592**	**21.2690**	**53.3051**	**0.1364**	**5.5477**	**0.2141**	**5.7187**	**1.5014**	**0.2096**	**1.6691**	**0.0000**	**14,203.2408**	**14,203.2408**	**2.7683**	**1.1785**	**14,623.6333**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**17.37**	**57.22**	**-16.35**	**0.00**	**1.20**	**85.73**	**19.96**	**0.56**	**85.01**	**42.57**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Energy	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298
Mobile	18.4134	17.0560	189.4538	0.3689	47.2440	0.2269	47.4708	12.5780	0.2108	12.7888		39,193.7524	39,193.7524	2.6083	1.6904	39,762.7032
Total	**42.0354**	**23.5284**	**195.0114**	**0.4078**	**47.2440**	**0.7191**	**47.9631**	**12.5780**	**0.7030**	**13.2810**		**46,959.5966**	**46,959.5966**	**2.7578**	**1.8328**	**47,574.7115**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Energy	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298
Mobile	15.2990	12.9843	146.2071	0.2564	32.4094	0.1650	32.5743	8.6285	0.1532	8.7817		27,233.7989	27,233.7989	2.0783	1.2946	27,671.5593
Total	**38.9211**	**19.4567**	**151.7646**	**0.2952**	**32.4094**	**0.6572**	**33.0666**	**8.6285**	**0.6454**	**9.2739**		**34,999.6432**	**34,999.6432**	**2.2278**	**1.4370**	**35,483.5675**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**7.41**	**17.31**	**22.18**	**27.61**	**31.40**	**8.61**	**31.06**	**31.40**	**8.19**	**30.17**	**0.00**	**25.47**	**25.47**	**19.22**	**21.59**	**25.42**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	3/1/2024	5	45	
2	Site Preparation	Site Preparation	3/2/2024	3/31/2024	5	20	
3	Grading	Grading	4/1/2024	2/1/2025	5	220	
4	Building Construction	Building Construction	1/1/2026	1/1/2028	5	522	
5	Paving	Paving	1/1/2026	12/31/2027	5	522	
6	Architectural Coating	Architectural Coating	1/1/2026	12/31/2027	5	522	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 6

Acres of Paving: 0.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,408,613; Non-Residential Outdoor: 469,538; Striped Parking Area: 15,324 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Signal Boards	2	2.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	65	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Bore/Drill Rigs	2	8.00	221	0.50
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	1	7.00	158	0.38
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Other Construction Equipment	3	7.00	172	0.42
Site Preparation	Rollers	1	8.00	16	0.38
Site Preparation	Rough Terrain Forklifts	2	8.00	100	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Skid Steer Loaders	2	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	1	8.00	187	0.41
Grading	Pavers	1	8.00	130	0.42
Grading	Paving Equipment	1	8.00	132	0.36
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	262.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	38.00	0.00	1,969.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	19,906.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	416.00	196.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2605	0.0000	1.2605	0.1909	0.0000	0.1909			0.0000			0.0000
Off-Road	0.5954	5.2601	10.3007	0.0159		0.2382	0.2382		0.2197	0.2197		1,527.5215	1,527.5215	0.4886		1,539.7369
Total	**0.5954**	**5.2601**	**10.3007**	**0.0159**	**1.2605**	**0.2382**	**1.4987**	**0.1909**	**0.2197**	**0.4106**		**1,527.5215**	**1,527.5215**	**0.4886**		**1,539.7369**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0131	0.9171	0.3086	3.6600e-003	0.1014	6.0200e-003	0.1074	0.0278	5.7600e-003	0.0335		429.8137	429.8137	0.0450	0.0693	451.6002
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0339	0.0206	0.2855	9.2000e-004	0.1232	5.4000e-004	0.1238	0.0327	5.0000e-004	0.0332		95.2270	95.2270	2.3700e-003	2.4000e-003	96.0009
Total	**0.0470**	**0.9377**	**0.5941**	**4.5800e-003**	**0.2246**	**6.5600e-003**	**0.2312**	**0.0604**	**6.2600e-003**	**0.0667**		**525.0407**	**525.0407**	**0.0474**	**0.0717**	**547.6011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5672	0.0000	0.5672	0.0859	0.0000	0.0859			0.0000			0.0000
Off-Road	0.2160	1.8774	11.7475	0.0159		0.0254	0.0254		0.0254	0.0254	0.0000	1,527.5215	1,527.5215	0.4886		1,539.7369
Total	**0.2160**	**1.8774**	**11.7475**	**0.0159**	**0.5672**	**0.0254**	**0.5926**	**0.0859**	**0.0254**	**0.1113**	**0.0000**	**1,527.5215**	**1,527.5215**	**0.4886**		**1,539.7369**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0131	0.9171	0.3086	3.6600e-003	0.1014	6.0200e-003	0.1074	0.0278	5.7600e-003	0.0335		429.8137	429.8137	0.0450	0.0693	451.6002
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0339	0.0206	0.2855	9.2000e-004	0.1232	5.4000e-004	0.1238	0.0327	5.0000e-004	0.0332		95.2270	95.2270	2.3700e-003	2.4000e-003	96.0009
Total	**0.0470**	**0.9377**	**0.5941**	**4.5800e-003**	**0.2246**	**6.5600e-003**	**0.2312**	**0.0604**	**6.2600e-003**	**0.0667**		**525.0407**	**525.0407**	**0.0474**	**0.0717**	**547.6011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3277	0.0000	0.3277	0.0393	0.0000	0.0393			0.0000			0.0000
Off-Road	2.6647	25.4982	34.3238	0.0693		1.0814	1.0814		1.0037	1.0037		6,694.1281	6,694.1281	2.0015		6,744.1655
Total	**2.6647**	**25.4982**	**34.3238**	**0.0693**	**0.3277**	**1.0814**	**1.4091**	**0.0393**	**1.0037**	**1.0430**		**6,694.1281**	**6,694.1281**	**2.0015**		**6,744.1655**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2216	15.5074	5.2174	0.0619	1.7149	0.1018	1.8167	0.4695	0.0974	0.5669		7,267.8710	7,267.8710	0.7608	1.1724	7,636.2655
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0859	0.0521	0.7233	2.3400e-003	0.3122	1.3800e-003	0.3135	0.0828	1.2700e-003	0.0841		241.2418	241.2418	6.0100e-003	6.0700e-003	243.2023
Total	**0.3075**	**15.5595**	**5.9406**	**0.0643**	**2.0270**	**0.1032**	**2.1302**	**0.5523**	**0.0987**	**0.6509**		**7,509.1127**	**7,509.1127**	**0.7668**	**1.1785**	**7,879.4678**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1475	0.0000	0.1475	0.0177	0.0000	0.0177			0.0000			0.0000
Off-Road	0.8830	5.7095	43.5303	0.0693		0.1109	0.1109		0.1109	0.1109	0.0000	6,694.1281	6,694.1281	2.0015		6,744.1655
Total	**0.8830**	**5.7095**	**43.5303**	**0.0693**	**0.1475**	**0.1109**	**0.2584**	**0.0177**	**0.1109**	**0.1286**	**0.0000**	**6,694.1281**	**6,694.1281**	**2.0015**		**6,744.1655**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2216	15.5074	5.2174	0.0619	1.7149	0.1018	1.8167	0.4695	0.0974	0.5669		7,267.8710	7,267.8710	0.7608	1.1724	7,636.2655
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0859	0.0521	0.7233	2.3400e-003	0.3122	1.3800e-003	0.3135	0.0828	1.2700e-003	0.0841		241.2418	241.2418	6.0100e-003	6.0700e-003	243.2023
Total	**0.3075**	**15.5595**	**5.9406**	**0.0643**	**2.0270**	**0.1032**	**2.1302**	**0.5523**	**0.0987**	**0.6509**		**7,509.1127**	**7,509.1127**	**0.7668**	**1.1785**	**7,879.4678**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1108	0.0000	0.1108	0.0155	0.0000	0.0155			0.0000			0.0000
Off-Road	1.6674	16.1944	18.0277	0.0360		0.6738	0.6738		0.6287	0.6287		3,470.5516	3,470.5516	0.9589		3,494.5247
Total	**1.6674**	**16.1944**	**18.0277**	**0.0360**	**0.1108**	**0.6738**	**0.7846**	**0.0155**	**0.6287**	**0.6442**		**3,470.5516**	**3,470.5516**	**0.9589**		**3,494.5247**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2037	14.2523	4.7951	0.0569	1.5761	0.0936	1.6696	0.4315	0.0895	0.5210		6,679.6361	6,679.6361	0.6992	1.0775	7,018.2142
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0452	0.0274	0.3807	1.2300e-003	0.1643	7.3000e-004	0.1650	0.0436	6.7000e-004	0.0443		126.9693	126.9693	3.1600e-003	3.2000e-003	128.0012
Total	**0.2489**	**14.2797**	**5.1757**	**0.0582**	**1.7404**	**0.0943**	**1.8347**	**0.4750**	**0.0902**	**0.5652**		**6,806.6055**	**6,806.6055**	**0.7024**	**1.0807**	**7,146.2154**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0499	0.0000	0.0499	6.9800e-003	0.0000	6.9800e-003			0.0000			0.0000
Off-Road	0.4277	1.8535	22.4156	0.0360		0.0570	0.0570		0.0570	0.0570	0.0000	3,470.5516	3,470.5516	0.9589		3,494.5247
Total	**0.4277**	**1.8535**	**22.4156**	**0.0360**	**0.0499**	**0.0570**	**0.1069**	**6.9800e-003**	**0.0570**	**0.0640**	**0.0000**	**3,470.5516**	**3,470.5516**	**0.9589**		**3,494.5247**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2037	14.2523	4.7951	0.0569	1.5761	0.0936	1.6696	0.4315	0.0895	0.5210		6,679.6361	6,679.6361	0.6992	1.0775	7,018.2142
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0452	0.0274	0.3807	1.2300e-003	0.1643	7.3000e-004	0.1650	0.0436	6.7000e-004	0.0443		126.9693	126.9693	3.1600e-003	3.2000e-003	128.0012
Total	**0.2489**	**14.2797**	**5.1757**	**0.0582**	**1.7404**	**0.0943**	**1.8347**	**0.4750**	**0.0902**	**0.5652**		**6,806.6055**	**6,806.6055**	**0.7024**	**1.0807**	**7,146.2154**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1108	0.0000	0.1108	0.0155	0.0000	0.0155			0.0000			0.0000
Off-Road	1.5236	14.2119	17.9014	0.0360		0.5704	0.5704		0.5322	0.5322		3,470.4975	3,470.4975	0.9568		3,494.4180
Total	**1.5236**	**14.2119**	**17.9014**	**0.0360**	**0.1108**	**0.5704**	**0.6812**	**0.0155**	**0.5322**	**0.5478**		**3,470.4975**	**3,470.4975**	**0.9568**		**3,494.4180**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2011	13.9958	4.9072	0.0555	1.5764	0.0934	1.6698	0.4316	0.0893	0.5209		6,543.4418	6,543.4418	0.7150	1.0566	6,876.1879
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0433	0.0249	0.3597	1.1900e-003	0.1643	7.0000e-004	0.1650	0.0436	6.4000e-004	0.0442		123.9453	123.9453	2.8800e-003	3.0100e-003	124.9127
Total	**0.2444**	**14.0207**	**5.2669**	**0.0567**	**1.7407**	**0.0941**	**1.8348**	**0.4752**	**0.0900**	**0.5651**		**6,667.3871**	**6,667.3871**	**0.7178**	**1.0596**	**7,001.1006**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0499	0.0000	0.0499	6.9800e-003	0.0000	6.9800e-003			0.0000			0.0000
Off-Road	0.4277	1.8535	22.4156	0.0360		0.0570	0.0570		0.0570	0.0570	0.0000	3,470.4975	3,470.4975	0.9568		3,494.4180
Total	**0.4277**	**1.8535**	**22.4156**	**0.0360**	**0.0499**	**0.0570**	**0.1069**	**6.9800e-003**	**0.0570**	**0.0640**	**0.0000**	**3,470.4975**	**3,470.4975**	**0.9568**		**3,494.4180**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2011	13.9958	4.9072	0.0555	1.5764	0.0934	1.6698	0.4316	0.0893	0.5209		6,543.4418	6,543.4418	0.7150	1.0566	6,876.1879
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0433	0.0249	0.3597	1.1900e-003	0.1643	7.0000e-004	0.1650	0.0436	6.4000e-004	0.0442		123.9453	123.9453	2.8800e-003	3.0100e-003	124.9127
Total	**0.2444**	**14.0207**	**5.2669**	**0.0567**	**1.7407**	**0.0941**	**1.8348**	**0.4752**	**0.0900**	**0.5651**		**6,667.3871**	**6,667.3871**	**0.7178**	**1.0596**	**7,001.1006**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6489	15.8035	17.1028	0.0324		0.7242	0.7242		0.6685	0.6685		3,099.6002	3,099.6002	0.9808		3,124.1205
Total	**1.6489**	**15.8035**	**17.1028**	**0.0324**		**0.7242**	**0.7242**		**0.6685**	**0.6685**		**3,099.6002**	**3,099.6002**	**0.9808**		**3,124.1205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1896	9.0793	3.3596	0.0385	1.3251	0.0476	1.3727	0.3813	0.0455	0.4268		4,335.9934	4,335.9934	0.3011	0.6413	4,534.6315
Worker	0.8693	0.4749	7.1323	0.0240	3.4173	0.0138	3.4311	0.9064	0.0127	0.9191		2,524.1872	2,524.1872	0.0549	0.0594	2,543.2477
Total	**1.0589**	**9.5542**	**10.4919**	**0.0625**	**4.7425**	**0.0613**	**4.8038**	**1.2878**	**0.0581**	**1.3459**		**6,860.1806**	**6,860.1806**	**0.3559**	**0.7007**	**7,077.8791**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4070	2.7054	19.9856	0.0324		0.0509	0.0509		0.0509	0.0509	0.0000	3,099.6001	3,099.6001	0.9808		3,124.1205
Total	**0.4070**	**2.7054**	**19.9856**	**0.0324**		**0.0509**	**0.0509**		**0.0509**	**0.0509**	**0.0000**	**3,099.6001**	**3,099.6001**	**0.9808**		**3,124.1205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1896	9.0793	3.3596	0.0385	1.3251	0.0476	1.3727	0.3813	0.0455	0.4268		4,335.9934	4,335.9934	0.3011	0.6413	4,534.6315
Worker	0.8693	0.4749	7.1323	0.0240	3.4173	0.0138	3.4311	0.9064	0.0127	0.9191		2,524.1872	2,524.1872	0.0549	0.0594	2,543.2477
Total	**1.0589**	**9.5542**	**10.4919**	**0.0625**	**4.7425**	**0.0613**	**4.8038**	**1.2878**	**0.0581**	**1.3459**		**6,860.1806**	**6,860.1806**	**0.3559**	**0.7007**	**7,077.8791**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6489	15.8035	17.1028	0.0324		0.7242	0.7242		0.6685	0.6685		3,099.6002	3,099.6002	0.9808		3,124.1205
Total	**1.6489**	**15.8035**	**17.1028**	**0.0324**		**0.7242**	**0.7242**		**0.6685**	**0.6685**		**3,099.6002**	**3,099.6002**	**0.9808**		**3,124.1205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1851	8.9578	3.3676	0.0376	1.3253	0.0472	1.3724	0.3814	0.0451	0.4265		4,243.6951	4,243.6951	0.3061	0.6282	4,438.5359
Worker	0.8406	0.4406	6.8453	0.0234	3.4173	0.0129	3.4303	0.9064	0.0119	0.9183		2,477.8022	2,477.8022	0.0507	0.0568	2,496.0006
Total	**1.0257**	**9.3984**	**10.2129**	**0.0610**	**4.7426**	**0.0601**	**4.8027**	**1.2878**	**0.0570**	**1.3448**		**6,721.4973**	**6,721.4973**	**0.3568**	**0.6850**	**6,934.5366**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4070	2.7054	19.9856	0.0324		0.0509	0.0509		0.0509	0.0509	0.0000	3,099.6001	3,099.6001	0.9808		3,124.1205
Total	**0.4070**	**2.7054**	**19.9856**	**0.0324**		**0.0509**	**0.0509**		**0.0509**	**0.0509**	**0.0000**	**3,099.6001**	**3,099.6001**	**0.9808**		**3,124.1205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1851	8.9578	3.3676	0.0376	1.3253	0.0472	1.3724	0.3814	0.0451	0.4265		4,243.6951	4,243.6951	0.3061	0.6282	4,438.5359
Worker	0.8406	0.4406	6.8453	0.0234	3.4173	0.0129	3.4303	0.9064	0.0119	0.9183		2,477.8022	2,477.8022	0.0507	0.0568	2,496.0006
Total	**1.0257**	**9.3984**	**10.2129**	**0.0610**	**4.7426**	**0.0601**	**4.8027**	**1.2878**	**0.0570**	**1.3448**		**6,721.4973**	**6,721.4973**	**0.3568**	**0.6850**	**6,934.5366**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6489	15.8035	17.1028	0.0324		0.7242	0.7242		0.6685	0.6685		3,099.6002	3,099.6002	0.9808		3,124.1205
Total	**1.6489**	**15.8035**	**17.1028**	**0.0324**		**0.7242**	**0.7242**		**0.6685**	**0.6685**		**3,099.6002**	**3,099.6002**	**0.9808**		**3,124.1205**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1820	8.8595	3.3858	0.0368	1.3254	0.0468	1.3722	0.3814	0.0448	0.4262		4,156.1135	4,156.1135	0.3116	0.6155	4,347.3074
Worker	0.8129	0.4122	6.6028	0.0229	3.4173	0.0120	3.4294	0.9064	0.0111	0.9175		2,437.5223	2,437.5223	0.0471	0.0547	2,455.0051
Total	**0.9949**	**9.2717**	**9.9885**	**0.0596**	**4.7428**	**0.0589**	**4.8016**	**1.2879**	**0.0559**	**1.3437**		**6,593.6358**	**6,593.6358**	**0.3587**	**0.6702**	**6,802.3125**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4070	2.7054	19.9856	0.0324		0.0509	0.0509		0.0509	0.0509	0.0000	3,099.6001	3,099.6001	0.9808		3,124.1205
Total	**0.4070**	**2.7054**	**19.9856**	**0.0324**		**0.0509**	**0.0509**		**0.0509**	**0.0509**	**0.0000**	**3,099.6001**	**3,099.6001**	**0.9808**		**3,124.1205**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1820	8.8595	3.3858	0.0368	1.3254	0.0468	1.3722	0.3814	0.0448	0.4262		4,156.1135	4,156.1135	0.3116	0.6155	4,347.3074
Worker	0.8129	0.4122	6.6028	0.0229	3.4173	0.0120	3.4294	0.9064	0.0111	0.9175		2,437.5223	2,437.5223	0.0471	0.0547	2,455.0051
Total	**0.9949**	**9.2717**	**9.9885**	**0.0596**	**4.7428**	**0.0589**	**4.8016**	**1.2879**	**0.0559**	**1.3437**		**6,593.6358**	**6,593.6358**	**0.3587**	**0.6702**	**6,802.3125**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7119	16.6480	15.5257	0.0328		0.7035	0.7035		0.6546	0.6546		3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7167**	**16.6480**	**15.5257**	**0.0328**		**0.7035**	**0.7035**		**0.6546**	**0.6546**		**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0314	0.0171	0.2572	8.7000e-004	0.1232	5.0000e-004	0.1237	0.0327	4.6000e-004	0.0331		91.0164	91.0164	1.9800e-003	2.1400e-003	91.7036
Total	**0.0314**	**0.0171**	**0.2572**	**8.7000e-004**	**0.1232**	**5.0000e-004**	**0.1237**	**0.0327**	**4.6000e-004**	**0.0331**		**91.0164**	**91.0164**	**1.9800e-003**	**2.1400e-003**	**91.7036**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3885	1.6835	19.3150	0.0328		0.0518	0.0518		0.0518	0.0518	0.0000	3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3934**	**1.6835**	**19.3150**	**0.0328**		**0.0518**	**0.0518**		**0.0518**	**0.0518**	**0.0000**	**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0314	0.0171	0.2572	8.7000e-004	0.1232	5.0000e-004	0.1237	0.0327	4.6000e-004	0.0331		91.0164	91.0164	1.9800e-003	2.1400e-003	91.7036
Total	**0.0314**	**0.0171**	**0.2572**	**8.7000e-004**	**0.1232**	**5.0000e-004**	**0.1237**	**0.0327**	**4.6000e-004**	**0.0331**		**91.0164**	**91.0164**	**1.9800e-003**	**2.1400e-003**	**91.7036**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7119	16.6480	15.5257	0.0328		0.7035	0.7035		0.6546	0.6546		3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.7167**	**16.6480**	**15.5257**	**0.0328**		**0.7035**	**0.7035**		**0.6546**	**0.6546**		**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0159	0.2468	8.4000e-004	0.1232	4.7000e-004	0.1237	0.0327	4.3000e-004	0.0331		89.3438	89.3438	1.8300e-003	2.0500e-003	90.0000
Total	**0.0303**	**0.0159**	**0.2468**	**8.4000e-004**	**0.1232**	**4.7000e-004**	**0.1237**	**0.0327**	**4.3000e-004**	**0.0331**		**89.3438**	**89.3438**	**1.8300e-003**	**2.0500e-003**	**90.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3885	1.6835	19.3150	0.0328		0.0518	0.0518		0.0518	0.0518	0.0000	3,163.2380	3,163.2380	0.8575		3,184.6742
Paving	4.8700e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.3934**	**1.6835**	**19.3150**	**0.0328**		**0.0518**	**0.0518**		**0.0518**	**0.0518**	**0.0000**	**3,163.2380**	**3,163.2380**	**0.8575**		**3,184.6742**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0303	0.0159	0.2468	8.4000e-004	0.1232	4.7000e-004	0.1237	0.0327	4.3000e-004	0.0331		89.3438	89.3438	1.8300e-003	2.0500e-003	90.0000
Total	**0.0303**	**0.0159**	**0.2468**	**8.4000e-004**	**0.1232**	**4.7000e-004**	**0.1237**	**0.0327**	**4.3000e-004**	**0.0331**		**89.3438**	**89.3438**	**1.8300e-003**	**2.0500e-003**	**90.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**19.1362**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1735	0.0948	1.4230	4.7900e-003	0.6818	2.7500e-003	0.6846	0.1809	2.5300e-003	0.1834		503.6239	503.6239	0.0110	0.0118	507.4268
Total	**0.1735**	**0.0948**	**1.4230**	**4.7900e-003**	**0.6818**	**2.7500e-003**	**0.6846**	**0.1809**	**2.5300e-003**	**0.1834**		**503.6239**	**503.6239**	**0.0110**	**0.0118**	**507.4268**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2026

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**18.9951**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1735	0.0948	1.4230	4.7900e-003	0.6818	2.7500e-003	0.6846	0.1809	2.5300e-003	0.1834		503.6239	503.6239	0.0110	0.0118	507.4268
Total	**0.1735**	**0.0948**	**1.4230**	**4.7900e-003**	**0.6818**	**2.7500e-003**	**0.6846**	**0.1809**	**2.5300e-003**	**0.1834**		**503.6239**	**503.6239**	**0.0110**	**0.0118**	**507.4268**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1709	1.1455	1.8091	2.9700e-003		0.0515	0.0515		0.0515	0.0515		281.4481	281.4481	0.0154		281.8319
Total	**19.1362**	**1.1455**	**1.8091**	**2.9700e-003**		**0.0515**	**0.0515**		**0.0515**	**0.0515**		**281.4481**	**281.4481**	**0.0154**		**281.8319**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1677	0.0879	1.3658	4.6700e-003	0.6818	2.5800e-003	0.6844	0.1809	2.3700e-003	0.1832		494.3692	494.3692	0.0101	0.0113	498.0001
Total	**0.1677**	**0.0879**	**1.3658**	**4.6700e-003**	**0.6818**	**2.5800e-003**	**0.6844**	**0.1809**	**2.3700e-003**	**0.1832**		**494.3692**	**494.3692**	**0.0101**	**0.0113**	**498.0001**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2027

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	18.9654					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0154		281.8319
Total	**18.9951**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0154**		**281.8319**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1677	0.0879	1.3658	4.6700e-003	0.6818	2.5800e-003	0.6844	0.1809	2.3700e-003	0.1832		494.3692	494.3692	0.0101	0.0113	498.0001
Total	**0.1677**	**0.0879**	**1.3658**	**4.6700e-003**	**0.6818**	**2.5800e-003**	**0.6844**	**0.1809**	**2.3700e-003**	**0.1832**		**494.3692**	**494.3692**	**0.0101**	**0.0113**	**498.0001**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	15.2990	12.9843	146.2071	0.2564	32.4094	0.1650	32.5743	8.6285	0.1532	8.7817		27,233.7989	27,233.7989	2.0783	1.2946	27,671.5593
Unmitigated	18.4134	17.0560	189.4538	0.3689	47.2440	0.2269	47.4708	12.5780	0.2108	12.7888		39,193.7524	39,193.7524	2.6083	1.6904	39,762.7032

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Free-Standing Discount store	157.79	35.80	11.34	186,239	127,760
General Light Industry	343.34	77.90	27.14	759,790	521,216
Health Club	172.30	39.09	12.38	225,332	154,578
High Turnover (Sit Down Restaurant)	91.56	20.77	6.58	80,412	55,163
Library	230.55	52.31	16.57	295,779	202,904
Parking Lot	0.00	0.00	0.00		
Research & Development	8,151.11	1,849.48	585.81	15,463,854	10,608,204
Total	9,146.64	2,075.37	659.82	17,011,407	11,669,825

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Free-Standing Discount store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Free-Standing Discount store	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
General Light Industry	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Health Club	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
High Turnover (Sit Down Restaurant)	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Library	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Parking Lot	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Research & Development	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

121 East Grand Avenue - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298
NaturalGas Unmitigated	0.7119	6.4713	5.4359	0.0388		0.4918	0.4918		0.4918	0.4918		7,765.5829	7,765.5829	0.1488	0.1424	7,811.7298

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	202.339	2.1800e-003	0.0198	0.0167	1.2000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003		23.8046	23.8046	4.6000e-004	4.4000e-004	23.9461
General Light Industry	2372.79	0.0256	0.2326	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.1516	279.1516	5.3500e-003	5.1200e-003	280.8105
Health Club	1190.87	0.0128	0.1168	0.0981	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1025	140.1025	2.6900e-003	2.5700e-003	140.9350
High Turnover (Sit Down Restaurant)	4314.21	0.0465	0.4230	0.3553	2.5400e-003		0.0322	0.0322		0.0322	0.0322		507.5546	507.5546	9.7300e-003	9.3100e-003	510.5707
Library	1593.62	0.0172	0.1562	0.1312	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.4843	187.4843	3.5900e-003	3.4400e-003	188.5985
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	56333.6	0.6075	5.5229	4.6392	0.0331		0.4197	0.4197		0.4197	0.4197		6,627.4853	6,627.4853	0.1270	0.1215	6,666.8691
Total		**0.7119**	**6.4713**	**5.4359**	**0.0388**		**0.4918**	**0.4918**		**0.4918**	**0.4918**		**7,765.5829**	**7,765.5829**	**0.1489**	**0.1424**	**7,811.7298**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	0.202339	2.1800e-003	0.0198	0.0167	1.2000e-004		1.5100e-003	1.5100e-003		1.5100e-003	1.5100e-003		23.8046	23.8046	4.6000e-004	4.4000e-004	23.9461
General Light Industry	2.37279	0.0256	0.2326	0.1954	1.4000e-003		0.0177	0.0177		0.0177	0.0177		279.1516	279.1516	5.3500e-003	5.1200e-003	280.8105
Health Club	1.19087	0.0128	0.1168	0.0981	7.0000e-004		8.8700e-003	8.8700e-003		8.8700e-003	8.8700e-003		140.1025	140.1025	2.6900e-003	2.5700e-003	140.9350
High Turnover (Sit Down Restaurant)	4.31421	0.0465	0.4230	0.3553	2.5400e-003		0.0322	0.0322		0.0322	0.0322		507.5546	507.5546	9.7300e-003	9.3100e-003	510.5707
Library	1.59362	0.0172	0.1562	0.1312	9.4000e-004		0.0119	0.0119		0.0119	0.0119		187.4843	187.4843	3.5900e-003	3.4400e-003	188.5985
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	56.3336	0.6075	5.5229	4.6392	0.0331		0.4197	0.4197		0.4197	0.4197		6,627.4853	6,627.4853	0.1270	0.1215	6,666.8691
Total		**0.7119**	**6.4713**	**5.4359**	**0.0388**		**0.4918**	**0.4918**		**0.4918**	**0.4918**		**7,765.5829**	**7,765.5829**	**0.1489**	**0.1424**	**7,811.7298**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Unmitigated	22.9102	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	20.1867					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0112	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Total	**22.9102**	**1.1000e-003**	**0.1216**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**		**0.2614**	**0.2614**	**6.8000e-004**		**0.2784**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	2.7123					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	20.1867					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0112	1.1000e-003	0.1216	1.0000e-005		4.3000e-004	4.3000e-004		4.3000e-004	4.3000e-004		0.2614	0.2614	6.8000e-004		0.2784
Total	**22.9102**	**1.1000e-003**	**0.1216**	**1.0000e-005**		**4.3000e-004**	**4.3000e-004**		**4.3000e-004**	**4.3000e-004**		**0.2614**	**0.2614**	**6.8000e-004**		**0.2784**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Use Water Efficient Landscaping

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Emergency Generator Testing

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2028
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Model run done for emissions of emergency generator testing

Construction Phase - Model run done for emissions of emergency generator testing

Off-road Equipment - Model run done for emissions of emergency generator testing

Architectural Coating - Model run done for emissions of emergency generator testing

Area Coating - Model run done for emissions of emergency generator testing

Construction Off-road Equipment Mitigation - Tier 4 per BAAQMD

Area Mitigation - Model run done for emissions of emergency generator testing

Consumer Products - Model run done for the testing of emergency generators

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	1050
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Parking	6	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	1050	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	0.00	5.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblOffRoadEquipment	HorsePower	84.00	2,982.00

2.0 Emissions Summary

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	1.0100	16.4161	5.8846	0.0292	0.0000	0.2744	0.2744	0.0000	0.2744	0.2744	0.0000	3,317.6591	3,317.6591	0.0876	0.0000	3,319.8483
Maximum	**1.0100**	**16.4161**	**5.8846**	**0.0292**	**0.0000**	**0.2744**	**0.2744**	**0.0000**	**0.2744**	**0.2744**	**0.0000**	**3,317.6591**	**3,317.6591**	**0.0876**	**0.0000**	**3,319.8483**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	0.0000	0.0000	0.0000	0.0292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,317.6591	3,317.6591	0.0876	0.0000	3,319.8483
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0292**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3,317.6591**	**3,317.6591**	**0.0876**	**0.0000**	**3,319.8483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**100.00**	**100.00**	**100.00**	**0.00**	**0.00**	**100.00**	**100.00**	**0.00**	**100.00**	**100.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Emergency Generator Testing	Architectural Coating	1/1/2028	1/7/2028	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Emergency Generator Testing	Generator Sets	4	0.30	2982	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Emergency Generator Testing	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Emergency Generator Testing - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0100	16.4161	5.8846	0.0292		0.2744	0.2744		0.2744	0.2744		3,317.6591	3,317.6591	0.0876		3,319.8483
Total	**1.0100**	**16.4161**	**5.8846**	**0.0292**		**0.2744**	**0.2744**		**0.2744**	**0.2744**		**3,317.6591**	**3,317.6591**	**0.0876**		**3,319.8483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Emergency Generator Testing - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0292		0.0000	0.0000		0.0000	0.0000	0.0000	3,317.6591	3,317.6591	0.0876		3,319.8483
Total	**0.0000**	**0.0000**	**0.0000**	**0.0292**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3,317.6591**	**3,317.6591**	**0.0876**		**3,319.8483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005

Emergency Generator Testing - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**		**2.0000e-005**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**		**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Emergency Generator Testing

San Mateo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2028
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Model run done for emissions of emergency generator testing

Construction Phase - Model run done for emissions of emergency generator testing

Off-road Equipment - Model run done for emissions of emergency generator testing

Architectural Coating - Model run done for emissions of emergency generator testing

Area Coating - Model run done for emissions of emergency generator testing

Construction Off-road Equipment Mitigation - Tier 4 per BAAQMD

Area Mitigation - Model run done for emissions of emergency generator testing

Consumer Products - Model run done for the testing of emergency generators

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	1050
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Parking	6	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	1050	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	0.00	5.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblOffRoadEquipment	HorsePower	84.00	2,982.00

2.0 Emissions Summary

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	1.0100	16.4161	5.8846	0.0292	0.0000	0.2744	0.2744	0.0000	0.2744	0.2744	0.0000	3,317.6591	3,317.6591	0.0876	0.0000	3,319.8483
Maximum	**1.0100**	**16.4161**	**5.8846**	**0.0292**	**0.0000**	**0.2744**	**0.2744**	**0.0000**	**0.2744**	**0.2744**	**0.0000**	**3,317.6591**	**3,317.6591**	**0.0876**	**0.0000**	**3,319.8483**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2028	0.0000	0.0000	0.0000	0.0292	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,317.6591	3,317.6591	0.0876	0.0000	3,319.8483
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0292**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**3,317.6591**	**3,317.6591**	**0.0876**	**0.0000**	**3,319.8483**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**100.00**	**100.00**	**100.00**	**0.00**	**0.00**	**100.00**	**100.00**	**0.00**	**100.00**	**100.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Emergency Generator Testing	Architectural Coating	1/1/2028	1/7/2028	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Emergency Generator Testing	Generator Sets	4	0.30	2982	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Emergency Generator Testing	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Emergency Generator Testing - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	1.0100	16.4161	5.8846	0.0292		0.2744	0.2744		0.2744	0.2744		3,317.6591	3,317.6591	0.0876		3,319.8483
Total	**1.0100**	**16.4161**	**5.8846**	**0.0292**		**0.2744**	**0.2744**		**0.2744**	**0.2744**		**3,317.6591**	**3,317.6591**	**0.0876**		**3,319.8483**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Emergency Generator Testing - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0292		0.0000	0.0000		0.0000	0.0000	0.0000	3,317.6591	3,317.6591	0.0876		3,319.8483
Total	**0.0000**	**0.0000**	**0.0000**	**0.0292**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**3,317.6591**	**3,317.6591**	**0.0876**		**3,319.8483**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**		**2.0000e-005**

Emergency Generator Testing - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000		2.0000e-005	2.0000e-005	0.0000		2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**2.0000e-005**	**2.0000e-005**	**0.0000**		**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Existing (Baseline)

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	169.00	Room	2.00	57,623.00	0
Parking Lot	32.75	1000sqft	0.91	32,748.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2021
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Model run to account for existing conditions.

Land Use - Model run to account for existing conditions. Parking estimated from google earth. Lot acreage updated to match that for the Project.

Construction Phase - Model run to account for existing conditions. No construction.

Off-road Equipment - Model run to account for existing conditions. No construction.

Trips and VMT - Model run to account for existing conditions. No construction.

Energy Use - Model run to account for existing conditions- historical data used.

Mobile Land Use Mitigation -

Area Mitigation -

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	PhaseEndDate	4/7/2023	3/24/2023
tblEnergyUse	LightingElect	3.82	3.13
tblEnergyUse	LightingElect	0.88	0.35
tblEnergyUse	T24E	2.95	1.95
tblEnergyUse	T24NG	31.80	29.09
tblLandUse	LandUseSquareFeet	245,388.00	57,623.00
tblLandUse	LotAcreage	5.63	2.00
tblLandUse	LotAcreage	0.75	0.91
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	0.00
tblTripsAndVMT	WorkerTripLength	10.80	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00

2.0 Emissions Summary

Existing (Baseline) - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Energy	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Mobile	3.3219	2.9281	26.8459	0.0559	5.6410	0.0485	5.6895	1.5014	0.0453	1.5467		5,675.5088	5,675.5088	0.3799	0.2503	5,759.6008
Total	**4.7986**	**3.4889**	**27.3374**	**0.0593**	**5.6410**	**0.0911**	**5.7322**	**1.5014**	**0.0880**	**1.5894**		**6,348.2702**	**6,348.2702**	**0.3929**	**0.2627**	**6,436.3627**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Energy	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Mobile	3.0957	2.5224	23.0474	0.0457	4.5739	0.0405	4.6144	1.2174	0.0378	1.2552		4,638.6080	4,638.6080	0.3407	0.2182	4,712.1559
Total	**4.5724**	**3.0832**	**23.5390**	**0.0490**	**4.5739**	**0.0832**	**4.6571**	**1.2174**	**0.0805**	**1.2979**		**5,311.3693**	**5,311.3693**	**0.3537**	**0.2306**	**5,388.9178**

Existing (Baseline) - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.71**	**11.63**	**13.89**	**17.23**	**18.92**	**8.76**	**18.76**	**18.92**	**8.50**	**18.34**	**0.00**	**16.33**	**16.33**	**9.97**	**12.22**	**16.27**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/25/2023	3/24/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.91

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 86,435; Non-Residential Outdoor: 28,812; Striped Parking Area: 1,965 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	0.00	0.00	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Existing (Baseline) - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Existing (Baseline) - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.0957	2.5224	23.0474	0.0457	4.5739	0.0405	4.6144	1.2174	0.0378	1.2552		4,638.6080	4,638.6080	0.3407	0.2182	4,712.1559
Unmitigated	3.3219	2.9281	26.8459	0.0559	5.6410	0.0485	5.6895	1.5014	0.0453	1.5467		5,675.5088	5,675.5088	0.3799	0.2503	5,759.6008

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,412.84	1,384.11	1005.55	2,565,954	2,080,561
Parking Lot	0.00	0.00	0.00		
Total	1,412.84	1,384.11	1,005.55	2,565,954	2,080,561

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.503496	0.067796	0.219620	0.135110	0.024059	0.005574	0.010071	0.002314	0.001646	0.000661	0.026822	0.000442	0.002389
Parking Lot	0.503496	0.067796	0.219620	0.135110	0.024059	0.005574	0.010071	0.002314	0.001646	0.000661	0.026822	0.000442	0.002389

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
NaturalGas Unmitigated	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	5718.1	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0617**	**0.5606**	**0.4709**	**3.3600e-003**		**0.0426**	**0.0426**		**0.0426**	**0.0426**		**672.7172**	**672.7172**	**0.0129**	**0.0123**	**676.7148**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	5.7181	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0617**	**0.5606**	**0.4709**	**3.3600e-003**		**0.0426**	**0.0426**		**0.0426**	**0.0426**		**672.7172**	**672.7172**	**0.0129**	**0.0123**	**676.7148**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Unmitigated	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9300e-003	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Total	**1.4150**	**1.9000e-004**	**0.0207**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0442**	**0.0442**	**1.2000e-004**		**0.0471**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9300e-003	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Total	**1.4150**	**1.9000e-004**	**0.0207**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0442**	**0.0442**	**1.2000e-004**		**0.0471**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Existing (Baseline)

San Mateo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	169.00	Room	2.00	57,623.00	0
Parking Lot	32.75	1000sqft	0.91	32,748.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2021
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Model run to account for existing conditions.

Land Use - Model run to account for existing conditions. Parking estimated from google earth. Lot acreage updated to match that for the Project.

Construction Phase - Model run to account for existing conditions. No construction.

Off-road Equipment - Model run to account for existing conditions. No construction.

Trips and VMT - Model run to account for existing conditions. No construction.

Energy Use - Model run to account for existing conditions- historical data used.

Mobile Land Use Mitigation -

Area Mitigation -

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	PhaseEndDate	4/7/2023	3/24/2023
tblEnergyUse	LightingElect	3.82	3.13
tblEnergyUse	LightingElect	0.88	0.35
tblEnergyUse	T24E	2.95	1.95
tblEnergyUse	T24NG	31.80	29.09
tblLandUse	LandUseSquareFeet	245,388.00	57,623.00
tblLandUse	LotAcreage	5.63	2.00
tblLandUse	LotAcreage	0.75	0.91
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	0.00
tblTripsAndVMT	WorkerTripLength	10.80	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00

2.0 Emissions Summary

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Energy	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Mobile	3.1361	3.3873	29.5958	0.0535	5.6410	0.0485	5.6895	1.5014	0.0453	1.5467		5,431.7755	5,431.7755	0.4344	0.2770	5,525.1926
Total	**4.6128**	**3.9481**	**30.0874**	**0.0568**	**5.6410**	**0.0912**	**5.7322**	**1.5014**	**0.0880**	**1.5894**		**6,104.5368**	**6,104.5368**	**0.4474**	**0.2894**	**6,201.9545**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Energy	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Mobile	2.8987	2.9213	25.8377	0.0437	4.5739	0.0405	4.6145	1.2174	0.0378	1.2553		4,442.0083	4,442.0083	0.3946	0.2420	4,523.9972
Total	**4.3754**	**3.4821**	**26.3293**	**0.0471**	**4.5739**	**0.0832**	**4.6571**	**1.2174**	**0.0805**	**1.2979**		**5,114.7697**	**5,114.7697**	**0.4076**	**0.2544**	**5,200.7591**

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	5.15	11.80	12.49	17.14	18.92	8.76	18.76	18.92	8.50	18.34	0.00	16.21	16.21	8.90	12.10	16.14

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/25/2023	3/24/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.91

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 86,435; Non-Residential Outdoor: 28,812; Striped Parking Area: 1,965 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	0.00	0.00	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Architectural Coating - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.8987	2.9213	25.8377	0.0437	4.5739	0.0405	4.6145	1.2174	0.0378	1.2553		4,442.0083	4,442.0083	0.3946	0.2420	4,523.9972
Unmitigated	3.1361	3.3873	29.5958	0.0535	5.6410	0.0485	5.6895	1.5014	0.0453	1.5467		5,431.7755	5,431.7755	0.4344	0.2770	5,525.1926

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,412.84	1,384.11	1005.55	2,565,954	2,080,561
Parking Lot	0.00	0.00	0.00		
Total	1,412.84	1,384.11	1,005.55	2,565,954	2,080,561

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.503496	0.067796	0.219620	0.135110	0.024059	0.005574	0.010071	0.002314	0.001646	0.000661	0.026822	0.000442	0.002389
Parking Lot	0.503496	0.067796	0.219620	0.135110	0.024059	0.005574	0.010071	0.002314	0.001646	0.000661	0.026822	0.000442	0.002389

5.0 Energy Detail

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
NaturalGas Unmitigated	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	5718.1	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0617**	**0.5606**	**0.4709**	**3.3600e-003**		**0.0426**	**0.0426**		**0.0426**	**0.0426**		**672.7172**	**672.7172**	**0.0129**	**0.0123**	**676.7148**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	5.7181	0.0617	0.5606	0.4709	3.3600e-003		0.0426	0.0426		0.0426	0.0426		672.7172	672.7172	0.0129	0.0123	676.7148
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0617**	**0.5606**	**0.4709**	**3.3600e-003**		**0.0426**	**0.0426**		**0.0426**	**0.0426**		**672.7172**	**672.7172**	**0.0129**	**0.0123**	**676.7148**

6.0 Area Detail

Existing (Baseline) - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Unmitigated	1.4151	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9300e-003	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Total	**1.4150**	**1.9000e-004**	**0.0207**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0442**	**0.0442**	**1.2000e-004**		**0.0471**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1684					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2447					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.9300e-003	1.9000e-004	0.0207	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005		0.0442	0.0442	1.2000e-004		0.0471
Total	**1.4150**	**1.9000e-004**	**0.0207**	**0.0000**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**		**0.0442**	**0.0442**	**1.2000e-004**		**0.0471**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

Health Risk Analysis Output Files

Construction Health Risk Model Outputs

Source Pathway - Source Inputs

Point Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/s]	Gas Exit Temp. [K]	Gas Exit Velocity [m/s]	Stack Inside Diameter [m]
POINT	STCK1	552511.93 Rooftop Vent	4167695.94	5.41	80.77	1.00000	291.00	5.00	1.00
POINT	STCK2	552539.00 Generator 1	4167725.50	8.52	1.37	1.00000	291.00	5.00	1.00
POINT	STCK3	552552.88 Generator 2	4167717.83	8.39	1.37	1.00000	291.00	5.00	1.00
POINT	STCK4	552567.68 Generator 3	4167709.24	7.46	1.37	1.00000	291.00	5.00	1.00
POINT	STCK5	552584.31 Generator 4	4167699.92	6.48	1.37	1.00000	291.00	5.00	1.00

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE2 (Offsite HDT)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	1.00000		552492.48	4167647.32	4.96	0.00
			552492.48	4167641.23	4.97	0.00
			552564.31	4167642.75	4.82	0.00
			552591.67	4167656.44	5.38	0.00
			552614.10	4167684.18	6.23	0.00
			552628.92	4167710.41	6.89	0.00
			552498.94	4167786.42	5.13	0.00
			552456.75	4167789.84	5.23	0.00
			552412.66	4167771.98	5.17	0.00
			552333.61	4167675.06	6.59	0.00
			552310.04	4167667.08	5.52	0.00
			552294.08	4167666.70	5.17	0.00
			552286.48	4167670.88	5.26	0.00

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000033	552497.47	4167641.34	4.97	0.00	0.07143	22.15		20.60	2.37
	L0000034	552541.76	4167642.28	4.77	0.00	0.07143	22.15		20.60	2.37
	L0000035	552583.76	4167652.48	5.21	0.00	0.07143	22.15		20.60	2.37
	L0000036	552613.96	4167684.01	6.22	0.00	0.07143	22.15		20.60	2.37
	L0000037	552616.88	4167717.45	7.70	0.00	0.07143	22.15		20.60	2.37
	L0000038	552578.64	4167739.81	10.57	0.00	0.07143	22.15		20.60	2.37
	L0000039	552540.39	4167762.18	5.94	0.00	0.07143	22.15		20.60	2.37
	L0000040	552502.15	4167784.54	5.33	0.00	0.07143	22.15		20.60	2.37
	L0000041	552458.50	4167789.70	5.23	0.00	0.07143	22.15		20.60	2.37
	L0000042	552417.32	4167773.86	5.19	0.00	0.07143	22.15		20.60	2.37
	L0000043	552387.83	4167741.54	13.54	0.00	0.07143	22.15		20.60	2.37
	L0000044	552359.83	4167707.21	9.49	0.00	0.07143	22.15		20.60	2.37
	L0000045	552330.95	4167674.16	6.50	0.00	0.07143	22.15		20.60	2.37
	L0000046	552288.59	4167669.72	5.26	0.00	0.07143	22.15		20.60	2.37

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
STCK5	STCK5
STCK4	STCK4
STCK3	STCK3
STCK2	STCK2
STCK1	STCK1
SLINE2	SLINE2
ALL	All Sources Included

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	551401.43	4166490.10	30	30	50.00	50.00

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	552142.68	4167489.68		6.90	
2	552027.56	4167539.00		8.56	
3	552116.68	4167425.27		6.91	
4	552243.56	4167902.46		7.81	

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	552500.01	4167748.47	FENCEPRI	5.35	
2	552434.92	4167671.17	FENCEPRI	5.30	
3	552439.57	4167656.35	FENCEPRI	5.30	
4	552446.25	4167654.61	FENCEPRI	5.19	
5	552491.00	4167653.74	FENCEPRI	5.22	
6	552568.01	4167656.06	FENCEPRI	5.03	
7	552593.87	4167674.66	FENCEPRI	5.57	
8	552602.88	4167692.09	FENCEPRI	6.73	
9	552499.72	4167749.92	FENCEPRI	5.37	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	UCART1	Receptors generated from Uniform Cartesian Grid

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\..\modeling\E Grand Ave\SFIAP_met\724940.SFC

Format Type: Default AERMET format

Profile Met Data

Filename: ..\..\modeling\E Grand Ave\SFIAP_met\724940.PFL

Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 9.14 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2009			SAN FRANCISCO/INT'L ARPT
Upper Air		2009			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2009 Start Hour: 1 End Date: 1/2/2014 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Operational Health Risk Model Outputs

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME

Source: SLINE1 (Onsite construction)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	0.00E+0		552611.22	4167692.25	6.83	0.00
			552584.84	4167658.65	5.36	0.00
			552556.84	4167649.54	4.75	0.00
			552442.01	4167647.91	5.15	0.00
			552437.11	4167650.24	5.26	0.00
			552428.94	4167660.05	5.58	0.00
			552427.77	4167668.21	5.51	0.00
			552498.96	4167758.53	5.41	0.00
			552610.75	4167692.72	6.91	0.00

Source Type: LINE VOLUME

Source: SLINE2 (Vendors, construction worker + hauling)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	1.00000		552492.48	4167647.32	4.96	0.00
			552492.48	4167641.23	4.97	0.00
			552564.31	4167642.75	4.82	0.00
			552591.67	4167656.44	5.38	0.00
			552614.10	4167684.18	6.23	0.00
			552628.92	4167710.41	6.89	0.00
			552498.94	4167786.42	5.13	0.00
			552456.75	4167789.84	5.23	0.00
			552412.66	4167771.98	5.17	0.00
			552333.61	4167675.06	6.59	0.00
			552310.04	4167667.08	5.52	0.00
			552294.08	4167666.70	5.17	0.00
			552286.48	4167670.88	5.26	0.00

Source Pathway - Source Inputs

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE1	L0000001	552604.38	4167683.54	6.15	0.00	0.00E+0	22.15		20.28	2.37
	L0000002	552573.47	4167654.95	5.11	0.00	0.00E+0	22.15		20.28	2.37
	L0000003	552530.73	4167649.17	4.83	0.00	0.00E+0	22.15		20.28	2.37
	L0000004	552487.13	4167648.55	5.03	0.00	0.00E+0	22.15		20.28	2.37
	L0000005	552443.53	4167647.93	5.17	0.00	0.00E+0	22.15		20.28	2.37
	L0000006	552437.46	4167680.50	5.29	0.00	0.00E+0	22.15		20.28	2.37
	L0000007	552464.45	4167714.74	5.30	0.00	0.00E+0	22.15		20.28	2.37
	L0000008	552491.43	4167748.99	5.51	0.00	0.00E+0	22.15		20.28	2.37
	L0000009	552526.06	4167742.58	5.73	0.00	0.00E+0	22.15		20.28	2.37
	L0000010	552563.63	4167720.46	10.44	0.00	0.00E+0	22.15		20.28	2.37
	L0000011	552601.21	4167698.34	7.54	0.00	0.00E+0	22.15		20.28	2.37

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000033	552497.47	4167641.34	4.97	0.00	0.07143	22.15		20.60	2.37
	L0000034	552541.76	4167642.28	4.77	0.00	0.07143	22.15		20.60	2.37
	L0000035	552583.76	4167652.48	5.21	0.00	0.07143	22.15		20.60	2.37
	L0000036	552613.96	4167684.01	6.22	0.00	0.07143	22.15		20.60	2.37
	L0000037	552616.88	4167717.45	7.70	0.00	0.07143	22.15		20.60	2.37
	L0000038	552578.64	4167739.81	10.57	0.00	0.07143	22.15		20.60	2.37
	L0000039	552540.39	4167762.18	5.94	0.00	0.07143	22.15		20.60	2.37
	L0000040	552502.15	4167784.54	5.33	0.00	0.07143	22.15		20.60	2.37
	L0000041	552458.50	4167789.70	5.23	0.00	0.07143	22.15		20.60	2.37
	L0000042	552417.32	4167773.86	5.19	0.00	0.07143	22.15		20.60	2.37
	L0000043	552387.83	4167741.54	13.54	0.00	0.07143	22.15		20.60	2.37

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000044	552359.83	4167707.21	9.49	0.00	0.07143	22.15		20.60	2.37
	L0000045	552330.95	4167674.16	6.50	0.00	0.07143	22.15		20.60	2.37
	L0000046	552288.59	4167669.72	5.26	0.00	0.07143	22.15		20.60	2.37

Source Pathway

Building Downwash Information

Option not in use

Emission Rate Units for Output

For Concentration

Unit Factor:	1E6
Emission Unit Label:	GRAMS/SEC
Concentration Unit Label:	MICROGRAMS/M**3

Source Groups

Source Group ID:	List of Sources in Group (Source Range or Single Sources)
SLINE2	SLINE2
SLINE1	SLINE1
ALL	All Sources Included

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	551773.50	4166989.63	30	30	50.00	50.00

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	552142.68	4167489.68		6.90	
2	552027.56	4167539.00		8.56	
3	552116.68	4167425.27		6.91	
4	552243.56	4167902.46		7.81	

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	552487.63	4167757.73	FENCEPRI	5.66	
2	552424.22	4167671.71	FENCEPRI	5.56	
3	552437.00	4167647.62	FENCEPRI	5.19	
4	552562.84	4167648.11	FENCEPRI	4.77	
5	552609.04	4167692.35	FENCEPRI	6.83	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors
2	UCART1	Receptors generated from Uniform Cartesian Grid

Meteorology Pathway

Met Input Data

Surface Met Data

Filename: ..\Lakes AERMOD Outputs\a-Met Data\SAN FRANCISCO INTERNATIONAL AIRPORT\724940.SFC

Format Type: Default AERMET format

Profile Met Data

Filename: ..\Lakes AERMOD Outputs\a-Met Data\SAN FRANCISCO INTERNATIONAL AIRPORT\724940.PFL

Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 9.14 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2009			SAN FRANCISCO/INT'L ARPT
Upper Air		2009			OAKLAND/WSO AP

Data Period

Data Period to Process

Start Date: 1/1/2009 Start Hour: 1 End Date: 1/2/2014 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Plant Boundary Summary Results

C:\Users\agne\Desktop\South SF- Construction\South SF- Construction.

Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	174.95103	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	2/3/2012, 7
1-HR	1ST	151.40468	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	1/7/2013, 22
1-HR	1ST	171.77649	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	12/17/2013, 2
1-HR	1ST	182.11601	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	1/21/2009, 6
1-HR	1ST	193.95583	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	1/3/2013, 18
24-HR	1ST	68.85549	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	12/31/2011, 24
24-HR	1ST	71.34411	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	11/3/2009, 24
24-HR	1ST	64.85353	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	12/17/2009, 24
24-HR	1ST	71.26890	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	1/7/2009, 24
24-HR	1ST	69.09224	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	11/16/2009, 24
24-HR	6TH	64.40209	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	11/14/2012, 24
24-HR	6TH	64.77118	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	12/3/2012, 24
24-HR	6TH	59.95815	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	12/27/2010, 24
24-HR	6TH	64.06628	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	11/3/2009, 24
24-HR	6TH	62.56222	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	11/29/2010, 24
ANNUAL		27.07699	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	
ANNUAL		27.20815	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	
ANNUAL		24.92537	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	
ANNUAL		23.86320	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	
ANNUAL		27.88478	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	

Plant Boundary Summary Results

C:\Users\agne\Desktop\South SF- Construction\South SF- Construction.

Concentration - Source Group: SLINE1

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.00000	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	
1-HR	1ST	0.00000	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	
1-HR	1ST	0.00000	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	
1-HR	1ST	0.00000	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	
1-HR	1ST	0.00000	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	
24-HR	1ST	0.00000	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	
24-HR	1ST	0.00000	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	
24-HR	1ST	0.00000	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	
24-HR	1ST	0.00000	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	
24-HR	1ST	0.00000	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	
24-HR	6TH	0.00000	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	
24-HR	6TH	0.00000	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	
24-HR	6TH	0.00000	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	
24-HR	6TH	0.00000	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	
24-HR	6TH	0.00000	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	
ANNUAL		0.00000	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	
ANNUAL		0.00000	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	
ANNUAL		0.00000	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	
ANNUAL		0.00000	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	
ANNUAL		0.00000	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	

Plant Boundary Summary Results

C:\Users\agne\Desktop\South SF- Construction\South SF- Construction.

Concentration - Source Group: SLINE2

Averaging Period	Rank	Peak	Units	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	174.95103	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	2/3/2012, 7
1-HR	1ST	151.40468	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	1/7/2013, 22
1-HR	1ST	171.77649	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	12/17/2013, 2
1-HR	1ST	182.11601	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	1/21/2009, 6
1-HR	1ST	193.95583	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	1/3/2013, 18
24-HR	1ST	68.85549	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	12/31/2011, 24
24-HR	1ST	71.34411	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	11/3/2009, 24
24-HR	1ST	64.85353	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	12/17/2009, 24
24-HR	1ST	71.26890	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	1/7/2009, 24
24-HR	1ST	69.09224	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	11/16/2009, 24
24-HR	6TH	64.40209	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	11/14/2012, 24
24-HR	6TH	64.77118	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	12/3/2012, 24
24-HR	6TH	59.95815	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	12/27/2010, 24
24-HR	6TH	64.06628	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	11/3/2009, 24
24-HR	6TH	62.56222	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	11/29/2010, 24
ANNUAL		27.07699	ug/m^3	552487.63	4167757.73	5.66	0.00	357.95	
ANNUAL		27.20815	ug/m^3	552424.22	4167671.71	5.56	0.00	357.95	
ANNUAL		24.92537	ug/m^3	552437.00	4167647.62	5.19	0.00	357.95	
ANNUAL		23.86320	ug/m^3	552562.84	4167648.11	4.77	0.00	357.95	
ANNUAL		27.88478	ug/m^3	552609.04	4167692.35	6.83	0.00	357.95	

Construction Health Risk Calculations

Table A-1. Modeled Roadway Dimensions

Roadway Link Description	AERMOD ID	Length (miles)	Width (m)	Area (m^2)
Link 1 Onsite	Link1	0.28	3.7	1,667.28

(1) All roadways modeled with standard 3.7 meter width per lane.

(2) Site to Montague captures eastbound and westbound traffic

Table A-2. Total Haul and Vendor Trip Information

Trip Type	Trips/Day
Vendor Heavy Duty Trucks (Building Construction)	22333

Note: All grading material assumed to remain on site and no new material will be brought onsite

Daily truck trips from CalEEMod for building and construction and materials

Table A-3. Modeled Roadway Trip Information

	Truck Trips		
Roadway Link	Percentage Total Trips	Hourly	Average Daily
Link 1 Onsite	100%	2791.6	22333

(1) Offiste truck emissions calcuated for roadway within .36 miles of the site.

Table A-4. Onroad DPM Emission Rates

	DPM Emission Rates[1] (g/mi)					
Vehicle Type	Idle[2]	5 mph	15 mph	45 mph	Onsite Composite[4]	Offsite Composite[5]
HHDT	0.039	0.041	0.024	0.020	0.027	0.021
MHDT	0.018	0.069	0.048	0.039	0.051	0.039
Station Customer Composite[3]	0.028	0.055	0.036	0.030	0.039	0.030

(1) DPM Emission Rates conservativly represented using EMFAC2017 PM10 Exhaust emission factors for 2022.

(2) Idle emission rates in grams per minute.

(3) Vender diesel vehicle fleet mix estimated at 50% HHDT 50% MDV per CalEEMod.

(4) Onsite Composite factor is 85% @ 15 mph + 15% @ 5 mph + 1 minute idle per mile

(5) Offsite Composite factor is 80% @ 45 mph + 10% @ 15 mph + 10% @ 5 mph + .1 minute idle per mile

Table A-5. Modeled Roadway Emission Rates

Roadway Link	DPM Emissions[1,2]	
	Peak Hourly (lbs/hr)	Annual (lbs/yr)
Link 1 Onsite	0.0680	135.9048

(1) Peak Hourly Emissions = DPM Emission Rate (g/mi) * Peak Hourly Trips * Link Length (mi) / 453.6 (g/lb)

(2) Annual Emissions = DPM Emission Rate (g/mi) * Daily Trips * Link Length (mi) * 365 (days/yr) / 453.6 (g/lb)

Table A-6. Construction Phase Information

Phase Name	Start Date	End Date
Demolition	1/1/2024	3/1/2024
Site Preperation	3/2/2024	3/31/2024
Grading	4/1/2024	2/1/2025
Building Construction	1/1/2026	1/1/2028
Paving	1/1/2026	12/31/2027
Architectural Coating	1/1/2026	12/31/2027

Source: CalEEMod - Annual Consite Construction

Table A-7. Construction Offroad Equipment List

Phase Name	Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Excavators	2	8	158	0.38
Demolition	Signal Boards	2	2	6	0.82
Demolition	Skid Steer Loaders	1	8	65	0.37
Demolition	Tractors/Loaders/Backhoes	1	8	97	0.37
Site Preparation	Bore/Drill Rigs	2	8	221	0.5
Site Preparation	Concrete/Industrial Saws	1	8	81	0.73
Site Preparation	Excavators	1	7	158	0.38
Site Preparation	Other Construction Equipment	3	7	172	0.42
Site Preparation	Rollers	1	8	16	0.38
Site Preparation	Rough Terrain Forklifts	2	8	100	0.4
Site Preparation	Rubber Tired Loaders	1	8	203	0.36
Site Preparation	Skid Steer Loaders	2	8	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	7	97	0.37
Grading	Concrete/Industrial Saws	1	8	81	0.73
Grading	Graders	1	8	187	0.41
Grading	Pavers	1	8	130	0.42
Grading	Paving Equipment	1	8	132	0.36
Grading	Rollers	1	8	80	0.38
Grading	Rubber Tired Loaders	1	8	203	0.36
Grading	Tractors/Loaders/Backhoes	2	7	97	0.37
Building Construction	Cranes	2	8	231	0.29

Building Construction	Forklifts	2	7	89	0.2
Building Construction	Other Construction Equipment	2	8	172	0.42
Building Construction	Signal Boards	2	8	6	0.82
Building Construction	Skid Steer Loaders	1	8	65	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6	97	0.37
Paving	Concrete/Industrial Saws	1	8	81	0.73
Paving	Graders	1	8	187	0.41
Paving	Pavers	1	8	130	0.42
Paving	Paving Equipment	1	8	132	0.36
Paving	Rollers	1	8	80	0.38
Paving	Rubber Tired Dozers	1	8	247	0.4
Architectural Coating	Air Compressors	1	6	78	0.48

Source: CalEEMod - Annual Onsite Construction

Table A-8 Annual Onsite Offroad DPM Exhaust Construction Emissions by Phase

Phase	Emissions (tons/yr)					Total (tons)
	2024	2025	2026	2027	2028	
Demolition	0.00057	0.0000	0.0000	0.0000	0.0000	0.00057
Site Preparation	0.0011	0.0000	0.0000	0.0000	0.0000	0.0011
Grading	0.0056	0.0007	0.0000	0.0000	0.0000	0.0063
Building Construction	0.0000	0.0000	0.0066	0.0066	0.0000	0.0133
Paving	0.0000	0.0000	0.0068	0.0068	0.0000	0.0135
Architectural Coating	0.0000	0.0000	0.0005	0.0005	0.0000	0.0010
Annual DPM Emissions	**0.0067**	**0.0007**	**0.0139**	**0.0139**	**0.0000**	**0.0358**

Source: CalEEMod - Annual Onsite Construction

Note: Emissions modleing done for five years of construction

Operational Health Risk Calculations

Table B-1. Modeled Roadway Dimensions

Roadway Link Description	AERMOD ID	Length (miles)	Width (m)	Area (m^2)
Link 1 Offsite	Link1	0.28	3.7	1,667.28

(1) All roadways modeled with standard 3.7 meter width per lane.

(2) Site to Montague captures eastbound and westbound traffic

Table B-2. Total Haul and Vendor Trip Information

Trip Type	Trips/Day
Vendor Heavy Duty Trucks (Building Construction)	40

Note: All grading material assumed to remain on site and no new material will be brought onsite

Daily truck trips from CalEEMod for building and construction and materials

Table B-3. Modeled Roadway Trip Information

	Truck Trips		
Roadway Link	Percentage Total Trips	Hourly	Average Daily
Link 1 Offsite	100%	5.0	40

(1) Offiste truck emissions calcuated for roadway within .36 miles of the site.

Table B-4. Onroad DPM Emission Rates

	DPM Emission Rates[1] (g/mi)					
Vehicle Type	Idle[2]	5 mph	15 mph	45 mph	Onsite Composite[4]	Offsite Composite[5]
HHDT	0.039	0.041	0.024	0.020	0.027	0.021
MHDT	0.018	0.069	0.048	0.039	0.051	0.039
Station Customer Composite[3]	0.028	0.055	0.036	0.030	0.039	0.030

(1) DPM Emission Rates conservativly represented using EMFAC2017 PM10 Exhaust emission factors for 2022.

(2) Idle emission rates in grams per minute.

(3) Vender diesel vehicle fleet mix estimated at 50% HHDT 50% MDV per CalEEMod.

(4) Onsite Composite factor is 85% @ 15 mph + 15% @ 5 mph + 1 minute idle per mile

(5) Offsite Composite factor is 80% @ 45 mph + 10% @ 15 mph + 10% @ 5 mph + .1 minute idle per mile

Table B-5. Modeled Roadway Emission Rates

Roadway Link	DPM Emissions[1,2]	
	Peak Hourly (lbs/hr)	Annual (lbs/yr)
Link 1 Offsite	0.0001	0.2434

(1) Peak Hourly Emissions = DPM Emission Rate (g/mi) * Peak Hourly Trips * Link Length (mi) / 453.6 (g/lb)

(2) Annual Emissions = DPM Emission Rate (g/mi) * Daily Trips * Link Length (mi) * 365 (days/yr) / 453.6 (g/lb)

Table B-6. Representative Chemical Usage Data					
		Chemical Usage		Vapor	
Compound	CAS	Annual (lbs)	Hourly (lbs)	Pressure (mm Hg)	% Emitted
Arsenic and compounds	7440-38-2	1.10E-01	1.10E-02	-	-
Benzene	71-43-2	16.40	1.64	75.00	0.75
Cadmium and compounds	7440-43-9	7.77	7.77E-01	-	-
Carbon tetrachloride	56-23-5	7.22	7.22E-01	91.00	0.91
Chloroform	67-66-3	438.00	43.80	156.70	1.57
Dibromo-3-chloropropane, 1,2-	96-12-8	1.10E-01	1.10E-02	0.80	0.01
Dioxane, 1,4-	123-91-1	33.80	3.38	27.00	0.27
Ethylene dibromide	106-93-4	5.86	5.86E-01	11.70	0.12
Ethylene dibromide	107-06-2	33.20	3.32	100.00	1.00
Formaldehyde	50-00-0	1.31E-02	1.31E-03	1.30	0.01
Glutaraldehyde	111-30-8	13.50	1.35	17.00	0.17
Manganese and Compounds	7439-96-5	24.30	2.43	0.09	-
Methylene chloride	75-09-2	717.00	71.70	3.50	0.04
Mercury and compounds	7439-97-6	7.49	7.49E-01	1.20	0.01
Potassium Bromate	1-2-7758	2.20	2.20E-01	-	-
Propylene	75-56-9	189.00	18.90	538.00	5.38

Source: Health Risk Analysis for Emissions of Air Toxics from Operational Sources University of California, San Francisco Mission Bay Site Genentech Hall Fume Hood Risk Screen December 7, 2011

Additional Data and Equations

Data Source Lab Area	385,000	Square Feet
Project Maximum Lab Area	836,865	Square Feet

Equation 1: Emissions = Chemical Usage * % Emitted * Project Lab Area / Data Source Lab Area

Table B-7. Calculated Emissions From Project Laboratories			
		Emissions	
Compound	CAS	Annual (lbs)	Hourly (lbs)
Arsenic and compounds	7440-38-2	-	-
Benzene	71-43-2	0.27	0.03
Cadmium and compounds	7440-43-9	-	-
Carbon tetrachloride	56-23-5	0.14	-
Chloroform	67-66-3	14.95	1.49
Dibromo-3-chloropropane, 1,2-	96-12-8	-	-
Dioxane, 1,4-	123-91-1	0.20	0.02

Ethylene dibromide	106-93-4	0.02	-
Ethylene dibromide	107-06-2	0.72	0.07
Formaldehyde	50-00-0	-	-
Glutaraldehyde	111-30-8	0.05	0.00
Manganese and Compounds	7439-96-5	-	-
Methylene chloride	75-09-2	0.62	0.06
Mercury and compounds	7439-97-6	0.00	-
Potassium Bromate	1-2-7758	-	-
Propylene	75-56-9	22.10	2.21

Note: Calculated emissions were input into HARP2 as point sources.

Table B-8. Emergency Generator Operational Data						
Source	Number	Tier	Standby Rating (kW)	Load Factor	Fuel Type	Hours per Year (ea.)
Cummings DQKAB	4	4i	2000	0.25	diesel	100

Source: Tier 4 interim compliant (without DPF) after treatment QSK50 and QSK60 series engines 1250 kW - 2250 kW 60 Hz (Cummings, 2018)

Table B-9. Tier 4i Generator Emission Factors						
	Tier 4 Standards for Engines Over 750 HP (g/bhp-hr)					
	2011 Interim			2015 Final		
Description	PM	NOx	NMHC	PM	NOx	NMHC
generators sets < 1200 hp	0.075	2.60	0.30	0.02	0.50	0.14
generators sets > 1200 hp	0.075	2.60	0.30	0.02	0.50	0.14
all other equipment	0.075	2.60	0.30	0.02	0.50	0.14

Source: https://www.govinfo.gov/content/pkg/FR-2004-06-29/pdf/04-11293.pdf

Equations

lbs/day = Hrs/day * Rating (kW) * 1.341 (bhp/kW) * Load Factor (%) * EF (g/bhp-hr) / 453.6 (g/lb) * pieces (#)

lbs/yr = lbs/day * Days per Year

Table B-10. Calculated Emissions from Generators		
	Particulate Matter Emissions	
Source	lbs/hr	lb/yr
Cummings DQKAB	0.44	44.35
Emissions / Point Source (4 total)	**0.11**	**11.09**

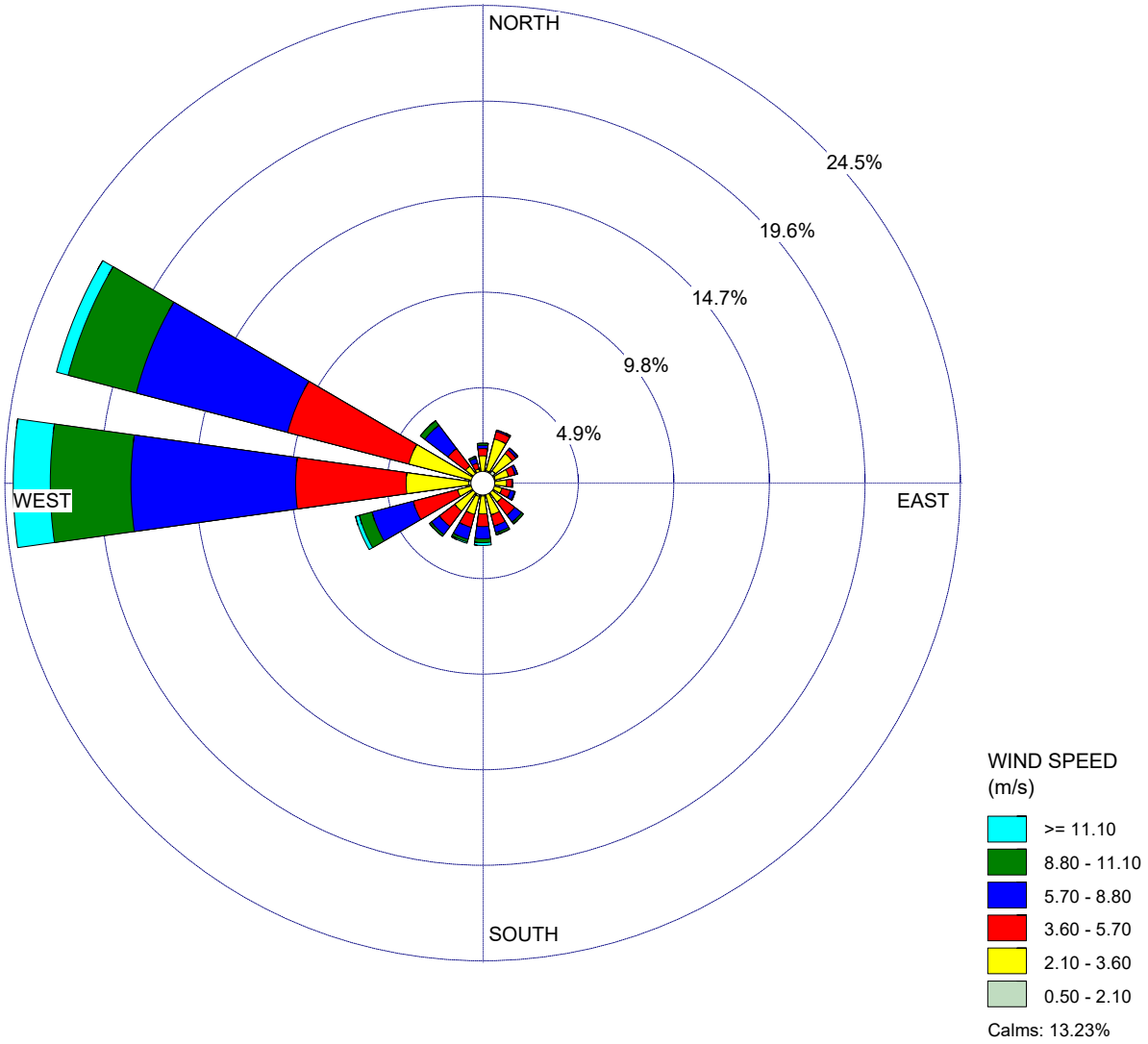
Figures

WIND ROSE PLOT:

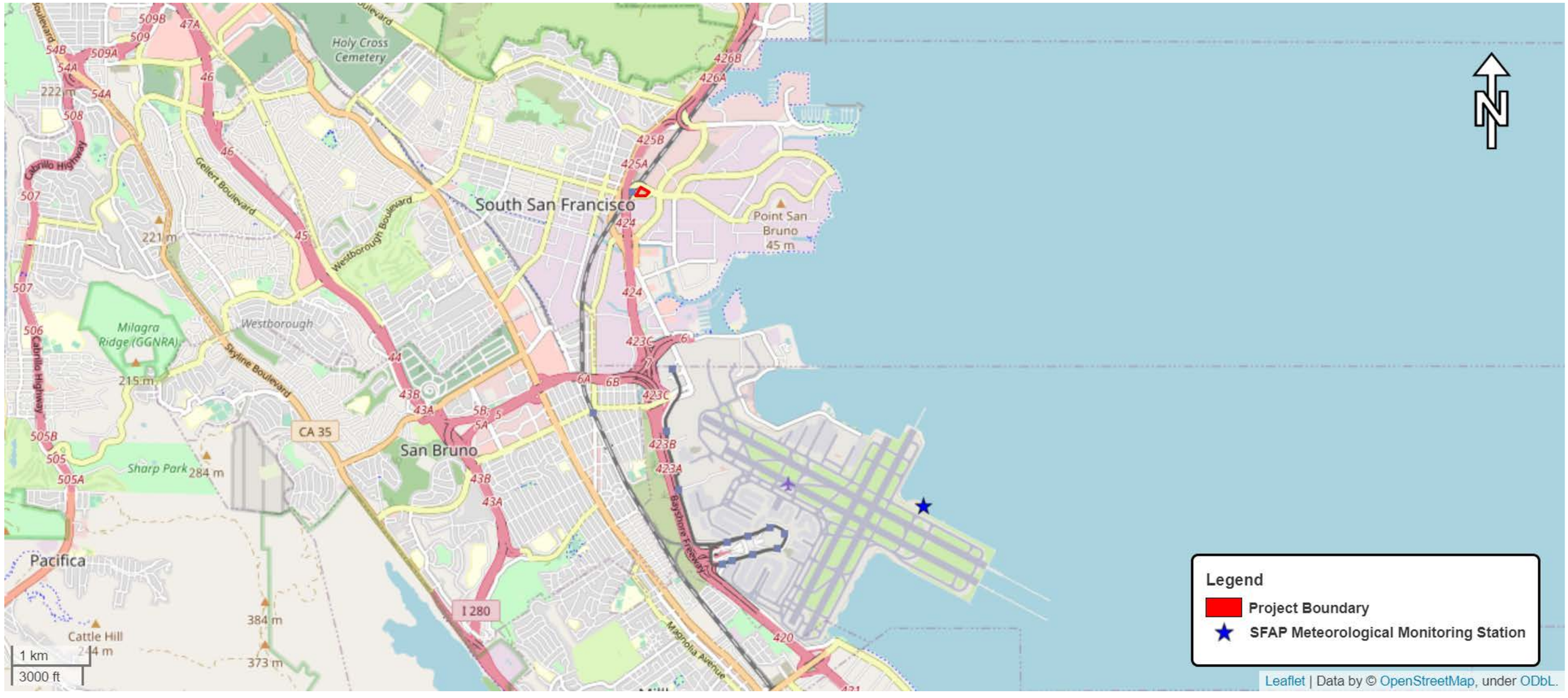
Station #23234 - SAN FRANCISCO/INT'L ARPT, CA

DISPLAY:

Wind Speed
Direction (blowing from)

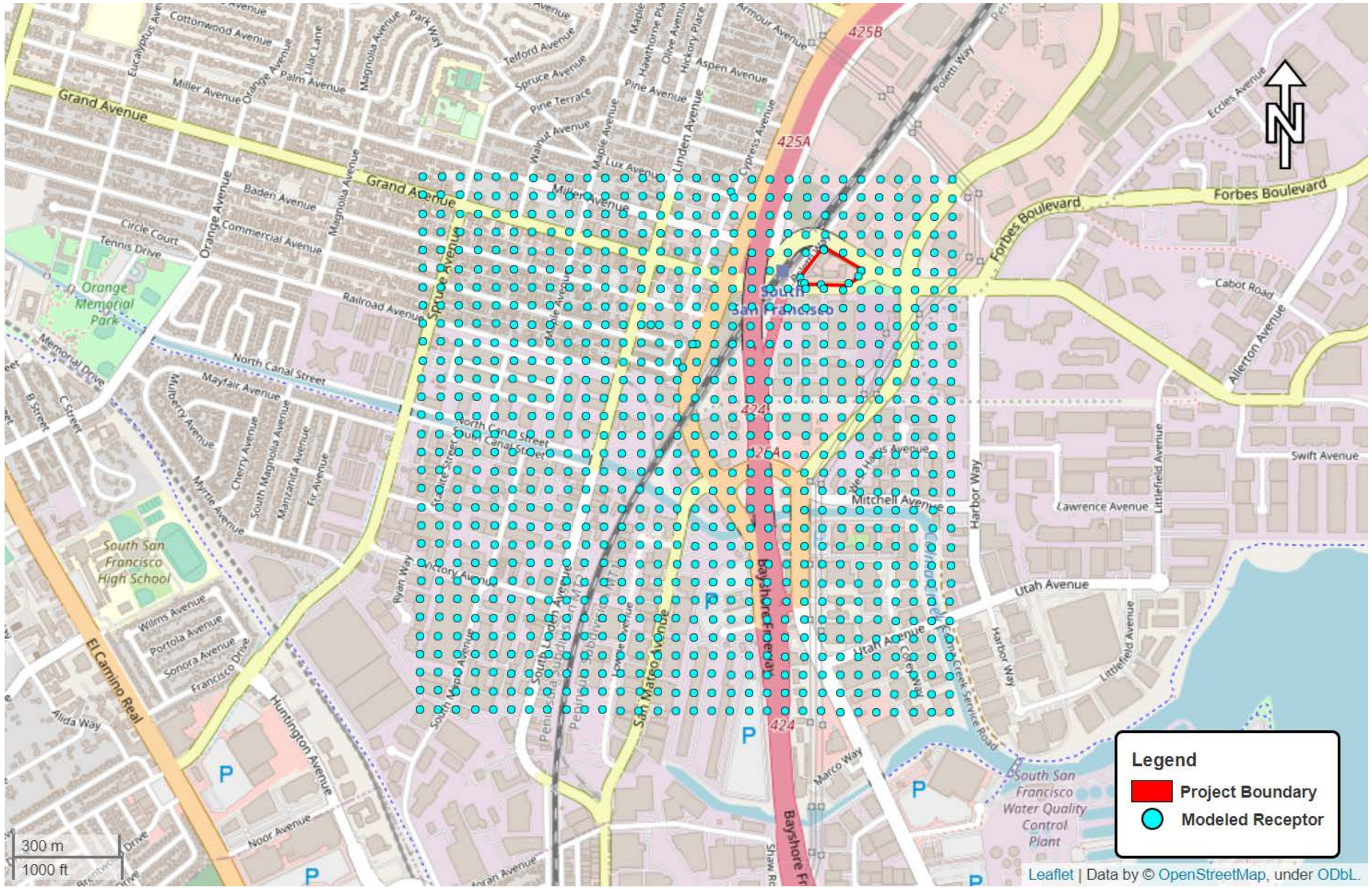


COMMENTS: AERMET Processed Data	DATA PERIOD: **Start Date: 1/1/2009 - 00:00** **End Date: 1/2/2014 - 23:59**	COMPANY NAME:	
		MODELER:	
	CALM WINDS: **13.23%**	TOTAL COUNT: **43596 hrs.**	
	AVG. WIND SPEED: **4.75 m/s**	DATE: **4/22/2022**	PROJECT NO.: **2022-039.01**

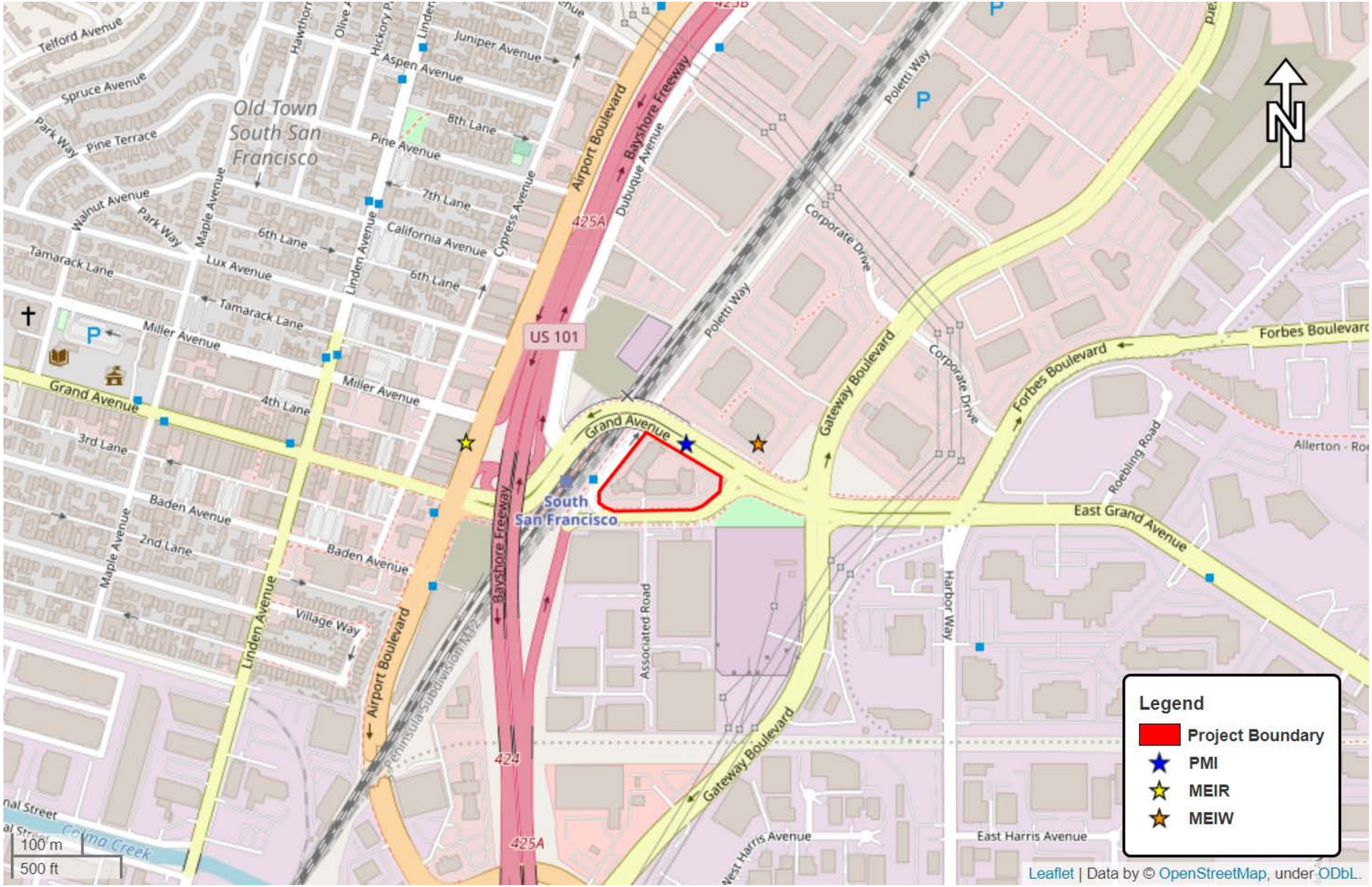


ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Meteorological Data



Receptor Location



Maximum Impact

ATTACHMENT C

CalEEMod Output Files – Greenhouse Gas Emissions

121 East Grand Avenue - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

121 East Grand Avenue

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Research & Development	836.87	1000sqft	0.00	836,865.00	0
Library	23.67	1000sqft	0.00	23,674.00	0
General Light Industry	35.25	1000sqft	0.97	35,249.00	0
Enclosed Parking Structure	229.22	1000sqft	0.00	229,216.00	0
Parking Lot	26.19	1000sqft	0.97	26,191.00	0
Health Club	17.69	1000sqft	0.00	17,691.00	0
High Turnover (Sit Down Restaurant)	9.40	1000sqft	0.00	9,400.00	0
Free-Standing Discount store	16.20	1000sqft	0.97	16,196.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2028
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot acreage updated to only account for uses on the ground floor.

Construction Phase - Building construction, paving and painting assumed to occur simultaneously. Information updated to match that provided by the applicant.

121 East Grand Avenue - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment -

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Off-road Equipment - Equipment list updated to match information provided by the Project applicant.

Demolition -

Grading - Material to be exported divided between phases based on number of days

Vehicle Trips - Operational trips updated for that of “general office” to account for the actual usage of the site/ No traffic report was provided as the site is in close proximity to transit.

Energy Use - All nontitle-24 electricity usage was reduced by 50%. Per the ‘121. E Grand Conservation Measures and Sustainable Design’ sheet provided by the applicant.

Water And Wastewater - Indoor water use provided by applicant. Usage was evenly distributed between all uses.

Land Use Change -

Sequestration -

Construction Off-road Equipment Mitigation - Tier 4 imposed for mitigation measure 4.2-1 in Downtown Station Area Specific Plan. Additional mitigation per the BAAQMD’s Basic Construction Mitigation Measures.

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Water Mitigation -

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - conversion of 1kw=1.341 hp

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	6.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	20.00	45.00
tblConstructionPhase	NumDays	3.00	20.00
tblConstructionPhase	NumDays	6.00	220.00
tblConstructionPhase	NumDays	220.00	522.00
tblConstructionPhase	NumDays	10.00	522.00
tblConstructionPhase	NumDays	10.00	522.00
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	20.97	10.48
tblEnergyUse	NT24E	3.36	1.68
tblEnergyUse	NT24E	3.36	1.68
tblGrading	AcresOfGrading	110.00	6.00
tblGrading	AcresOfGrading	0.00	4.50
tblGrading	MaterialExported	0.00	159,250.00
tblGrading	MaterialExported	0.00	15,750.00
tblLandUse	LandUseSquareFeet	836,870.00	836,865.00
tblLandUse	LandUseSquareFeet	23,670.00	23,674.00
tblLandUse	LandUseSquareFeet	35,250.00	35,249.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblLandUse	LandUseSquareFeet	229,220.00	229,216.00
tblLandUse	LandUseSquareFeet	26,190.00	26,191.00
tblLandUse	LandUseSquareFeet	17,690.00	17,691.00
tblLandUse	LandUseSquareFeet	16,200.00	16,196.00
tblLandUse	LotAcreage	19.21	0.00
tblLandUse	LotAcreage	0.54	0.00
tblLandUse	LotAcreage	0.81	0.97
tblLandUse	LotAcreage	5.26	0.00
tblLandUse	LotAcreage	0.60	0.97
tblLandUse	LotAcreage	0.41	0.00
tblLandUse	LotAcreage	0.22	0.00
tblLandUse	LotAcreage	0.37	0.97
tblOffRoadEquipment	HorsePower	80.00	16.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00
tblVehicleTrips	ST_TR	70.76	2.21
tblVehicleTrips	ST_TR	1.99	2.21
tblVehicleTrips	ST_TR	20.87	2.21

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	122.40	2.21
tblVehicleTrips	ST_TR	80.09	2.21
tblVehicleTrips	ST_TR	1.90	2.21
tblVehicleTrips	SU_TR	60.21	0.70
tblVehicleTrips	SU_TR	5.00	0.77
tblVehicleTrips	SU_TR	26.73	0.70
tblVehicleTrips	SU_TR	142.64	0.70
tblVehicleTrips	SU_TR	42.09	0.70
tblVehicleTrips	SU_TR	1.11	0.70
tblVehicleTrips	WD_TR	53.12	9.74
tblVehicleTrips	WD_TR	4.96	9.74
tblVehicleTrips	WD_TR	32.93	9.74
tblVehicleTrips	WD_TR	112.18	9.74
tblVehicleTrips	WD_TR	72.05	9.74
tblVehicleTrips	WD_TR	11.26	9.74
tblWater	IndoorWaterUseRate	1,199,974.85	2,597,035.00
tblWater	IndoorWaterUseRate	8,151,562.50	2,597,035.00
tblWater	IndoorWaterUseRate	1,046,242.22	2,597,035.00
tblWater	IndoorWaterUseRate	2,853,216.90	2,597,035.00
tblWater	IndoorWaterUseRate	740,608.46	2,597,035.00
tblWater	IndoorWaterUseRate	411,483,913.60	2,597,035.00

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.2329	3.5245	2.9294	0.0111	0.2333	0.0930	0.3263	0.0583	0.0869	0.1452	0.0000	1,089.0034	1,089.0034	0.1845	0.1087	1,126.0010
2025	0.0203	0.3219	0.2661	1.0700e-003	0.0315	7.6400e-003	0.0391	6.9900e-003	7.1500e-003	0.0141	0.0000	105.7535	105.7535	0.0175	0.0111	109.4831
2026	3.0875	5.6183	6.0310	0.0178	0.6951	0.2014	0.8965	0.1888	0.1873	0.3762	0.0000	1,658.2616	1,658.2616	0.2627	0.0841	1,689.8853
2027	3.0824	5.5974	5.9874	0.0176	0.6951	0.2012	0.8963	0.1888	0.1872	0.3760	0.0000	1,640.5134	1,640.5134	0.2627	0.0822	1,671.5680
2028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**3.0875**	**5.6183**	**6.0310**	**0.0178**	**0.6951**	**0.2014**	**0.8965**	**0.1888**	**0.1873**	**0.3762**	**0.0000**	**1,658.2616**	**1,658.2616**	**0.2627**	**0.1087**	**1,689.8853**

121 East Grand Avenue - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2024	0.0845	1.8379	3.4862	0.0111	0.2092	0.0178	0.2269	0.0548	0.0173	0.0721	0.0000	1,089.0029	1,089.0029	0.1845	0.1087	1,126.0005
2025	7.7400e-003	0.1798	0.3180	1.0700e-003	0.0248	1.7400e-003	0.0265	6.0500e-003	1.6900e-003	7.7400e-003	0.0000	105.7535	105.7535	0.0175	0.0111	109.4831
2026	2.7343	1.8235	6.9047	0.0178	0.6951	0.0223	0.7174	0.1888	0.0219	0.2107	0.0000	1,658.2607	1,658.2607	0.2627	0.0841	1,689.8844
2027	2.7292	1.8026	6.8611	0.0176	0.6951	0.0221	0.7172	0.1888	0.0217	0.2105	0.0000	1,640.5125	1,640.5125	0.2627	0.0822	1,671.5671
2028	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**2.7343**	**1.8379**	**6.9047**	**0.0178**	**0.6951**	**0.0223**	**0.7174**	**0.1888**	**0.0219**	**0.2107**	**0.0000**	**1,658.2607**	**1,658.2607**	**0.2627**	**0.1087**	**1,689.8844**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**13.50**	**62.53**	**-15.49**	**0.00**	**1.86**	**87.30**	**21.79**	**1.01**	**86.65**	**45.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2024**	**3-31-2024**	0.6208	0.3077
2	**4-1-2024**	**6-30-2024**	1.0288	0.5224
3	**7-1-2024**	**9-30-2024**	1.0401	0.5281
4	**10-1-2024**	**12-31-2024**	1.0643	0.5523
5	**1-1-2025**	**3-31-2025**	0.3429	0.1891
9	**1-1-2026**	**3-31-2026**	2.1545	1.1328
10	**4-1-2026**	**6-30-2026**	2.1564	1.1234

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

11	**7-1-2026**	**9-30-2026**	2.1801	1.1357
12	**10-1-2026**	**12-31-2026**	2.2024	1.1580
13	**1-1-2027**	**3-31-2027**	2.1479	1.1263
14	**4-1-2027**	**6-30-2027**	2.1502	1.1171
15	**7-1-2027**	**9-30-2027**	2.1738	1.1294
16	**10-1-2027**	**12-31-2027**	2.1957	1.1513
17	**1-1-2028**	**3-31-2028**	0.0099	0.0048
		Highest	2.2024	1.1580

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.1801	1.0000e-004	0.0110	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0213	0.0213	6.0000e-005	0.0000	0.0227
Energy	0.1299	1.1810	0.9921	7.0900e-003		0.0898	0.0898		0.0898	0.0898	0.0000	1,285.6793	1,285.6793	0.0246	0.0236	1,293.3195
Mobile	2.5064	2.2246	24.5257	0.0509	6.2395	0.0312	6.2707	1.6668	0.0290	1.6958	0.0000	4,902.7221	4,902.7221	0.3117	0.2039	4,971.2697
Waste						0.0000	0.0000		0.0000	0.0000	83.5247	0.0000	83.5247	4.9362	0.0000	206.9289
Water						0.0000	0.0000		0.0000	0.0000	4.9435	0.0000	4.9435	0.5078	0.0120	21.2099
Total	**6.8164**	**3.4057**	**25.5287**	**0.0580**	**6.2395**	**0.1210**	**6.3605**	**1.6668**	**0.1188**	**1.7856**	**88.4682**	**6,188.4228**	**6,276.8910**	**5.7804**	**0.2394**	**6,492.7507**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	4.1801	1.0000e-004	0.0110	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0213	0.0213	6.0000e-005	0.0000	0.0227
Energy	0.1299	1.1810	0.9921	7.0900e-003		0.0898	0.0898		0.0898	0.0898	0.0000	1,285.6793	1,285.6793	0.0246	0.0236	1,293.3195
Mobile	2.0880	1.6926	18.7798	0.0353	4.2803	0.0227	4.3030	1.1434	0.0211	1.1645	0.0000	3,406.0754	3,406.0754	0.2466	0.1559	3,458.7097
Waste						0.0000	0.0000		0.0000	0.0000	83.5247	0.0000	83.5247	4.9362	0.0000	206.9289
Water						0.0000	0.0000		0.0000	0.0000	3.9548	0.0000	3.9548	0.4062	9.5900e-003	16.9679
Total	**6.3980**	**2.8737**	**19.7828**	**0.0424**	**4.2803**	**0.1125**	**4.3928**	**1.1434**	**0.1109**	**1.2543**	**87.4795**	**4,691.7761**	**4,779.2556**	**5.6137**	**0.1891**	**4,975.9487**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**6.14**	**15.62**	**22.51**	**26.79**	**31.40**	**7.03**	**30.94**	**31.40**	**6.68**	**29.75**	**1.12**	**24.18**	**23.86**	**2.88**	**21.02**	**23.36**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2024	3/1/2024	5	45	
2	Site Preparation	Site Preparation	3/2/2024	3/31/2024	5	20	
3	Grading	Grading	4/1/2024	2/1/2025	5	220	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Building Construction	Building Construction	1/1/2026	1/1/2028	5	522	
5	Paving	Paving	1/1/2026	12/31/2027	5	522	
6	Architectural Coating	Architectural Coating	1/1/2026	12/31/2027	5	522	

Acres of Grading (Site Preparation Phase): 4.5

Acres of Grading (Grading Phase): 6

Acres of Paving: 0.97

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,408,613; Non-Residential Outdoor: 469,538; Striped Parking Area: 15,324 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	0	8.00	81	0.73
Demolition	Excavators	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Signal Boards	2	2.00	6	0.82
Demolition	Skid Steer Loaders	1	8.00	65	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Bore/Drill Rigs	2	8.00	221	0.50
Site Preparation	Concrete/Industrial Saws	1	8.00	81	0.73
Site Preparation	Excavators	1	7.00	158	0.38
Site Preparation	Graders	0	8.00	187	0.41
Site Preparation	Other Construction Equipment	3	7.00	172	0.42
Site Preparation	Rollers	1	8.00	16	0.38
Site Preparation	Rough Terrain Forklifts	2	8.00	100	0.40
Site Preparation	Rubber Tired Loaders	1	8.00	203	0.36
Site Preparation	Scrapers	0	8.00	367	0.48
Site Preparation	Skid Steer Loaders	2	8.00	65	0.37
Site Preparation	Tractors/Loaders/Backhoes	2	7.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Concrete/Industrial Saws	1	8.00	81	0.73
Grading	Graders	1	8.00	187	0.41
Grading	Pavers	1	8.00	130	0.42
Grading	Paving Equipment	1	8.00	132	0.36
Grading	Rollers	1	8.00	80	0.38
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Loaders	1	8.00	203	0.36
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	2	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Other Construction Equipment	2	8.00	172	0.42
Building Construction	Signal Boards	2	8.00	6	0.82
Building Construction	Skid Steer Loaders	1	8.00	65	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Concrete/Industrial Saws	1	8.00	81	0.73
Paving	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	262.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	15	38.00	0.00	1,969.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	19,906.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	416.00	196.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	83.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0284	0.0000	0.0284	4.2900e-003	0.0000	4.2900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0134	0.1184	0.2318	3.6000e-004		5.3600e-003	5.3600e-003		4.9400e-003	4.9400e-003	0.0000	31.1792	31.1792	9.9700e-003	0.0000	31.4286
Total	**0.0134**	**0.1184**	**0.2318**	**3.6000e-004**	**0.0284**	**5.3600e-003**	**0.0337**	**4.2900e-003**	**4.9400e-003**	**9.2300e-003**	**0.0000**	**31.1792**	**31.1792**	**9.9700e-003**	**0.0000**	**31.4286**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-004	0.0203	6.9200e-003	8.0000e-005	2.2000e-003	1.4000e-004	2.3300e-003	6.0000e-004	1.3000e-004	7.3000e-004	0.0000	8.7715	8.7715	9.2000e-004	1.4100e-003	9.2161
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	4.3000e-004	6.1800e-003	2.0000e-005	2.6600e-003	1.0000e-005	2.6700e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.9498	1.9498	5.0000e-005	5.0000e-005	1.9648
Total	**9.9000e-004**	**0.0207**	**0.0131**	**1.0000e-004**	**4.8600e-003**	**1.5000e-004**	**5.0000e-003**	**1.3100e-003**	**1.4000e-004**	**1.4500e-003**	**0.0000**	**10.7213**	**10.7213**	**9.7000e-004**	**1.4600e-003**	**11.1808**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	1.9300e-003	0.0000	1.9300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8600e-003	0.0422	0.2643	3.6000e-004		5.7000e-004	5.7000e-004		5.7000e-004	5.7000e-004	0.0000	31.1792	31.1792	9.9700e-003	0.0000	31.4285
Total	**4.8600e-003**	**0.0422**	**0.2643**	**3.6000e-004**	**0.0128**	**5.7000e-004**	**0.0133**	**1.9300e-003**	**5.7000e-004**	**2.5000e-003**	**0.0000**	**31.1792**	**31.1792**	**9.9700e-003**	**0.0000**	**31.4285**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.0000e-004	0.0203	6.9200e-003	8.0000e-005	2.2000e-003	1.4000e-004	2.3300e-003	6.0000e-004	1.3000e-004	7.3000e-004	0.0000	8.7715	8.7715	9.2000e-004	1.4100e-003	9.2161
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	4.3000e-004	6.1800e-003	2.0000e-005	2.6600e-003	1.0000e-005	2.6700e-003	7.1000e-004	1.0000e-005	7.2000e-004	0.0000	1.9498	1.9498	5.0000e-005	5.0000e-005	1.9648
Total	**9.9000e-004**	**0.0207**	**0.0131**	**1.0000e-004**	**4.8600e-003**	**1.5000e-004**	**5.0000e-003**	**1.3100e-003**	**1.4000e-004**	**1.4500e-003**	**0.0000**	**10.7213**	**10.7213**	**9.7000e-004**	**1.4600e-003**	**11.1808**

3.3 Site Preparation - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2800e-003	0.0000	3.2800e-003	3.9000e-004	0.0000	3.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0267	0.2550	0.3432	6.9000e-004		0.0108	0.0108		0.0100	0.0100	0.0000	60.7281	60.7281	0.0182	0.0000	61.1820
Total	**0.0267**	**0.2550**	**0.3432**	**6.9000e-004**	**3.2800e-003**	**0.0108**	**0.0141**	**3.9000e-004**	**0.0100**	**0.0104**	**0.0000**	**60.7281**	**60.7281**	**0.0182**	**0.0000**	**61.1820**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2700e-003	0.1524	0.0520	6.2000e-004	0.0165	1.0200e-003	0.0175	4.5400e-003	9.7000e-004	5.5100e-003	0.0000	65.9199	65.9199	6.9100e-003	0.0106	69.2611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.8000e-004	6.9600e-003	2.0000e-005	2.9900e-003	1.0000e-005	3.0100e-003	8.0000e-004	1.0000e-005	8.1000e-004	0.0000	2.1954	2.1954	5.0000e-005	5.0000e-005	2.2122
Total	**3.0500e-003**	**0.1529**	**0.0589**	**6.4000e-004**	**0.0195**	**1.0300e-003**	**0.0206**	**5.3400e-003**	**9.8000e-004**	**6.3200e-003**	**0.0000**	**68.1152**	**68.1152**	**6.9600e-003**	**0.0107**	**71.4733**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.4700e-003	0.0000	1.4700e-003	1.8000e-004	0.0000	1.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8300e-003	0.0571	0.4353	6.9000e-004		1.1100e-003	1.1100e-003		1.1100e-003	1.1100e-003	0.0000	60.7280	60.7280	0.0182	0.0000	61.1820
Total	**8.8300e-003**	**0.0571**	**0.4353**	**6.9000e-004**	**1.4700e-003**	**1.1100e-003**	**2.5800e-003**	**1.8000e-004**	**1.1100e-003**	**1.2900e-003**	**0.0000**	**60.7280**	**60.7280**	**0.0182**	**0.0000**	**61.1820**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Site Preparation - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.2700e-003	0.1524	0.0520	6.2000e-004	0.0165	1.0200e-003	0.0175	4.5400e-003	9.7000e-004	5.5100e-003	0.0000	65.9199	65.9199	6.9100e-003	0.0106	69.2611
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.8000e-004	4.8000e-004	6.9600e-003	2.0000e-005	2.9900e-003	1.0000e-005	3.0100e-003	8.0000e-004	1.0000e-005	8.1000e-004	0.0000	2.1954	2.1954	5.0000e-005	5.0000e-005	2.2122
Total	**3.0500e-003**	**0.1529**	**0.0589**	**6.4000e-004**	**0.0195**	**1.0300e-003**	**0.0206**	**5.3400e-003**	**9.8000e-004**	**6.3200e-003**	**0.0000**	**68.1152**	**68.1152**	**6.9600e-003**	**0.0107**	**71.4733**

3.4 Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0122	0.0000	0.0122	1.7100e-003	0.0000	1.7100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1642	1.5952	1.7757	3.5400e-003		0.0664	0.0664		0.0619	0.0619	0.0000	310.1205	310.1205	0.0857	0.0000	312.2627
Total	**0.1642**	**1.5952**	**1.7757**	**3.5400e-003**	**0.0122**	**0.0664**	**0.0786**	**1.7100e-003**	**0.0619**	**0.0636**	**0.0000**	**310.1205**	**310.1205**	**0.0857**	**0.0000**	**312.2627**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0206	1.3799	0.4706	5.6100e-003	0.1496	9.2000e-003	0.1588	0.0411	8.8000e-003	0.0499	0.0000	596.7578	596.7578	0.0625	0.0963	627.0051
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0300e-003	2.4900e-003	0.0361	1.2000e-004	0.0155	7.0000e-005	0.0156	4.1300e-003	7.0000e-005	4.1900e-003	0.0000	11.3812	11.3812	2.7000e-004	2.7000e-004	11.4684
Total	**0.0246**	**1.3824**	**0.5066**	**5.7300e-003**	**0.1651**	**9.2700e-003**	**0.1744**	**0.0452**	**8.8700e-003**	**0.0541**	**0.0000**	**608.1390**	**608.1390**	**0.0628**	**0.0965**	**638.4736**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4800e-003	0.0000	5.4800e-003	7.7000e-004	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0421	0.1826	2.2079	3.5400e-003		5.6200e-003	5.6200e-003		5.6200e-003	5.6200e-003	0.0000	310.1201	310.1201	0.0857	0.0000	312.2623
Total	**0.0421**	**0.1826**	**2.2079**	**3.5400e-003**	**5.4800e-003**	**5.6200e-003**	**0.0111**	**7.7000e-004**	**5.6200e-003**	**6.3900e-003**	**0.0000**	**310.1201**	**310.1201**	**0.0857**	**0.0000**	**312.2623**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0206	1.3799	0.4706	5.6100e-003	0.1496	9.2000e-003	0.1588	0.0411	8.8000e-003	0.0499	0.0000	596.7578	596.7578	0.0625	0.0963	627.0051
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0300e-003	2.4900e-003	0.0361	1.2000e-004	0.0155	7.0000e-005	0.0156	4.1300e-003	7.0000e-005	4.1900e-003	0.0000	11.3812	11.3812	2.7000e-004	2.7000e-004	11.4684
Total	**0.0246**	**1.3824**	**0.5066**	**5.7300e-003**	**0.1651**	**9.2700e-003**	**0.1744**	**0.0452**	**8.8700e-003**	**0.0541**	**0.0000**	**608.1390**	**608.1390**	**0.0628**	**0.0965**	**638.4736**

3.4 Grading - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0122	0.0000	0.0122	1.7100e-003	0.0000	1.7100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0175	0.1634	0.2059	4.1000e-004		6.5600e-003	6.5600e-003		6.1200e-003	6.1200e-003	0.0000	36.2064	36.2064	9.9800e-003	0.0000	36.4560
Total	**0.0175**	**0.1634**	**0.2059**	**4.1000e-004**	**0.0122**	**6.5600e-003**	**0.0188**	**1.7100e-003**	**6.1200e-003**	**7.8300e-003**	**0.0000**	**36.2064**	**36.2064**	**9.9800e-003**	**0.0000**	**36.4560**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3700e-003	0.1582	0.0562	6.4000e-004	0.0175	1.0700e-003	0.0185	4.8000e-003	1.0300e-003	5.8300e-003	0.0000	68.2500	68.2500	7.4600e-003	0.0110	71.7205
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.6000e-004	3.9800e-003	1.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.2971	1.2971	3.0000e-005	3.0000e-005	1.3067
Total	**2.8200e-003**	**0.1585**	**0.0602**	**6.5000e-004**	**0.0193**	**1.0800e-003**	**0.0204**	**5.2800e-003**	**1.0400e-003**	**6.3200e-003**	**0.0000**	**69.5471**	**69.5471**	**7.4900e-003**	**0.0111**	**73.0271**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.4800e-003	0.0000	5.4800e-003	7.7000e-004	0.0000	7.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.9200e-003	0.0213	0.2578	4.1000e-004		6.6000e-004	6.6000e-004		6.6000e-004	6.6000e-004	0.0000	36.2064	36.2064	9.9800e-003	0.0000	36.4559
Total	**4.9200e-003**	**0.0213**	**0.2578**	**4.1000e-004**	**5.4800e-003**	**6.6000e-004**	**6.1400e-003**	**7.7000e-004**	**6.6000e-004**	**1.4300e-003**	**0.0000**	**36.2064**	**36.2064**	**9.9800e-003**	**0.0000**	**36.4559**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Grading - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3700e-003	0.1582	0.0562	6.4000e-004	0.0175	1.0700e-003	0.0185	4.8000e-003	1.0300e-003	5.8300e-003	0.0000	68.2500	68.2500	7.4600e-003	0.0110	71.7205
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	2.6000e-004	3.9800e-003	1.0000e-005	1.8100e-003	1.0000e-005	1.8200e-003	4.8000e-004	1.0000e-005	4.9000e-004	0.0000	1.2971	1.2971	3.0000e-005	3.0000e-005	1.3067
Total	**2.8200e-003**	**0.1585**	**0.0602**	**6.5000e-004**	**0.0193**	**1.0800e-003**	**0.0204**	**5.2800e-003**	**1.0400e-003**	**6.3200e-003**	**0.0000**	**69.5471**	**69.5471**	**7.4900e-003**	**0.0111**	**73.0271**

3.5 Building Construction - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2152	2.0624	2.2319	4.2300e-003		0.0945	0.0945		0.0872	0.0872	0.0000	366.9543	366.9543	0.1161	0.0000	369.8572
Total	**0.2152**	**2.0624**	**2.2319**	**4.2300e-003**		**0.0945**	**0.0945**		**0.0872**	**0.0872**	**0.0000**	**366.9543**	**366.9543**	**0.1161**	**0.0000**	**369.8572**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0250	1.1633	0.4318	5.0200e-003	0.1670	6.1800e-003	0.1732	0.0483	5.9200e-003	0.0542	0.0000	513.1161	513.1161	0.0357	0.0759	536.6152
Worker	0.1020	0.0571	0.8944	3.1500e-003	0.4274	1.8000e-003	0.4292	0.1137	1.6500e-003	0.1154	0.0000	299.7654	299.7654	6.1200e-003	6.6500e-003	301.9007
Total	**0.1269**	**1.2204**	**1.3262**	**8.1700e-003**	**0.5944**	**7.9800e-003**	**0.6024**	**0.1620**	**7.5700e-003**	**0.1696**	**0.0000**	**812.8814**	**812.8814**	**0.0418**	**0.0825**	**838.5159**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0531	0.3531	2.6081	4.2300e-003		6.6400e-003	6.6400e-003		6.6400e-003	6.6400e-003	0.0000	366.9538	366.9538	0.1161	0.0000	369.8567
Total	**0.0531**	**0.3531**	**2.6081**	**4.2300e-003**		**6.6400e-003**	**6.6400e-003**		**6.6400e-003**	**6.6400e-003**	**0.0000**	**366.9538**	**366.9538**	**0.1161**	**0.0000**	**369.8567**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0250	1.1633	0.4318	5.0200e-003	0.1670	6.1800e-003	0.1732	0.0483	5.9200e-003	0.0542	0.0000	513.1161	513.1161	0.0357	0.0759	536.6152
Worker	0.1020	0.0571	0.8944	3.1500e-003	0.4274	1.8000e-003	0.4292	0.1137	1.6500e-003	0.1154	0.0000	299.7654	299.7654	6.1200e-003	6.6500e-003	301.9007
Total	**0.1269**	**1.2204**	**1.3262**	**8.1700e-003**	**0.5944**	**7.9800e-003**	**0.6024**	**0.1620**	**7.5700e-003**	**0.1696**	**0.0000**	**812.8814**	**812.8814**	**0.0418**	**0.0825**	**838.5159**

3.5 Building Construction - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2152	2.0624	2.2319	4.2300e-003		0.0945	0.0945		0.0872	0.0872	0.0000	366.9543	366.9543	0.1161	0.0000	369.8572
Total	**0.2152**	**2.0624**	**2.2319**	**4.2300e-003**		**0.0945**	**0.0945**		**0.0872**	**0.0872**	**0.0000**	**366.9543**	**366.9543**	**0.1161**	**0.0000**	**369.8572**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0244	1.1475	0.4330	4.9100e-003	0.1670	6.1300e-003	0.1732	0.0483	5.8700e-003	0.0542	0.0000	502.1743	502.1743	0.0363	0.0743	525.2236
Worker	0.0983	0.0530	0.8581	3.0600e-003	0.4274	1.6800e-003	0.4291	0.1137	1.5500e-003	0.1153	0.0000	294.2566	294.2566	5.6500e-003	6.3700e-003	296.2955
Total	**0.1228**	**1.2005**	**1.2911**	**7.9700e-003**	**0.5944**	**7.8100e-003**	**0.6022**	**0.1621**	**7.4200e-003**	**0.1695**	**0.0000**	**796.4309**	**796.4309**	**0.0419**	**0.0807**	**821.5191**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0531	0.3531	2.6081	4.2300e-003		6.6400e-003	6.6400e-003		6.6400e-003	6.6400e-003	0.0000	366.9538	366.9538	0.1161	0.0000	369.8567
Total	**0.0531**	**0.3531**	**2.6081**	**4.2300e-003**		**6.6400e-003**	**6.6400e-003**		**6.6400e-003**	**6.6400e-003**	**0.0000**	**366.9538**	**366.9538**	**0.1161**	**0.0000**	**369.8567**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0244	1.1475	0.4330	4.9100e-003	0.1670	6.1300e-003	0.1732	0.0483	5.8700e-003	0.0542	0.0000	502.1743	502.1743	0.0363	0.0743	525.2236
Worker	0.0983	0.0530	0.8581	3.0600e-003	0.4274	1.6800e-003	0.4291	0.1137	1.5500e-003	0.1153	0.0000	294.2566	294.2566	5.6500e-003	6.3700e-003	296.2955
Total	**0.1228**	**1.2005**	**1.2911**	**7.9700e-003**	**0.5944**	**7.8100e-003**	**0.6022**	**0.1621**	**7.4200e-003**	**0.1695**	**0.0000**	**796.4309**	**796.4309**	**0.0419**	**0.0807**	**821.5191**

3.5 Building Construction - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2028

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2028

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.6 Paving - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2234	2.1726	2.0261	4.2800e-003		0.0918	0.0918		0.0854	0.0854	0.0000	374.4882	374.4882	0.1015	0.0000	377.0260
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2240**	**2.1726**	**2.0261**	**4.2800e-003**		**0.0918**	**0.0918**		**0.0854**	**0.0854**	**0.0000**	**374.4882**	**374.4882**	**0.1015**	**0.0000**	**377.0260**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6800e-003	2.0600e-003	0.0323	1.1000e-004	0.0154	6.0000e-005	0.0155	4.1000e-003	6.0000e-005	4.1600e-003	0.0000	10.8089	10.8089	2.2000e-004	2.4000e-004	10.8858
Total	**3.6800e-003**	**2.0600e-003**	**0.0323**	**1.1000e-004**	**0.0154**	**6.0000e-005**	**0.0155**	**4.1000e-003**	**6.0000e-005**	**4.1600e-003**	**0.0000**	**10.8089**	**10.8089**	**2.2000e-004**	**2.4000e-004**	**10.8858**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0507	0.2197	2.5206	4.2800e-003		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	374.4877	374.4877	0.1015	0.0000	377.0255
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0513**	**0.2197**	**2.5206**	**4.2800e-003**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**374.4877**	**374.4877**	**0.1015**	**0.0000**	**377.0255**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.6800e-003	2.0600e-003	0.0323	1.1000e-004	0.0154	6.0000e-005	0.0155	4.1000e-003	6.0000e-005	4.1600e-003	0.0000	10.8089	10.8089	2.2000e-004	2.4000e-004	10.8858
Total	**3.6800e-003**	**2.0600e-003**	**0.0323**	**1.1000e-004**	**0.0154**	**6.0000e-005**	**0.0155**	**4.1000e-003**	**6.0000e-005**	**4.1600e-003**	**0.0000**	**10.8089**	**10.8089**	**2.2000e-004**	**2.4000e-004**	**10.8858**

3.6 Paving - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2234	2.1726	2.0261	4.2800e-003		0.0918	0.0918		0.0854	0.0854	0.0000	374.4882	374.4882	0.1015	0.0000	377.0260
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.2240**	**2.1726**	**2.0261**	**4.2800e-003**		**0.0918**	**0.0918**		**0.0854**	**0.0854**	**0.0000**	**374.4882**	**374.4882**	**0.1015**	**0.0000**	**377.0260**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	1.9100e-003	0.0309	1.1000e-004	0.0154	6.0000e-005	0.0155	4.1000e-003	6.0000e-005	4.1600e-003	0.0000	10.6102	10.6102	2.0000e-004	2.3000e-004	10.6837
Total	**3.5500e-003**	**1.9100e-003**	**0.0309**	**1.1000e-004**	**0.0154**	**6.0000e-005**	**0.0155**	**4.1000e-003**	**6.0000e-005**	**4.1600e-003**	**0.0000**	**10.6102**	**10.6102**	**2.0000e-004**	**2.3000e-004**	**10.6837**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0507	0.2197	2.5206	4.2800e-003		6.7600e-003	6.7600e-003		6.7600e-003	6.7600e-003	0.0000	374.4877	374.4877	0.1015	0.0000	377.0255
Paving	6.4000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0513**	**0.2197**	**2.5206**	**4.2800e-003**		**6.7600e-003**	**6.7600e-003**		**6.7600e-003**	**6.7600e-003**	**0.0000**	**374.4877**	**374.4877**	**0.1015**	**0.0000**	**377.0255**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Paving - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.5500e-003	1.9100e-003	0.0309	1.1000e-004	0.0154	6.0000e-005	0.0155	4.1000e-003	6.0000e-005	4.1600e-003	0.0000	10.6102	10.6102	2.0000e-004	2.3000e-004	10.6837
Total	**3.5500e-003**	**1.9100e-003**	**0.0309**	**1.1000e-004**	**0.0154**	**6.0000e-005**	**0.0155**	**4.1000e-003**	**6.0000e-005**	**4.1600e-003**	**0.0000**	**10.6102**	**10.6102**	**2.0000e-004**	**2.3000e-004**	**10.6837**

3.7 Architectural Coating - 2026

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**2.4973**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2026

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	0.0114	0.1785	6.3000e-004	0.0853	3.6000e-004	0.0856	0.0227	3.3000e-004	0.0230	0.0000	59.8090	59.8090	1.2200e-003	1.3300e-003	60.2350
Total	**0.0204**	**0.0114**	**0.1785**	**6.3000e-004**	**0.0853**	**3.6000e-004**	**0.0856**	**0.0227**	**3.3000e-004**	**0.0230**	**0.0000**	**59.8090**	**59.8090**	**1.2200e-003**	**1.3300e-003**	**60.2350**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8800e-003	0.0168	0.2391	3.9000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**2.4789**	**0.0168**	**0.2391**	**3.9000e-004**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2026

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0204	0.0114	0.1785	6.3000e-004	0.0853	3.6000e-004	0.0856	0.0227	3.3000e-004	0.0230	0.0000	59.8090	59.8090	1.2200e-003	1.3300e-003	60.2350
Total	**0.0204**	**0.0114**	**0.1785**	**6.3000e-004**	**0.0853**	**3.6000e-004**	**0.0856**	**0.0227**	**3.3000e-004**	**0.0230**	**0.0000**	**59.8090**	**59.8090**	**1.2200e-003**	**1.3300e-003**	**60.2350**

3.7 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0223	0.1495	0.2361	3.9000e-004		6.7200e-003	6.7200e-003		6.7200e-003	6.7200e-003	0.0000	33.3200	33.3200	1.8200e-003	0.0000	33.3654
Total	**2.4973**	**0.1495**	**0.2361**	**3.9000e-004**		**6.7200e-003**	**6.7200e-003**		**6.7200e-003**	**6.7200e-003**	**0.0000**	**33.3200**	**33.3200**	**1.8200e-003**	**0.0000**	**33.3654**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Architectural Coating - 2027

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0196	0.0106	0.1712	6.1000e-004	0.0853	3.4000e-004	0.0856	0.0227	3.1000e-004	0.0230	0.0000	58.7099	58.7099	1.1300e-003	1.2700e-003	59.1167
Total	**0.0196**	**0.0106**	**0.1712**	**6.1000e-004**	**0.0853**	**3.4000e-004**	**0.0856**	**0.0227**	**3.1000e-004**	**0.0230**	**0.0000**	**58.7099**	**58.7099**	**1.1300e-003**	**1.2700e-003**	**59.1167**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	2.4750					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8800e-003	0.0168	0.2391	3.9000e-004		5.2000e-004	5.2000e-004		5.2000e-004	5.2000e-004	0.0000	33.3199	33.3199	1.8200e-003	0.0000	33.3654
Total	**2.4789**	**0.0168**	**0.2391**	**3.9000e-004**		**5.2000e-004**	**5.2000e-004**		**5.2000e-004**	**5.2000e-004**	**0.0000**	**33.3199**	**33.3199**	**1.8200e-003**	**0.0000**	**33.3654**

3.7 Architectural Coating - 2027

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0196	0.0106	0.1712	6.1000e-004	0.0853	3.4000e-004	0.0856	0.0227	3.1000e-004	0.0230	0.0000	58.7099	58.7099	1.1300e-003	1.2700e-003	59.1167
Total	**0.0196**	**0.0106**	**0.1712**	**6.1000e-004**	**0.0853**	**3.4000e-004**	**0.0856**	**0.0227**	**3.1000e-004**	**0.0230**	**0.0000**	**58.7099**	**58.7099**	**1.1300e-003**	**1.2700e-003**	**59.1167**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Density

Improve Destination Accessibility

Increase Transit Accessibility

Improve Pedestrian Network

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.0880	1.6926	18.7798	0.0353	4.2803	0.0227	4.3030	1.1434	0.0211	1.1645	0.0000	3,406.0754	3,406.0754	0.2466	0.1559	3,458.7097
Unmitigated	2.5064	2.2246	24.5257	0.0509	6.2395	0.0312	6.2707	1.6668	0.0290	1.6958	0.0000	4,902.7221	4,902.7221	0.3117	0.2039	4,971.2697

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Free-Standing Discount store	157.79	35.80	11.34	186,239	127,760
General Light Industry	343.34	77.90	27.14	759,790	521,216
Health Club	172.30	39.09	12.38	225,332	154,578
High Turnover (Sit Down Restaurant)	91.56	20.77	6.58	80,412	55,163
Library	230.55	52.31	16.57	295,779	202,904
Parking Lot	0.00	0.00	0.00		
Research & Development	8,151.11	1,849.48	585.81	15,463,854	10,608,204
Total	9,146.64	2,075.37	659.82	17,011,407	11,669,825

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Free-Standing Discount store	9.50	7.30	7.30	12.20	68.80	19.00	47.5	35.5	17
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3
Health Club	9.50	7.30	7.30	16.90	64.10	19.00	52	39	9

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
High Turnover (Sit Down	9.50	7.30	7.30	8.50	72.50	19.00	37	20	43
Library	9.50	7.30	7.30	52.00	43.00	5.00	44	44	12
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Research & Development	9.50	7.30	7.30	33.00	48.00	19.00	82	15	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Free-Standing Discount store	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
General Light Industry	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Health Club	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
High Turnover (Sit Down Restaurant)	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Library	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Parking Lot	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814
Research & Development	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

121 East Grand Avenue - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.1299	1.1810	0.9921	7.0900e-003		0.0898	0.0898		0.0898	0.0898	0.0000	1,285.6793	1,285.6793	0.0246	0.0236	1,293.3195
NaturalGas Unmitigated	0.1299	1.1810	0.9921	7.0900e-003		0.0898	0.0898		0.0898	0.0898	0.0000	1,285.6793	1,285.6793	0.0246	0.0236	1,293.3195

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	73853.8	4.0000e-004	3.6200e-003	3.0400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	3.9411	3.9411	8.0000e-005	7.0000e-005	3.9645
General Light Industry	866068	4.6700e-003	0.0425	0.0357	2.5000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	46.2167	46.2167	8.9000e-004	8.5000e-004	46.4913
Health Club	434668	2.3400e-003	0.0213	0.0179	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1955	23.1955	4.4000e-004	4.3000e-004	23.3334
High Turnover (Sit Down Restaurant)	1.57469e+006	8.4900e-003	0.0772	0.0648	4.6000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	84.0314	84.0314	1.6100e-003	1.5400e-003	84.5307
Library	581670	3.1400e-003	0.0285	0.0240	1.7000e-004		2.1700e-003	2.1700e-003		2.1700e-003	2.1700e-003	0.0000	31.0401	31.0401	5.9000e-004	5.7000e-004	31.2246
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	2.05618e+007	0.1109	1.0079	0.8467	6.0500e-003		0.0766	0.0766		0.0766	0.0766	0.0000	1,097.2545	1,097.2545	0.0210	0.0201	1,103.7750
Total		**0.1299**	**1.1810**	**0.9921**	**7.0800e-003**		**0.0898**	**0.0898**		**0.0898**	**0.0898**	**0.0000**	**1,285.6793**	**1,285.6793**	**0.0246**	**0.0236**	**1,293.3195**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	73853.8	4.0000e-004	3.6200e-003	3.0400e-003	2.0000e-005		2.8000e-004	2.8000e-004		2.8000e-004	2.8000e-004	0.0000	3.9411	3.9411	8.0000e-005	7.0000e-005	3.9645
General Light Industry	866068	4.6700e-003	0.0425	0.0357	2.5000e-004		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	46.2167	46.2167	8.9000e-004	8.5000e-004	46.4913
Health Club	434668	2.3400e-003	0.0213	0.0179	1.3000e-004		1.6200e-003	1.6200e-003		1.6200e-003	1.6200e-003	0.0000	23.1955	23.1955	4.4000e-004	4.3000e-004	23.3334
High Turnover (Sit Down Restaurant)	1.57469e+006	8.4900e-003	0.0772	0.0648	4.6000e-004		5.8700e-003	5.8700e-003		5.8700e-003	5.8700e-003	0.0000	84.0314	84.0314	1.6100e-003	1.5400e-003	84.5307
Library	581670	3.1400e-003	0.0285	0.0240	1.7000e-004		2.1700e-003	2.1700e-003		2.1700e-003	2.1700e-003	0.0000	31.0401	31.0401	5.9000e-004	5.7000e-004	31.2246
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Research & Development	2.05618e+007	0.1109	1.0079	0.8467	6.0500e-003		0.0766	0.0766		0.0766	0.0766	0.0000	1,097.2545	1,097.2545	0.0210	0.0201	1,103.7750
Total		**0.1299**	**1.1810**	**0.9921**	**7.0800e-003**		**0.0898**	**0.0898**		**0.0898**	**0.0898**	**0.0000**	**1,285.6793**	**1,285.6793**	**0.0246**	**0.0236**	**1,293.3195**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.20338e+006	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	138638	0.0000	0.0000	0.0000	0.0000
General Light Industry	202682	0.0000	0.0000	0.0000	0.0000
Health Club	101723	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	171080	0.0000	0.0000	0.0000	0.0000
Library	136126	0.0000	0.0000	0.0000	0.0000
Parking Lot	9166.85	0.0000	0.0000	0.0000	0.0000
Research & Development	4.81197e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	1.20338e+006	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	138638	0.0000	0.0000	0.0000	0.0000
General Light Industry	202682	0.0000	0.0000	0.0000	0.0000
Health Club	101723	0.0000	0.0000	0.0000	0.0000
High Turnover (Sit Down Restaurant)	171080	0.0000	0.0000	0.0000	0.0000
Library	136126	0.0000	0.0000	0.0000	0.0000
Parking Lot	9166.85	0.0000	0.0000	0.0000	0.0000
Research & Development	4.81197e+006	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

No Hearths Installed

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.1801	1.0000e-004	0.0110	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0213	0.0213	6.0000e-005	0.0000	0.0227
Unmitigated	4.1801	1.0000e-004	0.0110	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0213	0.0213	6.0000e-005	0.0000	0.0227

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0100e-003	1.0000e-004	0.0110	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0213	0.0213	6.0000e-005	0.0000	0.0227
Total	**4.1801**	**1.0000e-004**	**0.0110**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0213**	**0.0213**	**6.0000e-005**	**0.0000**	**0.0227**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.4950					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6841					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.0100e-003	1.0000e-004	0.0110	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	0.0213	0.0213	6.0000e-005	0.0000	0.0227
Total	**4.1801**	**1.0000e-004**	**0.0110**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**0.0213**	**0.0213**	**6.0000e-005**	**0.0000**	**0.0227**

7.0 Water Detail

7.1 Mitigation Measures Water

Install Low Flow Bathroom Faucet

Install Low Flow Kitchen Faucet

Install Low Flow Toilet

Install Low Flow Shower

Use Water Efficient Irrigation System

Use Water Efficient Landscaping

121 East Grand Avenue - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.9548	0.4062	9.5900e-003	16.9679
Unmitigated	4.9435	0.5078	0.0120	21.2099

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	2.59704 / 0.735468	0.8239	0.0846	2.0000e-003	3.5350
General Light Industry	2.59704 / 0	0.8239	0.0846	2.0000e-003	3.5350
Health Club	2.59704 / 0.641245	0.8239	0.0846	2.0000e-003	3.5350
High Turnover (Sit Down Restaurant)	2.59704 / 0.18212	0.8239	0.0846	2.0000e-003	3.5350
Library	2.59704 / 1.15839	0.8239	0.0846	2.0000e-003	3.5350
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	2.59704 / 0	0.8239	0.0846	2.0000e-003	3.5350
Total		**4.9435**	**0.5077**	**0.0120**	**21.2099**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	2.07763 / 0.690605	0.6591	0.0677	1.6000e-003	2.8280
General Light Industry	2.07763 / 0	0.6591	0.0677	1.6000e-003	2.8280
Health Club	2.07763 / 0.602129	0.6591	0.0677	1.6000e-003	2.8280
High Turnover (Sit Down Restaurant)	2.07763 / 0.171011	0.6591	0.0677	1.6000e-003	2.8280
Library	2.07763 / 1.08773	0.6591	0.0677	1.6000e-003	2.8280
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Research & Development	2.07763 / 0	0.6591	0.0677	1.6000e-003	2.8280
Total		**3.9548**	**0.4062**	**9.6000e-003**	**16.9679**

8.0 Waste Detail

8.1 Mitigation Measures Waste

121 East Grand Avenue - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	83.5247	4.9362	0.0000	206.9289
Unmitigated	83.5247	4.9362	0.0000	206.9289

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	69.67	14.1424	0.8358	0.0000	35.0372
General Light Industry	43.71	8.8727	0.5244	0.0000	21.9818
Health Club	100.83	20.4676	1.2096	0.0000	50.7076
High Turnover (Sit Down Restaurant)	111.86	22.7066	1.3419	0.0000	56.2546
Library	21.8	4.4252	0.2615	0.0000	10.9633
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	63.6	12.9102	0.7630	0.0000	31.9845
Total		**83.5247**	**4.9362**	**0.0000**	**206.9289**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Free-Standing Discount store	69.67	14.1424	0.8358	0.0000	35.0372
General Light Industry	43.71	8.8727	0.5244	0.0000	21.9818
Health Club	100.83	20.4676	1.2096	0.0000	50.7076
High Turnover (Sit Down Restaurant)	111.86	22.7066	1.3419	0.0000	56.2546
Library	21.8	4.4252	0.2615	0.0000	10.9633
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Research & Development	63.6	12.9102	0.7630	0.0000	31.9845
Total		**83.5247**	**4.9362**	**0.0000**	**206.9289**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Emergency Generator Testing

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2028
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Model run done for emissions of emergency generator testing

Construction Phase - Model run done for emissions of emergency generator testing

Off-road Equipment - Model run done for emissions of emergency generator testing

Architectural Coating - Model run done for emissions of emergency generator testing

Area Coating - Model run done for emissions of emergency generator testing

Construction Off-road Equipment Mitigation - Tier 4 per BAAQMD

Area Mitigation - Model run done for emissions of emergency generator testing

Consumer Products - Model run done for the testing of emergency generators

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	100.00	0.00
tblArchitecturalCoating	EF_Parking	150.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	150.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	100.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	150	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	150	0
tblAreaCoating	Area_EF_Residential_Exterior	150	1050
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	Area_Parking	6	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblAreaMitigation	UseLowVOCPaintResidentialExteriorValue	1050	0
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	0.00	5.00
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblOffRoadEquipment	HorsePower	84.00	2,982.00

2.0 Emissions Summary

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	2.5200e-003	0.0410	0.0147	7.0000e-005	0.0000	6.9000e-004	6.9000e-004	0.0000	6.9000e-004	6.9000e-004	0.0000	7.5243	7.5243	2.0000e-004	0.0000	7.5293
Maximum	**2.5200e-003**	**0.0410**	**0.0147**	**7.0000e-005**	**0.0000**	**6.9000e-004**	**6.9000e-004**	**0.0000**	**6.9000e-004**	**6.9000e-004**	**0.0000**	**7.5243**	**7.5243**	**2.0000e-004**	**0.0000**	**7.5293**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2028	0.0000	0.0000	0.0000	7.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	7.5243	7.5243	2.0000e-004	0.0000	7.5293
Maximum	**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**7.5243**	**7.5243**	**2.0000e-004**	**0.0000**	**7.5293**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**100.00**	**100.00**	**100.00**	**0.00**	**0.00**	**100.00**	**100.00**	**0.00**	**100.00**	**100.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
23	**10-20-2027**	**1-19-2028**	0.0436	0.0000
		Highest	0.0436	0.0000

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Emergency Generator Testing	Architectural Coating	1/1/2028	1/7/2028	5	5	

Acres of Grading (Site Preparation Phase): 0

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Emergency Generator Testing	Generator Sets	4	0.30	2982	0.74

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Emergency Generator Testing	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Emergency Generator Testing - 2028

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.5200e-003	0.0410	0.0147	7.0000e-005		6.9000e-004	6.9000e-004		6.9000e-004	6.9000e-004	0.0000	7.5243	7.5243	2.0000e-004	0.0000	7.5293
Total	**2.5200e-003**	**0.0410**	**0.0147**	**7.0000e-005**		**6.9000e-004**	**6.9000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**7.5243**	**7.5243**	**2.0000e-004**	**0.0000**	**7.5293**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Emergency Generator Testing - 2028

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	7.0000e-005		0.0000	0.0000		0.0000	0.0000	0.0000	7.5243	7.5243	2.0000e-004	0.0000	7.5293
Total	**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.5243**	**7.5243**	**2.0000e-004**	**0.0000**	**7.5293**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.445042	0.076631	0.244215	0.152976	0.026509	0.006871	0.010884	0.001867	0.001384	0.000522	0.029860	0.000424	0.002814

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

Emergency Generator Testing - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Existing (Baseline) - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Existing (Baseline)

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	169.00	Room	2.00	57,623.00	0
Parking Lot	32.75	1000sqft	0.91	32,748.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2021
Utility Company	Peninsula Clean Energy				
CO2 Intensity (lb/MWhr)	0	**CH4 Intensity (lb/MWhr)**	0	**N2O Intensity (lb/MWhr)**	0

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Model run to account for existing conditions.

Land Use - Model run to account for existing conditions. Parking estimated from google earth. Lot acreage updated to match that for the Project.

Construction Phase - Model run to account for existing conditions. No construction.

Off-road Equipment - Model run to account for existing conditions. No construction.

Trips and VMT - Model run to account for existing conditions. No construction.

Energy Use - Model run to account for existing conditions- historical data used.

Mobile Land Use Mitigation -

Area Mitigation -

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	0.00
tblConstructionPhase	PhaseEndDate	4/7/2023	3/24/2023
tblEnergyUse	LightingElect	3.82	3.13
tblEnergyUse	LightingElect	0.88	0.35
tblEnergyUse	T24E	2.95	1.95
tblEnergyUse	T24NG	31.80	29.09
tblLandUse	LandUseSquareFeet	245,388.00	57,623.00
tblLandUse	LotAcreage	5.63	2.00
tblLandUse	LotAcreage	0.75	0.91
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblTripsAndVMT	HaulingTripLength	20.00	0.00
tblTripsAndVMT	VendorTripLength	7.30	0.00
tblTripsAndVMT	WorkerTripLength	10.80	0.00
tblTripsAndVMT	WorkerTripNumber	8.00	0.00

2.0 Emissions Summary

Existing (Baseline) - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2581	2.0000e-005	1.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6000e-003	3.6000e-003	1.0000e-005	0.0000	3.8400e-003
Energy	0.0113	0.1023	0.0859	6.1000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	111.3759	111.3759	2.1300e-003	2.0400e-003	112.0377
Mobile	0.5369	0.5578	4.8224	9.3100e-003	0.9407	8.4200e-003	0.9492	0.2512	7.8700e-003	0.2591	0.0000	858.0192	858.0192	0.0647	0.0420	872.1574
Waste						0.0000	0.0000		0.0000	0.0000	18.7828	0.0000	18.7828	1.1100	0.0000	46.5335
Water						0.0000	0.0000		0.0000	0.0000	1.3601	0.0000	1.3601	0.1397	3.3000e-003	5.8353
Total	**0.8062**	**0.6601**	**4.9102**	**9.9200e-003**	**0.9407**	**0.0162**	**0.9570**	**0.2512**	**0.0157**	**0.2669**	**20.1428**	**969.3986**	**989.5415**	**1.3166**	**0.0474**	**1,036.5677**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2581	2.0000e-005	1.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6000e-003	3.6000e-003	1.0000e-005	0.0000	3.8400e-003
Energy	0.0113	0.1023	0.0859	6.1000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	111.3759	111.3759	2.1300e-003	2.0400e-003	112.0377
Mobile	0.4966	0.4809	4.1893	7.6100e-003	0.7628	7.0400e-003	0.7698	0.2037	6.5700e-003	0.2103	0.0000	701.5939	701.5939	0.0585	0.0367	713.9889
Waste						0.0000	0.0000		0.0000	0.0000	18.7828	0.0000	18.7828	1.1100	0.0000	46.5335
Water						0.0000	0.0000		0.0000	0.0000	1.3601	0.0000	1.3601	0.1397	3.3000e-003	5.8353
Total	**0.7659**	**0.5832**	**4.2771**	**8.2200e-003**	**0.7628**	**0.0148**	**0.7776**	**0.2037**	**0.0144**	**0.2181**	**20.1428**	**812.9733**	**833.1162**	**1.3104**	**0.0420**	**878.3992**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.99**	**11.66**	**12.89**	**17.14**	**18.92**	**8.51**	**18.74**	**18.91**	**8.30**	**18.29**	**0.00**	**16.14**	**15.81**	**0.47**	**11.26**	**15.26**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/25/2023	3/24/2023	5	0	

Acres of Grading (Site Preparation Phase): 0

Existing (Baseline) - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.91

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 86,435; Non-Residential Outdoor: 28,812; Striped Parking Area: 1,965 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	0.00	0.00	0.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Architectural Coating - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.2 Architectural Coating - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Destination Accessibility

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4966	0.4809	4.1893	7.6100e-003	0.7628	7.0400e-003	0.7698	0.2037	6.5700e-003	0.2103	0.0000	701.5939	701.5939	0.0585	0.0367	713.9889
Unmitigated	0.5369	0.5578	4.8224	9.3100e-003	0.9407	8.4200e-003	0.9492	0.2512	7.8700e-003	0.2591	0.0000	858.0192	858.0192	0.0647	0.0420	872.1574

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	1,412.84	1,384.11	1005.55	2,565,954	2,080,561
Parking Lot	0.00	0.00	0.00		
Total	1,412.84	1,384.11	1,005.55	2,565,954	2,080,561

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.503496	0.067796	0.219620	0.135110	0.024059	0.005574	0.010071	0.002314	0.001646	0.000661	0.026822	0.000442	0.002389
Parking Lot	0.503496	0.067796	0.219620	0.135110	0.024059	0.005574	0.010071	0.002314	0.001646	0.000661	0.026822	0.000442	0.002389

5.0 Energy Detail

Existing (Baseline) - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Historical Energy Use: Y

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0113	0.1023	0.0859	6.1000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	111.3759	111.3759	2.1300e-003	2.0400e-003	112.0377
NaturalGas Unmitigated	0.0113	0.1023	0.0859	6.1000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	111.3759	111.3759	2.1300e-003	2.0400e-003	112.0377

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	2.08711e+006	0.0113	0.1023	0.0859	6.1000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	111.3759	111.3759	2.1300e-003	2.0400e-003	112.0377
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0113**	**0.1023**	**0.0859**	**6.1000e-004**		**7.7800e-003**	**7.7800e-003**		**7.7800e-003**	**7.7800e-003**	**0.0000**	**111.3759**	**111.3759**	**2.1300e-003**	**2.0400e-003**	**112.0377**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	2.08711e+006	0.0113	0.1023	0.0859	6.1000e-004		7.7800e-003	7.7800e-003		7.7800e-003	7.7800e-003	0.0000	111.3759	111.3759	2.1300e-003	2.0400e-003	112.0377
Parking Lot	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0113**	**0.1023**	**0.0859**	**6.1000e-004**		**7.7800e-003**	**7.7800e-003**		**7.7800e-003**	**7.7800e-003**	**0.0000**	**111.3759**	**111.3759**	**2.1300e-003**	**2.0400e-003**	**112.0377**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	456950	0.0000	0.0000	0.0000	0.0000
Parking Lot	11461.8	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Hotel	456950	0.0000	0.0000	0.0000	0.0000
Parking Lot	11461.8	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2581	2.0000e-005	1.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6000e-003	3.6000e-003	1.0000e-005	0.0000	3.8400e-003
Unmitigated	0.2581	2.0000e-005	1.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6000e-003	3.6000e-003	1.0000e-005	0.0000	3.8400e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2272					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6000e-003	3.6000e-003	1.0000e-005	0.0000	3.8400e-003
Total	**0.2581**	**2.0000e-005**	**1.8600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.6000e-003**	**3.6000e-003**	**1.0000e-005**	**0.0000**	**3.8400e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0307					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2272					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.7000e-004	2.0000e-005	1.8600e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	3.6000e-003	3.6000e-003	1.0000e-005	0.0000	3.8400e-003
Total	**0.2581**	**2.0000e-005**	**1.8600e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**3.6000e-003**	**3.6000e-003**	**1.0000e-005**	**0.0000**	**3.8400e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	1.3601	0.1397	3.3000e-003	5.8353
Unmitigated	1.3601	0.1397	3.3000e-003	5.8353

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	4.28698 / 0.476332	1.3601	0.1397	3.3000e-003	5.8353
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.3601**	**0.1397**	**3.3000e-003**	**5.8353**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Hotel	4.28698 / 0.476332	1.3601	0.1397	3.3000e-003	5.8353
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**1.3601**	**0.1397**	**3.3000e-003**	**5.8353**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.7828	1.1100	0.0000	46.5335
Unmitigated	18.7828	1.1100	0.0000	46.5335

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	92.53	18.7828	1.1100	0.0000	46.5335
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**18.7828**	**1.1100**	**0.0000**	**46.5335**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Hotel	92.53	18.7828	1.1100	0.0000	46.5335
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**18.7828**	**1.1100**	**0.0000**	**46.5335**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation



February 21, 2022

BASIN
RESEARCH
ASSOCIATES
1933 DAVIS STREET
SUITE 214
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Michael Gerrity, President
Phase 3 Real Estate Partners, Inc.
4380 La Jolla Village Drive, Suite 230
San Diego, CA 92122

RE: Cultural Resources Services - In Support of 121 E. Grand Avenue, South San Francisco, San Mateo County

Dear Mr. Gerrity,

Please let this letter stand as Basin Research Associates' (BASIN) review and supplement to the *Archaeological Resources Study of 121 E. Grand Ave, South San Francisco* (Taagepera 2021) which has previously reviewed the proposed development project. The 2021 study researched both the cultural and geological settings and provided recommended mitigation measures. BASIN conducted a supplemental review of the project site and has developed enhanced mitigation measures based on our research.

Project Location and Description

The triangular 3.25 acre project site, located at 121 E. Grand Avenue, City of South San Francisco, is currently occupied by a Comfort Inn and Suites. U.S. Highway 101 (Bayshore Freeway) is to the immediate west while Point San Bruno and the San Francisco Bay Shoreline are approximately 1.0 to 1.5 miles to the east. The project site is bounded by Grand Avenue on the northeast, by E. Grand Avenue on the south and by Poletti Way and the Union Pacific Railroad/Caltrain tracks on the west (USGS San Francisco South, CA 1995, T 3S, R 5W, unsectioned) [Figs. 1-2].

The project plan to demolish and remove the existing structures and infrastructure and construct a mixed-use retail/life science office building, at-grade parking and potentially up to four levels of underground parking, and a public plaza. The project may also include pedestrian access to a future Caltrain station, in the form of either an overcrossing or a tunnel undercrossing. It is anticipated that site will be graded to a depth of 38 feet.

Research Protocols

BASIN reviewed Taagepera (2021); the results of the California Historical Resources Information Center, Northwest Information Center (CHRIS/NWIC) archive search and selected

publications completed for Taagepera (2021); the Meyer and Rosenthal (2007) review of local Bay Area geoarchaeology; Geocon's (2021) geotechnical report; the USDA SoilWeb; Witter et al. (2006); USGS San Mateo historic topographic maps; Sowers et al. (2007); Givler and Sowers (2007); Tillery et al. (2007); and, Waechter et al. (2008) as well as BASIN internal files for South San Francisco and adjacent areas.

In addition, the Native American Heritage Commission (NAHC) was contacted for a review of the Sacred Lands File (Busby 2021).

A field review of the project site was not undertaken due to the developed nature of the property.

Findings

The observations presented below are based on the available archaeological data, a review of historic maps, and geoarchaeological studies completed for the adjacent Caltrain Electrification Project in addition to research by BASIN along Colma Creek (2015, 2018).

Archaeological Resources

There are no archaeological resources within or adjacent to the project site. The nearest resource mapped by the NWIC/CHRIS is located approximately 2000 feet south southwest of the project site. The putative location of CA-SMA-41 (P-41-000045) or Nelson Mound 380 was subject to a GeoProbe coring program by AECOM in 2016 with negative results::

> The negative boring results indicate that the site may no longer be present, or may never have existed at this location. This location historically bordered a tidal marsh, which is unlikely to have had surfaces stable enough to support and preserve a prehistoric or contact-era shell midden for later observation by Nelson. Given the tenuous provenience origins, negative boring results, and the unlikely placement of a shell midden site adjacent to a tidal marsh, we believe that CA-SMA-41 is mapped incorrectly on the NWIC base map. The true location of CA-SMA-41 is unknown (AECOM 2017).

BASIN agrees with the findings and that the site was mis-plotted. A review of Nelson's maps (1909, ca. 1912) clearly shows Nelson Mounds 380-386 clustering south of the Guadalupe Valley north of the project site near Visitation Point and within what is now currently downtown Brisbane. This finding was discussed with the CHRIS/NWIC in 2015 during the completion of a review for the *Colma Creek Flood Control Maintenance Project, San Mateo County* by BASIN and the location should have been corrected (see Busby 2015, 2018). In summary, this resource is non-existent in the vicinity of the project site.

Native American Sacred Lands File Review

The Native American Heritage Commission has no resources listed on the Sacred Lands File (SLF) for either the project site or adjacent areas (see Sanchez 2021). The NAHC typically reviews the SLF for a minimum one mile radius of a project.

Historic Map and Geological Review

The *Creek & Watershed Map of Daly City & Vicinity* (Givler and Sowers 2007; see also Sowers et al. 2007) shows the project within "Historical Tidal Marsh" through which Colma Creek located to the south of the project site flowed/meandered to the bay (see also USGS 1896, 1915, 1947, 1956; US War Dept 1943 [photography 1939, topography 1941]). The creek was known in the 1770s as the *Arroyo de San Bruno*, and from the ca. 1880s onward as Colma Creek. The recent engineered channel is often referred to as the Colma Canal (see Brown 1975). Channelization and filling of adjacent areas to the creek appears to have started in the 1890s and continued until the 1950s or later. The USGS San Mateo, Calif. 1899 shows the project site partially within a tidal marsh and partially within dry land. It is not known if the land represents the start of the historic land reclamation started in the 1890s [see Fig. 3].

Witter et al. (2006) note that the project site is within artificial fill (af), artificial fill over bay mud (afbm) or artificial fill over estuarine mud (afem) with early to late Pleistocene alluvium, undifferentiated (Qoa) adjacent on the west boundary of the project site [see Fig. 4].

Geocon (2021) completed a series of soil bores over the project for geotechnical studies. The bores yielded artificial fills from the surface grade to approximately 7.5-12 feet below grade with the materials consisting of loose to very dense sands with variable amounts of clay and silt, soft to very stiff sandy silts with relatively minor amounts of clay and gravel, and medium dense to very dense gravels with sand. The fills also included various amounts of construction debris such as concrete, brick and slag. The fills were followed by Bay Mud to about 15.5 feet below existing grade followed by mixed alluvial deposits to approximately 33.5 to 93.5 feet below grade. The Colma Formation was encountered to depths of 59.5 to 112 feet below existing grade and is below the proposed project excavation level.

The geoarchaeological sensitivity study completed for the *Caltrain Electrification Program Alternative: San Francisco, San Mateo and Santa Clara Counties* (Waechter et al. 2008:Appendix F; see also Meyer and Rosenthal 2007) included the area within and adjacent to the project site as potential facilities were under consideration for the area. The project site falls within Project Miles 9.39-9.44 which are identified as Latest Holocene (Bay Mud) and Pleistocene or Older Deposits with respective sensitivities of Low-Moderate and Very Low-Low for buried archaeological sites (see Waechter et al. 2008:Appendix F, Table 5).

Archaeological Sensitivity of Project Site

The archival and literature record review, the historic maps review, and geoarchaeological data strongly suggest a very low to low potential for subsurface archaeological resources.

- No prehistoric resources have been recorded within the project area or immediate area. Archaeological studies in the early 20th century recorded no shell mounds along this portion of San Francisco Bay.
- Geoarchaeological sensitivity reviews for potential subsurface cultural resources suggest a low to very low sensitivity for the Pleistocene or Older Deposits adjacent to the project site. While Waechter et al. (2008:Appendic F) assign a Low-Moderate sensitivity for Bay Mud deposits, it is unlikely that the project site had surfaces stable enough to support

and preserve a prehistoric or contact-era shell mound as it historically bordered a tidal marsh or may have been located within one.

- No surface indications of significant prehistoric or historic archaeological resources have been noted during the past 50 years during archaeological inventories and/or development construction suggesting a very low potential for surface and shallow subsurface cultural resources within or adjacent to the project site.

Recommendations

It is the considered opinion of BASIN, based on a review of pertinent records, historic maps, geoarchaeological studies and other documents that the proposed project can proceed as planned as it will not affect any historic properties or unique archaeological resources. No subsurface testing for buried archaeological resources within the project construction prism is necessary. In addition, archaeological monitoring during ground disturbing construction does not appear warranted. The following measures are recommended by BASIN as protective measures even though there is a very low to low potential for exposing significant prehistoric or historic resources during ground disturbing construction:

(a) The project proponent shall note on any plans that require ground disturbing excavation that there is a potential for exposing buried cultural resources including prehistoric Native American burials.

(b) It is recommended that prior to the start of ground disturbing construction the project proponent implement a *Worker Awareness Environmental Training* (WAET) program for cultural resources.

Training shall be required for all personnel participating in ground disturbing construction to alert them to the archaeological sensitivity of the project area and provide protocols to follow in the event of a discovery of archaeological materials.

A Professional Archaeologist shall develop and distribute for job site posting an "ALERT SHEET" summarizing potential finds that could be exposed and the protocols to be followed as well as points of contact to alert in the event of a discovery.

Training shall be scheduled at the discretion of the contractor in consultation with the project proponent and City of South San Francisco.

(c) It is recommended that the project proponent retain a Professional Archaeologist on an “on-call” basis to review and identify any potential archaeological discoveries during construction.

(d) BASIN recommends that if any unanticipated prehistoric or significant historic period cultural materials[1] are exposed during construction grading and/or

1. Significant prehistoric cultural resources are defined as human burials, features or other clusterings of finds made, modified or used by Native American peoples in the past. The prehistoric and protohistoric

excavation, operations should stop within 50 feet of the find and a qualified Professional Archaeologist contacted for identification, evaluation and further recommendations consistent with CEQA and City of South San Francisco requirements.

(e) If the Professional Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource under CEQA, he/she shall notify the appropriate parties of the evaluation and recommend mitigation measures to mitigate to a less-than significant impact in accordance with California Public Resources Code Section 15064.5. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal *Archaeological Monitoring Plan* (AMP) and/or *Archaeological Treatment Plan* (ATP) that may include data recovery may be recommended by the Professional Archaeologist if significant archaeological deposits are exposed during ground disturbing construction. Development and implementation of the AMP and ATP and treatment of significant cultural resources will be determined by the project proponent in consultation with any regulatory agencies.

(f) The treatment of human remains and any associated or unassociated funerary objects discovered during any soil-disturbing activity within the project site shall comply with applicable State laws (i.e., Native American burials (Chapter 1492, Section 7050.5 to the Health and Safety Code, Sections 5097.94, 5097.98 and

---

indicators of prior cultural occupation by Native Americans include artifacts and human bone, as well as soil discoloration, shell, animal bone, sandstone cobbles, ashy areas, and baked or vitrified clays. Prehistoric materials may include:

a. Human bone - either isolated or intact burials.
b. Habitation (occupation or ceremonial structures as interpreted from rock rings/features, distinct ground depressions, differences in compaction (e.g., house floors).
c Artifacts including chipped stone objects such as projectile points and bifaces; groundstone artifacts such as manos, metates, mortars, pestles, grinding stones, pitted hammerstones; and, shell and bone artifacts including ornaments and beads.
d. Various features and samples including hearths (fire-cracked rock; baked and vitrified clay), artifact caches, faunal and shellfish remains (which permit dietary reconstruction), distinctive changes in soil stratigraphy indicative of prehistoric activities.
e. Isolated artifacts

Historic cultural materials may include finds from the late 19th through early 20th centuries. Objects and features associated with the Historic Period can include.

a. Structural remains or portions of foundations (bricks, cobbles/boulders, stacked field stone, postholes, etc.).
b. Trash pits, privies, wells and associated artifacts.
c. Isolated artifacts or isolated clusters of manufactured artifacts (e.g., glass bottles, metal cans, manufactured wood items, etc.).
d. Human remains.

In addition, cultural materials including both artifacts and structures that can be attributed to Hispanic, Asian and other ethnic or racial groups are potentially significant. Such features or clusters of artifacts and samples include remains of structures, trash pits, and privies.

5097.99 of the Public Resources Code)). This shall include immediate notification of the appropriate county Coroner/Medical Examiner, the project proponent and the City of South San Francisco.

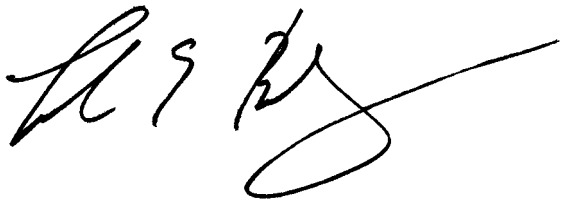
(g) A *Monitoring Closure Report* shall be filed with the project proponent at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.

Closing Remarks

The review of the archaeological data suggest that the potential for the exposure of significant cultural resources within the project site is very low to low for exposing significant cultural resources during ground disturbing construction. No archaeological testing appears necessary and archaeological monitoring does not appear to be warranted during future excavation. Worker Awareness Environmental Training (WAET) is recommended for personnel involved with ground disturbing construction as well as the retention of an "on-call" archaeologist to respond in the event of an unexpected discovery. These measures will provide resource protection in the event of any unexpected cultural discoveries.

If I can provide any additional information or be of further service please don't hesitate to contact me.

BASIN RESEARCH ASSOCIATES, INC.



Colin I. Busby, Ph.D., RPA
Principal

CIB/dg

References Cited and Consulted

AECOM
2017 CA-SMA-41 (P-41-000045) Site Form Update. On file, CHRIS/NWIC, Sonoma State University Rohnert Park.

Brown, Alan K.
1975 Place Names of San Mateo County. San Mateo County Historical Association, College of San Mateo Campus, San Mateo.

Busby, Colin I. (Basin Research Associates)
2015 Records Search and Limited Literature Review, Colma Creek Flood Control Maintenance Project [Colma and South San Francisco], San Mateo County [California]. Dated 6/23/2015. On file, Horizon Water and Environment, Oakland and Basin Research Associates, San Leandro.

2018 Historic Property Survey Report/Finding of Effect - Colma Creek Flood Control Zone Channel Improvement Project San Mateo County. On file WRECO, Walnut Creek and Basin Research Associates, San Leandro

2021 Native American Heritage Commission Sacred Lands File Review and Native American Contacts List Request: 121 East Grand Avenue, South San Francisco, San Mateo County. Via email nahc@nahc.ca.gov on August 3, 2021.

Geocon Consultants, Inc.
2021 Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Avenue, South San Francisco, California.

Givler, Robert W. and Janet M. Sowers
2007 Creek & Watershed Map of Daly City & Vicinity. 1:25,800 scale. The Oakland Museum of California, Oakland.

Meyer, Jack and Jeffrey Rosenthal
2007 Geoarchaeological Review of the Nine Bay Area Counties in Caltrans District 4. MS on file, S-33600, CHRIS/NWIC, Sonoma State University Rohnert Park.

Nelson, Nels C.
1909 Shellmounds of the San Francisco Bay Region. University of California Publications in American Archaeology and Ethnography 7(4):309-356.

ca. 1912 Site location map for Nelson's San Francisco Bay region (ca. 1910). Manuscript map in University of California Archaeological Survey Files (as cited in University of California Archaeological Survey Reports 75:83).

Sanchez, Katy (Native American Heritage Commission)
2021 Native American Heritage Commission – Response to Request for Review of Sacred Lands Inventory 121 E. Grand Avenue, San Mateo County. Dated September 9, 2021. On file, Basin Research Associates, San Leandro.

Sowers, Janet M., Robert W. Givler, M. Teresa Ramirez-Herrera, Anne Tillery, Christopher Richard, and Sarah Pearce
2007 Creek and Watershed Map of the San Francisco Peninsula: A Digital Database Version 1.1. William Lettis & Associates, Inc., October 19, 2007.

Taagepera, Leann
2021 Archaeological Resources Study of 121 E. Grand Avenue, South San Francisco. June 24, 2001. On file, Basin Research Associates, San Leandro.

Tillery, Anne C., Sowers, Janet M., and Pearce, Sarah
2007 Creek and Watershed Map of San Mateo County & Vicinity. William Lettis & Associates, Inc. and San Francisco Estuary Institute. Accessed online at www.museumca.org/creeks.

UC Davis and USDA Natural Resources Conservation Service
n.d. SoilWeb: An Online Soil Survey Browser | California Soil Resource Lab (ucdavis.edu)

United States Geological Survey **(USGS)**
1896 San Mateo Quadrangle [Topographic]. 15 minute series (surveyed 1896, reprinted 1906).
1915 San Mateo Quadrangle [Topographic]. 15 minute series (reprinted 1939).
1947 San Francisco South Quadrangle. 7.5 minute series.
1950 San Francisco South, Calif. [Quadrangle]. Topographic map, 7.5 minute series.
1956 San Francisco South, Calif. [Quadrangle]. Topographic map, 7.5 minute series.
1980 San Francisco South, Calif. [Quadrangle]. Topographic map, 7.5 minute series (1956 photorevised).
1995 San Francisco South, CA [Quadrangle]. Topographic map, 7.5 minute series. United States Geological Survey, Menlo Park.

United States War Department, Corps of Engineers **(US War Dept)**
1943 San Mateo, Calif. (Quadrangle). Topographic map, 15 minute series. Scale 1/62500 (photography 1939, topography 1941) [in Allan 2010].

Waechter, Sharon A., Jack Meyer, and Laura Leach-Palm
2008 Cultural Resources Addendum for the Caltrain Electrification Program Alternative: San Francisco, San Mateo and Santa Clara Counties, California. MS on file, S-37863, CHRIS/NWIC, Sonoma State University Rohnert Park.

Witter, Robert C., Keith L. Knudsen, Janet M. Sowers, Carl M. Wentworth, Richard D. Koehler and Carolyn E. Randolph
2006 Maps of Quaternary Deposits and Liquefaction Susceptibility in the Central San Francisco Bay Region, California. USGS Open-File Report 2006-1037.

ATTACHMENTS

FIGURES

FIGURE 1 Project Location - T3S R5W unsectioned (ESRI World Street Map)

FIGURE 2 Project Location - T3S R5W unsectioned (USGS San Francisco South, CA 1995)

FIGURE 3 Project Location in 1899 (USGS San Mateo, Calif. 1899)

FIGURE 4 Project Location - Quaternary Deposits (ESRI World Street Map; Witter et al. 2006)

NATIVE AMERICAN

LETTER Request to Native American Heritage Commission

LETTER Response from Native American Heritage Commission

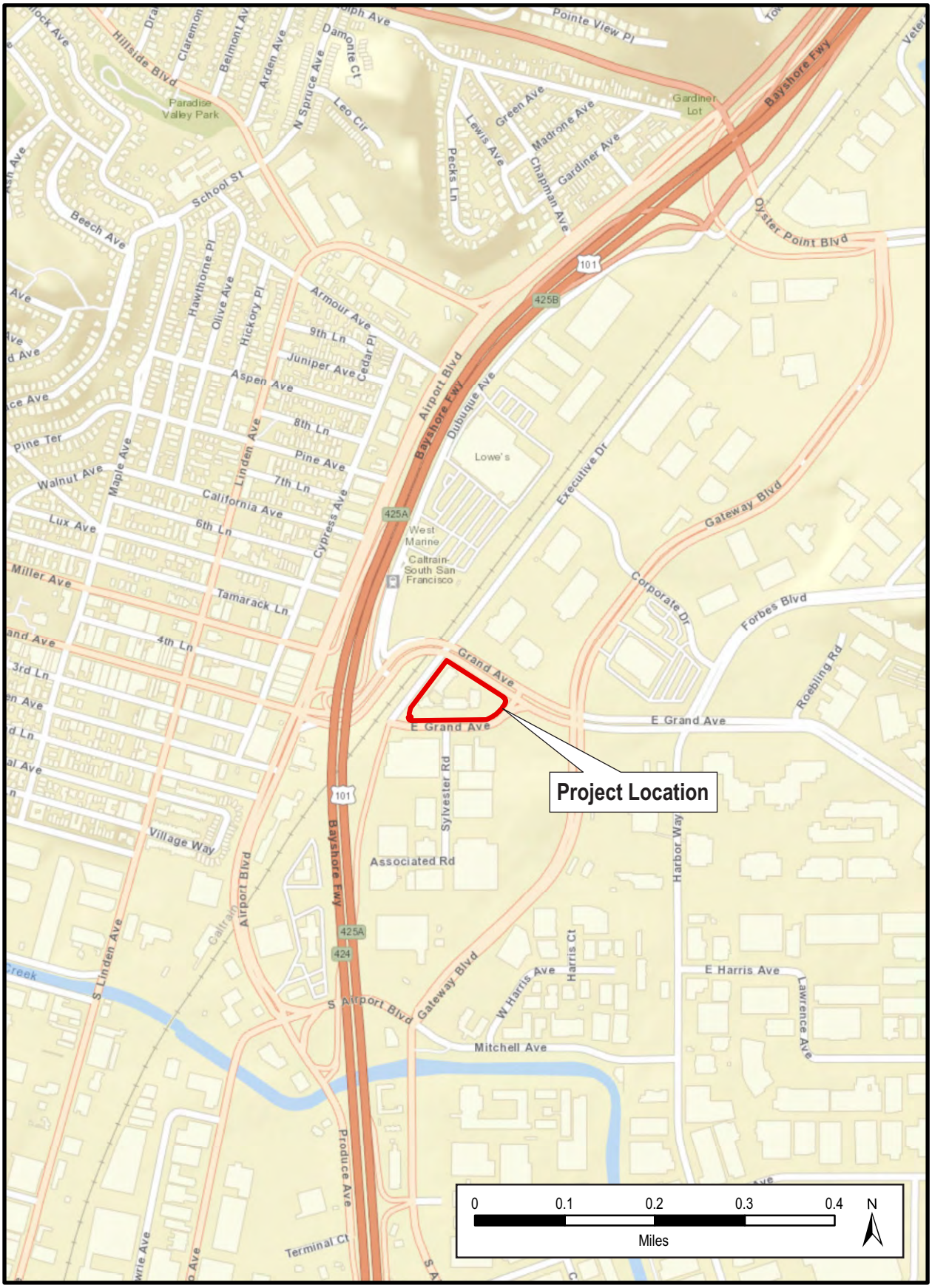


Figure 1: Project Location - T3S R5W unsectioned (ESRI World Street Map)

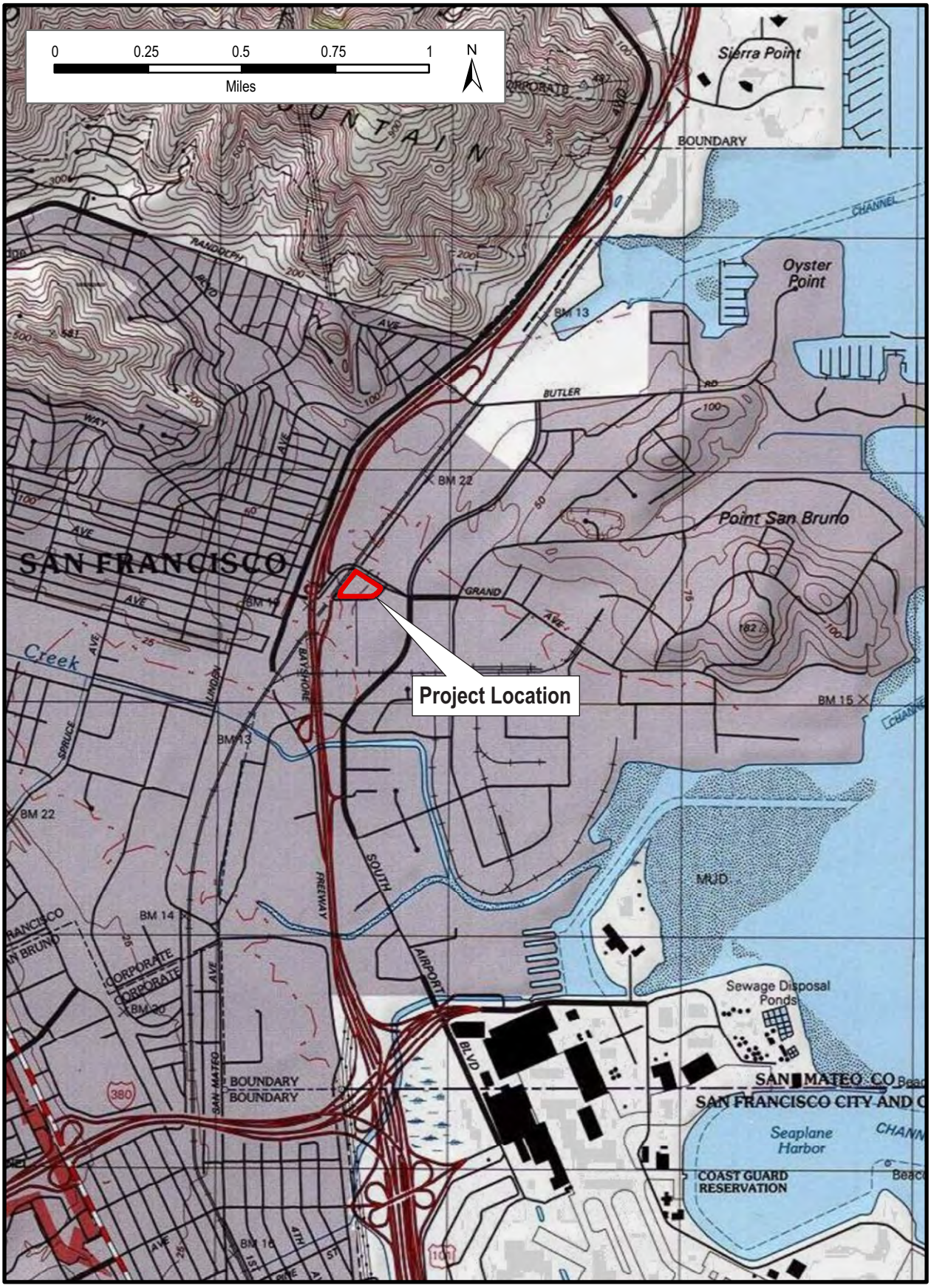


Figure 2: Project Location - T3S R5W unsectioned (USGS San Francisco South, CA 1995)



Figure 3: Project Location in 1899 (USGS San Mateo, Calif. 1899)



Figure 4: Project Location - Quaternary Deposits (ESRI World Street Map; Witter et al. 2006)

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION

1556 Harbor Boulevard, STE 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: 121 E. Grand Avenue, South San Francisco, San Mateo County

County: San Mateo County

USGS Quadrangle Name: USGS San Francisco South, CA. 1995

Address: 121 E Grand Avenue, City of South San Francisco

Township: 3S, **Range**: 5W, unsectioned

Company/Firm/Agency: Basin Research Associates

Contact Person: Colin I. Busby, PhD, RPA

Street Address: 1933 Davis Street, STE 215

City/Zip: San Leandro, CA 94577

Phone: (510) 430-8441 x101

Fax: (510) 430-8443

Email: basinres1@gmail.com

Project Description: Demolition and removal of the existing Comfort Inn Suites complex and infrastructure on the project site. Construct mixed-use retail/life science office building, at-grade parking and potentially up to four levels of underground parking, and a public plaza. The project may also include pedestrian access to a future Caltrain station, in the form of either an overcrossing or a tunnel undercrossing.

Project site is on filled land over San Francisco Bay mud. No resources known.

8/03/21

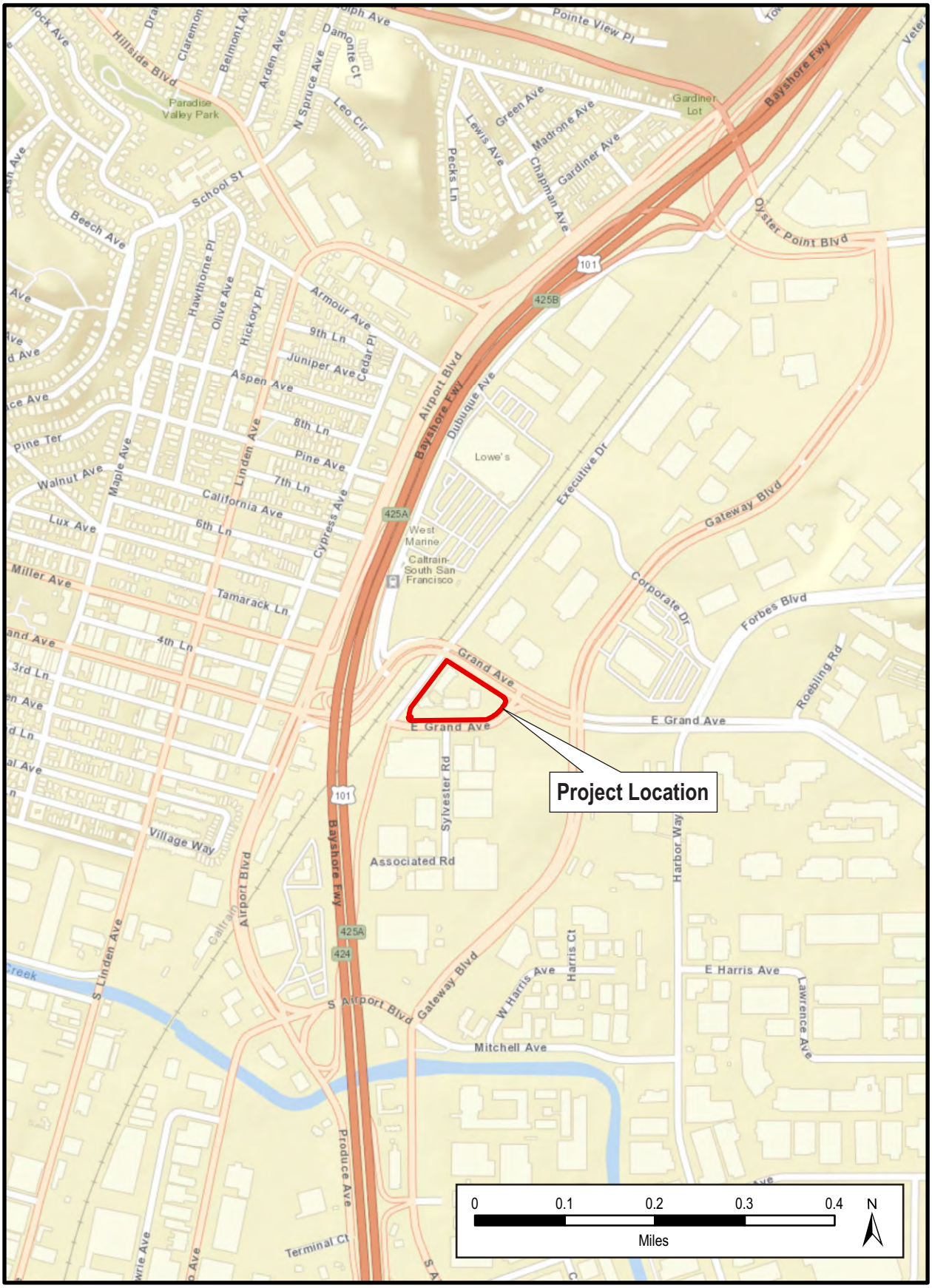


Figure 1: Project Location - T3S R5W unsectioned (ESRI World Street Map)

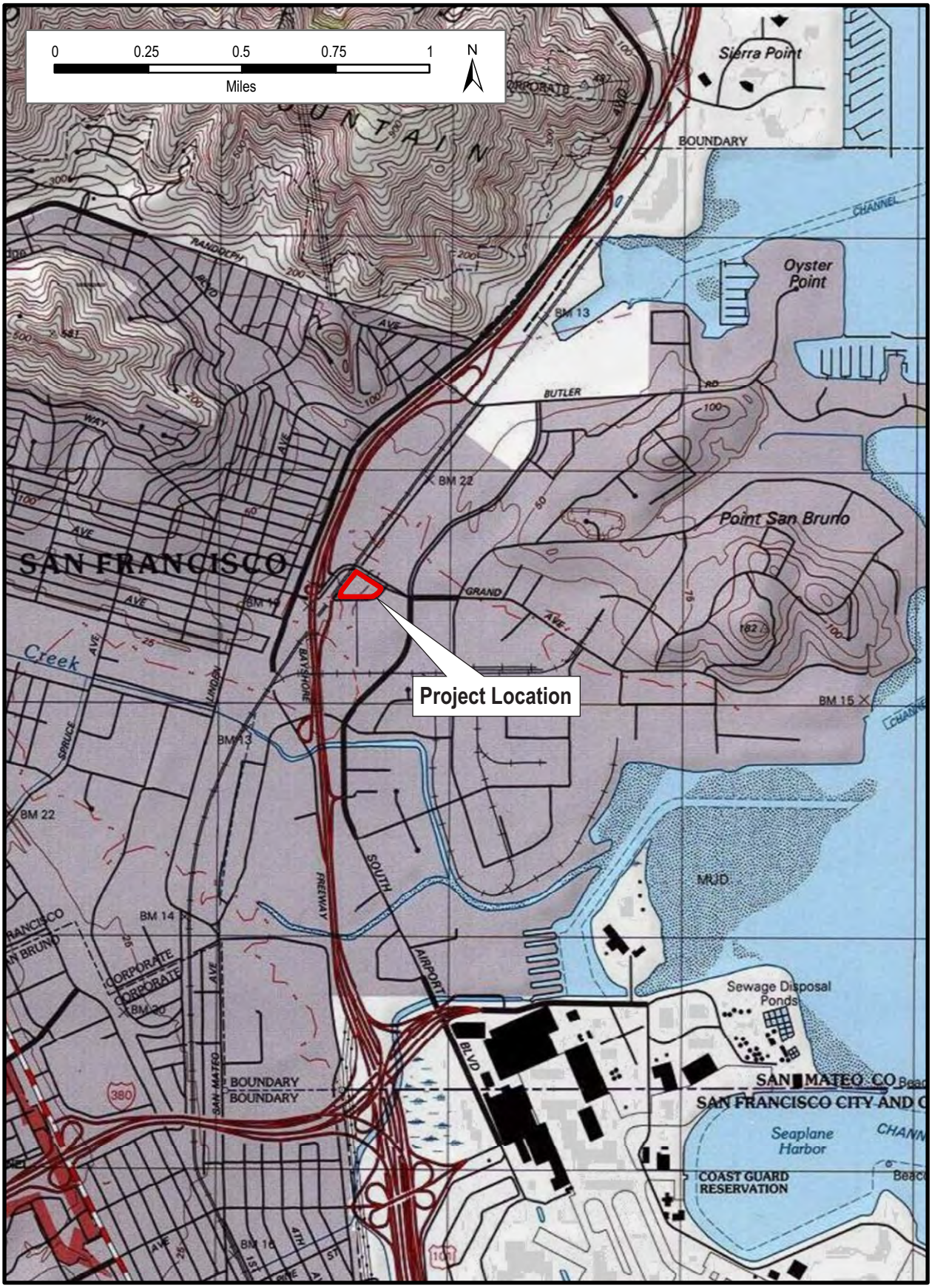


Figure 1: Project Location - T3S R5W unsectioned (USGS San Francisco South, CA 1995)

E

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

COMMISSIONER
[**Vacant**]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

NATIVE AMERICAN HERITAGE COMMISSION

September 9, 2021

Colin Busby
Basin Research

Via Email to: basinres1@gamil.com

Re: 121 E. Grand Ave., San Mateo County.

Dear Mr. Busby:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions, please contact me at my email address: Katy.Sanchez@nahc.ca.gov.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Environmental Planner

Attachment

Native American Heritage Commission
Native American Contacts List
September 9, 2021

Amah Mutsun Tribal Band of Mission San Juan Bautista
Irene Zwierlein, Chairperson
3030 Soda Bay Road — Ohlone/Costanoan
Lakeport ,CA 95453
amahmutsuntribal@gmail.com
(650) 851-7489 Cell
(650) 332-1526 Fax

Costanoan Rumsen Carmel Tribe
Tony Cerda, Chairman
244 E. 1st Street — Ohlone/Costanoan
Pomona ,CA 91766
rumsen@aol.com
(909) 629-6081
(909) 524-8041 Fax

Indian Canyon Mutsun Band of Costanoan
Kanyon Sayers-Roods
1615 Pearson Court — Ohlone/Costanoan
San Jose ,CA 95122
408-673-0626

Indian Canyon Mutsun Band of Costanoan
Ann Marie Sayers, Chairperson
P.O. Box 28 — Ohlone/Costanoan
Hollister ,CA 95024
(831) 637-4238

Muwekma Ohlone Indian Tribe of the SF Bay Area
Monica Arellano, Vice Chairwoman
20885 Redwood Road, Suite 232 — Ohlone / Costanoan
Castro Valley ,CA 94546
marellano@muwekma.org
(408) 205-9714

Tamien Nation
Quirina Luna Geary, Chairperson
P.O. Box 8053 — Ohlone/Costanoan
San Jose ,CA 95155
qgeary@tamien.org
(707) 295-4011

Tamien Nation
Johnathan Wasaka Costilla, THPO
P.O. Box 866 — Ohlone/Costanoan
Clearlake Oaks ,CA 95423
thpo@tamien.org
(925) 336-5359

The Ohlone Indian Tribe
Andrew Galvan
P.O. Box 3388 — Ohlone
Fremont ,CA 94539 — Bay Miwok
chochenyo@AOL.com — Plains Miwok
(510) 882-0527 Cell — Patwin
(510) 687-9393 Fax

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct. — Foothill Yokuts
Salinas ,CA 93906 — Mono
kwood8934@aol.com — Wuksache
(831) 443-9702

LEANN TAAGEPERA
Cultural and
Historical Resource Planning

June 4, 2021

Michael Gerrity and Adam Cashner
Phase 3 Real Estate Partners, Inc.
Via Electronic Mail to gerrity@p3re.com and cashner@p3re.com

SUBJECT: Archaeological Resources Study of 121 E. Grand Ave., South San Francisco.

Dear Mr. Gerrity and Mr. Cashner,

This letter report composes a site-specific archaeological resources study of APN 015-024-230, a 2.91 acre site, located at 121 E. Grand Ave., in South San Francisco. A Comfort Inn and Suites currently occupies the site and the project would include the demolition and removal of all of the existing structures and infrastructure on the site. The proposed project is the construction of a mixed-use office and employee services (cafe, gym, etc.) building, at-grade parking and potentially up to four levels of underground parking, bus stop area, and a public plaza. The project may also include pedestrian access to a future Caltrain station, in the form of either an overcrossing or a tunnel undercrossing. For purposes of this and other analyses of the project, it is assumed that the entire site would be graded to a depth of 38 feet. An archaeological study of the parcel is required as part of the California Environmental Quality Act (CEQA) environmental review process to determine whether any known archaeological sites exist on the project site and ascertain the probable likelihood of encountering any such sites during construction.

The scope of work of this study is composed of the results of a records search for archaeological resources on the project site and a study area .25 miles from the site, which was requested from the Northwest Information Center (NWIC) of the California Historical Resources Information System, Sonoma State University; a review of the geologic setting of the site; preparation of a brief regulatory setting section, determination of the site's sensitivity for archaeological resources; and a recommendation of mitigation measures for the project. The scope of work did not include contacting the Native American Heritage Commission for a review of the Sacred Lands File or contacting any Native American representatives.

Regulatory Context

Regulations affecting this project include the statutes and guidelines contained in CEQA (Public Resources Code Sections 20183.2 and 21084.1 and Section 15064.5 of the CEQA Guidelines). CEQA regulates projects proposed to be carried out or approved by public agencies in the state of California, whether directly undertaken by the agency, undertaken by a person supported, in whole or in part, by the agency; or involving the issuance of a lease, permit, license, certificate,

or other entitlement for use by the agency, which may directly or indirectly cause a physical change in the environment (California Public Resources Code (PRC), Division 13, §21063, §21065, and §21080).

A project "that may cause a substantial adverse change in the significance of an historical resource" is considered one that "may have a significant effect on the environment" (California Code of Regulations [CCR] Title 14, Chapter 3, §15064.5[b]). Pursuant to Section 15064.5 of the CEQA Guidelines, archaeological resources, not otherwise determined to be historical resources, may be significant if they are unique. Pursuant to Public Resources Code Section 21083.2, a unique archaeological resource is defined as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets one of the following criteria:

1. The resource contains information needed to answer important scientific questions and there is a demonstrable public interest in that information;
2. The resource has a special and particular quality, such as being the oldest of its type or the best available example of its type; or
3. The resource is directly associated with a scientifically recognized important prehistoric or historic event or person.

To comply with these regulations, first it should be determined whether any cultural resources exist on the site and, therefore, could be affected by the project. This archaeological resource study is intended to facilitate compliance with this requirement by identifying any previously recorded archaeological resources that might be affected, and also to assess the likelihood of encountering currently unknown resources during project construction activities.

Geological Setting

According to the Phase I Environmental Site Assessment Report completed for this project and based on information from the U.S. Geological Survey (USGS), the site and surrounding area rest on alluvial and marine terrace deposits of the Holocene Epoch of the Quaternary period. (The time period in which human occupation is known to have existed in North America.) Soils from this series are alluvium, lake, playa, and terrace deposits. Soils of the project area are said to consist mostly of non-marine deposits, with some marine deposits near the shore. The project site is located approximately 19 feet above mean sea level with a slight slope toward the southeast.[1]

The geotechnical report prepared for the project indicated that "Available geologic mapping by the [USGS] and other sources indicates the site is underlain by artificial fills over Bay Mud deposits." The geotechnical report reported the results of soil borings indicating that each boring encountered artificial fills, ranging at a depth of approximately 7.5 to 12 feet below the existing grade. Below the artificial fills, bay mud was observed extending to depths of about

[1] Partner Engineering and Science, Inc., Phase I Environmental Site Assessment Report, San Francisco Bay Development, Partner Project No. 20-281457.1, June 11, 2020; https://ngmdb.usgs.gov/Prodesc/proddesc_49.htm

15.5 feet or less in the borings. The soil borings encountered mixed alluvial deposits below the Bay Mud and/or the artificial fill to depths of approximately 33.5 to 93.5 feet below existing grade. A Pleistocene-age sedimentary deposit, known as Colma Formation was located below the alluvial deposits, to depths of 59.5 and 112 feet below existing grade.[2] (This deposit is located deeper than would be graded for the project.) As stated by Moratto, "The geologic data imply, first, that local estuarine adaptations must have appeared less than 8,000 years ago; second that archaeological sites on old bayshores are probably buried deeply under sediments…"[3]

Records Search Result

A request was submitted to NWIC Staff to conduct a records search on April 22, 2021 and the search results were received on May 28, 2021. The records search included a review of NWIC maps (USGS 7.5-minute topographic maps with NWIC annotations) to identify recorded archaeological sites and recorded archaeological surveys. It also included a search for any site records and study reports on file at the NWIC including the project site.

The records search did not locate any known archaeological resources on the project site. However, it identified one archaeological resource that potentially exists at least approximately 1250 feet from the project site (P-41-00004/CA-SMA-41.) This site is identified as a Native American archaeological site first identified by Nels Nelson in 1909. It was reviewed for its existence and location in a Department of Parks and Recreation Continuation Sheet dated January 12, 2017 by AECOM which found that "the site may no longer be present or may never have existed in this location." In addition, the records search identified one report (S-048738) as including at least a part of the parcel in its study. That report was an Archaeological Survey Report, a Technical Report prepared for the Environmental Impact Report/Environmental Impact Statement, San Francisco to San Jose Station, California High-Speed Train Project. No archaeological resources were identified on the project site as a result of this report. However, the records search result did not find that any site specific field surveys, borings, or shovel testing have been completed on the project site.

Sensitivity and Potential for Encountering Unknown Archaeological Resources

The likelihood that an area includes currently unknown archaeological remains is referred to as its archaeological sensitivity. Predictions of an area's sensitivity are based on various factors, including the results of a records search, the geological and soil conditions determined from maps or geotechnical reports, and distance to streams or former water sources. The Phase I Environmental Site Assessment prepared for the project identified the condition and uses of the site dating to 1943, when the site was vacant, until 1963 and 1968 when it appeared to be developed with two man-made ponds. By 1993, the site appeared to have been developed

[2] Geocon Consultants, Inc., Preliminary Geotechnical Investigation, Proposed Mixed-Use Development 121 East Grand Avenue, South San Francisco, California, April 2021.

[3] Moratto, Michael J. 1984. California Archaeology. San Diego: Academic Press, Inc.

with a hotel. While archaeology of the 19th or 20th century could exist on the site, it does not appear likely that such historical-era archaeology would be encountered during construction activities unless it was mixed in with the artificial fill on the site or the remains of an unknown historical site existed under the fill material.

The age and composition of deposits affects their potential to contain Native American buried archaeological sites. Landforms that developed before the Quaternary Period have little potential for buried archaeological remains, as the surface formed prior to human occupation in the region. Landforms that developed in the Holocene, however, may contain buried archaeological remains, as they formed during the time that humans were present. Construction of the project would result in grading to a depth of approximately 38 feet, through artificial fill, Bay Mud, and alluvial deposits. It is possible that the geological layers below the artificial fill contain buried archaeological deposits, as could all such sites throughout the area located on such soils. This possibility is discussed in and illustrated on Figure 6 "Radiocarbon dates associated with major strata and Transbay Man in Yerba Buena Cover (Meyer, 2014)" in the report Geology of San Francisco, California.[4] Regarding potential former water sources, Colma Creek is located south of the site and other creeks may have existed in the area prior to urbanization.

Conclusions

This analysis found that excavations associated with the project would be confined to imported fill, a deposit of Bay Mud that underlies the imported fill, and deeper alluvial deposits. If material exists from the borings or appropriate data was gathered from them during the preparation of the geotechnical report, it is recommended that the material be reviewed for the presence of cultural resources. The results of such a review could contribute information to the determination of the archaeological sensitivity of the site. Archaeological resources may exist in these geologic layers and the possibility of the inadvertent discovery of buried archeological resources cannot be completely eliminated. As such, ground-disturbing construction activities below artificial fill have the potential to inadvertently expose and, therefore, affect previously unknown archeological resources. Since the project site is mostly developed and constructed on artificial fill material, no pedestrian field survey to review the site for surface archaeological sites is recommended. The inadvertent exposure of a previously unknown archaeological resource would be a potentially significant impact, under CEQA.

Recommended/Example Mitigation Measures

- **Mitigation Measure: Inadvertent Encounter of Undiscovered Archaeological Resources.**
    - If buried cultural resources, such as chipped or ground stone, obsidian, animal bones, shells or shell pieces consistent with those found in Native American shellmounds, historic debris, building foundations, or other items are discovered inadvertently during soil or

[4] Association of Engineering Geologists, Geology of Cities of the World Series, Geology of San Francisco, California, United States of America, Edited by Kenneth A. Johnson and Greg W. Bartow, 2018, https://www.aegweb.org/assets/docs/updated_final_geology_of_san.pdf

ground-disturbing activities, work shall stop in that area and within 50 feet of the find until a qualified archaeologist/cultural resource specialist can assess the significance of the find and, if necessary, develop appropriate treatment measures in consultation with the City of South San Francisco, and Native American representatives, as appropriate.

- Project personnel shall not collect cultural resources found. Cultural material associated with Native peoples includes, but is not limited to, chert or obsidian flakes; projectile points; mortars and pestles; dark friable soil containing shell and bone dietary debris; heat-affected rock; human burials; shell midden deposits; hearth remains; and bone, stone and/or shell artifacts. Historical material associated with settlers include but are not limited to stone or adobe foundations or walls; structures and remains with square nails; whole or fragmentary ceramic, glass or metal objects; or wood, nails, brick, or other materials may occur within the project area in deposits such as old privies, dumps, or even as part of the fill. Any identified cultural resources shall be recorded on DPR 523 historic resource recordation forms which shall be provided to the NWIC for their files. The disposition of any such items discovered shall be determined by the City of South San Francisco through recommendations provided by an archaeologist or cultural resource specialist, and in consultation with a Native American representative, if recommended by the archaeologist or cultural resource specialist.

Mitigation Measure: Inadvertent Encounter of Human Remains.

If human remains are encountered, the County coroner shall be contacted immediately. If the County coroner determines that the remains are Native American, the coroner shall contact the Native American Heritage Commission within 24 hours (pursuant to Section 7050.5 of the California Health and Safety Code.) There shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent human remains until the County Coroner is contacted and the Coroner has determined that the remains are not subject to provisions of the law regarding the investigation of the circumstances, manner, and cause of death. The NAHC shall provide the City of San Francisco with the contact information for the Most Likely Descendant who will have the opportunity to make a recommendation within 24 hours after being notified by the NAHC as to how the remains shall be treated and their disposition. If any human remains are encountered, the remains shall be left in place and protected from further disturbance until a plan for their disposition can be developed. Pursuant to Section 7050.5(b), if the remains are not Native American and not subject to investigation as described above, the Coroner shall recommend treatment and disposition of the remains to the person responsible for the excavation.

Please contact me with any questions.

Sincerely,



Leann S. Taagepera
Principal

Tree Inventory Report

121 East Grand Avenue
South San Francisco, CA

PREPARED FOR:
OCI San Fran, LLC
P.O. Box 9927729
San Diego, CA 92192

PREPARED BY:
HortScience | Bartlett Consulting
325 Ray Street
Pleasanton, CA 94566

May 5, 2021

HORT SCIENCE
BARTLETT CONSULTING
A Division of The F.A. Bartlett Tree Expert Company

Tree Inventory Report

121 East Grand Avenue
South San Francisco, CA

Table of Contents

	Page
Introduction and Overview	1
Tree Assessment Methods	1
Description of Trees	2
South San Francisco Tree Ordinance	4
Suitability for Preservation	5
Preliminary Tree Preservation Guidelines	6

List of Tables

Table 1. Condition ratings and frequency of occurrence of trees.	2
Table 2. Tree suitability for preservation.	6

Exhibits

Tree Assessment Form

Tree Assessment Plan

Tree Inventory Report

121 East Grand Avenue
South San Francisco, CA

Introduction and Overview

OCI San Fran, LLC is planning to renovate the subject property at 121 East Grand Avene in South San Francisco. HortScience | Bartlett Consulting, Divisions of The F. A. Bartlett Tree Expert Company, was asked to prepare a **Tree Inventory Report** for the trees on the property as part of the application to the City of South San Francisco.

This report provides the following information:

1. An assessment of each tree's health, structure, suitability for preservation and protected status within and adjacent to the proposed project area.
2. Preliminary guidelines for tree preservation during the design, construction and maintenance phases of development.

Assessment Methods

Trees were assessed on April 12th and 23rd, 2021. The assessment included all trees within or adjacent to the property with a diameter of 5" or greater. The assessment procedure consisted of the following steps:

1. Identifying the tree species.
2. Tagging or confirming the presence of a metal numerical tag and confirming its location on a map.
3. Measuring the trunk diameter at a point 54 inches above grade; for off-site trees diameters were estimated.
4. Evaluating the health and structural condition using a scale of 1 – 5:
   - ***5*** - A healthy, vigorous tree, reasonably free of signs and symptoms of disease, with good structure and form typical of the species.
   - ***4*** - Tree with slight decline in vigor, small amount of twig dieback, minor structural defects that could be corrected.
   - ***3*** - Tree with moderate vigor, moderate twig and small branch dieback, thinning of crown, poor leaf color, moderate structural defects that might be mitigated with regular care.
   - ***2*** - Tree in decline, epicormic growth, extensive dieback of medium to large branches, significant structural defects that cannot be abated.
   - ***1*** - Tree in severe decline, dieback of scaffold branches and/or trunk; most of foliage from epicormics; extensive structural defects that cannot be abated.
   - ***0*** – Tree is dead.
5. Rating the suitability for preservation as "high", "moderate" or "low". Suitability for preservation considers the health, age and structural condition of the tree species, and its potential to remain an asset to the site.

High:	Trees with good health and structural stability that have the potential for longevity at the site.
Moderate:	Trees with somewhat declining health and/or structural defects than can be abated with treatment. The tree will require more intense management and monitoring, and may have shorter life span than those in 'high' category.
Low:	Trees in poor health or with significant structural defects that cannot be mitigated. Tree is expected to continue to decline, regardless of treatment. The species or individual tree may have characteristics that are undesirable for landscapes, and generally are unsuited for use areas.

Description of Trees

Sixty-nine (69) trees representing 10 species were evaluated. Forty-nine (49, or 71%) of the trees were in poor condition, and seventeen (17, or 25%) were in fair condition. Coast redwood #31 and white alder #53 were in good condition. White alder #51 was dead. Tree condition varied by species. Descriptions of each tree are found in the ***Tree Assessment Form*** and locations are plotted on the ***Tree Assessment Plan*** (see Exhibits).

Table 1. Tree condition and frequency of occurrence. 121 E Grand Ave, So. SF, CA.

Common Name	Scientific Name	Condition				Total
		Dead (0)	Poor (1-2)	Fair (3)	Good (4-5)	
Blackwood acacia	*Acacia melanoxylon*	-	3	2	-	**5**
White alder	*Alnus rhombifolia*	1	7	3	1	**12**
River red gum	*Eucalyptus camaldulensis*	-	3	1	-	**4**
Blue gum	*Eucalyptus globulus*	-	2	-	-	**2**
Silver dollar gum	*Eucalyptus polyanthemos*	-	8	4	-	**12**
Red ironbark	*Eucalyptus sideroxylon*	-	18	4	-	**22**
Manna gum	*Eucalyptus viminalis*	-	1	1	-	**2**
New Zealand Christmas Tree	*Metrosideros excelsa*	-	1	1	-	**2**
Monterey pine	*Pinus radiata*	-	3	1	-	**4**
Coast redwood	*Sequoia sempervirens*	-	3	-	1	**4**
Total		**1**	**49**	**17**	**2**	**69**

The site was a Comfort Inn & Suites at the east side of Highway 101, a mostly flat property that sloped up to the Grand Avenue overpass to the northeast. The trees were located at the perimeter of the parking lot and in landscape areas. Many of the tree species were common to Bay Area commercial landscapes, with various eucalyptus species making up over 60% of the trees (42 trees).



Photo 1. Trees #1-10 lined the south side of the parking lot. Red ironbark #1 is first tree on left.

Red ironbark was the most common species assessed, with 22 trees, or about 32% of the population (Photo 1). The ironbarks ranged from young trees of 8 inches to mature (29 inches). Condition tended to be poor (18 trees), with 4 trees in fair condition. Most of the trees were growing along the frontage of the property along East Grand Avenue, between the parking lot and the sidewalk. Many had poor form and structure, with codominant stems or multiple stems and twig dieback. Red ironbark #6 had a crook in its trunk, which was cracked and leaning toward the parking lot.

Twelve silver dollar gums were planted among the row of ironbarks along East Grand. Trees were predominantly in poor condition (8 trees), with 4 trees in fair condition. Their diameters ranged from 8 to 18 inches. Silver dollar gums tended to be crowded or suppressed by nearby trees, with narrow crowns. A few were leaning, and almost all had twig dieback.

Twelve white alders were assessed (Photo 2). Most of the alders were growing in a row along the north side of the Inn, and a trio located at the eastern corner. Conditions were variable, with 7 alders in poor condition, 3 in fair condition, and one tree, #53, in good condition. Tree #51 was dead. Trees were semi-mature in development with diameters from 10 to 21 inches. Several of the alders had high crowns or were sparse and one-sided; some had a history of limb removals.

Five blackwood acacias were growing among shrubs on the hillside at the north end of the site. Three trees were in poor condition and 2 were fair. A few were multi-stemmed at the base and were large shrubs. Trunk diameters ranged from 2 to 17 inches.

None of the remaining six species were represented by more than four trees. Included in this group were:

- Semi-mature river red gums #36 - 38 and 42 were growing at the southwest side of property, next to parking lot. Trees #36, 38, and 42 were in poor condition, and tree #37 was in fair condition. Trunk diameters ranged from 10 to 15 inches. Trees had poor structure with narrow, suppressed or one-sided form.

- Monterey pines #58, 59, 64 and 65 were growing on the northern slope in the same area as the acacias. These were semi-mature trees with diameters ranging from 12 to 20 inches. Three trees were in poor condition and one tree (#58) was in fair condition. Most of the pines were crowded and leaning, or had bowed trunks and poor branch structure.

- Coast redwoods #31 – 34 were growing in a group at the east end of the Inn (Photo 3). Tree #31 was the youngest, and was in good condition with a diameter of 14 inches. Trees



Photo 2. White alders #54–47 (left to right) were planted along the west side of the Inn building.



Photo 3. Coast redwoods #32-34 were growing close to the building.

#32 – 34 had all been topped at about 30 feet. These trees were in poor condition, and diameters ranged from 19 to 20 inches.

- Blue gums #55 and 56 were growing at the north side of the building, and were in poor condition (Photo 4). Tree #55 had a diameter of 20 inches, and was in a narrow corner planter and leaned north. Tree #56 also leaned slightly north. Its diameter was 24 inches. It had a history of limb failures and bark was detaching from the lower portion of the trunk.

- Manna gums #28 and 30 were growing on the slope by the east parking lot and were in poor condition. Both had high thin crowns with twig and branch dieback. Diameters were 10 and 15 inches, respectively.

- New Zealand Christmas trees #57 and 66 were growing at the back (north) side of the Inn near the hillside. Both were multi-stemmed at the base with shrubby form. Tree #57 was in fair condition, with stems ranging from 4 to 11 inches in diameter. Tree #66 was in poor condition with stems from one to 5 inches in diameter, and was one-sided and suppressed by nearby trees.



Photo 4. Blue gum #55 was growing near an enclosure wall and was leaning toward the Grand Avenue overpass.

South San Francisco - Tree Ordinance

The City of South San Francisco regulates trees under Municipal Code Chapter 13.30 Tree Preservation. A Protected tree is any of the following:

- Certain species (such as oaks) 10” and greater in trunk diameter,
- Most species 15” and greater in diameter,
- Certain species (such as blackwood acacia) 24” and greater in trunk diameter (Municipal Code Section 13.30),
- A stand of trees whereby each tree is dependent upon the others for survival,
- A tree or stand of trees so designated based on findings that it is unique and is of importance to the public due to its unusual appearance, location, or historical significance.
- In the case where the tree is a multi-stemmed specimen (i.e., is a single specimen which has two or more trunks that are connected above the ground), the size shall be determined by measuring all of the trunks at a height of fifty-four inches above natural grade and then adding the total circumference of the largest trunk to one-half the circumference of each additional trunk. These alternative measuring methods for non-standard trees should be evaluated against the same measurement criteria as listed in the “protected tree” subsections (1), (2), and (3) above. (Ord. 1514 § 1, 2016; Ord. 1271 § 1, 2000; Ord. 1060 § 1, 1989)

Based on these definitions, thirty-two (32) trees included in the report are considered Protected. These trees cannot be removed without a permit. Protected Trees are identified on the ***Tree Assessment Form.***

Suitability for Preservation

Before evaluating the impacts that will occur during development, it is important to consider the quality of the tree resource itself, and the potential for individual trees to function well over an extended length of time. Trees that are preserved on development sites must be carefully selected to make sure that they may survive development impacts, adapt to a new environment and perform well in the landscape. Our goal is to identify trees that have the potential for long-term health, structural stability and longevity within the proposed development.

Evaluation of suitability for preservation considers several factors:

- **Tree health**
  Healthy, vigorous trees are better able to tolerate impacts such as root injury, demolition of existing structures, changes in soil grade and moisture, and soil compaction than are non-vigorous trees. For example, Monterey pine #64 on the north slope was in poor health with its crown half dead. It would not make a good candidate for preservation.

- **Structural integrity**
  Trees with significant amounts of wood decay and other structural defects that cannot be corrected are likely to fail. Red ironbark #6 was in very poor condition with a cracked, bent trunk near the parking lot.

- **Species response**
  There is a wide variation in the response of individual species to construction impacts and changes in the environment. Coast redwood has good tolerance to construction impacts, while Monterey pine and white alder are poor.

- **Tree age and longevity**
  Old trees, while having significant emotional and aesthetic appeal, have limited physiological capacity to adjust to an altered environment. Young trees are better able to generate new tissue and respond to change.

- **Invasiveness**
  Species that spread across a site and displace desired vegetation are not always appropriate for retention. This is particularly true when indigenous species are displaced. The California Invasive Plant Inventory Database (http://www.cal-ipc.org/paf/) lists species identified as being invasive. South San Francisco is part of the Central West Floristic Province. Blackwood acacia, river red gum, and blue gum are considered invasive on a limited basis.

Each tree was rated for suitability for preservation based upon its age, health, structural condition and ability to safely coexist within a development environment (Table 2, below). We consider trees with high suitability for preservation to be the best candidates for preservation. We do not recommend retention of trees with low suitability for preservation in areas where people or property will be present. Retention of trees with moderate suitability for preservation depends upon the intensity of proposed site changes.

Table 2: Tree suitability for preservation. 121 E Grand Ave, So. SF, CA.

High	Trees in this category had good health and structural stability that have the potential for longevity at the site. One tree had high suitability for preservation: coast redwood #31.
Moderate	Trees in this category have fair health and/or structural defects that may be abated with treatment. Trees in this category require more intense management and monitoring and may have shorter lifespans than those in the "high" category. Three (3) trees had moderate suitability for preservation.
Low	Trees in this category are in poor health or have significant defects in structure that cannot be abated with treatment. These trees can be expected to decline regardless of management. The species or individual tree may possess either characteristics that are undesirable in landscape settings or be unsuited for use areas. Sixty-four (64) trees had low suitability for preservation.

Note: Table does not include white alder #51. This tree was dead.

Preliminary Tree Preservation Guidelines

The goal of tree preservation is not merely tree survival during development but maintenance of tree health and beauty for many years. Trees retained on sites that are either subject to extensive injury during construction or are inadequately maintained become a liability rather than an asset. The response of individual trees will depend on the amount of excavation and grading, the care with which demolition is undertaken, and the construction methods. Coordinating any construction activity inside the **TREE PROTECTION ZONE** can minimize these impacts. Trees with high suitability for preservation should be preserved where possible.

The following recommendations will help reduce impacts to trees from development as well as maintain and improve their health and vitality through the clearing, grading and construction phases. The key elements of a tree preservation plan for the 121 East Grand Avenue property would include:

- Focus efforts at tree preservation on those trees with high or moderate suitability for preservation. Examples include: coast redwood #31, river red gum #37, white alder #53, and New Zealand Christmas tree #57.
- Establish **TREE PROTECTION ZONES** for each tree to be preserved. **TREE PROTECTION ZONES** are identified by the Consulting Arborist based on species tolerances, tree condition, trunk diameters and the nature and proximity of the proposed disturbance.
- Provide supplemental irrigation prior to and during the demolition and construction phases.

Trees should be preserved in groups with minimal grading within the critical root zone, where possible. The following are recommendations for design and construction phases that will assist in successful tree preservation.

Design recommendations

1. Plan for tree preservation by designing adequate space around trees to be preserved. This area is called the **TREE PROTECTION ZONE.** No grading, excavation, construction or storage of materials should occur within that zone. Route underground services including utilities, sub-drains, water or sewer around the **TREE PROTECTION ZONE**. For design purposes, the tree protection zone is ten times the trunk diameter or the entire dripline whichever is larger. Areas of the **Tree Protection Zone** should be fenced to minimize impacts and staging in the **TREE PROTECTION ZONE**.
2. Any changes to the plans affecting the trees should be reviewed by the Project Arborist with regard to tree impacts. These include, but are not limited to, site plans, improvement plans, utility and drainage plans, grading plans, landscape and irrigation plans, and demolition plans.
3. Irrigation systems must be designed so that no trenching severs roots larger than 2 inch in diameter within the **TREE PROTECTION ZONE**.
4. Tree Preservation Guidelines prepared by the Project Arborist, which include specifications for tree protection during demolition and construction, should be included on all plans.
5. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use.
6. Ensure adequate but not excessive water is supplied to trees; in most cases, occasional irrigation will be required. Avoid directing runoff toward trees.

Pre-demolition and pre-construction treatments and recommendations

1. The demolition and construction superintendents shall meet with the Project Arborist before beginning work to review all work procedures, access routes, storage areas, and tree protection measures.
2. Fence the **TREE PROTECTION ZONE**. Trees adjacent to demolition may require limb and trunk protections. This may be accomplished using foam wrapped with wattle and orange snow fencing to protect the areas where the limb (or trunk) is exposed to incidental contact.
3. Trees to be preserved may require pruning to clean the crown of dead branches 1 inch and larger in diameter, raise canopies as needed for construction activities. All pruning shall be done by a State of California Licensed Tree Contractor (C61/D49). All pruning shall be done by Certified Arborist or Certified Tree Worker in accordance with the Best Management Practices for Pruning (International Society of Arboriculture, 2002) and adhere to the most recent editions of the American National Standard for Tree Care Operations (Z133.1) and Pruning (A300). The Project Arborist will provide pruning specifications prior to site demolition.
4. Structures and underground features to be removed within the **TREE PROTECTION ZONE** shall use equipment that will minimize damage to trees above and below ground, and operate from outside the **TREE PROTECTION ZONE**. The Project Arborist shall be on site during all operations within the **TREE PROTECTION ZONE** to monitor demolition activity.
5. All tree work shall comply with the Migratory Bird Treaty Act as well as California Fish and Wildlife code 3503-3513 to not disturb nesting birds. To the extent feasible, tree pruning and removal should be scheduled outside of the breeding season. Breeding bird surveys should be conducted prior to tree work. Qualified biologists should be involved in establishing work buffers for active nests.
6. Apply and maintain 4-6” of wood chip mulch within the **TREE PROTECTION ZONE.**

Recommendations for tree protection during construction

1. Any approved grading, construction, demolition or other work within the **TREE PROTECTION ZONE** should be monitored by the Project Arborist.
2. All contractors shall conduct operations in a manner that will prevent damage to trees to be preserved.
3. Tree protection devices are to remain until all site work has been completed within the work area. Fences or other protection devices may not be relocated or removed without permission of the Project Arborist.
4. Construction trailers, traffic and storage areas must remain outside **TREE PROTECTION ZONE** at all times.
5. Any root pruning required for construction purposes shall receive the prior approval of and be supervised by the Project Arborist. Roots should be cut with a saw to provide a flat and smooth cut. Removal of roots larger than 2 inches in diameter should be avoided.
6. If roots 1 inches and greater in diameter are encountered during site work and must be cut to complete the construction, the Project Arborist must be consulted to evaluate effects on the health and stability of the tree and recommend treatment.
7. Spoil from trench, footing, utility or other excavation shall not be placed within the **TREE PROTECTION ZONE**, neither temporarily nor permanently.
8. All grading within the dripline of trees shall be done using the smallest equipment possible. The equipment shall operate perpendicular to the tree and operate from outside the **TREE PROTECTION ZONE**. Any modifications must be approved and monitored by the Project Arborist.
9. All trees shall be irrigated on a schedule to be determined by the Project Arborist (every 3 to 6 weeks is typical). Each irrigation shall wet the soil within the **TREE PROTECTION ZONE** to a depth of 18-24 inches.
10. If injury should occur to any tree during construction, it should be evaluated as soon as possible by the Project Arborist so that appropriate treatments can be applied.
11. No excess soil, chemicals, debris, equipment or other materials shall be dumped or stored within the **TREE PROTECTION ZONE**.
12. Any additional tree pruning needed for clearance during construction must be performed by a Certified Arborist and not by construction personnel or certified tree climber.

Maintenance of impacted trees

Trees should be monitored and inspected annually and after major storms to identify conditions requiring treatment to manage risk associated with tree failure.

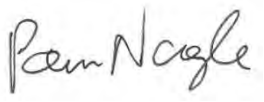
Preserved trees will experience a physical environment different from that pre-development. As a result, tree health and structural stability should be monitored. Occasional pruning, fertilization, mulch, pest management, replanting and irrigation may be required. In addition, provisions for monitoring both tree health and structural stability following construction must be made a priority. Inspect trees annually and following major storms to identify conditions requiring treatment to manage risk associated with tree failure.

Our procedures included assessing trees for observable defects in structure. This is not to say that trees without significant defects will not fail. Failure of apparently defect-free trees does occur, especially during storm events. Wind forces, for example, can exceed the strength of defect-free wood causing branches and trunks to break. Wind forces coupled with rain can saturate soils, reducing their ability to hold roots, and blow over defect-free trees. Although we cannot predict all failures, identifying those trees with observable defects is a critical component of enhancing public safety.

Furthermore, trees change over time. Our inspections represent the condition of the tree at the time of inspection. As trees age, the likelihood of failure of branches or entire trees increases. Annual tree inspections are recommended to identify changes to tree health and structure. In addition, trees should be inspected after storms of unusual severity to evaluate damage and structural changes. Initiating these inspections is the responsibility of the client and/or tree owner.

If you have any questions regarding my observations or recommendations, please contact me.

HortScience | Bartlett Consulting



Pam Nagle
Consulting Arborist and Urban Forester
Certified Arborist #WE-9617A
ISA Tree Risk Assessment Qualified

Exhibits

Tree Assessment Form

Tree Assessment Plan

Tree Assessment

121 East Grand Avenue
South San Francisco, CA
April 2020

HORT SCIENCE
BARTLETT CONSULTING

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
1	Red ironbark	26	Yes	2	Low	Codominant stems at 6'; twig dieback; history of branch failures.
2	Silver dollar gum	8	No	2	Low	Narrow; suppressed form.
3	Red ironbark	21	Yes	2	Low	Codominant stems at 6'; twig dieback; history of branch failures; trunk wound.
4	Red ironbark	19	Yes	2	Low	Codominant stems at 12'; twig dieback; bows to E.
5	Red ironbark	20	Yes	2	Low	Codominant stems at 8'; twig dieback; crown reduced to E.; lateral over sidewalk.
6	Red ironbark	12	No	1	Low	Poor form and structure; trunk cracked over parking; remove asap.
7	Red ironbark	8	No	3	Low	Narrow; thin form; top bows to N.
8	Red ironbark	29	Yes	3	Low	Crook at 10'; bows to N.
9	Silver dollar gum	10	No	3	Low	Codominant stems at 12'; narrow form.
10	Red ironbark	14	No	2	Low	Twig dieback; thin crown.
11	Silver dollar gum	10	No	3	Low	Narrow form; small; thin crown.
12	Red ironbark	13	No	2	Low	Twig dieback; history of branch failures; poor form and structure.
13	Silver dollar gum	11	No	3	Low	Narrow form; leans N.
14	Silver dollar gum	15	Yes	2	Low	Multiple attachments at 10'; twig dieback.
15	Silver dollar gum	14	No	2	Low	One sided to N.; twig dieback.
16	Red ironbark	13	No	2	Low	Poor form and structure; multiple attachments at 15'.
17	Silver dollar gum	18	Yes	2	Low	Codominant stems at 8'; twig and branch dieback.
18	Red ironbark	12	No	2	Low	Poor form and structure; multiple attachments at 15'.
19	Red ironbark	12	No	2	Low	Poor form and structure; multiple attachments at 15'; failure at point of attachment left wound.
20	Silver dollar gum	8	No	2	Low	Wire girdling trunk at codominant attachment; twig dieback.

Tree Assessment

121 East Grand Avenue
South San Francisco, CA
April 2020

HORT SCIENCE
BARTLETT CONSULTING

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
21	Red ironbark	16	Yes	2	Low	Codominant stem removed at 10'; remaining stem has severe crook.
22	Red ironbark	18	Yes	3	Low	Central leader bows to W.; full crown.
23	Red ironbark	13	No	2	Low	Leaning and suppressed to E.; poor structure.
24	Red ironbark	19	No	2	Low	Codominant stems at 5'; twig dieback; poor structure.
25	Red ironbark	26	Yes	2	Low	Codominant stems at 12'; twig dieback; poor structure.
26	Red ironbark	13	No	2	Low	Trunk leans to SE.; twig dieback; poor structure; reduced over parking.
27	Blackwood acacia	17	No	3	Low	Codominant stems at 7' with included bark; full; dense crown.
28	Manna gum	10	No	2	Low	High small crown; twig and branch dieback.
29	Blackwood acacia	6,5,4,4	No	3	Low	Multiple attachments at base; low, full dense crown.
30	Manna gum	15	Yes	3	Low	Twig and branch dieback; leans E.; thin crown.
31	Coast redwood	14	No	4	High	Good upright form; slightly drought stressed.
32	Coast redwood	20	Yes	2	Low	Topped at 30'; drought stressed.
33	Coast redwood	19	Yes	2	Low	Topped at 30'; drought stressed.
34	Coast redwood	20	Yes	2	Low	Topped at 30'; drought stressed.
35	Red ironbark	25	Yes	3	Low	Codominant stems at 6'; twig dieback; lateral limbs over sidewalk.
36	River red gum	10	No	2	Low	Two cracked codominant attachments; suppressed form.
37	River red gum	14	No	3	Moderate	Narrow form; one-sided to N.
38	River red gum	15	Yes	2	Low	Poor form and structure; tree ties girdling trunk; twig dieback.
39	Silver dollar gum	9	No	2	Low	Suppressed and bows to SE.; poor structure.
40	Silver dollar gum	14	No	2	Low	Codominant stems at 18'; twig dieback; history of branch failures.
41	Red ironbark	17	Yes	2	Low	Codominant stems at 10'; twig dieback; lateral over sidewalk.

Tree Assessment

121 East Grand Avenue
South San Francisco, CA
April 2020

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
42	River red gum	14	No	2	Low	Poor form and structure; twig dieback; hanger; sinuous form.
43	Silver dollar gum	16	Yes	3	Low	Codominant stem failed; second stem has upright form with a full crown.
44	Silver dollar gum	11	No	2	Low	Codominant stems at 8'; twig dieback; bark checking on trunk.
45	Red ironbark	17	Yes	2	Low	Codominant stems at 10'; twig dieback; poor structure.
46	Red ironbark	18	Yes	2	Low	Twig dieback; poor structure; history of branch failures.
47	White alder	16	Yes	3	Low	Correcting lean SE.; crowded by bldg.; high crown.
48	White alder	19	Yes	2	Low	Codominant stems at 7'; decay in wound N. side; history of limb removals; correcting lean E.; high crown.
49	White alder	13	No	3	Low	Circling root NE. side; codominant at 20'; high crown.
50	White alder	21	Yes	2	Low	Codominant stems at 18'; history of limb removals; pruned back from bldg.; sparse crown.
51	White alder	10	No	0	-	Dead.
52	White alder	14	No	3	Low	Corrected lean NW.; trunk wound W. side near base; history of limb removals W side; high crown.
53	White alder	18	Yes	4	Moderate	Correcting lean N.; 1-sided to S.; vigorous.
54	White alder	15	Yes	2	Low	Leans N.; codominant stems at 12'; sparse crown.
55	Blue gum	20	No	2	Low	Old rag #4980. 1.5' from wall on S. side; in narrow corner planter; leaning N.; some twig and branch dieback; topped at 25'.
56	Blue gum	24	Yes	2	Low	Leans N., slightly corrected; bark detaching lower 10' trunk; history of limb failures.
57	New Zealand Christmas Tree	11,6,6,5,4	Yes	3	Moderate	Multiple attachments arise from base; crowded by pine; circling roots; 2 trunks fused.
58	Monterey pine	18	Yes	3	Low	Correcting lean S.; lost top w/ multiple stems arising at 25'.
59	Monterey pine	12	No	1	Low	Strong lean E. down slope; very suppressed; half of foliage dead; lateral branch bends back up hill and fused w/ trunk.

Tree Assessment

121 East Grand Avenue
South San Francisco, CA
April 2020

Tree No.	Species	Trunk Diameter (in.)	Protected Tree?	Condition 1=poor 5=excellent	Suitability for Preservation	Comments
60	Blackwood acacia	10	No	1	Low	Trunk bows/leans SE.; 4' vertical wound S. side; decay at base.
61	Blackwood acacia	12	No	1	Low	Sinuous trunk; codominant at 3.5' with fused stems; 6" lateral twists downhill; poor form and structure.
62	White alder	17	Yes	2	Low	Leans E., slightly correcting; codominant at 6' with included bark.
63	Blackwood acacia	8,6,3,2	No	1	Low	Codominant stems arise from base; splitting apart on slope (failing); largest stem split open at base.
64	Monterey pine	20	Yes	1	Low	Trunk bows N.; sinuous form; half of crown dead; crowded.
65	Monterey pine	14	No	1	Low	Correcting lean NE.; high crown; crowded.
66	New Zealand Christmas Tree	5,5,4,1	Yes	2	Low	Multiple attachments arise from base; suppressed; 1-sided to N.; fairly vigorous.
67	White alder	10	No	1	Low	Leans NE.; crowded by #62 and 68; high crown.
68	White alder	16	Yes	2	Low	Leans NE.; crowded by #67 and 69.
69	White alder	11	No	1	Low	Topped; codominant stems at 15'; little live foliage.

Tree Assessment Plan

Comfort Inn
121 E. Grand Avenue
South San Francisco, CA

Prepared for:
P3RE
San Diego, CA

April 2021

No Scale

Notes:
Base map provided by:
BKF
Redwood City, CA

Numbered tree locations with no survey point were approximately located in the field.

TS = (too small) tree less than 6" in diameter and not included in this assessment.

HORT SCIENCE
BARTLETT CONSULTING
Divisions of The F.A. Bartlett Tree Expert Company

325 Ray Street
Pleasanton, CA 94566
Phone 925.484.0211
Fax 925.484.0596
www.hortscience.com

PRELIMINARY GEOTECHNICAL INVESTIGATION



Proposed Mixed-Use Development
121 East Grand Avenue
South San Francisco, California

PREPARED FOR:
OCI SAN FRAN, LLC
P.O. BOX 927729
SAN DIEGO, CALIFORNIA 92192

PREPARED BY:

GEOCON CONSULTANTS, INC.
6671 BRISA STREET
LIVERMORE, CALIFORNIA 94550

GEOCON

GEOCON PROJECT NO. E8961-04-02

APRIL 2021

Project No. E8961-04-02
April 21, 2021

OCI San Fran, LLC
PO Box 927729
San Diego, California 92192

Attention: Mr. Adam Cashner

Subject: PROPOSED MIXED-USE DEVELOPMENT
121 EAST GRAND AVENUE
SOUTH SAN FRANCISCO, CALIFORNIA
PRELIMINARY GEOTECHNICAL INVESTIGATION

Dear Mr. Cashner:

In accordance with your authorization of our proposal dated November 18, 2020, we have performed a preliminary geotechnical investigation for the subject mixed-use development in South San Francisco, California. Our investigation was performed to corroborate the soils conditions that we encountered in our previous investigation and provide conclusions and recommendations pertaining to the geotechnical aspects of project design and construction. The findings of this study indicate the site is suitable for development as planned provided the recommendations of this report are implemented during design and construction.

The project is still in the early stages of design. As such, we expect this report will be updated as project design progresses, and to incorporate any review comments provided by the City of South San Francisco.

If you have any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Sincerely,
GEOCON CONSULTANTS, INC.

DRAFT

Shane Rodacker, GE
Senior Engineer

DRAFT

Andre Ashour, PE
Senior Project Engineer

(1/e-mail) Addressee
(1/e-mail) M-RAD Architecture
Attention: Ms. Margerie Bonnet
(1/e-mail) M-RAD Architecture
Attention: Ms. Kristy Velasco

TABLE OF CONTENTS

1. PURPOSE AND SCOPE 1
2. SITE CONDITIONS AND PROJECT DESCRIPTION 1
3. GEOLOGIC SETTING 2
4. GEOLOGIC HAZARDS 3
   - 4.1 Faulting and Seismicity 3
   - 4.2 Surface Fault Rupture 3
   - 4.3 Ground Shaking 4
   - 4.4 Liquefaction 4
   - 4.5 Landslides 4
   - 4.6 Tsunamis and Seiches 5
5. SOIL AND GROUNDWATER CONDITIONS 5
   - 5.1 Artificial Fill 5
   - 5.2 Bay Mud 5
   - 5.3 Alluvium 5
   - 5.4 Colma Formation 5
   - 5.5 Franciscan Formation 5
   - 5.6 Groundwater 6
   - 5.7 Soil Corrosion Screening 6
6. CONCLUSIONS AND RECOMMENDATIONS 7
   - 6.1 General 7
   - 6.2 Seismic Design Criteria 8
   - 6.3 Soil and Excavation Characteristics 9
   - 6.4 Materials for Fill 9
   - 6.5 Grading 10
   - 6.6 Mat Foundations 11
   - 6.7 Tiedown Anchors 11
   - 6.8 Exterior Slabs 12
   - 6.9 Temporary Excavations 12
   - 6.10 Temporary Shoring 13
   - 6.11 Retaining Wall Design 15
   - 6.12 Underground Utilities 16
   - 6.13 Pavement Recommendations 16
   - 6.14 Surface Drainage 17
7. FURTHER GEOTECHNICAL SERVICES 19
   - 7.1 Plan and Specification Review 19
   - 7.2 Testing and Observation Services 19

LIMITATIONS AND UNIFORMITY OF CONDITIONS

FIGURES
- Figure 1, Vicinity Map
- Figure 2, Site Plan
- Figure 3, Geology Map

APPENDIX A – FIELD INVESTIGATION
- Figure A1, Key to Boring Logs
- Figures A2 through A7, Logs of Exploratory Borings
- Figures A8 through A14, Cone Penetrometer Test Data

TABLE OF CONTENTS (continued)

Figures A15 through A17, SCPT Sounding Data
Figure A18, Borehole Percolation Test Results

APPENDIX B – LABORATORY TESTING
Table B-I, Summary of Laboratory Atterberg Limits Test Results
Table B-II, Summary of Direct Shear Test Results
Table B-III, Summary of Laboratory No. 200 Wash Test Results
Table B-IV, Summary of Soil Corrosion Parameters
Figures B1 through B11, Laboratory Particle Size Analyses
Figure B12, Unconfined Compressive Strength Test Results

APPENDIX C – LIQUEFACTION ANALYSIS
Selected CLiq Output

LIST OF REFERENCES

PRELIMINARY GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of a preliminary geotechnical investigation for a proposed mixed-use development in South San Francisco, California (see Vicinity Map, Figure 1). The purpose of this investigation was to corroborate the soils conditions that we encountered in our previous investigation and provide conclusions and recommendations pertaining to the geotechnical aspects of project design and construction, based on the conditions encountered during our study.

The scope of current investigation included field exploration, laboratory testing, engineering analysis and the preparation of this report. Our field exploration was performed on December 3 and December 10, 2020 and included drilling two exploratory borings to depths of approximately 60 and 112 ½ feet, respectively, and four Cone Penetrometer Tests (CPTs) to maximum depths of approximately 85 feet below the existing grade. Seismic shear wave velocity measurements were collected at 5-foot intervals at each CPT location.

Subsurface exploration for our previous investigation was performed on December 16 ,2016, April 26, 2017 and May 5, 2017 and included four Cone Penetrometer Tests (CPTs) to maximum depths of approximately 55 feet and drilling four exploratory borings to approximately 45 feet or less below existing grade.

The locations of all CPTs and soil borings are depicted on the Site Plan, Figure 2. A detailed discussion of our field investigation, soil boring logs, and CPT profiles are presented in Appendix A.

Laboratory tests were performed on selected soil samples obtained during the investigation to evaluate pertinent geotechnical parameters. Appendix B presents the laboratory test results in tabular format and graphical format. Appendix C presents selected output from our liquefaction analysis.

The opinions expressed herein are based on analysis of the data obtained during the investigation and our experience with similar soil and geologic conditions. References reviewed to prepare this report are provided in the *List of Reference*s section.

If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

2. SITE CONDITIONS AND PROJECT DESCRIPTION

The approximately 3 ¼-acre site is comprised of four adjacent parcels at the northeast corner of Poletti Way and East Grand Avenue in South San Francisco. Topographically, the site is relatively flat with ground surface elevations on the order of 15 to 20 feet above Mean Sea Level (MSL) according to web-based mapping. An embankment for the nearby East Grand Avenue overcrossing ascends from the northern margin of the property. The site is currently occupied by a three-story hotel and associated courtyard areas and surface parking.

The project concept plans by M-Rad Architecture indicate the mixed-use development will consist of a Life Science Building and integrated transportation hub. The development will include eleven levels above grade with a maximum height of approximately 160 feet. Three levels of subterranean parking are also planned. The development will include 803,000 square feet (SF) of office space, and about 342,000 SF of parking between the ground level and three subterranean parking levels. A two-deck reinforced concrete podium with parking and retail space is planned at ground level. We anticipate the superstructure above the concrete podium will be steel-framed and the subterranean levels will be reinforced concrete construction. The eleven above-grade levels will

be in an L-shaped configuration with wings fronting the East Grand Avenue overcrossing and Poletti Way; the balance of the site footprint will be two-level podium with a public plaza at the upper deck.

Ancillary site improvements such as new underground utilities, driveways, exterior flatwork and landscaped areas are also expected. The project will require the relocation of underground public utilities situated along the southern and western margins of the site. An above-grade retaining wall will be required where the northern property line coincides with the East Grand Avenue overcrossing embankment.

Structural design details were not available at the time of this report, but we understand a reinforced concrete mat foundation with thicknesses on the order of three to eight feet is conceptualized. We anticipate cuts up to 40 feet will be required for the subterranean levels and mat foundation construction. We have assumed the subterranean levels will generally extend laterally to the site limits. Should the underground levels only occupy a portion of the site footprint, we should be contacted to update the recommendations presented herein.

3. GEOLOGIC SETTING

South San Francisco is located within the Coast Ranges Geomorphic Province of California, which is characterized by a series of northwest trending mountains and valleys along the north and central coast of California. Topography is controlled by the predominant geological structural trends within the Coast Range that generally consist of northwest trending synclines, anticlines and faulted blocks. The dominant structure is a result of both active northwest trending strike-slip faulting, associated with the San Andreas Fault system, and east-west compression within the province.

The San Andreas Fault (SAF) is a major right-lateral strike-slip fault that extends from the Gulf of California in Mexico to Cape Mendocino in northern California. The SAF forms a portion of the boundary between two tectonic plates on the surface of the earth. To the west of the SAF is the Pacific Plate, which moves north relative to the North American Plate, located east of the fault. In the San Francisco Bay Area, movement across this plate boundary is concentrated on the SAF but also distributed, to a lesser extent, across several other faults including the Hayward, Calaveras and Rodgers Creek faults, among others. Together, these faults are referred to as the SAF system.

Basement rock west of the SAF is generally granitic, while to the east it consists of a chaotic mixture of highly deformed marine sedimentary, submarine volcanic and metamorphic rocks of the Franciscan Complex. Both are typically Jurassic to Cretaceous in age (205 to 65 million years old). Overlying the basement rocks are Cretaceous (about 140 to 65 million years old) marine, as well as Tertiary (about 65 to 1.6 million years old) marine and non-marine sedimentary rocks with some continental volcanic rock. These Cretaceous and Tertiary rocks have typically been extensively folded and faulted largely because of movement along the SAF system, which has been ongoing for about the last 25 million years, and regional compression during the last about 4 million years. The inland valleys, as well as the structural depression within which San Francisco Bay is located, are filled with unconsolidated to semi-consolidated deposits of Quaternary age (about the last 1.6 million years). Continental deposits (alluvium) consist of unconsolidated to semi-consolidated sand, silt, clay and gravel, while the bay deposits typically consist of soft organic-rich silt and clay (bay mud) or sand.

Available geologic mapping by the United States Geological Survey (USGS) and other sources indicates the site is underlain by artificial fills over Bay Mud deposits. Geologic mapping by the USGS indicates bedrock depths of approximately 50 to 100 feet below MSL across the site. A Geology Map depicting mapped geologic units in the site vicinity is presented as Figure 3.

4. GEOLOGIC HAZARDS

4.1 Faulting and Seismicity

Geologists and seismologists recognize the San Francisco Bay Area as one of the most seismically active regions in the United States. The significant earthquakes that occur in the Bay Area are associated with crustal movements along well-defined active fault zones that generally trend in a northwesterly direction.

The site and greater Bay Area are seismically dominated by the presence of the active San Andreas Fault System. In the theory of plate tectonics, the San Andreas Fault System is a transform fault that forms the boundary between the northward moving Pacific Plate (west of the fault) and the southward moving North American Plate (east of the fault). Locally, the movement is distributed across a complex system of strike-slip, right lateral parallel and subparallel faults, which include the San Andreas, Hayward and Calaveras faults, among others.

The table below presents approximate distances to active faults in the site vicinity based on web-based mapping by the California Geological Survey (CGS), as presented in an online fault database previously maintained by Caltrans. Site latitude is N 37.6549˚ N, W 122.4046˚.

TABLE 4
REGIONAL FAULT SUMMARY

Fault Name	Approximate Distance to Site (miles)	Maximum Earthquake Magnitude, M_w
San Andreas	3	8.0
San Gregorio	8 ¾	7.4
Hayward	15	7.3
Monte Vista - Shannon	21 ½	6.4
Silver Creek	23 ¼	6.9
Calaveras	23 ¾	6.9
Contra Costa Shear Zone	23 ¾	6.5
Pleasanton	25 ¼	6.6

The faults tabulated above and many others in the greater Bay Area are sources of potential ground motion. However, earthquakes that might occur on other faults within the northern California area are also potential generators of significant ground motion and could cause ground shaking at the site. Table 4 is intended only to acquaint the reader with the seismic setting of the site and is not meant as a basis for seismic design.

4.2 Surface Fault Rupture

The site is not within a currently established State of California Earthquake Fault Zone for surface fault rupture hazards. No active or potentially active faults are known to pass directly beneath the site. Therefore, the potential for surface rupture due to faulting occurring beneath the site during the design life of the proposed development is considered low. By CGS definition, an active fault is one with surface displacement within the last 11,000 years. A potentially active fault has demonstrated evidence of surface displacement with the past 1.6 million years. Faults that have not moved in the last 1.6 million years are typically considered inactive.

4.3 Ground Shaking

We used the web-based *Unified Hazard Tool* application to estimate the peak ground acceleration (PGA) and modal (most probable) magnitude associated with a 2,475-year return period. This return period corresponds to an event with 2% chance of exceedance in a 50-year period. The USGS estimated PGA is 0.96g and the modal magnitude is 7.9 for Seismic Site Class D (V_s30 = 259 m/sec). The estimated PGA is 1.05g and the modal magnitude is 7.9 for Seismic Site Class C and D boundary (V_s30 = 360 m/sec).

While listing PGA is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including frequency and duration of motion and soil conditions underlying the site.

4.4 Liquefaction

The site is not located within a State of California Seismic Hazard Zone Hazard Zone for liquefaction as CGS has not published such mapping for the project area. However, web-based mapping by USGS and CGS indicates portions of the site possesses a "very high" susceptibility to liquefaction. Liquefaction is a phenomenon in which saturated cohesionless soils are subject to a temporary loss of shear strength due to pore pressure buildup under the cyclic shear stresses associated with intense earthquakes. Primary factors that trigger liquefaction are: moderate to strong ground shaking (seismic source), relatively clean, loose granular soils (primarily poorly graded sands and silty sands), and saturated soil conditions (shallow groundwater). Due to the increasing overburden pressure with depth, liquefaction of granular soils is generally limited to the upper 50 feet of a soil profile.

We assessed the potential for liquefaction using the computer software program *CLiq* (Version 2.0, Geologismiki) and the in-situ soil parameters measured in the CPT soundings. The software applied the methodology of Boulanger and Idriss (2014) to the CPT data to evaluate liquefaction potential and estimate resultant settlements. In estimating post-liquefaction settlement at the site, we have implemented a depth weighting factor proposed by Cetin (2009). Our analysis also considered the potential for cyclic softening in clayey soil. Our evaluation incorporated an earthquake moment magnitude (M_w) of 7.9 and a groundwater depth of 5 feet. We used a ground motion/Peak Ground Acceleration (PGA) of 1.0g for our analysis based on 2019 CBC seismic design criteria.

Our liquefaction analysis identified potentially liquefiable layers at each CPT location that did not meet refusal on obstructions within the artificial fills that mantle the site. In general, the liquefiable layers are located more than 5 feet below the existing grade at the site.

Several sandy layers within the upper 30 to 35 feet are potentially liquefiable. Should liquefaction occur, our analysis indicates total ground surface settlements of up to approximately 3 ½ inches may occur. Our soil borings encountered predominantly dense to very dense granular soil with some medium dense sandy layers below a depth of about 35 feet. Considering the upper 35 feet of soil will be removed during excavation for the underground parking, we opine that the development atop the subterranean levels may experience potential total settlement of approximately ¾ inch or less during or after a seismic event. Selected output from our liquefaction analysis is presented in Appendix C.

4.5 Landslides

There are no known landslides near the site, nor is the site in the path of any known or potential landslides. We do not consider the potential for a landslide to be a hazard to this project.

4.6 Tsunamis and Seiches

Based on mapping published by the California Emergency Management Agency and CGS, the site is outside of a tsunami (seismic sea wave) inundation area.

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. No major water-retaining structures are located immediately up gradient from the project site. Flooding from a seismically induced seiche is considered unlikely.

5. SOIL AND GROUNDWATER CONDITIONS

5.1 Artificial Fill

Each of our soil borings encountered artificial fills. Fill depths ranged from approximately 7½ to 12 feet below existing grade. The source of the fill materials and details regarding placement methods are unknown. As observed in our soil borings, the fill materials consisted of loose to very dense sands with variable amounts of clay and silt, soft to very stiff sandy silts with relatively minor amounts of clay and gravel, and medium dense to very dense gravels with sand. The fills encountered in our borings included various amounts of construction debris such as concrete, brick and slag. We encountered slag chunks up to 6 inches in nominal dimension at a depth of about 7 feet in Boring B5. The upper approximately 4 feet of fill in Boring B3 showed indications of previous lime or cement treatment. The artificial fills encountered in Boring B4 are interpreted as trench backfill materials based on proximity to existing underground utilities.

5.2 Bay Mud

Our Borings B1, B3, B4, and B5 encountered Bay Mud beneath the artificial fills described above. The Bay Mud materials were generally observed as soft to medium stiff organic-rich, highly plastic clays with fine sands. The Bay Mud extended to depths of approximately 15 ½ feet or less in our borings.

5.3 Alluvium

All of our soil borings encountered mixed alluvial deposits below the Bay Mud and/or artificial fill. The deposits were observed as medium stiff to hard sandy clay and medium dense to very dense sand with variable amounts of gravel, silt and clay. We encountered alluvium to depths of approximately 33 ½ to 93 ½ feet below existing grade in Borings B6 and B5, respectively.

5.4 Colma Formation

Colma Formation was encountered in Borings B5 and B6 below the alluvial deposits. Colma Formation is a Pleistocene-age sedimentary deposit common in the area and is described by the USGS as mostly yellow-orange to gray, sandy clay and silty sand in the site vicinity. In our soil borings, the Colma Formation materials were observed as very stiff sandy clay and dense to very dense clayey sand with variable amount of gravel and silt content. We encountered Colma Formation to depths of 59 ½ and 112 feet below existing grade in Borings B6 and B5, respectively.

5.5 Franciscan Formation

We encountered Franciscan Formation beneath Colma Formation in Borings B5 and B6. The formational materials extended to the maximum depths explored – approximately 60 and 112 ½ feet, respectively, in Borings

B6 and B5. The Franciscan Formation materials were observed as weathered claystone and sandstone. Our Borings B5 and B6 met refusal in the formational materials. Several of our CPTs met refusal in suspected Franciscan Formation. Based on the conditions encountered in Borings B5 and B6, the top of the Franciscan Formation dips significantly from southwest to northeast across the site, which is consistent with USGS geologic mapping.

5.6 Groundwater

Groundwater was encountered at approximately 8½ and 16 feet below grade in our recent Borings B5 and B6, respectively. Groundwater was noted at approximately 4½ to 8 feet below grade in our previous soil borings performed in 2017. Actual groundwater levels will fluctuate seasonally and with variations in rainfall, temperature and other factors and may be higher or lower than observed during our study.

5.7 Soil Corrosion Screening

Soil samples obtained during our field exploration were subjected to laboratory testing for minimum resistivity, pH, and chloride and water-soluble sulfate. The laboratory test results and published screening levels are presented in Appendix B. Soil corrosivity should be considered in the design of buried metal pipes, underground structures, etc.

Water-soluble sulfate test results on selected samples of site soils indicate an S0 exposure classification for sulfate attack on normal portland cement concrete (PCC) as defined in Chapter 318, Table 19.3.1.1 of the ACI *Building Code Requirements for Structural Concrete*. ACI does not set forth requirements for S0 sulfate exposure classification. In addition, none of the four soil samples tested would be classified as corrosive to buried metal improvements based on Caltrans criteria.

Geocon does not practice in the field of corrosion engineering and mitigation. If corrosion sensitive improvements are planned, it is recommended that a corrosion engineer be retained to evaluate corrosion test results and incorporate the necessary precautions to avoid premature corrosion of buried metal pipes and concrete structures in direct contact with the soils.

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 No overriding geotechnical constraints were encountered during our investigation that would preclude the project as presently proposed. Primary geotechnical considerations are the presence of shallow groundwater, wet and unstable subgrade soil at the bottom of the subterranean excavation, shoring considerations for the below-grade excavation, undocumented artificial fills, and potential differential movement at on-grade to below-grade transitions. The recommendations presented herein are intended to mitigate the effects of the identified geotechnical constraints. A conventionally reinforced concrete mat foundation is planned at the bottom of the subterranean level.

6.1.2 Given the history of land use in the area, as well as the unknown source and composition of the fill materials that underlie the site, the costs for disposal of spoils generated by excavation operation should be considered in project planning.

6.1.3 Bay Mud deposits were encountered in our Borings B1, B3, B4, and B5 with the maximum observed thickness of those deposits being approximately 8 feet in Boring B1. Given the age of the fills placed atop the Bay Mud during original development in the area, as well as the surcharge effects of the nearby East Grand Avenue overcrossing embankment that was constructed in the 1980s, the potential for ongoing secondary compression in the Bay Mud is considered low.

6.1.4 Based on the subsurface conditions at the site and the anticipated structural loading, a reinforced concrete mat can be used for foundation support the proposed superstructure. Post-construction settlements due to static foundation loads should be in order of 2 inches or less. Assuming uniform mat bearing pressures across the site, differential settlements due to foundation loading should be ¼ inch or less across a distance of 50 feet. We should review mat contract pressures during project design to confirm estimated settlements.

6.1.5 The proposed project redevelops a site with past episodes of grading and construction. As such, unknown underground improvements and areas of undocumented fill materials (not discussed herein) may be present. If encountered, supplemental recommendations will be provided during site development.

6.1.6 A temporary dewatering system will be implemented prior to excavations. Design, selection of the equipment and dewatering method, and construction of temporary dewatering should be the responsibility of the contractor. In general, temporary draw down of groundwater can cause subsidence outside the excavation area. The dewatering designer should evaluate potential effects on adjacent improvements.

6.1.7 The bottom of the mat foundation for the project will be situated approximately 40 feet below grade and 35 feet below the shallowest groundwater observed in our borings. Mat foundations bearing 40 feet below grade should be designed to accommodate up to 2,200 psf in hydrostatic uplift pressure.

6.1.8 Any changes in the design, location or elevation of the proposed improvements, as outlined in this report, should be reviewed by this office. Geocon should be contacted to determine the necessity for review and possible revision of this report.

6.1.9 All references to relative compaction and optimum moisture content in this report are based on ASTM D 1557 (latest edition).

6.2 Seismic Design Criteria

6.2.1 We understand that seismic structural design will be performed in accordance with the provisions of 2019 CBC which is based on the American Society of Civil Engineers (ASCE) publication *Minimum Design Loads for Buildings and Other Structures* (ASCE 7-16). We derived the following seismic design parameters using the web-based Structural Engineers Association of California application *U.S. Seismic Design Maps*. Results are summarized in Table 6.2.1. The values presented are for the risk-targeted maximum considered earthquake (MCE_R) and Seismic Risk Category III. We have assigned Site Class C based on Vs30 values calculated using the shear wave velocity measurements from our CPTs. Vs30 values were calculated from the half-depth of the subterranean levels downward.

TABLE 6.2.1
2019 CBC SEISMIC DESIGN PARAMETERS

Parameter	Value	2019 CBC Reference
Site Class	C	Section 1613.2.2
MCE_R Ground Motion Spectral Response Acceleration – Class B (short), S_S	1.94g	Figure 1613.2.1(1)
MCE_R Ground Motion Spectral Response Acceleration – Class B (1 sec), S_1	0.798g	Figure 1613.2.1(2)
Site Coefficient, F_A	1.2	Table 1613.2.3(1)
Site Coefficient, F_V	1.4*	Table 1613.2.3(2)
Site Class Modified MCE_R Spectral Response Acceleration (short), S_{MS}	2.328g	Section 1613.2.3 (Eq. 16-36)
Site Class Modified MCE_R Spectral Response Acceleration – (1 sec), S_{M1}	1.118g*	Section 1613.2.3 (Eq. 16-37)
5% Damped Design Spectral Response Acceleration (short), S_{DS}	1.552g	Section 1613.2.4 (Eq. 16-38)
5% Damped Design Spectral Response Acceleration (1 sec), S_{D1}	0.745g*	Section 1613.2.4 (Eq. 16-39)

Note:
*Per Section 11.4.8 of ASCE/SEI 7-16, a ground motion hazard analysis shall be performed for projects for Site Class "E" sites with Ss greater than or equal to 1.0g and for Site Class "D" and "E" sites with S1 greater than 0.2g. Section 11.4.8 also provides exceptions where ground motion hazard analysis may be waived. Using the code-based values presented in the table above, in lieu of a performing a ground motion hazard analysis, requires the exceptions outlined in ASCE 7-16 Section 11.4.8 be followed in project design.

6.2.2 Table 6.2.2 presents additional seismic design parameters for projects with Seismic Design Categories of D through F in accordance with ASCE 7-16 for the mapped maximum considered geometric mean (MCE_G).

TABLE 6.2.2
2019 CBC SITE ACCELERATION DESIGN PARAMETERS

Parameter	Value	ASCE 7-16 Reference
Mapped MCE_G Peak Ground Acceleration, PGA	0.833g	Figure 22-7
Site Coefficient, F_{PGA}	1.2	Table 11.8-1
Site Class Modified MCE_G Peak Ground Acceleration, PGA_M	1.00g	Section 11.8.3 (Eq. 11.8-1)

6.2.3 Conformance to the criteria presented in Tables 6.2.1 and 6.2.2 for seismic design does not constitute any kind of guarantee or assurance that significant structural damage or ground failure will not occur if a maximum level earthquake occurs. The primary goal of seismic design is to protect life and not to avoid structural damage, since such design may be economically prohibitive.

6.3 Soil and Excavation Characteristics

6.3.1 The onsite soils might be excavated with moderate effort using conventional excavation equipment. Additional effort may be required for excavations in artificial fill materials. In general, we anticipate excavations will generate construction debris and deleterious materials not suitable for reuse in engineered fills. Contractors should review the subsurface conditions in our logs prior to bidding and selecting construction equipment and methods. Excavations or drilled shafts that extend into Franciscan Formation will require additional effort and possibly special equipment or construction methods.

6.3.1 Unknown or unanticipated constituents may exist, especially within areas of artificial fill. The artificial fills at the site are undocumented and may contain constituents not reported herein. Below-grade improvements associated with prior site development may also be present.

6.3.2 It is the responsibility of the contractor to ensure that all excavations and trenches are properly shored and maintained in accordance with applicable Occupational Safety and Health Administration (OSHA) rules and regulations to maintain safety and maintain the stability of adjacent existing improvements.

6.3.3 The Bay Mud and alluvial soils encountered at the site should be considered “expansive” as defined by 2019 CBC. The recommendations of this report assume proposed foundation systems will derive support in engineered fills or competent alluvial soils.

6.4 Materials for Fill

6.4.1 As discussed in Section 5.1, artificial fills were encountered in our borings to depths ranging from approximately 7 ½ to 12 feet below the existing grade. Over-excavated fill materials may be reused as engineered fill provided they are cleaned of construction debris. Engineered fills should not contain deleterious materials or cementations larger than 6 inches in maximum dimension.

6.4.2 Although not anticipated, import fill material should be primarily granular with a “low” expansion potential (Expansion Index less than 50), a Plasticity Index less than 15, be free of organic material and construction debris, and not contain rock larger than 6 inches in greatest dimension.

6.4.3 Environmental characteristics and corrosion potential of import soil materials may also be considered. Proposed import materials should be sampled, tested, and approved by Geocon prior to its transportation to the site.

6.5 Grading

6.5.1 All clearing operations and earthwork (including over-excavation, scarification, and recompaction) should be observed and all fills tested for recommended compaction and moisture content by representatives of Geocon.

6.5.2 Structural areas should be considered as areas extending a minimum of 5 feet horizontally from a foundation or beyond the outside dimensions of building pad, including footings and overhangs carrying structural loads, and where not restricted by property boundaries or other site logistics.

6.5.3 A preconstruction conference should be held at the site prior to the beginning of grading operations with the owner, contractor, civil engineer and geotechnical engineer in attendance. Special soil handling requirements can be discussed at that time.

6.5.4 After complete demolition and removal of any existing structures, site preparation should commence with the removal of all existing improvements from the area to be developed/graded. All active or inactive utilities within the construction area should be protected, relocated, or abandoned. Any pipelines to be abandoned that are greater than 2 inches and less than 18 inches in diameter should be removed or filled with sand-cement slurry. Utilities larger than 18 inches in diameter should be removed. Excavations or depressions resulting from site clearing operations, or other existing excavations or depressions, should be restored with engineered fill in accordance with the recommendations of this report.

6.5.5 Existing soils outside of the structure footprint should be over-excavated to a depth of approximately 1 foot. The exposed bottom should be scarified 8 to 12 inches moisture conditioned to at least 2% above optimum moisture and recompacted to at least 90% relative compaction (at near optimum moisture where fill materials are predominantly sands or gravels).

6.5.6 We anticipate that wet soils conditions will be exposed at bottom of the excavation for the subterranean levels. We recommend that the contractor plan to excavate an additional 12 inches. The over-excavation should be backfilled with crushed rock completed wrapped in filter fabric to stabilize the excavation bottom and occupy casual water not removed by the project dewatering system. The exposed bottom surfaces should be observed by our representatives during over-excavation. Rubber-tire equipment should not be allowed to operate on the exposed subgrade. The crushed rock should be stockpiled and pushed out over the subgrade. The crushed rock should be consolidated in place with vibratory equipment.

6.5.7 Cement treatment of the excavation bottom may also be considered. Recommended chemical treatment depths will typically range from 12 to 18 inches depending on the magnitude of the instability. Also, if the unstable soils are exposed at over-excavation bottom, a layer of geosynthetic stabilization fabric (Mirafi RS380i or similar) may be placed across the bottom, prior to the filter fabric and crushed rock.

6.5.8 The exposed bottom surfaces and bottom processing should be observed by our representatives on a full-time basis. Supplemental recommendations may be provided based on-site conditions during grading.

6.6 Mat Foundations

6.6.1 A reinforced concrete mat may be used for foundation support. The recommendations that follow are for the mat foundation planned at the subterranean level. A mat foundation consists of a thick, rigid concrete mat that allows the entire footprint of the structure to carry building loads. As such, the mat can tolerate significantly greater differential movements such as those associated with expansive soils or seismically induced settlement. A mat foundation system will allow the structure to settle with the ground and should have sufficient rigidity to allow the structure to move as a single unit. Mat thickness and reinforcement should be designed by the project structural engineer.

6.6.2 Consideration should be given to providing at least 12 inches of aggregate materials such as Class 2 Aggregate Base (AB) conforming to the latest Caltrans standard specifications or a rat slab beneath the mat foundation to create a durable working platform for construction, especially if construction will occur over winter months. The AB layer should be compacted to at least 95% relative compaction at near optimum moisture content.

6.6.3 The allowable bearing capacity for localized areas of mat foundations where column loads will induce higher contact pressures can be taken as 5,000 psf for dead plus live loads. We recommended that a modulus of subgrade reaction of 125 pounds per cubic inch (pci) be utilized for the design of mat foundations. The modulus of subgrade reaction is based on the square-foot plate load method, and should be adjusted as needed to account for mat size. Spring values in the structural design model may be taken as 125 pci if the springs are spaced at 1-foot intervals.

6.6.4 Mat foundation design will require iteration(s) between the geotechnical engineer and structural engineers to review the estimated settlement and foundation contact pressures. Settlements for the mat foundation should be approximately 2 inches or less under dead plus live loading conditions. Differential settlements will be generally controlled by mat rigidity but, due to the variable depth to bedrock across the site, maximum settlement may be expected at the northeast corner of the site assuming equivalent loading conditions. Since subgrade soils are predominantly sands, settlement should be nearly immediate upon application of load.

6.6.5 The allowable coefficient of friction to resist sliding is 0.35 for mat foundation concrete atop aggregate materials (0.30 for concrete atop recompacted or competent native alluvium). Combined passive resistance and friction may be utilized for design provided that the frictional resistance is reduced by 50%.

6.6.6 The allowable passive earth pressure for the sides of mat foundations poured against competent, undisturbed alluvial soils may be computed as an equivalent fluid having a density of 300 pounds per cubic foot (pcf) with a maximum earth pressure of 3,000 pounds per square foot. Where not protected by pavement, the upper 1 foot of soils should be ignored when calculating passive resistance.

6.6.7 As previously discussed, groundwater was encountered at depths of 4 ½ to 16 feet. Project design should consider hydrostatic uplift pressure as discussed in Section 6.1.

6.7 Tiedown Anchors

6.7.1 Tiedown anchors will be necessary where the dead weight of the building is not sufficient to resist hydrostatic uplift pressures. The structural engineer has indicated tiedown anchors will be needed for the portions of the development where only two above-grade levels overlie the subterranean parking levels. A variety of tiedown anchor types are available but most are drilled small-diameter shafts that

are post-grouted with steel reinforcing elements. Tiedown anchors are typically designed and installed by specialty contractors. Geocon should review all tiedown anchor designs for proper incorporation of soil parameters and the recommendations herein.

6.7.2 Tiedown anchors should be spaced at least five feet or five anchor diameters apart (whichever is greater and extend to depths of at least 20 feet below subgrade for the mat foundation. Tiedown anchors spaced closer than specified above may be subject to group effects that we should evaluate on a case-by-case basis. Uplift capacities will vary with anchor type and installation techniques. For preliminary planning purposes, we recommend ultimate bond stresses of 20 pounds per square inch (psi). The tiedown anchor designer should select and apply the appropriate factor of safety to the ultimate value provided above.

6.7.3 A full-scale load test program should be applied to the production tiedown anchors with test loads of 1.5 to 2 times the design load. Anchor bond stresses higher than those provided above may be available. Details of the test program should be reviewed by Geocon prior to finalization. Tiedown installation and load testing should be observed on a continuous basis by our representatives.

6.8 Exterior Slabs

6.8.1 Exterior concrete slabs-on-grade subject to vehicle loading are considered pavements should be designed in accordance with the recommendations in Section 6.12 of this report.

6.8.2 Exterior slabs, not subject to traffic loads, should be at least 4 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions, positioned near the slab midpoint. We recommend that at least 6 inches of Class 2 Aggregate Base (AB) compacted to at least 95% relative compaction be used below exterior concrete slabs. Prior to placing AB, the subgrade should be moisture conditioned to at least 2% over optimum (at near optimum moisture where fill materials are predominantly sands or gravels) and properly compacted to at least 90% relative compaction.

6.8.3 In lieu of specific recommendations from the structural or civil engineer, we recommend that crack control joints be spaced at intervals not greater than 8 feet for 4-inch-thick slabs. Crack control joints should extend a minimum depth of one-fourth the slab thickness and should be constructed using saw-cuts or other methods as soon as practical after concrete placement. Construction joints should be designed by the project structural engineer.

6.8.4 The recommendations of this report are intended to reduce the potential for cracking of slabs due to soil movement. However, even with the incorporation of the recommendations presented herein, foundations, stucco walls, and slabs-on-grade may exhibit some cracking due to soil movement. This is common for project areas that contain expansive soils since designing to eliminate potential soil movement is cost prohibitive. The occurrence of concrete shrinkage cracks is independent of the supporting soil characteristics. Their occurrence may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement and curing, and by the placement of crack control joints at periodic intervals, in particular, where re-entrant slab corners occur.

6.9 Temporary Excavations

6.9.1 The existing artificial fills can be considered a Type C soil in accordance with OSHA guidelines. The contractor should have a “competent person” as defined by OSHA evaluate all excavations. All onsite excavations must be conducted in such a manner that potential surcharges from existing structures,

construction equipment, and vehicle loads are resisted. The surcharge area may be defined by a 1:1 projection down and away from the bottom of an existing foundation or vehicle load. Penetrations below this 1:1 projection will require special excavation measures such as sloping and possibly shoring.

6.9.2 It is the contractor's responsibility to provide sufficient and safe excavation support as well as protecting nearby utilities, structures, and other improvements which may be damaged by earth movements.

6.10 Temporary Shoring

6.10.1 Shoring will be required for the planned excavation for the subterranean levels. Based on the planned depth of excavation, we anticipate temporary shoring systems may include diaphragm walls such as slurry or soil mix walls coupled with more conventional shoring elements such as solider piles and tiebacks. The recommendations that follow are preliminary and will be updated, and possibly modified, as project design details are developed. The earth pressure values recommended in Section 6.10 may be used for preliminary shoring design purposes.

6.10.2 The design of temporary shoring is governed by soil and groundwater conditions, as well as the depth and width of the excavated area. Based on the depth of excavation, restrained shoring will be required to limit detrimental lateral deflections and settlement behind the shoring walls.

6.10.3 Passive soil pressure resistance for embedded portions of soldier piles can be based upon an equivalent passive soil fluid weight of 350 pcf. The passive resistance can be assumed to act over a width of two pile diameters. The project structural engineer or shoring designer should determine the actual embedment depth. The recommendations herein assume a level ground surface behind the shoring wall and outward from the bottom of the retained face.

6.10.4 The frictional resistance between the soldier piles and retained soil may be used to resist the vertical component of the anchor load (if any). The coefficient of friction may be taken as 0.25 based on uniform contact between the steel beam and lean-mix concrete and surrounding soil. This value may be increased to 0.30 where structural concrete is used. The portion of soldier piles below the plane of excavation may also be employed to resist the downward loads. The downward capacity may be determined using a frictional resistance of 200 pounds per square foot.

6.10.5 Drilled cast-in-place soldier piles should be placed no closer than 3 diameters on center. The minimum diameter of the piles is 30 inches. Structural concrete should be used for the soldier piles below the excavation. As an alternative, lean-mix concrete may be used where the pile reinforcing consists of a wide-flange section. The slurry must be of sufficient strength to impart the lateral bearing pressure developed by the wide-flange section to the soil.

6.10.6 Casing may be required if caving is experienced in granular soil zones and the contractor should have casing available prior to commencement of drilling activities. When casing is used, extreme care should be employed so that the pile integrity is not compromised as the casing is withdrawn. At no time should the distance between the surface of the concrete and the bottom of the casing be less than five feet. A representative of Geocon should observe the drilling of soldier piles and construction of the shoring system on a continuous basis.

6.10.7 A special concrete mix should be used for concrete to be placed below water. The design should provide for concrete with a 28-day compressive strength psi of 1,000 pounds per square inch (psi)

greater than the initial job specification (minimum 4,000 psi). An admixture that reduces segregation of paste/aggregates and dilution of paste should be considered. Concrete below water should be placed via tremie method.

6.10.8 It is essential that the soldier pile and tieback system allow very limited amounts of lateral displacement. Earth pressures acting on a lagging wall can result in the movement of the shoring toward the excavation and result in ground subsidence outside of the excavation. For these reasons, we recommend that horizontal movements of the shoring wall be accurately monitored and recorded during excavation and anchor construction. Shoring systems, where adjacent offsite structures or improvements do not surcharge the shoring excavation, are typically designed to limit horizontal soldier pile movement to less than 1 inch. Where structures and/or sensitive improvements surcharge the excavations, horizontal soldier pile movement is typically limited to less than ½ inch (or no deflection if movement will damage existing structures). The allowable deflection is dependent on many factors, such as the presence of structures and utilities near the top of the excavation and will be assessed and designed by the project shoring engineer.

6.10.9 If desired for lateral restraint, tieback anchors employed in shoring should be designed such that anchors fully penetrate the "active zone" behind the shoring. The active zone is defined as the area bound by the wall and a plane projected up from the wall base at an inclination of 55° from horizontal. The bonded portion of the tieback anchors should be situated outside of the active zone.

6.10.10 Normally, tieback anchors are contractor-designed and installed, and there are numerous anchor construction methods available. Experience has shown that the use of pressure grouting during construction of the bonded portion of the anchor will decrease the probability of anchor failure.

6.10.11 All anchors should be proof tested to at least 130 percent of the anchor's design working load. Anchor acceptance criteria should be established in project plans and specifications. Any anchor test failure criteria should be based upon a maximum allowable displacement at 130 percent of the anchor's working load and a maximum residual displacement (anchor creep) within the anchor following stressing. Anchor stressing should only be conducted after sufficient curing has occurred and strength has developed within the anchor grout. Anchors that fail to meet project-specified test criteria should be replaced.

6.10.12 Lagging should keep pace with excavation and anchor construction. We recommend that the excavation not be advanced deeper than 3 feet below the bottom of lagging at any time; the unlagged gaps should only be allowed to stand for short periods of time in order to decrease the probability of soil sloughing and caving. Backfilling should be conducted when necessary between the back of lagging and excavation sidewalls to reduce sloughing in this zone. Further, the excavation should not be advanced further than 4 feet below a row of tiebacks prior to those tiebacks being proof tested and locked off.

6.10.13 If tieback anchors are employed, we recommend that an accurate survey of existing utilities and other underground structures adjacent to the shoring wall be conducted. The survey should include both locations and depths of existing utilities. Locations of anchors should be adjusted as necessary during the design and construction process to accommodate existing and proposed utilities.

6.10.14 The condition of existing buildings, streets, sidewalks, and other structures around the perimeter of the planned excavation should be documented prior to the start of shoring and excavation work. Special attention should be given to documenting existing cracks or other indications of differential settlement within these adjacent structures, pavements and other improvements. Consideration

should be given to videotaping adjacent underground utilities prior to construction to verify integrity of pipes. In addition, monitoring points should be established indicating location and elevation around the excavation and upon existing buildings. These points should be monitored on a regular basis during construction.

6.10.15 Geocon should review all shoring plans prior to finalizing to confirm the incorporation of the recommendations provided herein or to provide supplemental geotechnical recommendations, as necessary.

6.11 Retaining Wall Design

6.11.1 Lateral earth pressures may be used in the design of retaining walls, buried structures and basement walls for the underground level. Lateral earth pressures against these facilities may be assumed to be equal to the pressure exerted by an equivalent fluid. The unit weight of the equivalent fluid depends on the design conditions. Table 6.10 summarizes the weights of the equivalent fluid based on the different design conditions. The parameters below should be reviewed once the location of retaining walls is established. Updated earth pressures values may be provided, particularly for the northern basement wall below the embankment for the East Grand Avenue overcrossing.

TABLE 6.10
RECOMMENDED LATERAL EARTH PRESSURES

Condition	Depth Below Existing Grade	Equivalent Fluid Density Drained Conditions	Equivalent Fluid Density Undrained Conditions
Active	0 to 15 feet	60 pcf	90 pcf
	Below 15 feet	40 pcf	82 pcf
At-Rest	0 to 15 feet	80 pcf	100 pcf
	Below 15 feet	60 pcf	92 pcf

6.11.2 Unrestrained walls should be designed using the active case. Unrestrained walls are those that are allowed to rotate more than 0.01H (where H is the height of the wall). Walls restrained from movement such as basement walls should be designed using the at-rest case. The above soil pressures assume level backfill within an area bounded by the wall and a 1:1 plane extending upward from the base of the wall and no surcharges within that same area. Where the ground surface is sloped behind the retaining wall at 2:1 or flatter, an additional 15 pcf should be added to the equivalent fluid density values recommended above.

6.11.3 Unless project-specific loading information is provided by the structural engineer, where vehicle loads are expected atop the wall backfill, an additional uniform surcharge pressure equivalent to 2 feet of backfill soil should be used for design. Where the vehicle loading will be limited to passenger cars, the additional uniform surcharge equivalent may be reduced to 1 foot of backfill soil.

6.11.4 For drained conditions, retaining walls greater than 2 feet tall (retained height) should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces and should be waterproofed as required by the project architect. Positive drainage for retaining walls should consist of a vertical layer of permeable material positioned between the retaining wall and the soil backfill. The permeable material may be composed of a composite drainage geosynthetic or a natural

permeable material such as crushed gravel at least 12 inches thick and capped with at least 12 inches of native soil. A geosynthetic filter fabric should be placed between the gravel and the soil backfill. Provisions for removal of collected water should be provided for either system by installing a perforated drainage pipe along the bottom of the permeable material which leads to suitable drainage facilities.

6.11.5 Retaining walls should be designed considering seismic lateral earth pressure where required by building code or deemed necessary by the structural engineer. For level backfill conditions, the seismic lateral earth pressure increment exerted on a cantilever retaining wall should be a triangular distribution with a pressure of 47H (where H is the height of the wall, in feet, resulting in psf) exerted at the base of the wall and zero at the top of the wall. A higher seismic increment may be recommended for selected portions of the underground level once project design plans are available, particularly below the East Grand Avenue overcrossing embankment. Seismic loading should be considered in conjunction with active earth pressures for both restrained and unrestrained (cantilever) walls.

6.11.6 We recommend that all retaining wall designs be reviewed by Geocon to confirm the incorporation of the recommendations provided herein. In particular, potential surcharges from adjacent structures and other improvements should be reviewed by Geocon.

6.12 Underground Utilities

6.12.1 Underground utility trenches should be backfilled with properly compacted material. The material excavated from the trenches should be adequate for use as backfill provided it does not contain deleterious matter, vegetation or rock larger than six inches in maximum dimension. Trench backfill should be placed in loose lifts not exceeding eight inches and should be compacted to at least 90% relative compaction at least 2% above optimum moisture content (near optimum where backfill materials are predominantly sands and gravels).

6.12.2 Bedding and pipe zone backfill typically extends from the bottom of the trench excavations to a minimum of 6 inches above the crown of the pipe. Pipe bedding material should consist of crushed aggregate, clean sand or similar open-graded material. Proposed bedding and pipe zone materials should be reviewed by Geocon prior to construction; open-graded materials such as ¾ inch drain rock may require wrapping with filter fabric to mitigate the potential for piping. Pipe bedding and backfill should also conform to the requirements of the governing utility agency.

6.13 Pavement Recommendations

6.13.1 The upper 12 inches of pavement subgrade should be scarified, moisture conditioned to near optimum and compacted to at least 95% relative compaction. Prior to placing aggregate base, the finished subgrade should be proof-rolled with a laden water truck (or similar equipment with high contact pressure) to verify stability.

6.13.2 Sidewalk, curb, gutter, and driveway encroachments should be designed and constructed in accordance with City of South San Francisco requirements, as applicable.

6.13.3 Unless specifically designed and evaluated by the project structural engineer, where concrete paving will be utilized for support of vehicles, we recommend the concrete be a minimum of 6 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal

directions. In addition, doweling, reinforcing steel or other load-transfer mechanism should be provided at joints if desired to reduce the potential for vertical offset. The concrete should have a minimum 28-day compressive strength of 3,500 psi. We should evaluate pavements to support heavy truck or bus traffic on a case-by-case basis; supplemental recommendations may be provided.

6.13.4 We recommend that at least 6 inches of Class 2 Aggregate Base be used below rigid concrete pavements. The aggregate base should be compacted to at least 95% relative compaction near optimum moisture content.

6.13.5 In general, we recommend that concrete pavements be designed, constructed and maintained in accordance with industry standards such as those provided by the American Concrete Pavement Association.

6.13.6 Crack control joints should be spaced at intervals not greater than 12 feet and should be constructed using saw-cuts or other methods as soon as practical following concrete placement. Crack control joints should extend a minimum depth of one-fourth the slab thickness and should be constructed using saw-cuts or other methods as soon as practical after concrete placement. Construction joints should be designed by the project structural engineer.

6.13.7 The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence and pavement distress. If planters are planned adjacent to paving, it is recommended that the perimeter curb be extended at least 6 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving. Alternatives such as plastic moisture cut-offs or modified drop-inlets may also be considered in lieu of deepened curbs.

6.14 Surface Drainage

6.14.1 Proper surface drainage is critical to the future performance of the project. Uncontrolled infiltration of irrigation excess and storm runoff into the soils can adversely affect the performance of the planned improvements. Saturation of a soil can cause it to lose internal shear strength and increase its compressibility, resulting in a change to important engineering properties. Proper drainage should be maintained at all times.

6.14.2 All site drainage should be collected and transferred to the street in non-erosive drainage devices. Drainage should not be allowed to pond anywhere on the site, and especially not against any foundations or retaining walls. Drainage should not be allowed to flow uncontrolled over any descending slope. The proposed structures should be provided with roof gutters. Discharge from downspouts, roof drains and scuppers not permitted onto unprotected soils within five feet of the building perimeter. Planters which are located adjacent to foundations should be sealed or properly drained to prevent moisture intrusion into the materials providing foundation support. Landscape irrigation within five feet of the building perimeter or footings should be kept to a minimum to just support vegetative life.

6.14.3 Positive site drainage should be provided away from structures, pavement, and the tops of slopes to swales or other controlled drainage structures. The building pad and pavement areas should be fine graded such that water is not allowed to pond. Final soil grade should slope a minimum of 2% away from structures.

6.14.4 We recommend implemented measures to reduce infiltrating surface water near buildings and slabs-on-grade. Such measures may include:

- Selecting drought-tolerant plants that require little or no irrigation, especially within 5 feet of buildings, slabs-on-grade, or pavements.
- Using drip irrigation or low-output sprinklers.
- Using automatic timers for irrigation systems.
- Appropriately spaced area drains.
- Hard-piping roof downspouts to appropriate collection facilities.

7. FURTHER GEOTECHNICAL SERVICES

7.1 Plan and Specification Review

7.1.1 We should review project plans and specifications prior to final design submittal to assess whether our recommendations have been properly implemented and evaluate if additional analysis and/or recommendations are required.

7.2 Testing and Observation Services

7.2.1 The recommendations provided in this report are based on the assumption that we will continue as Geotechnical Engineer of Record throughout the construction phase. It is important to maintain continuity of geotechnical interpretation and confirm that field conditions encountered are similar to those anticipated during design. If we are not retained for these services, we cannot assume any responsibility for others interpretation of our recommendations, and therefore the future performance of the project.

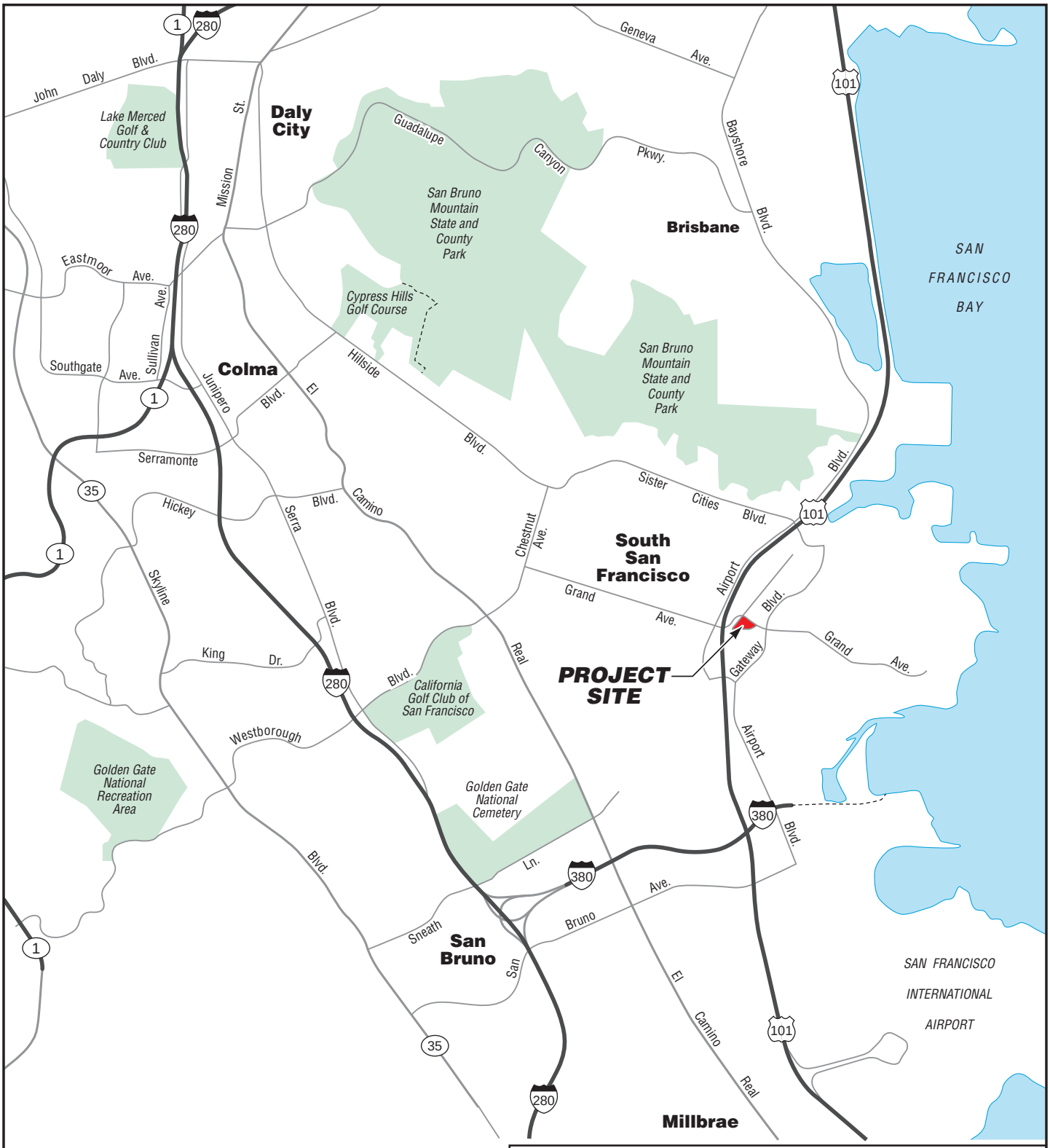
LIMITATIONS AND UNIFORMITY OF CONDITIONS

The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Consultants, Inc. should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the geotechnical scope of services provided by Geocon Consultants, Inc.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.



N

0 1

Scale in Miles

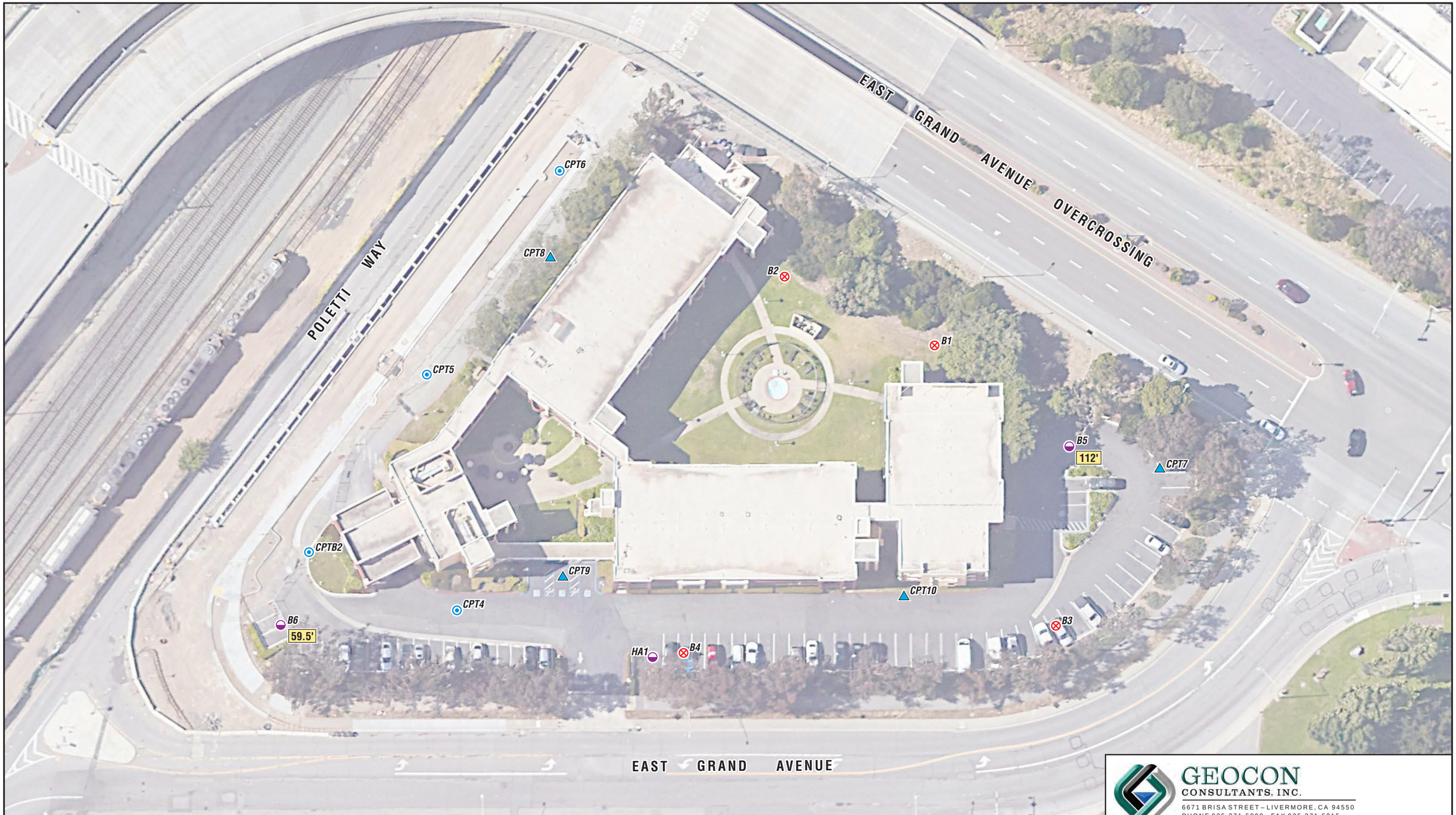
GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

Proposed Mixed-Use Development

121 East Grand Avenue
South San Francisco, California

VICINITY MAP

E8961-04-02	April 2021	Figure 1



LEGEND:

B1 ⊗ Approximate Boring Location (2017)

CPT1 ⊙ Approximate CPT Location (2016)

B5 ◒ Approximate Boring Location (2020)

CPT7 ▲ Approximate CPT Location (2020)

59.5' Approximate Depth (ft.) to Franciscan Formation

N

0 50

Scale in Feet

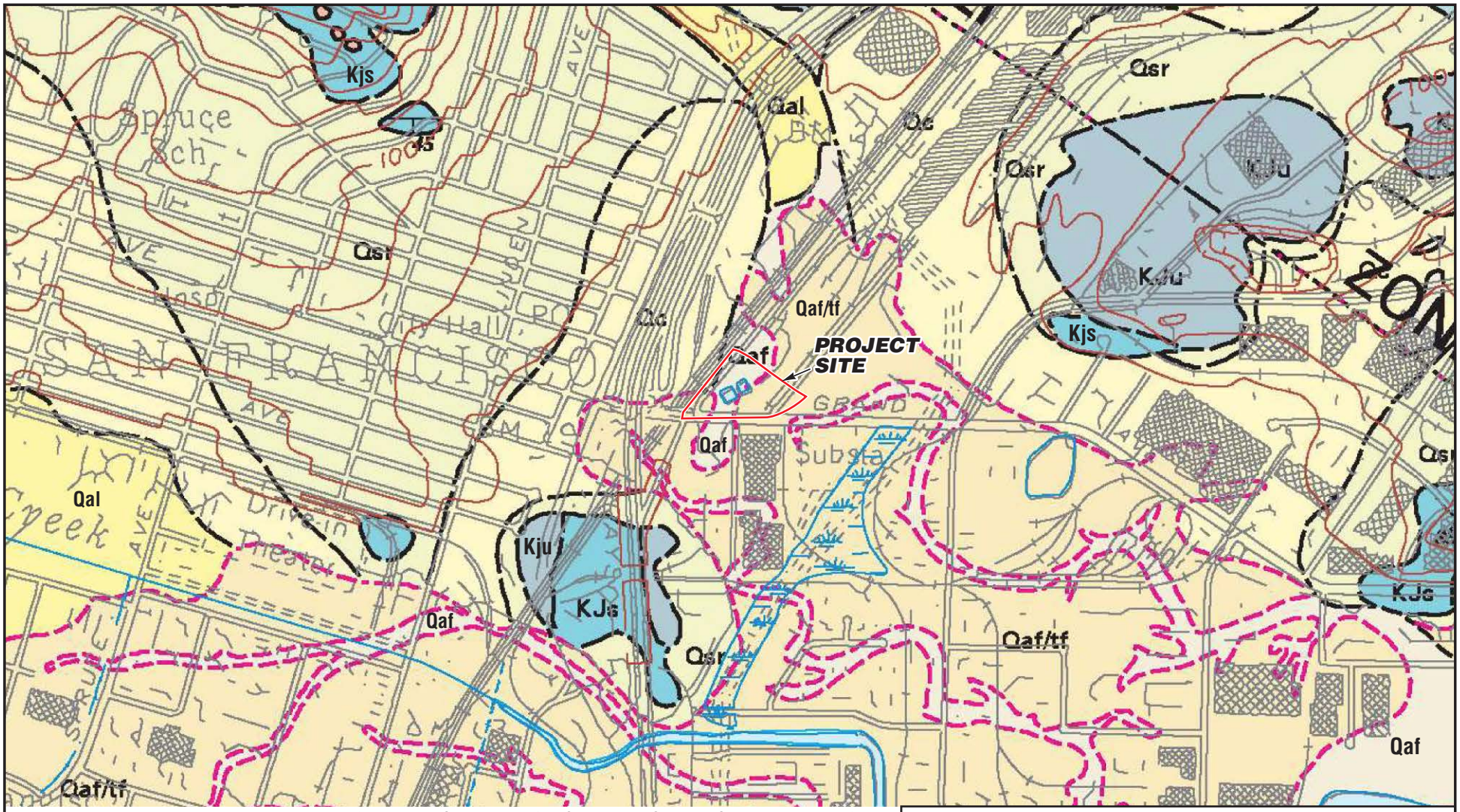
GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

Proposed Mixed-Use Development

121 East Grand Avenue
South San Francisco, California

SITE PLAN

E8961-04-02	April 2021	Figure 2



Ref: *Preliminary Geologic Map of the San Francisco South 7.5' Quadrangle and Part of the Hunters Point 7.5' Quadrangle, San Francisco Bay Area, California, 1998*

Qaf	Artificial fill (Holocene)
Qaf/tf	Artificial fill over tidal flat (Holocene)
Qal	Alluvium (Holocene)
Qsr	Slope debris and ravine fill (Pleistocene)
Qc	Colma Formation (Pleistocene)
KJs	Franciscan Complex – Sandstone and shale (Cretaceous and Jurassic)
KJu	Franciscan Complex – Sheared rocks (Cretaceous and Jurassic)

N

0 1000

Scale in Feet

GEOCON
CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

Proposed Mixed-Use Development

121 East Grand Avenue
South San Francisco, California

GEOLOGIC MAP

E8961-04-02	April 2021	Figure 3

APPENDIX A

APPENDIX A
FIELD EXPLORATION

Fieldwork for our investigation included site visits, subsurface exploration, and soil sampling. The locations of our exploratory borings and CPTs are shown on the Site Plan, Figure 2. Soil boring logs and CPT profiles for our exploration are presented as figures following the text in this appendix. The borings and CPTs were located by pacing from existing reference points. Therefore, the exploration locations shown on Figure 2 are approximate.

Our field exploration included the advancement of ten CPT soundings to maximum depths of approximately 85¼ feet below the existing ground surface utilizing a truck-mounted CPT rig with a down-pressure capacity of approximately 20 tons. The CPTs were performed on December 16, 2016 and December 3, 2020 by Middle Earth Geo Testing of Fremont, California using an integrated electronic cone system. The cone has a tip area of 15 square centimeters, a friction sleeve area of 150 square centimeters, and a ratio of friction sleeve area to tip end area equal to 0.80. The cone bearing (Q_C) and sleeve friction (F_S) were measured and recorded during tests at approximately 2-inch depth intervals. The CPT data consisting of cone bearing, sleeve friction, friction ratio and equivalent standard penetration blow counts (N) versus penetration depth below the existing ground surface for each location has been recorded and is presented in this appendix.

Our exploration also included exploratory soil borings. Our Borings B1 and B2 were performed on April 26, 2017 using a pickup truck-mounted New Holland TK80A drill rig equipped with 4-inch solid flight augers. Our Borings B3 and B4 on May 5, 2017 were performed with a truck-mounted Mobile B-53 drill rig equipped with 8-inch hollow stem augers. Our boring on December 3, 2020 were performed with a truck-mounted Mobile B-56R drill rig equipped with 8-inch hollow stem augers. Our boring on December 10, 2020 were performed with a truck-mounted Mobile B-61 drill rig equipped with 8-inch hollow stem augers.

It should be noted that our field investigation required driller remobilizations due to the presence of underground infrastructure not shown on the project plans nor identified by the City of South San Francisco during utility clearance through USA. In addition, the presence of that infrastructure and associated trench backfill and cement- or lime-treated fills precluded our planned CPTs at the eastern margin of the site.

Sampling in the borings was accomplished using a cathead or downhole-wireline 140-pound hammer with a 30-inch drop. Samples were obtained with a 3-inch outside-diameter (OD), split spoon (California Modified) sampler, and a 2-inch OD, Standard Penetration Test (SPT) sampler. The number of blows required to drive the sampler the last 12 inches (or fraction thereof) of the 18-inch sampling interval were recorded on the boring logs. The blow counts shown on the boring logs should not be interpreted as standard SPT “N” values; corrections have not been applied.

Subsurface conditions encountered in the exploratory boring were visually examined, classified and logged in general accordance with the American Society for Testing and Materials (ASTM) Practice for Description and Identification of Soils (Visual-Manual Procedure D2488). This system uses the Unified Soil Classification System (USCS) for soil designations. The log depicts soil and geologic conditions encountered and depths at which samples were obtained. The log also includes our interpretation of the conditions between sampling intervals. Therefore, the logs contain both observed and interpreted data. We determined the lines designating the interface between soil materials on the logs using visual observations, drill rig penetration rates, excavation characteristics and other factors. The transition between materials may be abrupt or gradual. Where applicable, the field logs were revised based on subsequent laboratory testing.

Upon completion, our boreholes were backfilled with grout per San Mateo County Environmental Health Services Division permit requirements.

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS, MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS, MORE THAN HALF COARSE FRACTION IS LARGER THAN NO.4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 12% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS, MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO.4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 12% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS, MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS, LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS, LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC CLAYS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
	HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

BORING/TRENCH LOG LEGEND

- No Recovery
- Shelby Tube Sample
- Bulk Sample
- SPT Sample
- Modified California Sample
- Groundwater Level (At Completion)
- Groundwater Level (Seepage)

PENETRATION RESISTANCE

SAND AND GRAVEL			SILT AND CLAY			
RELATIVE DENSITY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	CONSISTENCY	BLOWS PER FOOT (SPT)*	BLOWS PER FOOT (MOD-CAL)*	COMPRESSIVE STRENGTH (tsf)
VERY LOOSE	0 - 4	0 - 6	VERY SOFT	0 - 2	0 - 3	0 - 0.25
LOOSE	5 - 10	7 - 16	SOFT	3 - 4	4 - 6	0.25 - 0.50
MEDIUM DENSE	11 - 30	17 - 48	MEDIUM STIFF	5 - 8	7 - 13	0.50 - 1.0
DENSE	31 - 50	49 - 79	STIFF	9 - 15	14 - 24	1.0 - 2.0
VERY DENSE	OVER 50	OVER 79	VERY STIFF	16 - 30	25 - 48	2.0 - 4.0
			HARD	OVER 30	OVER 48	OVER 4.0

*NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE LAST 12 INCHES OF AN 18-INCH DRIVE

MOISTURE DESCRIPTIONS

FIELD TEST	APPROX. DEGREE OF SATURATION, S (%)	DESCRIPTION
NO INDICATION OF MOISTURE; DRY TO THE TOUCH	S<25	DRY
SLIGHT INDICATION OF MOISTURE	25≤S<50	DAMP
INDICATION OF MOISTURE; NO VISIBLE WATER	50≤S<75	MOIST
MINOR VISIBLE FREE WATER	75≤S<100	WET
VISIBLE FREE WATER	100	SATURATED

QUANTITY DESCRIPTIONS

APPROX. ESTIMATED PERCENT	DESCRIPTION
<5%	TRACE
5 - 10%	FEW
11 - 25%	LITTLE
26 - 50%	SOME
>50%	MOSTLY

GRAVEL/COBBLE/BOULDER DESCRIPTIONS

CRITERIA	DESCRIPTION
PASS THROUGH A 3-INCH SIEVE AND BE RETAINED ON A NO. 4 SIEVE (#4 TO 3")	GRAVEL
PASS A 12-INCH SQUARE OPENING AND BE RETAINED ON A 3-INCH SIEVE (3"-12")	COBBLE
WILL NOT PASS A 12-INCH SQUARE OPENING (>12")	BOULDER

BEDDING SPACING DESCRIPTIONS

THICKNESS/SPACING	DESCRIPTOR
GREATER THAN 10 FEET	MASSIVE
3 TO 10 FEET	VERY THICKLY BEDDED
1 TO 3 FEET	THICKLY BEDDED
3 $\frac{3}{8}$-INCH TO 1 FOOT	MODERATELY BEDDED
1 $\frac{1}{4}$-INCH TO 3 $\frac{3}{8}$-INCH	THINLY BEDDED
$\frac{3}{8}$-INCH TO 1 $\frac{1}{4}$-INCH	VERY THINLY BEDDED
LESS THAN $\frac{3}{8}$-INCH	LAMINATED

STRUCTURE DESCRIPTIONS

CRITERIA	DESCRIPTION
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS AT LEAST $\frac{1}{4}$-INCH THICK	STRATIFIED
ALTERNATING LAYERS OF VARYING MATERIAL OR COLOR WITH LAYERS LESS THAN $\frac{1}{4}$-INCH THICK	LAMINATED
BREAKS ALONG DEFINITE PLANES OF FRACTURE WITH LITTLE RESISTANCE TO FRACTURING	FISSURED
FRACTURE PLANES APPEAR POLISHED OR GLOSSY, SOMETIMES STRIATED	SLICKENSIDED
COHESIVE SOIL THAT CAN BE BROKEN DOWN INTO SMALLER ANGULAR LUMPS WHICH RESIST FURTHER BREAKDOWN	BLOCKY
INCLUSION OF SMALL POCKETS OF DIFFERENT SOIL, SUCH AS SMALL LENSES OF SAND SCATTERED THROUGH A MASS OF CLAY	LENSED
SAME COLOR AND MATERIAL THROUGHOUT	HOMOGENOUS

CEMENTATION/INDURATION DESCRIPTIONS

FIELD TEST	DESCRIPTION
CRUMBLES OR BREAKS WITH HANDLING OR LITTLE FINGER PRESSURE	WEAKLY CEMENTED/INDURATED
CRUMBLES OR BREAKS WITH CONSIDERABLE FINGER PRESSURE	MODERATELY CEMENTED/INDURATED
WILL NOT CRUMBLE OR BREAK WITH FINGER PRESSURE	STRONGLY CEMENTED/INDURATED

IGNEOUS/METAMORPHIC ROCK STRENGTH DESCRIPTIONS

FIELD TEST	DESCRIPTION
MATERIAL CRUMBLES WITH BARE HAND	WEAK
MATERIAL CRUMBLES UNDER BLOWS FROM GEOLOGY HAMMER	MODERATELY WEAK
$\frac{1}{8}$-INCH INDENTATIONS WITH SHARP END FROM GEOLOGY HAMMER	MODERATELY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **ONE** BLOW FROM GEOLOGY HAMMER	STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **COUPLE** BLOWS FROM GEOLOGY HAMMER	VERY STRONG
HAND-HELD SPECIMEN CAN BE BROKEN WITH **MANY** BLOWS FROM GEOLOGY HAMMER	EXTREMELY STRONG

IGNEOUS/METAMORPHIC ROCK WEATHERING DESCRIPTIONS

DEGREE OF DECOMPOSITION	FIELD RECOGNITION	ENGINEERING PROPERTIES
SOIL	DISCOLORED, CHANGED TO SOIL, FABRIC DESTROYED	EASY TO DIG
COMPLETELY WEATHERED	DISCOLORED, CHANGED TO SOIL, FABRIC MAINLY PRESERVED	EXCAVATED BY HAND OR RIPPING (Saprolite)
HIGHLY WEATHERED	DISCOLORED, HIGHLY FRACTURED, FABRIC ALTERED AROUND FRACTURES	EXCAVATED BY HAND OR RIPPING, WITH SLIGHT DIFFICULTY
MODERATELY WEATHERED	DISCOLORED, FRACTURES, INTACT ROCK-NOTICEABLY WEAKER THAN FRESH ROCK	EXCAVATED WITH DIFFICULTY WITHOUT EXPLOSIVES
SLIGHTLY WEATHERED	MAY BE DISCOLORED, SOME FRACTURES, INTACT ROCK-NOT NOTICEABLY WEAKER THAN FRESH ROCK	REQUIRES EXPLOSIVES FOR EXCAVATION, WITH PERMEABLE JOINTS AND FRACTURES
FRESH	NO DISCOLORATION, OR LOSS OF STRENGTH	REQUIRES EXPLOSIVES

IGNEOUS/METAMORPHIC ROCK JOINT/FRACTURE DESCRIPTIONS

FIELD TEST	DESCRIPTION
NO OBSERVED FRACTURES	UNFRACTURED/UNJOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1 TO 3 FOOT INTERVALS	SLIGHTLY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 4-INCH TO 1 FOOT INTERVALS	MODERATELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT 1-INCH TO 4-INCH INTERVALS WITH SCATTERED FRAGMENTED INTERVALS	INTENSELY FRACTURED/JOINTED
MAJORITY OF JOINTS/FRACTURES SPACED AT LESS THAN 1-INCH INTERVALS; MOSTLY RECOVERED AS CHIPS AND FRAGMENTS	VERY INTENSELY FRACTURED/JOINTED

GEOCON
CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

KEY TO LOGS

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B1

ELEV. (MSL.) _____ DATE COMPLETED **4/26/2017**

ENG./GEO. **JBM** DRILLER **Cenozoic Exploration**

EQUIPMENT **New Holland TK80A w/ 4-inch SFA** HAMMER TYPE **Cathead**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B1-0-5			SP	FILL Medium dense, damp, black, (f-m) SAND -organic rich topsoil to 9 inches -hand augered to 3 feet to verify clear of utilities			
3				SW-SC	Loose, damp, orange-brown, (f-c) SAND with few (f) subrounded gravels and clays	15	116.6	10.6
4	B1-4-4.5 B1-4.5							
6			▼	SC	Medium dense, moist, orange-brown, Clayey (f-c) SAND with few (f) subrounded gravels	11		
7	B1-6.5-7.5							
8				CH	BAY MUD Soft, wet to saturated, dark gray to black, Silty (f) Sandy CLAY with few (f-m) angular gravels -organic-rich	4	103.9	38.1
10	B1-10.5-11 B1-11							
16	B1-16			CL	ALLUVIUM Hard, moist, gray to grayish-beige, (f) Sandy CLAY -pp>4½	68	114.0	17.2
20	B1-20.5 B1-21			SP	Dense, moist, gray, (f) SAND with trace fines	61		
24								

Figure A2, Log of Boring B1, page 1 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B1

ELEV. (MSL.) _____ DATE COMPLETED **4/26/2017**

ENG./GEO. **JBM** DRILLER **Cenozoic Exploration**

EQUIPMENT **New Holland TK80A w/ 4-inch SFA** HAMMER TYPE **Cathead**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
25								
26	B1-25.5-26.5			SC	Medium dense, damp to moist, gray, Clayey (f) SAND	18		
27								
28								
29								
30								
31	B1-30.5-31.5					24		
					END OF BORING AT APPROXIMATELY 31½ FEET GROUNDWATER INITIALLY ENCOUNTERED AT 6 FEET BACKFILLED WITH NEAT CEMENT			

Figure A2, Log of Boring B1, page 2 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B2

ELEV. (MSL.) _____ DATE COMPLETED **4/26/2017**

ENG./GEO. **JBM** DRILLER **Cenozoic Exploration**

EQUIPMENT **New Holland TK80A w/ 4-inch SFA** HAMMER TYPE **Cathead**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B2-0-5	ML	FILL Stiff, damp, black, (f-m) Sandy SILT with (f-m) subangular to subrounded gravels			
1						
2			-very stiff			
3	B2-2.5 B2-3			36	135.7	21.5
4						
5			-soft, wet, less gravels, with few clays			
6	B2-5.5-6.5			4		
7						
8		SC	Medium dense, moist, orange-brown, Clayey (f) SAND			
9						
10						
11	B2-10.5-11 B2-11			41	107.5	16.2
12		SP	ALLUVIUM Dense, moist, grayish brown, (f) SAND			
13						
14						
15						
16	B2-15.5-16.5			35		
17						
18						
19						
20	B2-20.5-21.5	SC	Medium dense, moist, gray, (f-m) SAND with clay	17		
21						
22						
23						
24						

Figure A3, Log of Boring B2, page 1 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B2

ELEV. (MSL.) _____ DATE COMPLETED **4/26/2017**

ENG./GEO. **JBM** DRILLER **Cenozoic Exploration**

EQUIPMENT **New Holland TK80A w/ 4-inch SFA** HAMMER TYPE **Cathead**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
25								
26	B2-25.5-26.5				-same	24		
27								
28								
29								
30					-more clay			
31	B2-30.5-31.5					24		
					END OF BORING AT APPROXIMATELY 31½ FEET GROUNDWATER INITIALLY ENCOUNTERED AT 4½ FEET BACKFILLED WITH NEAT CEMENT			

Figure A3, Log of Boring B2, page 2 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B3

ELEV. (MSL.) _____ DATE COMPLETED **5/5/2017**

ENG./GEO. **JBM** DRILLER **EGI**

EQUIPMENT **Mobile B53 w/ 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					Approximately 2 inches AC			
1	B3-1-5				Approximately 12 inches AB			
2	B3-2			SC	FILL Very dense, damp, dark brown, (f-m) subrounded to angular Gravelly (f-c) SAND with clay -cement or lime treated to 4 feet	50/5½"		
3								
4	B3-4-5				-more gravel at 4 to 4½ feet	28		
5								
6	B3-5.5-6			GP	Dense to very dense, wet, gray, (c) GRAVEL with little sand			
7								
8			▼					
9								
10				CH	BAY MUD Medium stiff, moist, dark gray to black, CLAY with little organics and few (f) sands -organics partially rotted			
11	B3-10.5-11 B3-11					8		
12								
13								
14	B3-14-14.5 B3-14.5			SC	ALLUVIUM Loose to medium dense, moist, dark gray to gray, Clayey (f) SAND with few organics	13		
15								
16								
17								
18								
19	B3-19-20				-medium dense, orange-brown	18		
20								
21								
22								
23								
24	B3-24-25			SP	Dense, moist to wet, orange-brown, (f) SAND with trace clay	31		

Figure A4, Log of Boring B3, page 1 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B3

ELEV. (MSL.) _____ DATE COMPLETED **5/5/2017**

ENG./GEO. **JBM** DRILLER **EGI**

EQUIPMENT **Mobile B53 w/ 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
25								
26								
27								
28								
29	B3-29-30			SC	Medium dense, moist to wet, orange-brown, Clayey (f) SAND	13		
30								
31								
32								
33								
34	B3-34-35				-very dense, less clay	82/11"		
35								
36								
37								
38								
39	B3-39-40				-medium dense, more clay	21		
40					END OF BORING AT APPROXIMATELY 40 FEET GROUNDWATER INITIALLY ENCOUNTERED AT 8 FEET BACKFILLED WITH NEAT CEMENT & CAPPED WITH CONCRETE			

Figure A4, Log of Boring B3, page 2 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◪ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B4

ELEV. (MSL.) _____ DATE COMPLETED **5/5/2017**

ENG./GEO. **JBM** DRILLER **EGI**

EQUIPMENT **Mobile B53 w/ 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0			Approximately 2½ inches AC			
1			Approximately 11 inches AC			
2		SC	TRENCH BACKFILL Loose, moist, dark gray, (f-m) subrounded to angular Gravelly (f-c) SAND with few clays			
3	B4-2.5 B4-3			10		
4				9		
5						
6		GP	Medium dense, damp, gray-brown, (f-m) rounded GRAVEL with few (f) sands -pea gravel			
7						
8		CH	BAY MUD Medium stiff, moist, dark gray to black, CLAY with little organics and few (f) sands			
9	B4-9 B4-9.5	SC	-organics partially rotted -pp=0-1	16		
10			ALLUVIUM Medium dense, moist to wet, dark gray, Clayey (f) SAND			
11						
12						
13						
14	B4-14-15		-orange-brown	21		
15						
16						
17						
18						
19	B4-19-20	SP	Dense, wet, gray and orange-brown, (f) SAND	33		
20						
21						
22						
23						
24	B4-24-25	SC	Medium dense, moist to wet, orange-brown, Clayey (f) SAND	15		

Figure A5, Log of Boring B4, page 1 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-01** PROJECT NAME: **121 E Grand Ave**

BORING B4

ELEV. (MSL.) _____ DATE COMPLETED **5/5/2017**

ENG./GEO. **JBM** DRILLER **EGI**

EQUIPMENT **Mobile B53 w/ 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
25								
26								
27								
28								
29	B4-29-30				-more clay	13		
30								
31								
32								
33								
34	B4-34-35				-dense, less clay	40		
35								
36								
37								
38								
39	B4-39-40			SP-SC	Medium dense, wet to saturated, orange-brown, (f) SAND with few clays	15		
40								
41								
42								
43								
44	B4-44-45			CL	Hard, damp, orange-brown, CLAY with few (f) sands -pp>4½	32		
45					END OF BORING AT APPROXIMATELY 45 FEET GROUNDWATER INITIALLY ENCOUNTERED AT 8 FEET BACKFILLED WITH NEAT CEMENT & CAPPED WITH CONCRETE			

Figure A5, Log of Boring B4, page 2 of 2

GEOCON BORING LOG E8961-04-01 BORING LOGS.GPJ 08/30/18

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-02** PROJECT NAME: **121 E. Grand Avenue**

BORING B5

ELEV. (MSL.) _____ DATE COMPLETED **12/10/2020**

ENG./GEO. **AA** DRILLER **EGI**

EQUIPMENT **Mobile B61 w/w 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					Approximately 2½ inches AC			
1				GW	Approximately 10 inches AB			
2					FILL			
3	B5-3-8				Very dense, black, GRAVEL with sand, metal slag, construction debris, etc.			
4								
5								
6								
7								
8			▼	GP	Dense to very dense, wet, gray, (c) GRAVEL with sand			
9								
10								
11	B5-10.5-11.5			CH	BAY MUD Medium stiff, moist, dark gray to black, fat CLAY -pp=½	11		
12								
13								
14	B5-14			SC	ALLUVIUM	42		
15	B5-14.5				Medium dense, moist, dark gray to gray, Clayey (f-m) SAND		110.3	18.3
16								
17								
18								
19	B5-19-20			SM	Dense, moist to wet, brown, (f-m) SAND with little silt	50		
20								
21								
22								
23								
24	B5-24-25					54		
25					-wet			
26								
27								
28								
29	B5-28.5-29.5			SC	Very dense, moist to wet, brown, Clayey (f-m) SAND	50/4"		
30								
31								
32								
33								
34								

Figure A7, Log of Boring B5, Page 1 of 4

GEOCON BORING LOG W/FIG# STARTING W/ A2 E8961-04-02 BORING LOGS.GPJ 01/29/21

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-02** PROJECT NAME: **121 E. Grand Avenue**

BORING B5

ELEV. (MSL.) _____ DATE COMPLETED **12/10/2020**

ENG./GEO. **AA** DRILLER **EGI**

EQUIPMENT **Mobile B61 w/w 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
35								
36	B5-35.5-36.5					78/9"		
37								
38								
39								
40				SM	Very dense, wet, brown, Silty (f-c) SAND with trace (f) gravels			
41	B5-40.5-41.5					66		
42								
43								
44								
45								
46	B5-45.5-46.5					80/12"		
47								
48								
49								
50								
51	B5-50.5-51.5					72		
52								
53								
54								
55								
56	B5-55.5-56.5					57		
57				SC	Very dense, moist to wet, brown, Clayey (f) SAND			
58								
59								
60	B5-60-60.8			SM	Very dense, wet, brown, (f-m) SAND with little silt	50/3"		
61								
62								
63								
64								
65	B5-65-65.8					50/3"		
66								
67								
68								
69								

Figure A7, Log of Boring B5, Page 2 of 4

GEOCON BORING LOG W/FIG# STARTING W/ A2 E8961-04-02 BORING LOGS.GPJ 01/29/21

GEOCON

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◥ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-02** PROJECT NAME: **121 E. Grand Avenue**

BORING B5

ELEV. (MSL.) _____ DATE COMPLETED **12/10/2020**

ENG./GEO. **AA** DRILLER **EGI**

EQUIPMENT **Mobile B61 w/w 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
70								
71								
72								
73								
74	B5-73.5-73.8			SP-SM	Very dense, wet, brown, (f-m) SAND with few silts	50/4"		
75								
76								
77								
78								
79								
80								
81								
82								
83								
84	B5-83.5-83.9					50/5"		
85								
86								
87								
88								
89								
90								
91								
92								
93								
94	B5-93.5-94.5			SC/CL	COLMA FORMATION Very dense, moist to wet, orange-brown, Clayey (f) SAND to Sandy CLAY	50/6"		
95								
96								
97								
98								
99								
100								
101								
102								
103								
104								

Figure A7, Log of Boring B5, Page 3 of 4

GEOCON BORING LOG W/FIG# STARTING W/ A2 E8961-04-02 BORING LOGS.GPJ 01/29/21

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

⊠ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-02** PROJECT NAME: **121 E. Grand Avenue**

BORING B5

ELEV. (MSL.) _____ DATE COMPLETED **12/10/2020**

ENG./GEO. **AA** DRILLER **EGI**

EQUIPMENT **Mobile B61 w/w 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
105	B5-105-105.4					50/5"		
106								
107								
108								
109								
110								
111								
112	B5-112-112.5					50/6"		
					FRANCISCAN FORMATION CLAYSTONE with SANDSTONE; weathered and fractured by sampler			
					END OF BORING AT APPROXIMATELY 112½ FEET GROUNDWATER INITIALLY ENCOUNTERED AT APPROXIMATELY 8½ FEET BACKFILLED WITH GROUT VIA TREMIE AND CAPPED WITH CONCRETE			

Figure A7, Log of Boring B5, Page 4 of 4

GEOCON BORING LOG W/FIG# STARTING W/ A2 E8961-04-02 BORING LOGS.GPJ 01/29/21

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-02** PROJECT NAME: **121 E. Grand Avenue**

BORING B6

ELEV. (MSL.) _____ DATE COMPLETED **12/3/2020**

ENG./GEO. **JBM** DRILLER **EGI**

EQUIPMENT **Mobile B56R w/ 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0						
1		SM	Approximately 4 inches AC			
2			Approximately 4 inches AB			
3			FILL Medium dense, damp, dark brown to black, (f-c) Gravelly Silty (f-c) SAND			
4		GM	Medium dense to dense, black and gray and tan, (f-c) GRAVEL with (f-c) sand and silt -mixture of rock, brick, concrete, miscellaneous debris			
5						
6						
7						
8			-no recovery, obstruction at tip of sampler	17		
9						
10						
11						
12						
13	B6-13	CL	ALLUVIUM Stiff, moist, tan to gray, (f-m) Sandy CLAY	19		
14	B6-13.5					
15						
16		SP-SC	Dense, wet, brown and red-brown and tan, (f-m) SAND with few clays			
17						
18						
19	B6-19			59	105.2	20.0
20	B6-19.5					
21						
22						
23						
24	B6-24-25	SC	Medium dense, moist, light gray-brown, Clayey (f-m) SAND	14		
25						
26						
27						
28						
29	B6-29-30			29		
30						
31						
32						
33						
34	B6-34-35	SC	COLMA FORMATION Medium dense, moist, orange-brown, Clayey (f-c) SAND	26		

Figure A6, Log of Boring B6, Page 1 of 2

GEOCON BORING LOG W/FIG# STARTING W/ A2 E8961-04-02 BORING LOGS.GPJ 01/29/21

GEOCON

SAMPLE SYMBOLS

☐ ... SAMPLING UNSUCCESSFUL ◧ ... STANDARD PENETRATION TEST ■ ... DRIVE SAMPLE (UNDISTURBED)

▨ ... DISTURBED OR BAG SAMPLE ◥ ... CHUNK SAMPLE ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

PROJECT NO. **E8961-04-02** PROJECT NAME: **121 E. Grand Avenue**

BORING B6

ELEV. (MSL.) _____ DATE COMPLETED **12/3/2020**

ENG./GEO. **JBM** DRILLER **EGI**

EQUIPMENT **Mobile B56R w/ 8-inch HSA** HAMMER TYPE **Downhole-Wireline**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
35								
36								
37								
38								
39	B6-39					37	119.2	16.0
40	B6-39.5							
41								
42								
43								
44					-no recovery with California Modified sampler, chased with SPT sampler			
45					-dense, brown, less clay	39		
46	B6-45.5-46.5					49		
47								
48								
49	B6-49-50				-very dense	63		
50								
51								
52								
53								
54	B6-54-55				-dense, more clay	34		
55								
56								
57								
58								
59	B6-59-59.5				-very dense	97/9"		
					FRANCISCAN FORMATION CLAYSTONE and SANDSTONE	50/1½"		
					END OF BORING AT APPROXIMATELY 59¾ FEET GROUNDWATER INITIALLY ENCOUNTERED AT APPROXIMATELY 16 FEET BACKFILLED WITH GROUT VIA TREMIE & CAPPED WITH CONCRETE			

Figure A6, Log of Boring B6, Page 2 of 2

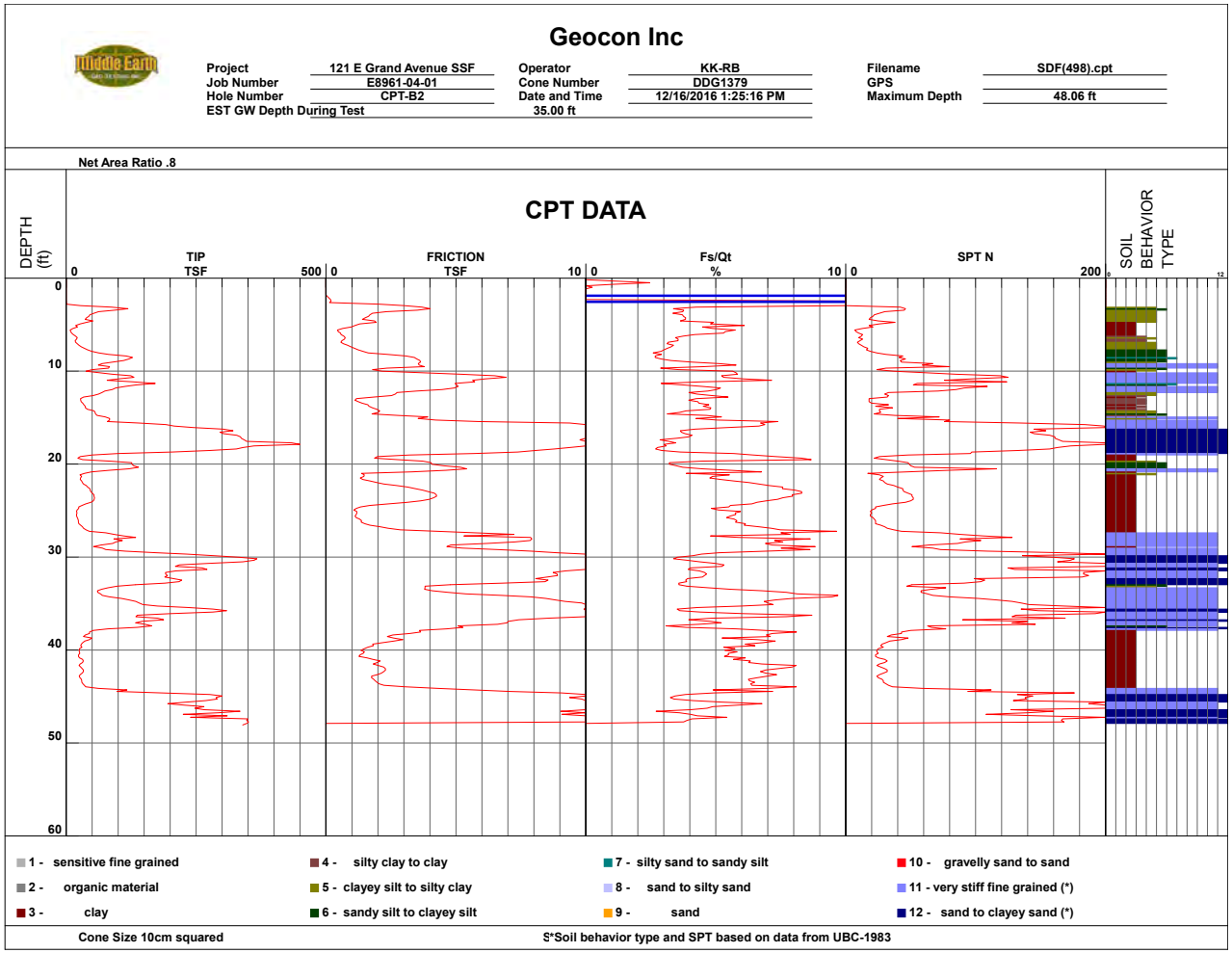
GEOCON BORING LOG W/FIG# STARTING W/ A2 E8961-04-02 BORING LOGS.GPJ 01/29/21

GEOCON

SAMPLE SYMBOLS

- ☐ ... SAMPLING UNSUCCESSFUL
- ◧ ... STANDARD PENETRATION TEST
- ■ ... DRIVE SAMPLE (UNDISTURBED)
- ⊠ ... DISTURBED OR BAG SAMPLE
- ◪ ... CHUNK SAMPLE
- ▼ ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

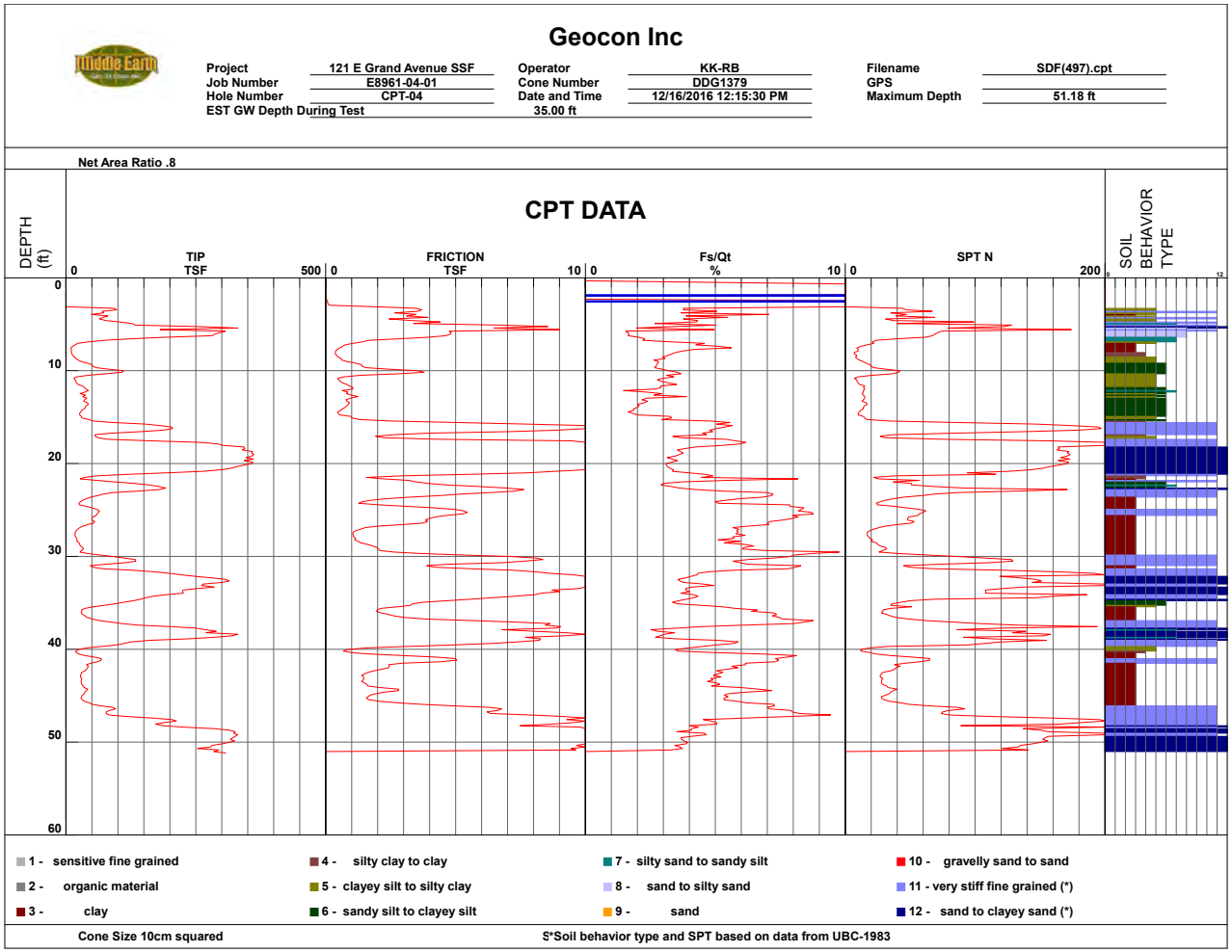


GEOCON CONSULTANTS, INC.
2420 MARTIN ROAD – SUITE 380 – FAIRFIELD, CA 94534
PHONE 925 961 0271 – FAX 925 371 5915

CONE PENETROMETER TEST CPT-B2

Project: 121 E. Grand
Location: South San Francisco
Project No. E8961-04-01
Date: June 2017

FIGURE A8

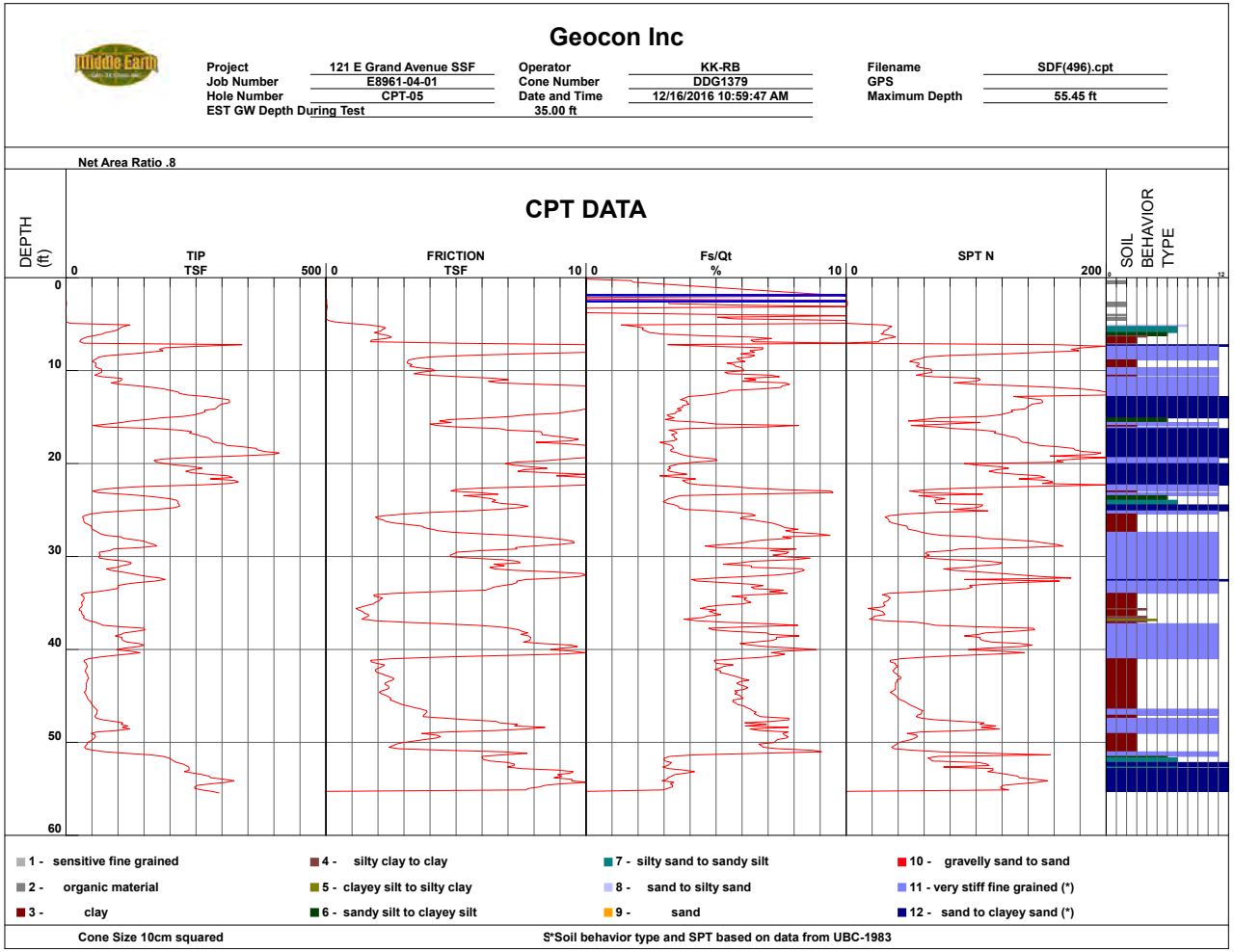


GEOCON CONSULTANTS, INC.
2420 MARTIN ROAD - SUITE 380 - FAIRFIELD, CA 94534
PHONE 925 961 0271 - FAX 925 371 5915

CONE PENETROMETER TEST CPT-4

Project: 121 E. Grand
Location: South San Francisco
Project No. E8961-04-01
Date: June 2017

FIGURE A9



GEOCON CONSULTANTS, INC.
2420 MARTIN ROAD - SUITE 380 - FAIRFIELD, CA 94534
PHONE 925 961 0271 - FAX 925 371 5915

CONE PENETROMETER TEST CPT-5

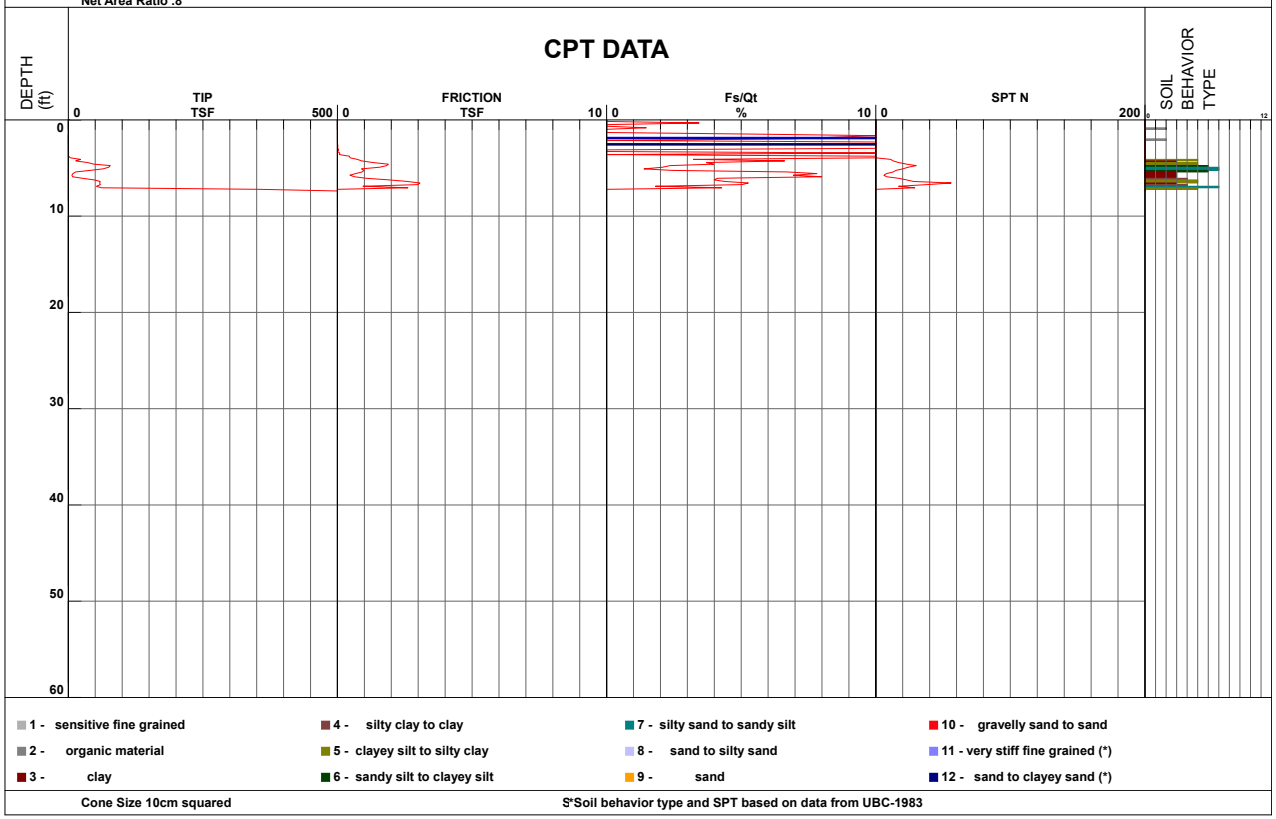
Project: 121 E. Grand
Location: South San Francisco
Project No. E8961-04-01
Date: June 2017

FIGURE A10

Geocon Inc

Project	121 E Grand Avenue SSF	Operator	KK-RB	Filename	SDF(495).cpt
Job Number	E8961-04-01	Cone Number	DDG1379	GPS	
Hole Number	CPT-06	Date and Time	12/16/2016 10:13:46 AM	Maximum Depth	7.38 ft
EST GW Depth During Test		35.00 ft			

Net Area Ratio .8



Cone Size 10cm squared

S*Soil behavior type and SPT based on data from UBC-1983

GEOCON CONSULTANTS, INC.
2420 MARTIN ROAD - SUITE 380 - FAIRFIELD, CA 94534
PHONE 925 961 0271 - FAX 925 371 5915

CONE PENETROMETER TEST CPT-6

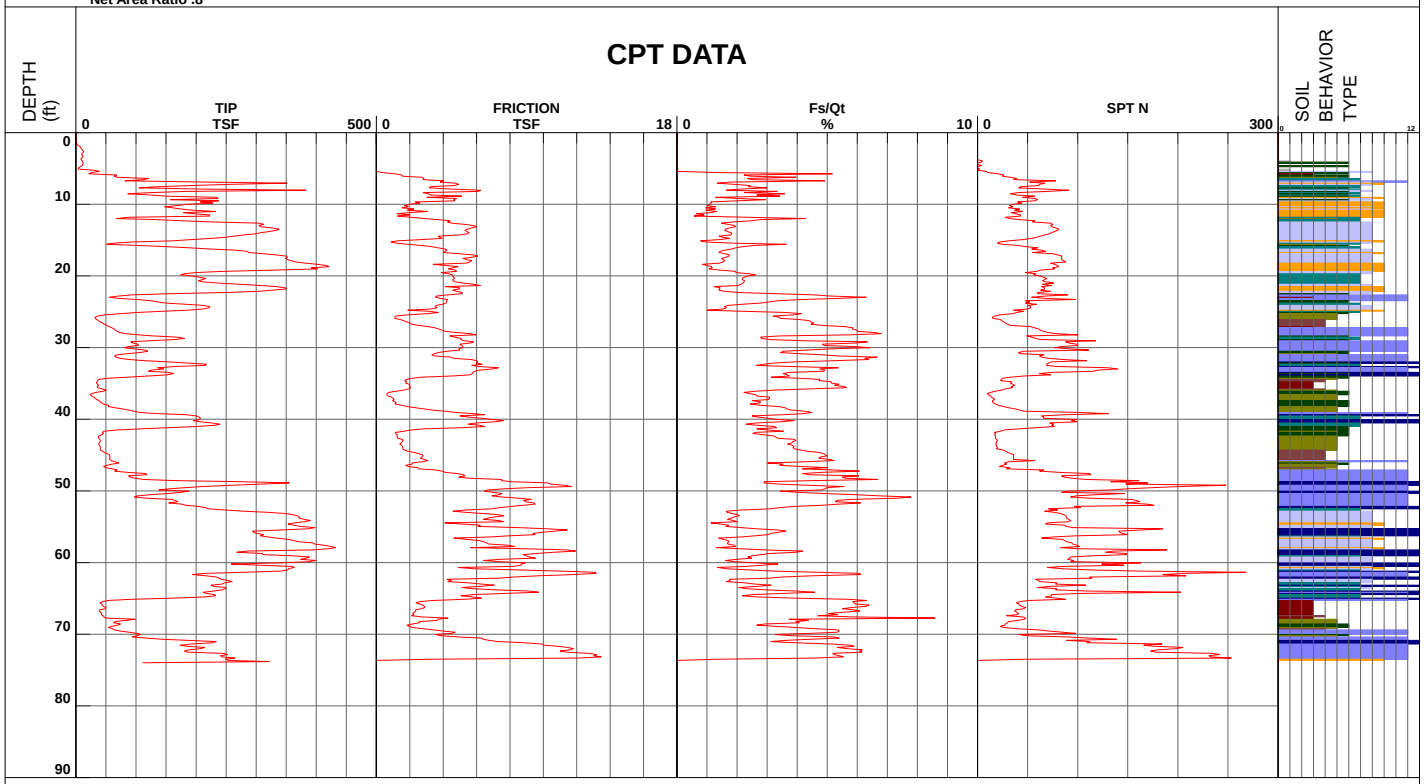
Project: 121 E. Grand
Location: South San Francisco
Project No. E8961-04-01
Date: June 2017

FIGURE A11

Geocon Inc.

Project	Mixed-Use Development	Operator	BH-AJ	Filename	SDF(037).cpt
Job Number	E8961-04-02	Cone Number	DDG1542	GPS	
Hole Number	CPT-08	Date and Time	12/3/2020 9:09:21 AM	Maximum Depth	73.98 ft
EST GW Depth During Test		11.00 ft			

Net Area Ratio .8



Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

CONE PENETROMETER TEST CPT-8

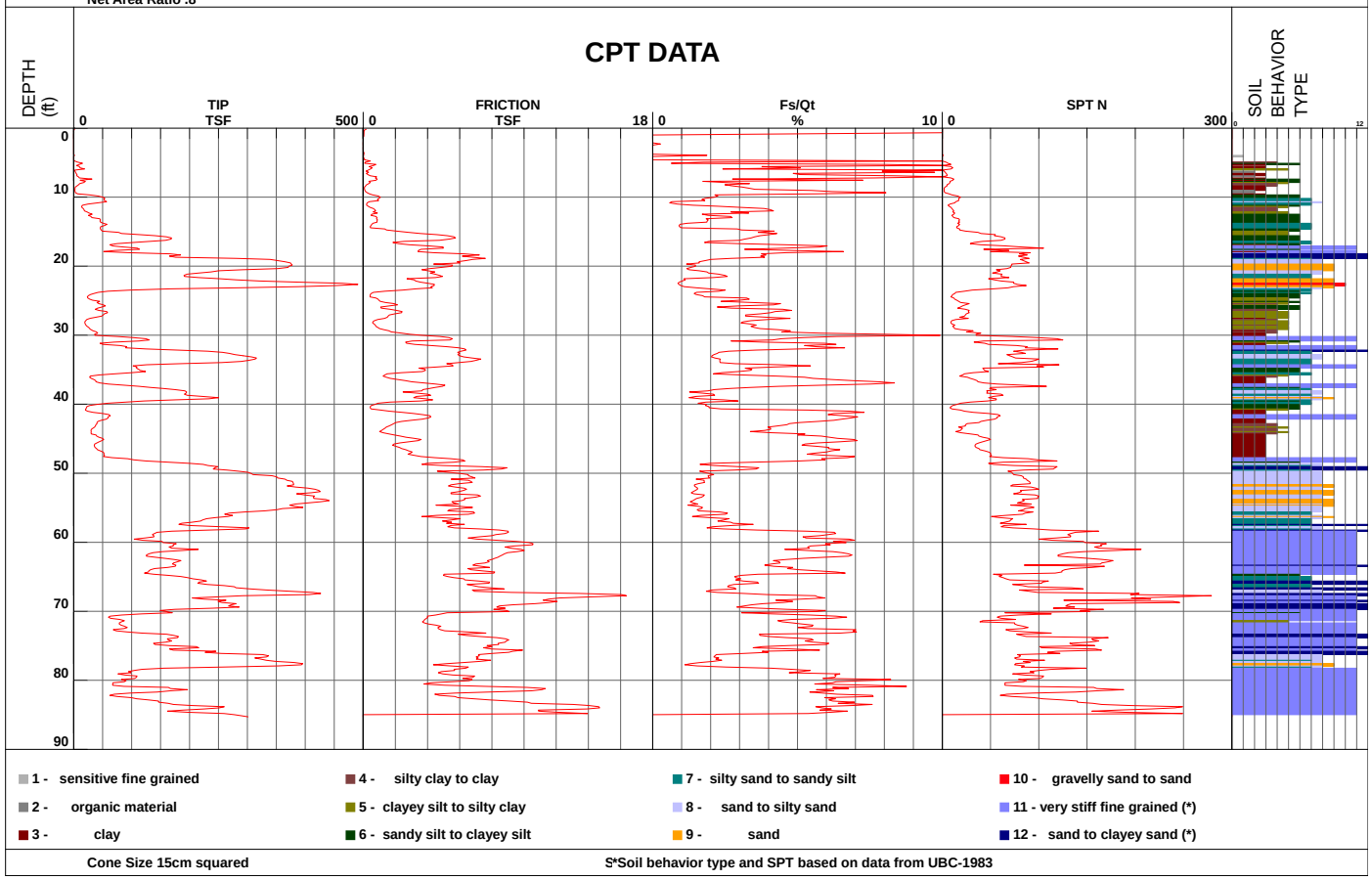
Project: 121 E Grand
Location: South San Francisco
Project No. E8961-04-02
Date: Jauary 2021

FIGURE A12

Geocon Inc.

Project	Mixed-Use Development	Operator	BH-AJ	Filename	SDF(038).cpt
Job Number	E8961-04-02	Cone Number	DDG1542	GPS	
Hole Number	CPT-09	Date and Time	12/3/2020 11:59:16 AM	Maximum Depth	85.30 ft
EST GW Depth During Test		9.00 ft			

Net Area Ratio .8



Cone Size 15cm squared

S*Soil behavior type and SPT based on data from UBC-1983

GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

CONE PENETROMETER TEST CPT-9

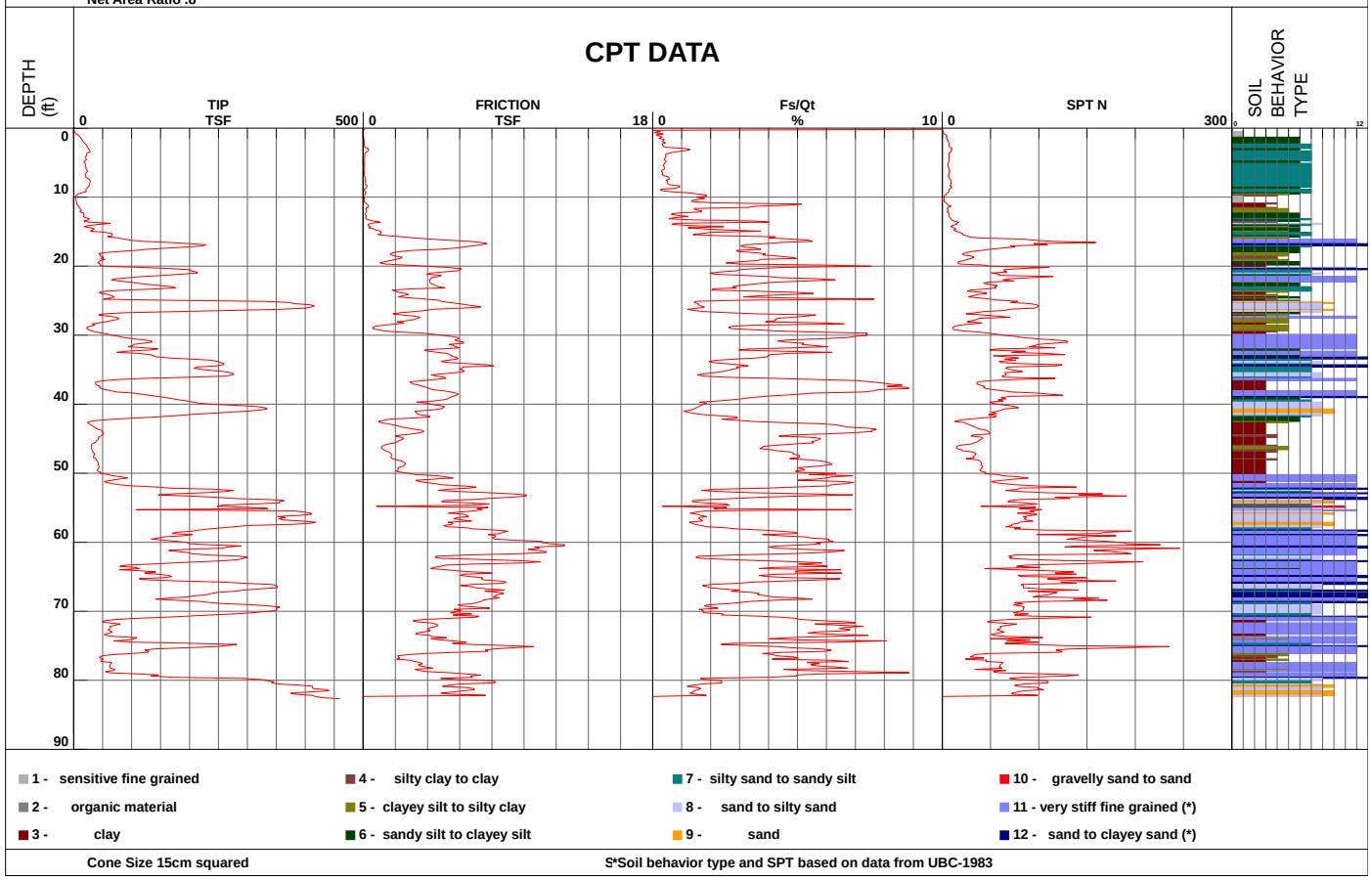
Project: 121 E Grand
Location: South San Francisco
Project No. E8961-04-02
Date: January 2021

FIGURE A13

Geocon Inc.

Project	Mixed-Use Development	Operator	BH-AJ	Filename	SDF(039).cpt
Job Number	E8961-04-02	Cone Number	DDG1542	GPS	
Hole Number	CPT-10	Date and Time	12/3/2020 2:12:58 PM	Maximum Depth	82.68 ft
EST GW Depth During Test		9.00 ft			

Net Area Ratio .8



Cone Size 15cm squared

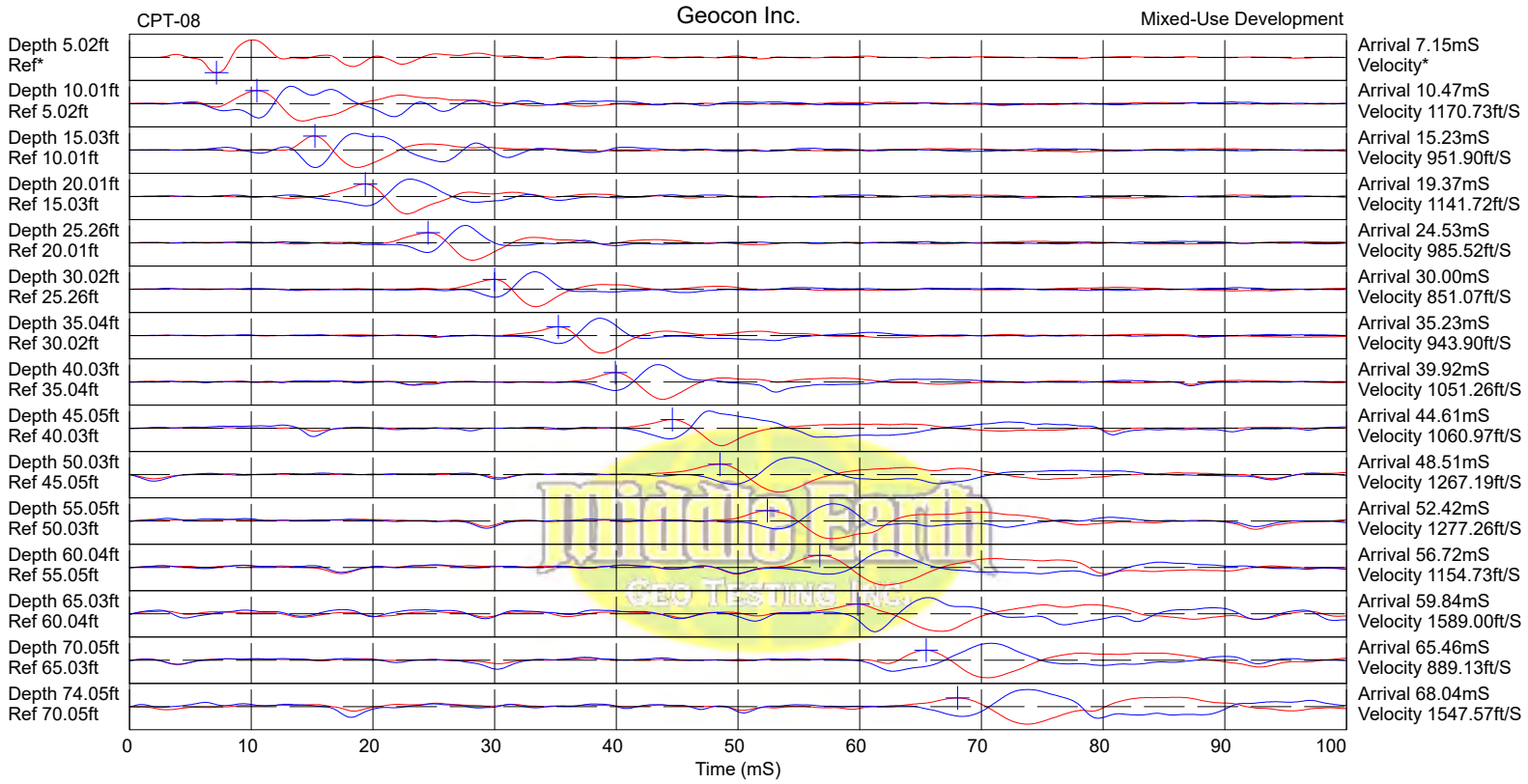
S*Soil behavior type and SPT based on data from UBC-1983

GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

CONE PENETROMETER TEST CPT-10

Project: 121 E Grand
Location: South San Francisco
Project No. E8961-04-02
Date: Jauary 2021

FIGURE A14



Hammer to Rod String Distance (ft): 5.83
* = Not Determined

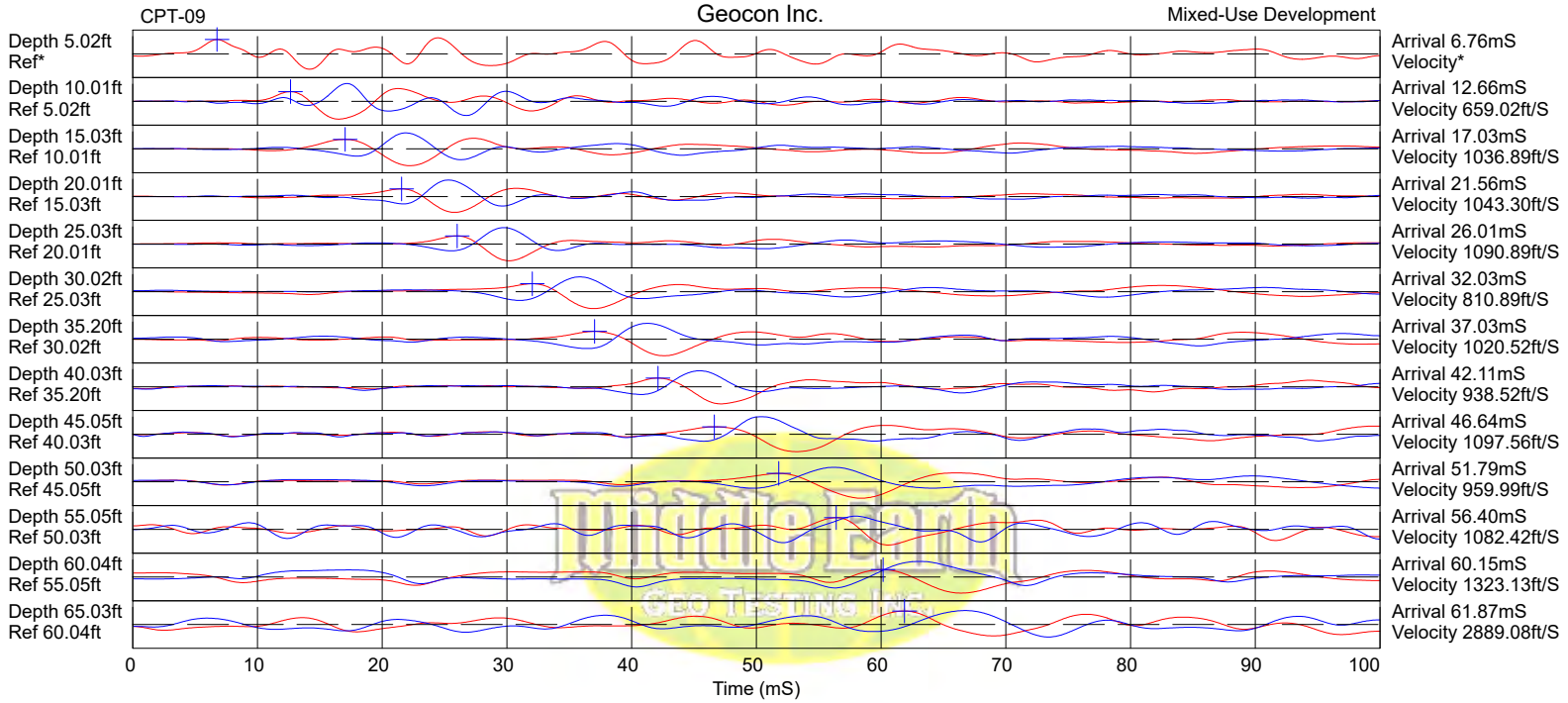
COMMENT:

GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

SCPT Sounding Data (CPT-8)

Project: 121 E Grand
Location: South San Francisco
Project No. E8961-04-02
Date: Jauary 2021

FIGURE A15



Hammer to Rod String Distance (ft): 5.83
* = Not Determined

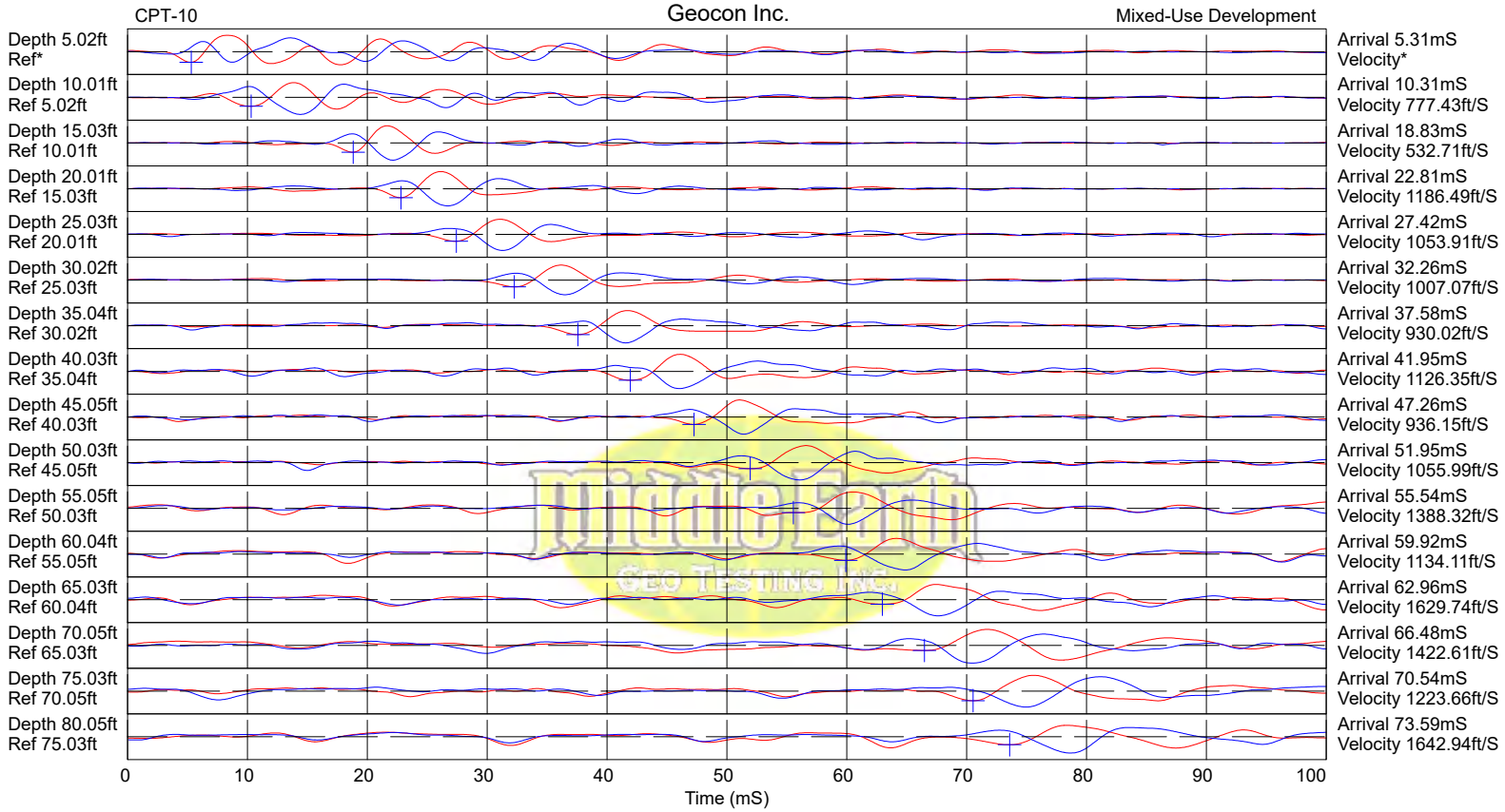
COMMENT:

GEOCON CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

SCPT Sounding Data (CPT-9)

Project: 121 E Grand
Location: South San Francisco
Project No. E8961-04-02
Date: Jauary 2021

FIGUREA16



Hammer to Rod String Distance (ft): 5.83
* = Not Determined

COMMENT:

GEOCON
CONSULTANTS, INC.
6671 BRISA STREET – LIVERMORE, CA 94550
PHONE 925.371.5900 – FAX 925.371.5915

SCPT Sounding Data (CPT-10)

Project: 121 E Grand
Location: South San Francisco
Project No. E8961-04-02
Date: Jauary 2021

FIGURE A17

APPENDIX B

APPENDIX B
LABORATORY TESTING

Laboratory tests were performed in accordance with generally accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. Selected samples were tested for in-situ dry density and/or moisture content, grain size distribution, Atterberg Limits, direct shear, and screening-level soil corrosion parameters. The results of our testing are summarized in tabular format below and the following figures. In-situ dry density and/or moisture content test results are included on the boring logs in Appendix A.

TABLE B-I
SUMMARY OF LABORATORY ATTERBERG LIMITS TEST RESULTS
ASTM D 4318

Sample No.	Liquid Limit	Plastic Limit	Plasticity Index
B3-10.5-11	75	29	46
B4-9	NP	NP	NP
B5-10.5	70	29	41
B6-13	26	12	14
B6-39	22	15	7

TABLE B-II
SUMMARY OF LABORATORY DIRECT SHEAR TEST RESULTS
ASTM D 3080

Boring No.	Sample Depth (feet)	Initial Average Dry Density (pcf)	Initial Average Moisture Content (%)	Cohesion (psf)	Angle of Shear Resistance (degrees)
B5	14.5	110.3	18.3	780	21
B6	19.5	105.2	20.0	250	31

TABLE B-III
SUMMARY OF LABORATORY GRAIN SIZE ANALYSIS – NO. 200 WASH
ASTM D1140

Boring No.	Sample Depth (feet)	Fraction Passing No. 200 Sieve (%)
B1	30.5 – 31.5	34
B2	0 – 5	50
B2	25.5 – 26.5	23
B2	30.5 – 31.5	39
B3	14 – 14.5	32
B3	19 – 20	32
B3	29 – 30	30
B3	34 – 35	19
B3	39 – 40	30
B4	14 – 15	35
B4	19 – 20	1
B4	24 – 25	26
B4	29 – 30	41
B4	34 – 35	17
B4	39 – 40	6
B5	14	43
B5	45.5 – 46.5	26
B5	73.5 – 73.8	10
B5	93.5 – 94.5	50
B6	19	8
B6	45.5 – 46.5	13
B6	54 – 55	25
B6	49 – 50	16

APPENDIX B
LABORATORY TESTING (continued)

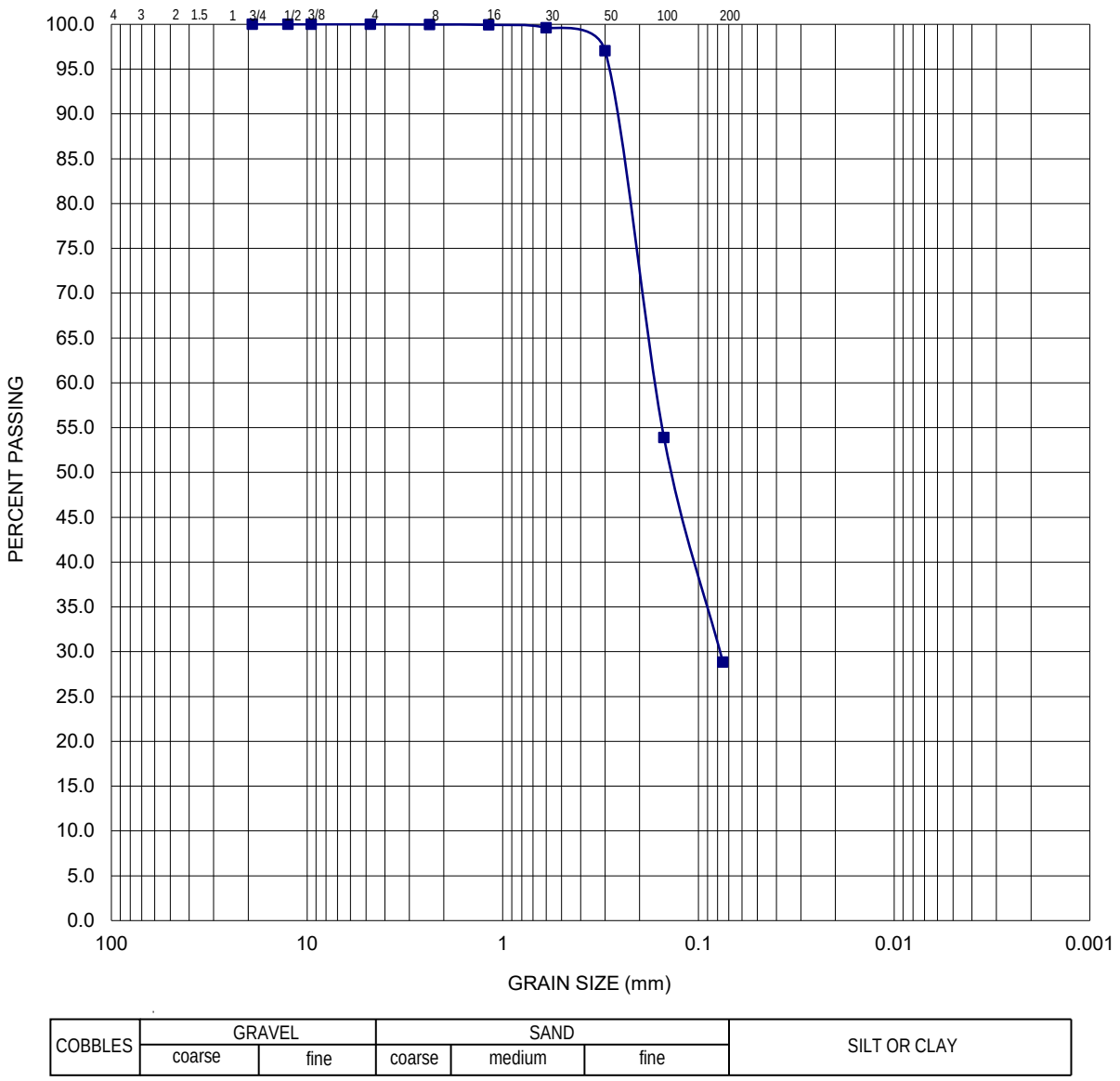
TABLE B-IV
SUMMARY OF SOIL CORROSION PARAMETERS
(CTM 643, CTM 417, CTM 422)

Boring No. (sample depth in feet)	Soil Type (USCS Classification)	Resistivity (ohm-cm)	pH	Chloride (ppm)	Sulfate (ppm)
B1 (0-5)	SAND with clays and gravels (SP)	3,900	8.5	50	<10
B2 (0-5)	Sandy SILT with gravels (ML)	2,000	8.2	96	190
B3 (1-5)	Gravelly SAND with clay (SC)	3,600	9.4	56	110
B4 (9.5)	Gravelly SAND with clay (SC)	3,200	6.5	56	140

*Caltrans considers a site corrosive to foundation elements if one or more of the following conditions exist for the representative soil samples at the site:

- The pH is equal to or less than 5.5.
- Chloride concentration is equal to or greater than 500 parts per million (ppm) or 0.05%.
- Sulfate concentration is equal to or greater than 1,500 ppm (0.15%)

**According to the American Concrete Institute 318 Chapter 19, Type II cement may be used where sulfate levels are below 2,000 ppm (0.2%)



Boring: B1

Depth To Sample: 25.5'-26.5'

Sieve Date: 5/31/17

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	99.9	99.6	97.0	53.9	28.8

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

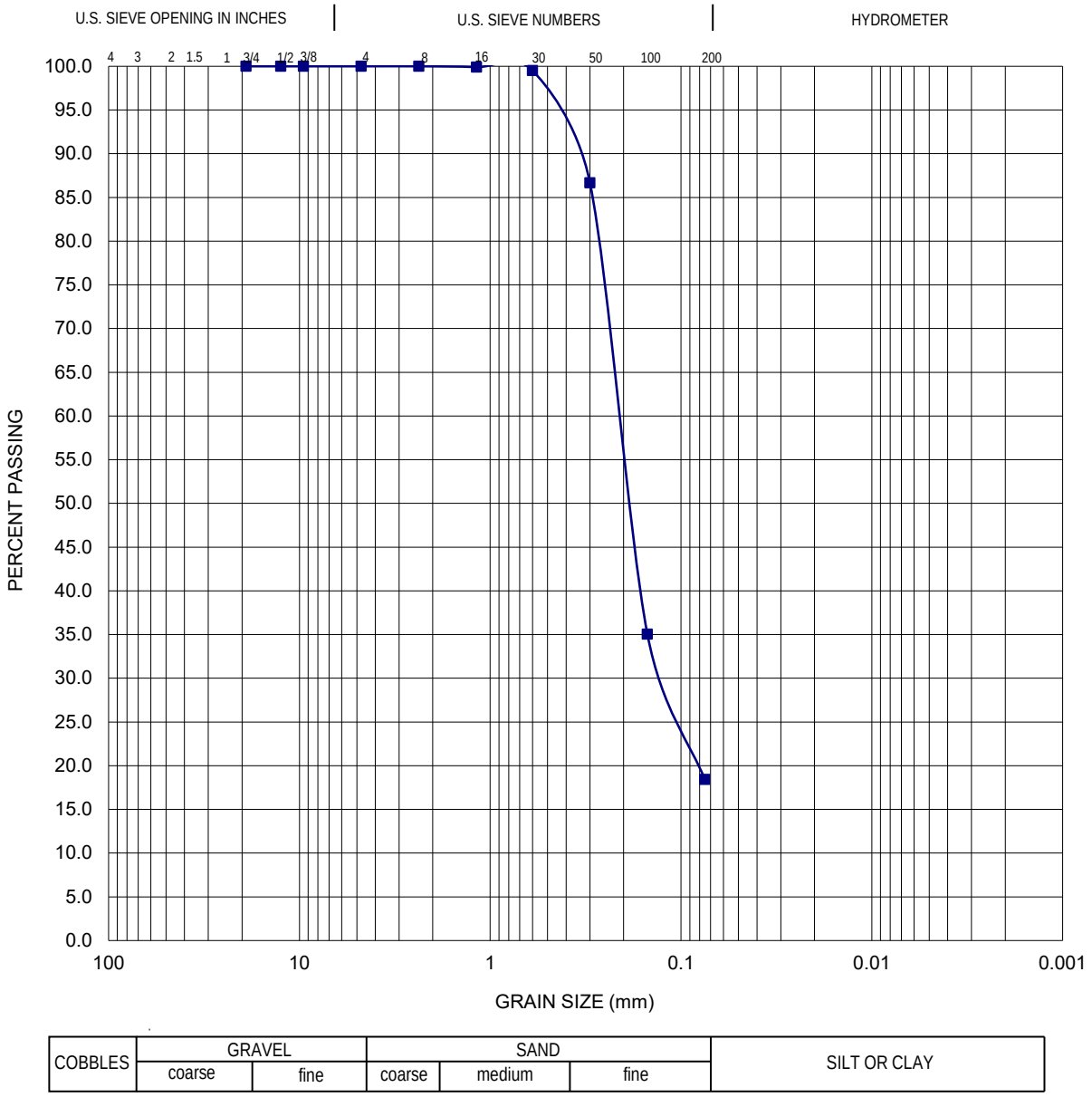
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-01

Figure B1



Boring: B2

Depth To Sample: 20.5'-21.5'

Sieve Date: 6/1/17

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	99.9	99.5	86.7	35.0	18.4

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

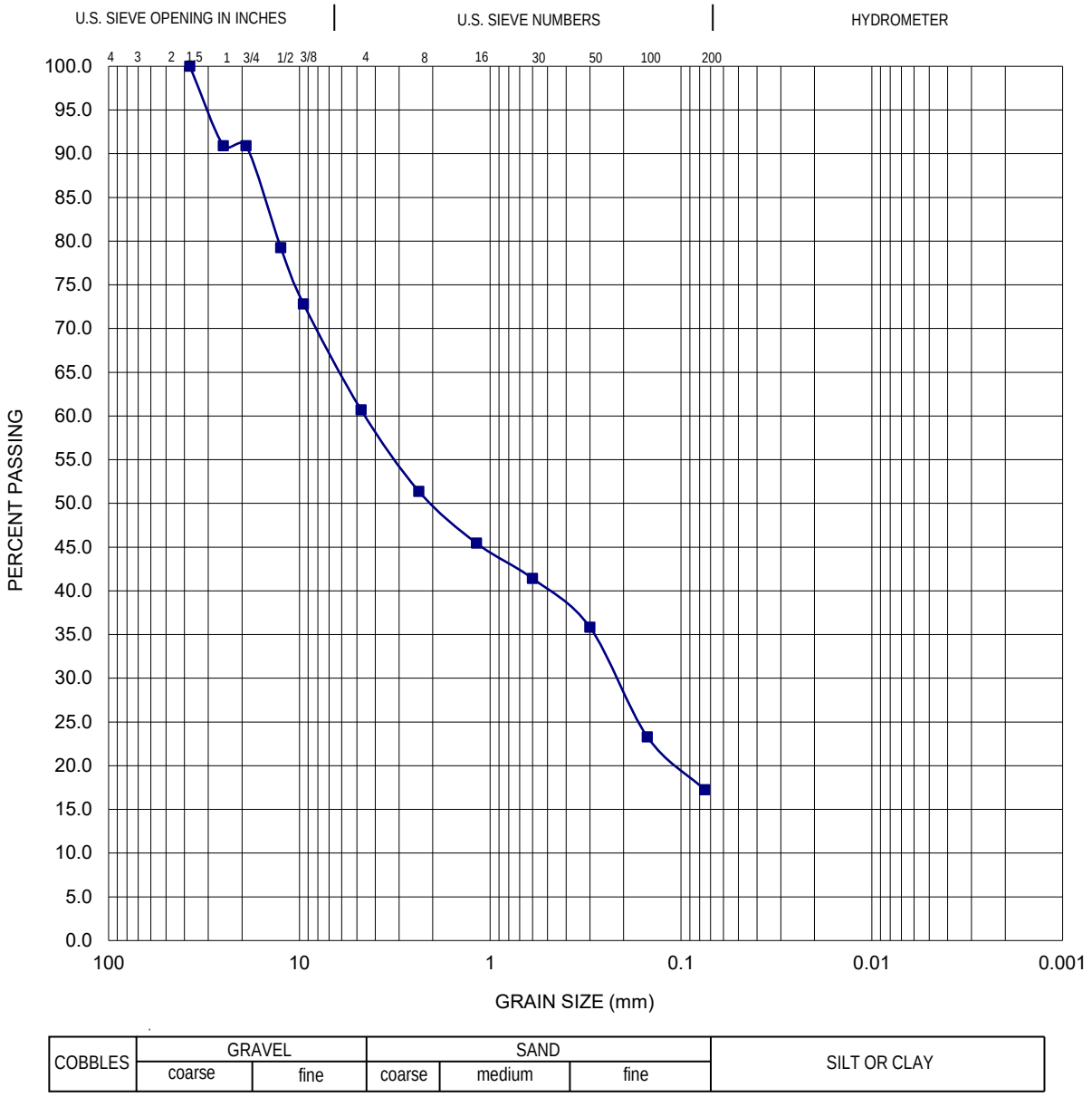
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-01

Figure B2



Boring: B3

Depth To Sample: 4'-5'

Sieve Date: 6/6/17

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	90.9	90.9	79.2	72.8	60.7	51.4	45.4	41.4	35.8	23.3	17.2

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

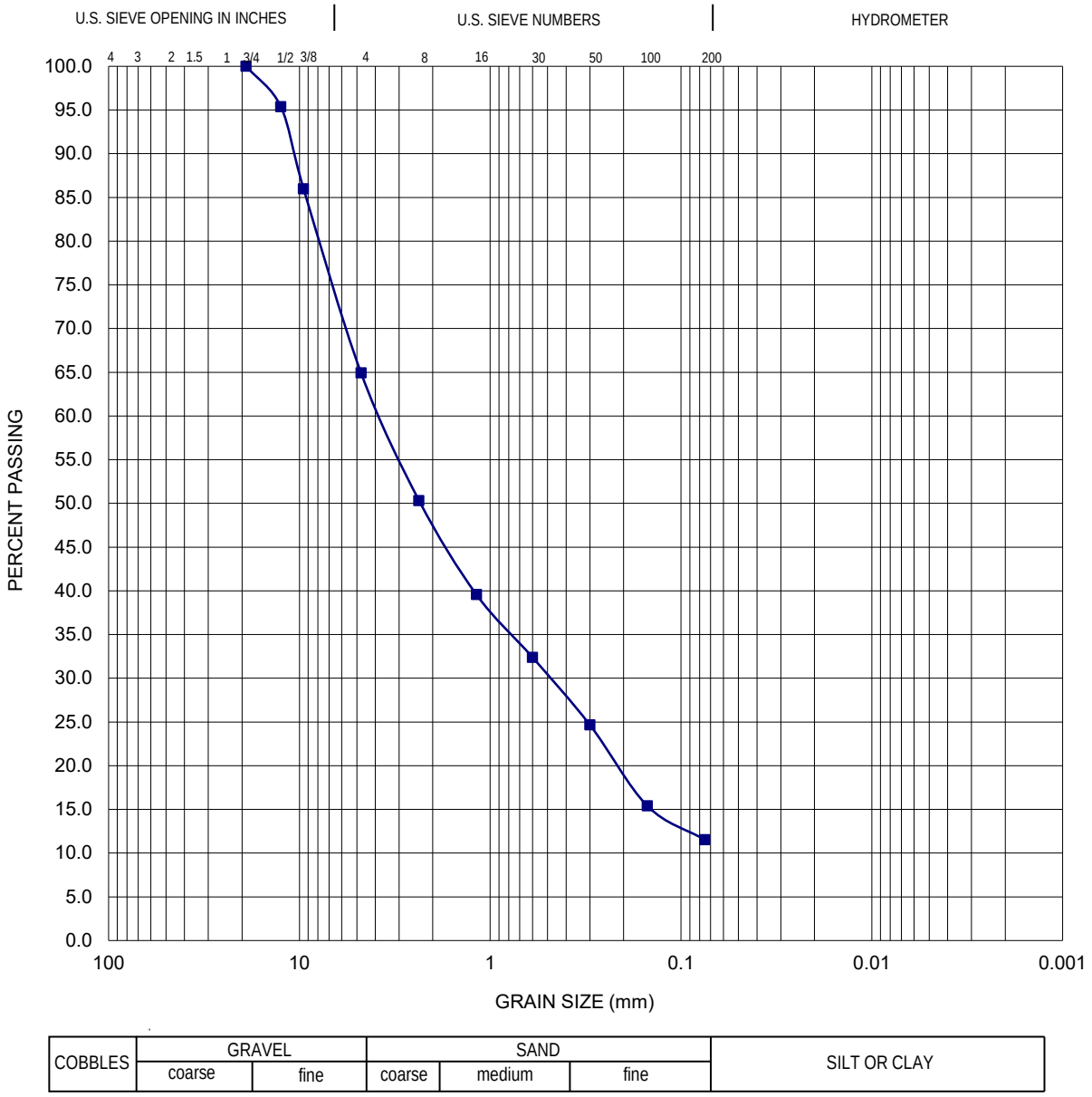
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave - SSF

Location: South San Francisco, CA

Project No.: E8961-04-01

Figure B3



Boring: B4

Depth To Sample: 3'

Sieve Date: 6/6/17

Tested and Computed by: AC

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	95.4	86.0	64.9	50.3	39.6	32.4	24.7	15.4	11.5

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

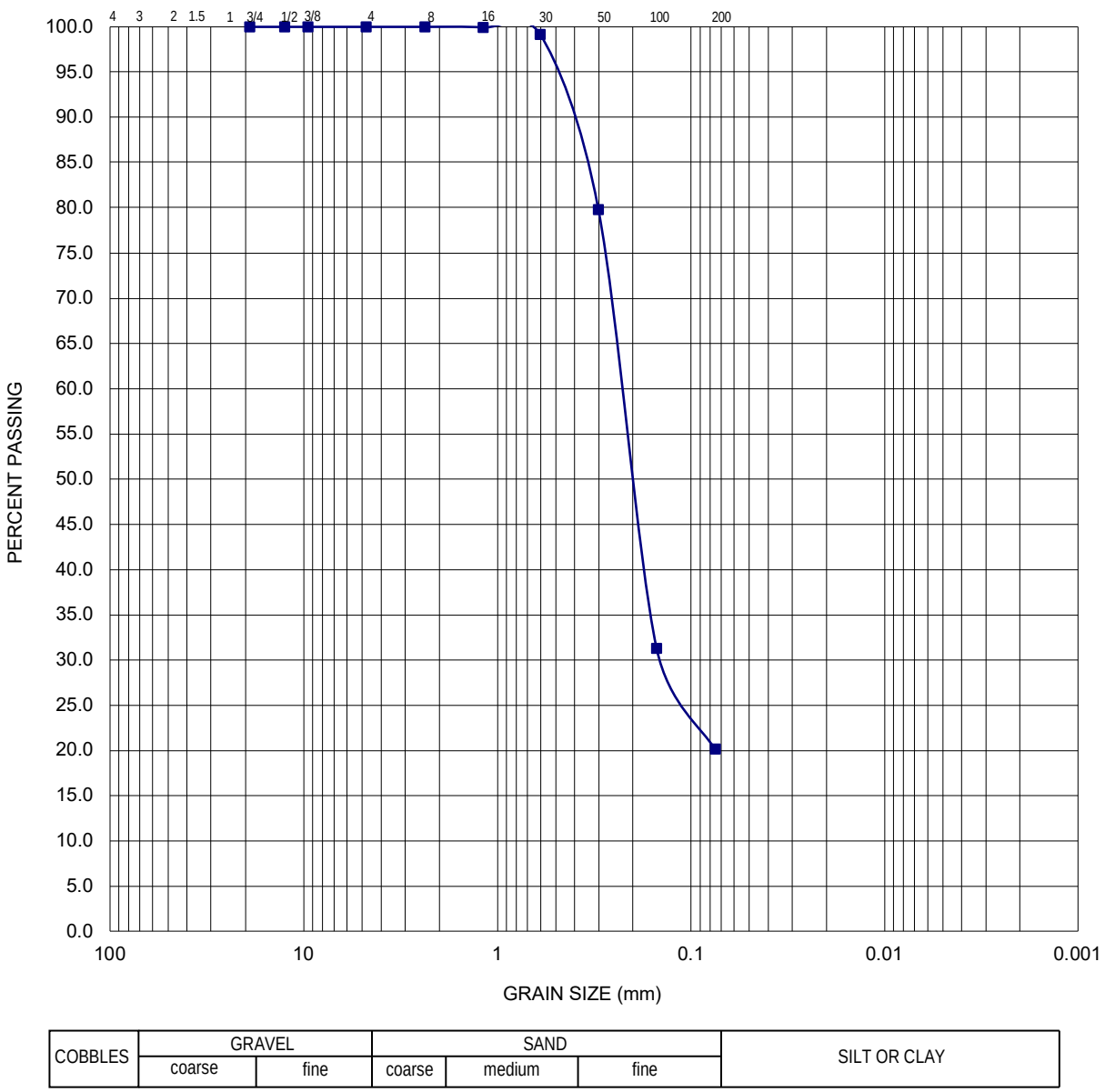
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-01

Figure B4



Boring: B5

Depth To Sample: 19-20

Sieve Date: 1/20/2021

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	99.9	99.2	79.8	31.3	20.1

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

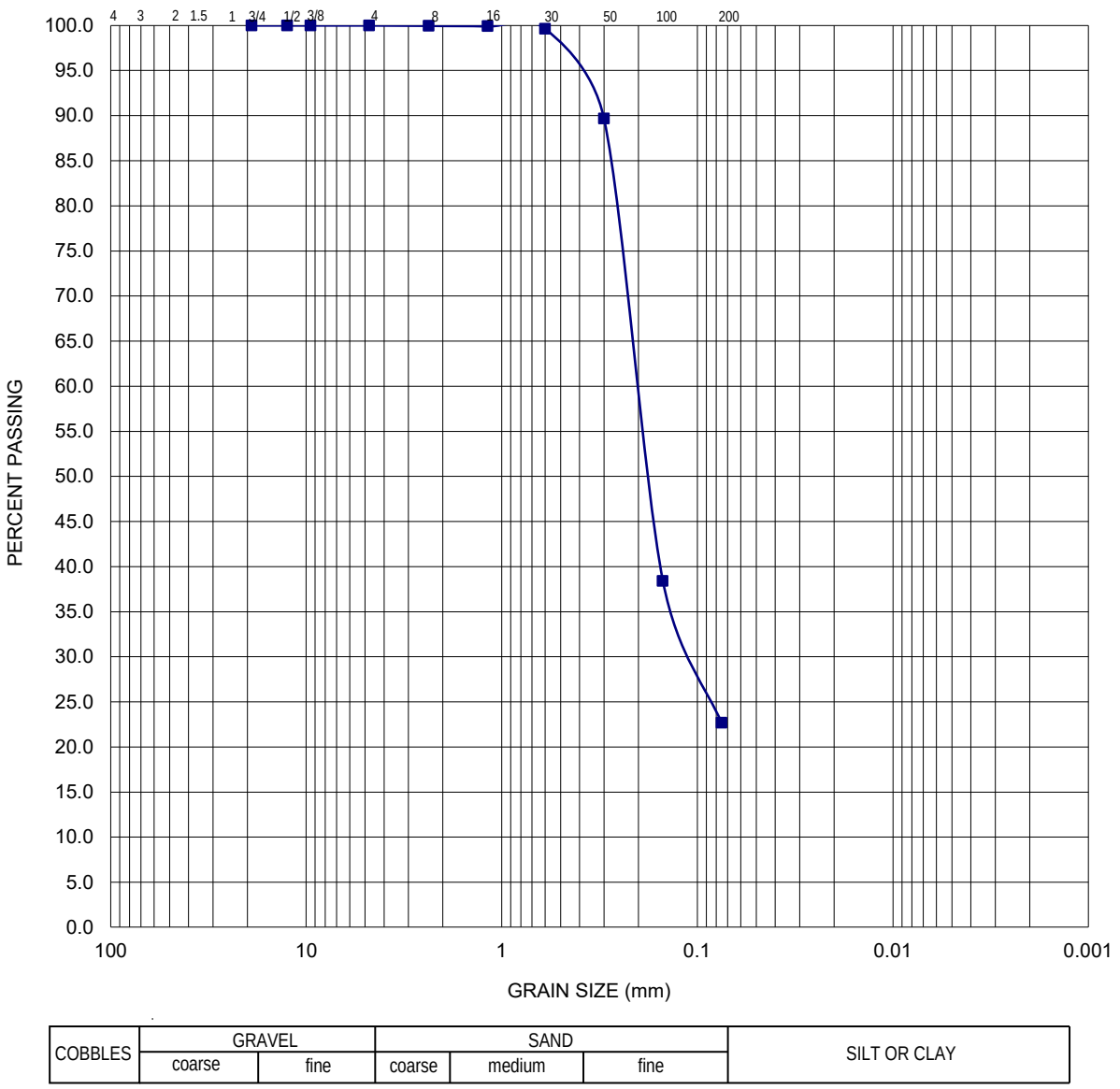
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B5



Boring: B5

Sieve Date: 1/20/2021

Depth To Sample: 35.5-36.5

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	99.9	99.6	89.7	38.4	22.7

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

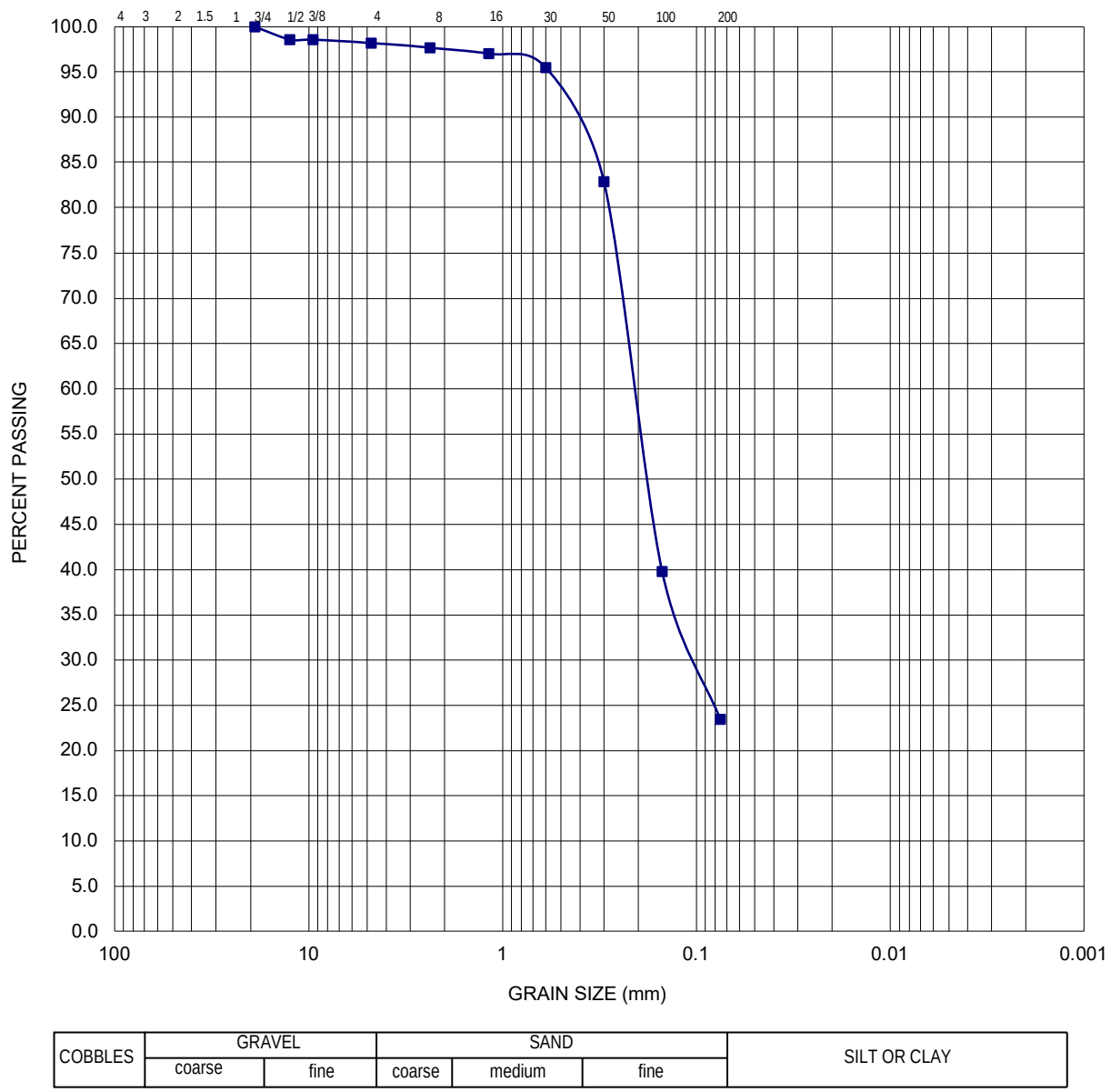
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B6



Boring: B5

Depth To Sample: 40.5-41.5

Sieve Date: 1/20/2021

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	99	99	98	98	97.0	95.5	82.9	39.8	23.4

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

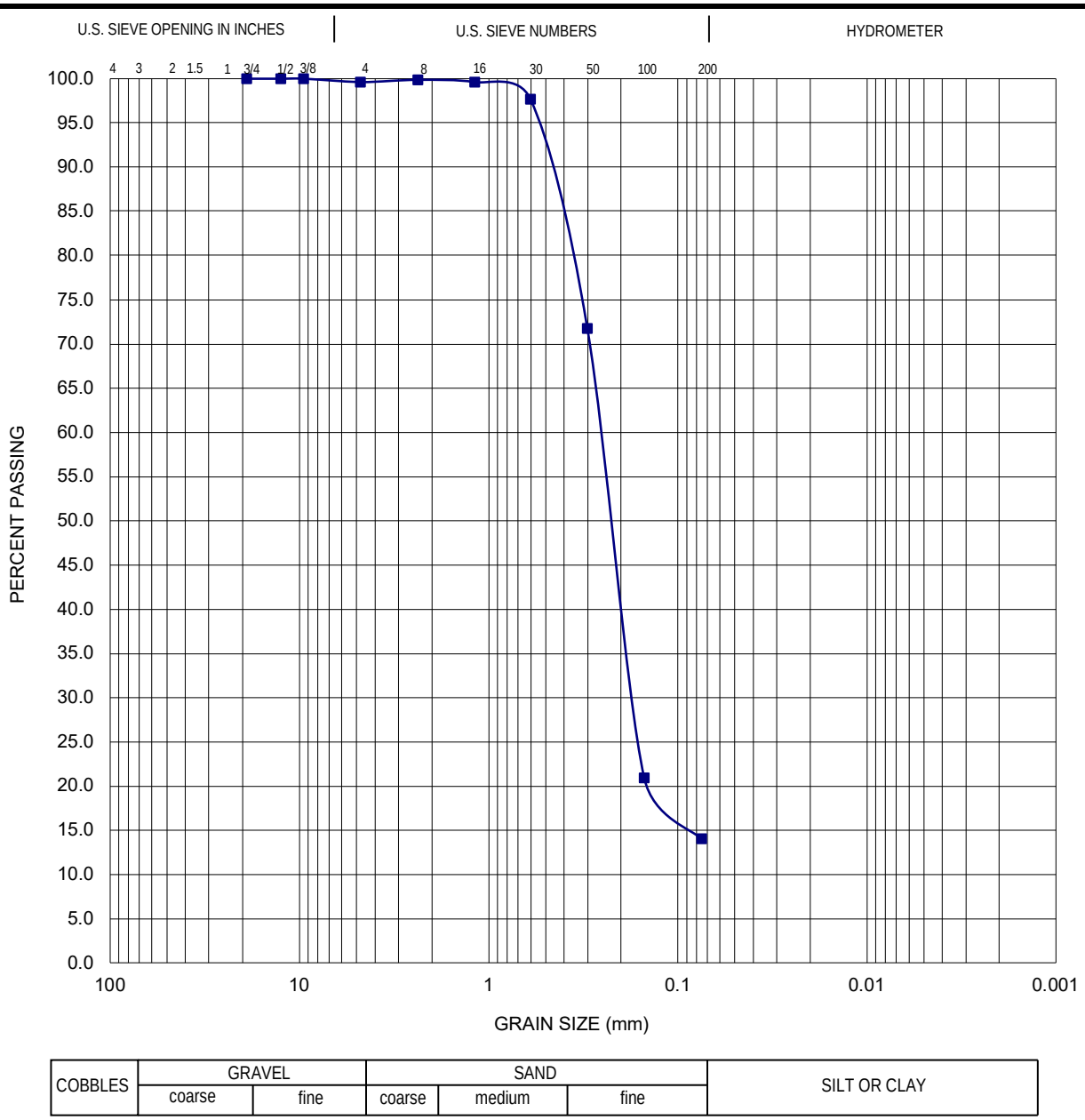
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B7



Boring: B5

Depth To Sample: 60-60.8

Sieve Date: 1/20/2021

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	99.6	97.7	71.8	20.9	14.0

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

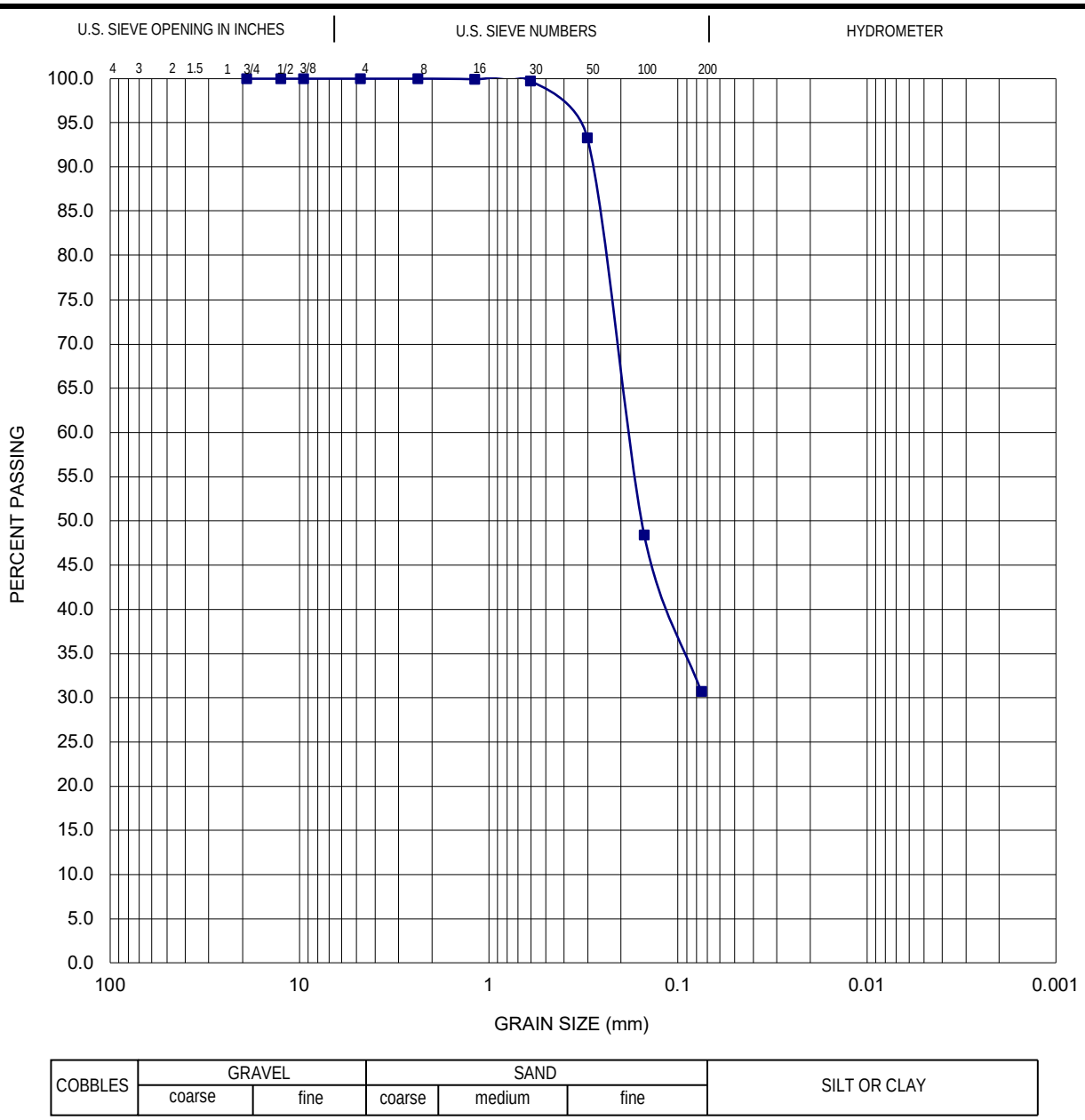
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B8



Boring: B6

Depth To Sample: 24-25

Sieve Date: 1/20/2021

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	99.9	99.7	93.3	48.4	30.7

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

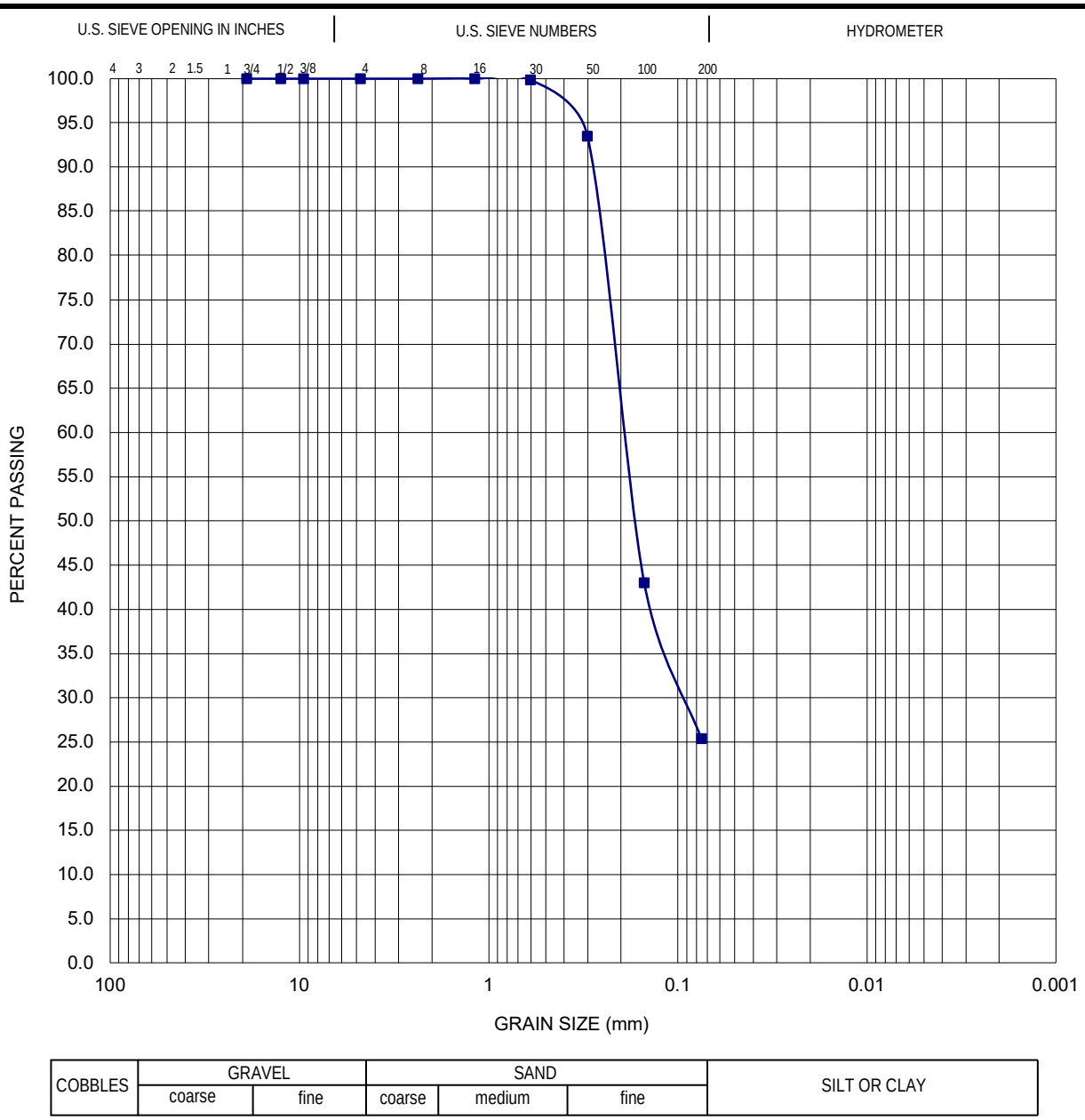
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B9



Boring: B6

Depth To Sample: 29-30

Sieve Date: 1/20/2021

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	100	100	100.0	99.8	93.5	43.0	25.4

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

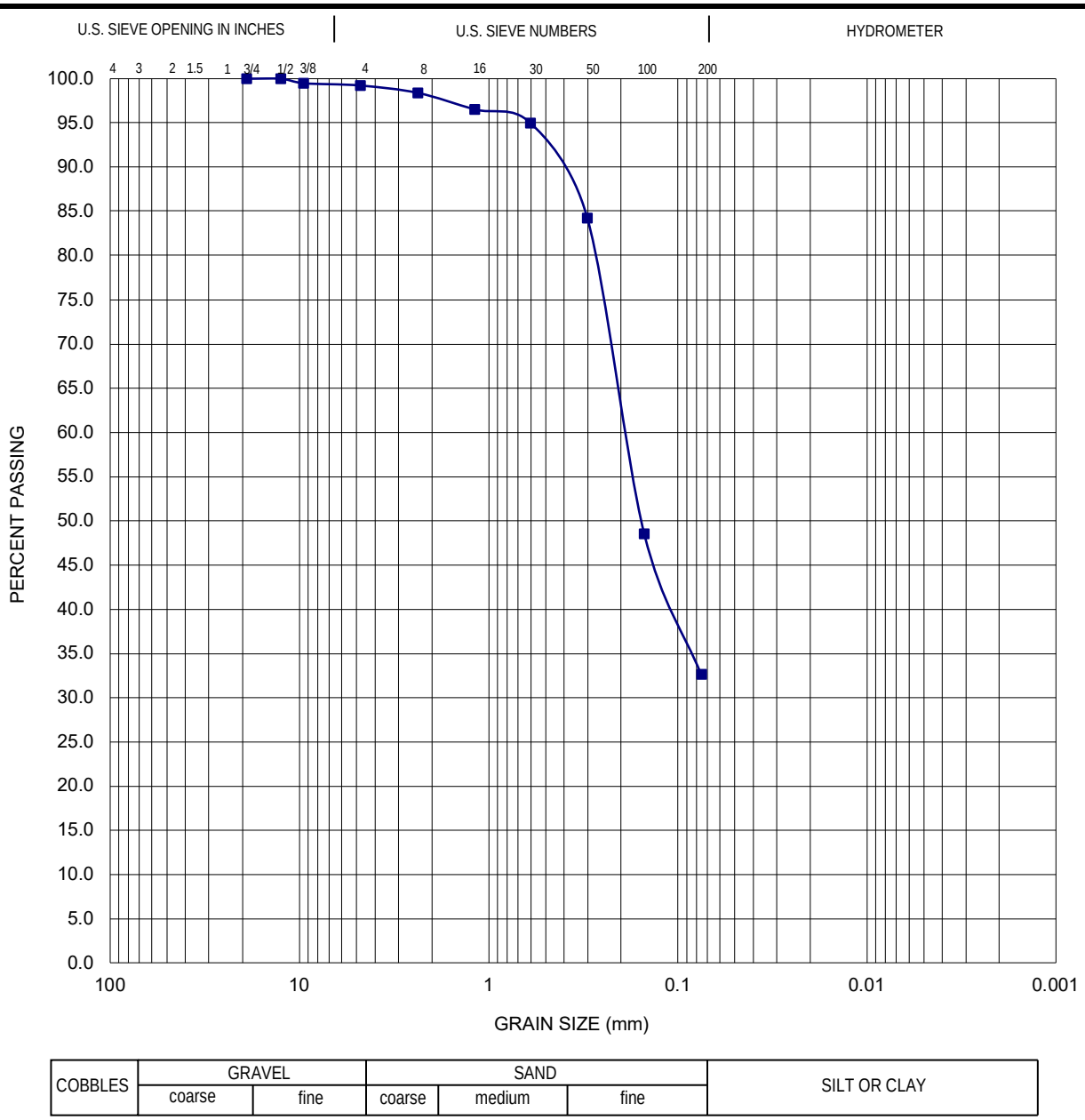
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B10



Boring: B6

Depth To Sample: 34-35

Sieve Date: 1/20/2021

Tested and Computed by: SG

Test Data

Sieve Number	1 1/2"	1"	3/4"	1/2"	3/8"	#4	#8	#16	#30	#50	#100	#200
% Passing	100	100	100	100	100	99	98	96.5	95.0	84.2	48.5	32.6

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: (925) 371-5900
Fax: (925) 371-5915

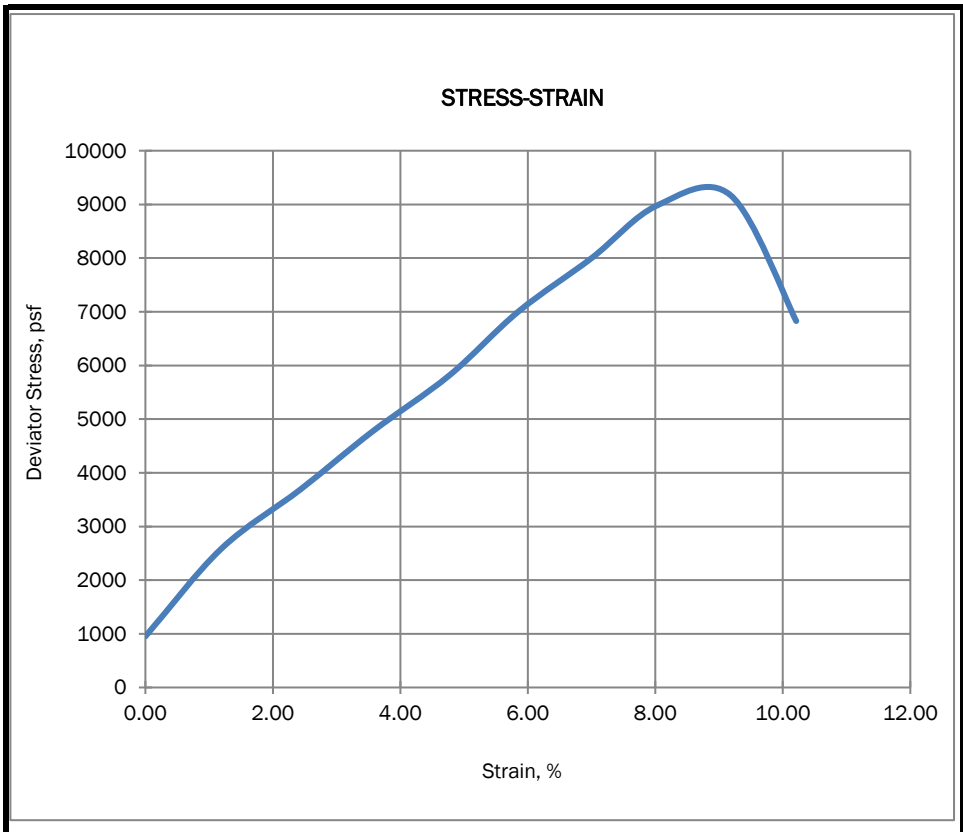
Particle Size Analysis - ASTM D422

Project: 121 E. Grand Ave

Location: South San Francisco, CA

Project No.: E8961-04-02

Figure B11



Failure Photo



Sample Description	
Boring Number	B1
Sample Depth (feet)	16'
Material Description	Brown SILTY clay with some fine sand
Initial Conditions at Start of Test	
Height (inch) average of 3	4.36
Diameter (inch) average of 3	2.39
Moisture Content (%)	17.2
Dry Density (pcf)	114.0
Estimated Specific Gravity	2.7
Saturation (%)	96.8
Shear Test Conditions	
Strain Rate (%/min)	2.0417
Major Principal Stress at Failure (psf)	9170
Strain at Failure (%)	9.2
Test Results	
Unconfined Compressive Strength (tons/ft^2)	4.6
Unconfined Compressive Strength (lbs/ft^2)	9171
Shear Strength (tons/ft^2)	2.3
Shear Strength (lbs/ft^2)	4586

Geocon Consultants, Inc.
6671 Brisa Street
Livermore, CA 94550
Telephone: 925-371-5900
Fax: 925-371-5915

Unconfined Compressive Strength (ASTM D2166)

Project: 121 E. Grand Ave, SSF
Location: South San Francisco, CA
Proj. No.: E8961-04-01

Figure B12

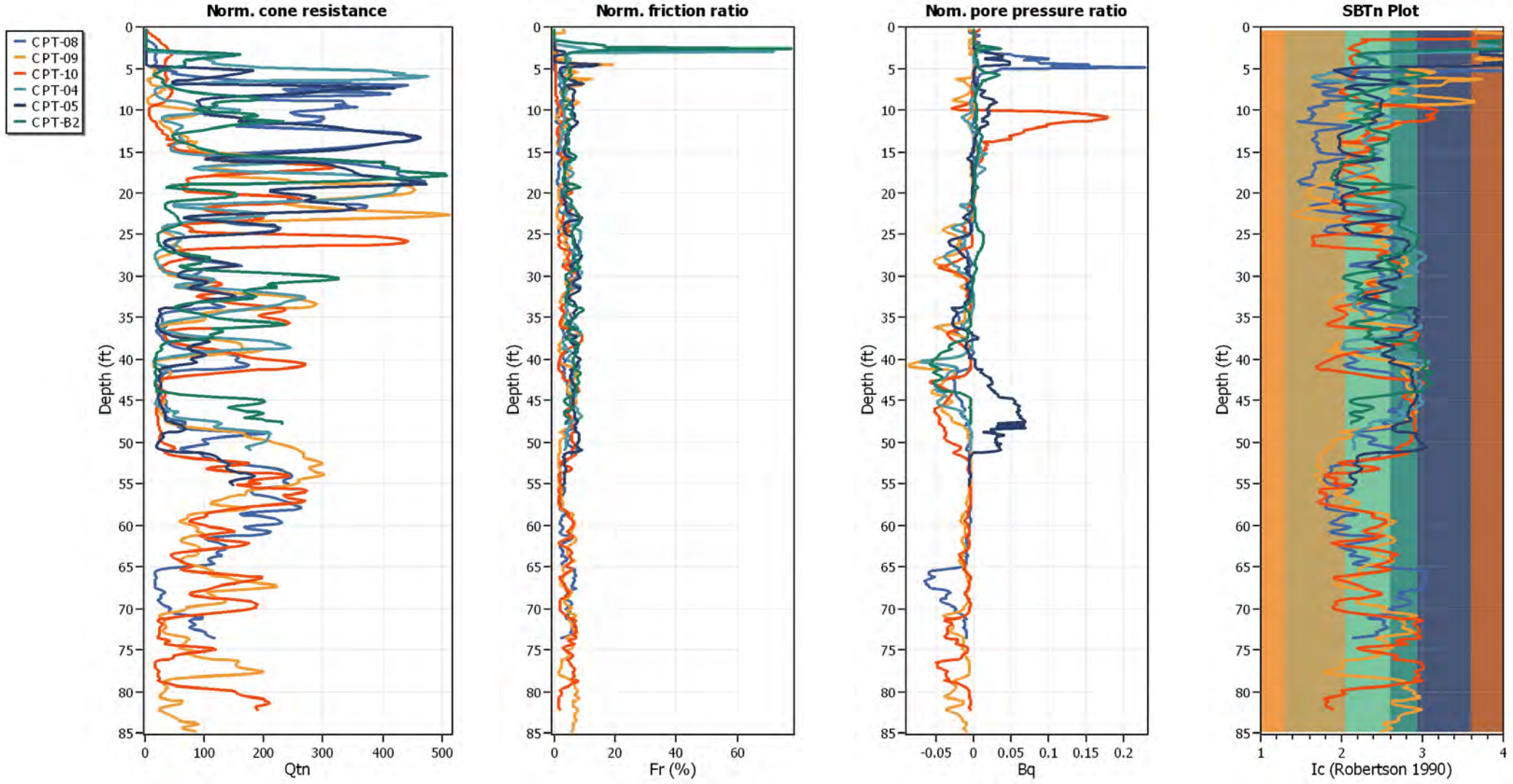
APPENDIX C

APPENDIX C
LIQUEFACTION ANALYSIS

GEOCON
CONSULTANTS, INC.
6671 BRISA STREET - LIVERMORE, CA 94550
PHONE 925.371.5900 - FAX 925.371.5915

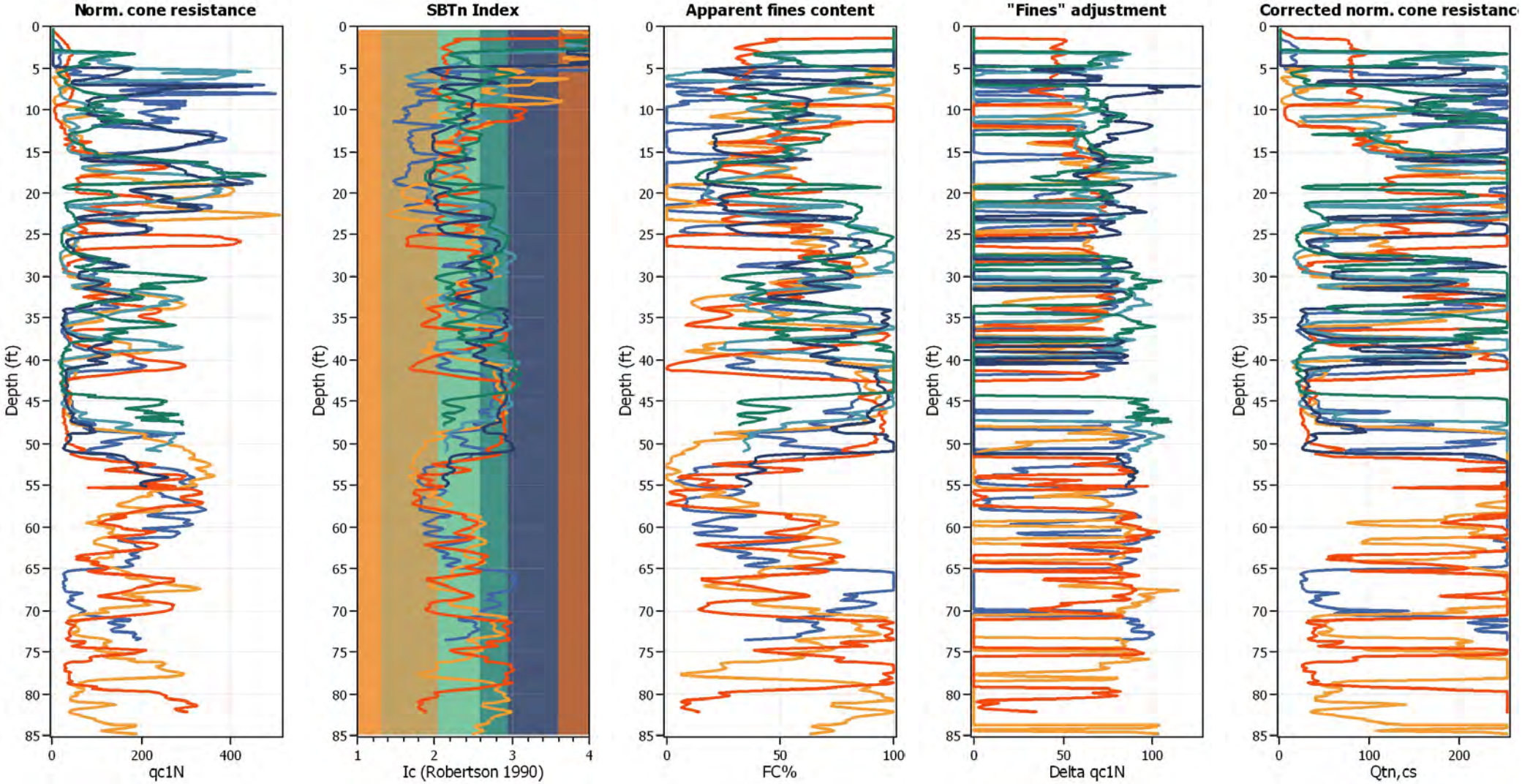
Project: 121 E. Grand

Overlay Normalized Plots



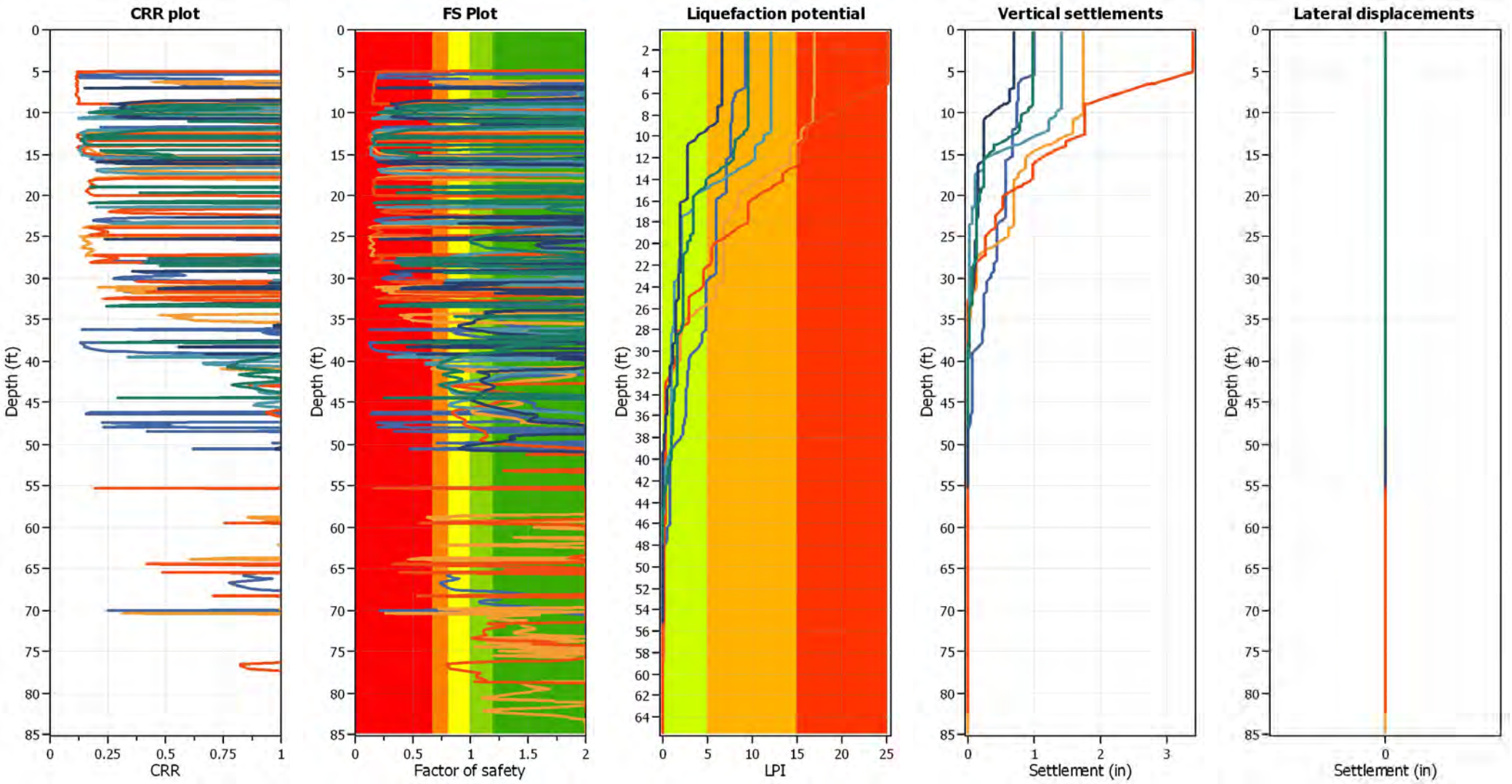
Project: 121 E. Grand

Overlay Intermediate Results



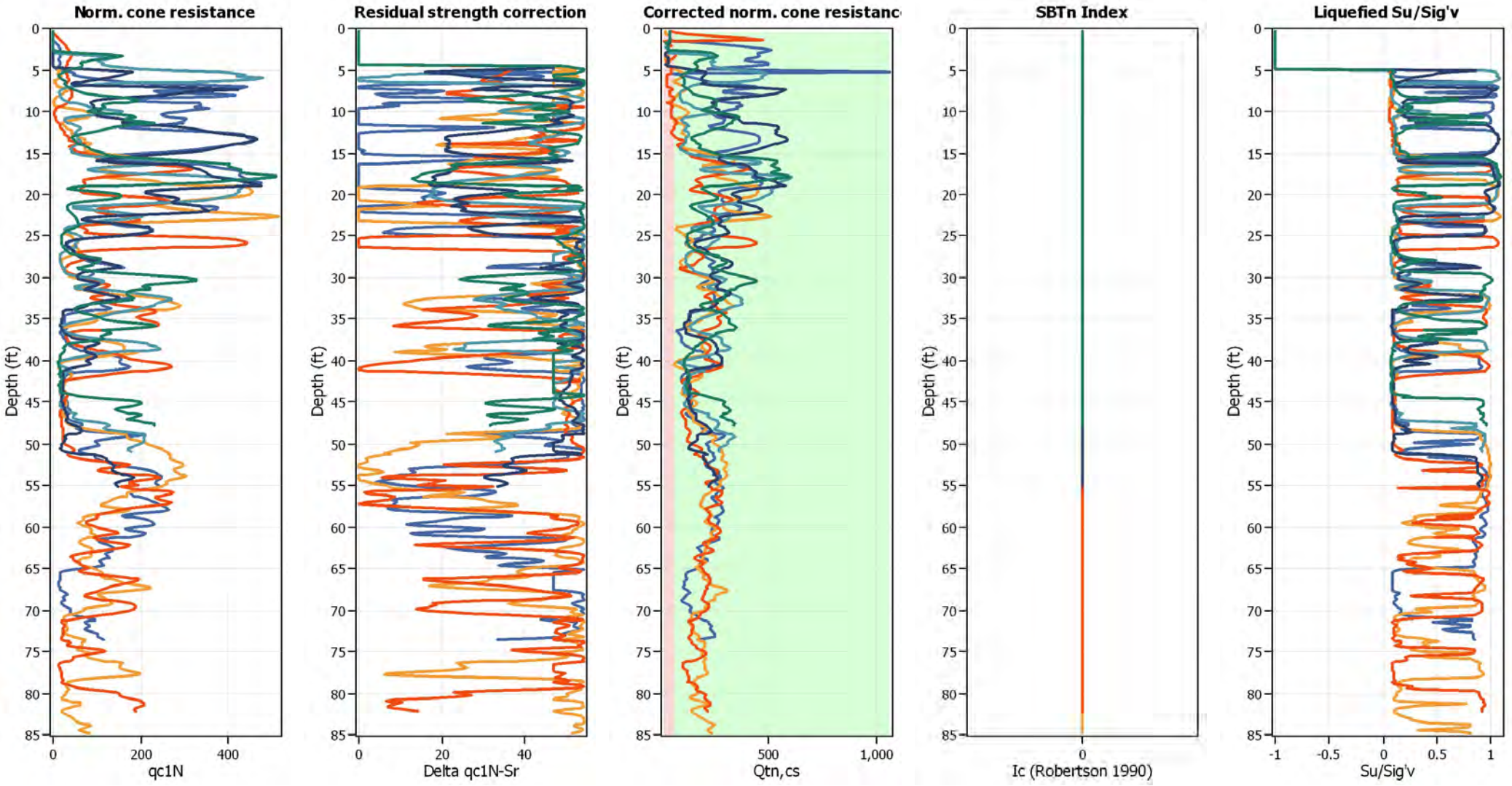
Project: 121 E. Grand

Overlay Cyclic Liquefaction Plots



Project: 121 E. Grand

Overlay Strength Loss Plots



LIST OF REFERENCES

American Concrete Institute, *Building Code Requirements for Structural Concrete and Commentary, ACI 318-14,* 2014.

American Society of Civil Engineers, *Minimum Design Loads for Buildings and Other Structures, ASCE Standard ASCE/SEI 7-16,* 2017.

Bonilla, M.G., *Bedrock Surface Map of the San Francisco South Quadrangle, California* (USGS MF-334), 1964.

Bonilla, M.G., *Preliminary Geologic Map of the San Francisco South 7.5' Quadrangle and Part of the Hunters Point 7.5' Quadrangle, San Francisco Bay Area, California* (USGS OF-98-354), 1998.

Boulanger, R.W. and Idriss, I.M., *CPT and SPT Based Liquefaction Triggering Procedures,* UC Davis Center for Geotechnical Modeling Report No. UCD/CGM-14/01, April 2014.

Brabb, E.E. et al, *Geology of the Onshore Part of San Mateo County, California* (USGS OF-98-137), 1998.

California Building Standards Commission, *2019 California Building Code*, based on 2018 International Building Code, International Code Council.

California Emergency Management Agency, *Tsunami Inundation Map for Emergency Planning, State of California ~ County of San Mateo, San Francisco South Quadrangle (San Francisco Bay),* 2009.

California Department of Transportation, *Corrosion Guidelines, Version 3.0, March 2018*.

California Geological Survey (CGS), *Geologic and Engineering Aspects of San Francisco Bay Fill*, Special Report 97, 1969.

CGS, *Earthquake Fault Zones, A Guide for Government Agencies, Property Owners/Developers, and Geoscience Practitioners for Assessing Fault Rupture Hazards in California*, Special Publication 42, Revised 2018.

CGS and United States Geological Survey (USGS) Quaternary Faults and Folds database, online: http://geohazards.usgs.gov/qfaults/map.php

Cetin, K.O., Bilge, H.T., Wu, J., Kammerer, A.M., and Seed, R.B., *Probabilistic Model for the Assessment of Cyclically Induced Reconsolidation (Volumetric) Settlements, ASCE Journal of Geotechnical and Geoenvironmental Engineering, Vo. 135, No. 3, March 1, 2009.*

CGS and United States Geological Survey (USGS) Quaternary Faults and Folds database, online: http://geohazards.usgs.gov/qfaults/map.php

CGS, *Guidelines for Evaluating and Mitigating Seismic Hazards in California, Special Publication 117A,* 2008.

Geologismiki and Gregg Drilling, Inc., *CLiq v. 2.2.0.35* ©2006.

Geologismiki and Gregg Drilling, Inc., *CPeT-IT v. 2.02.5,* ©2007.

Graymer, R.W. et al, *Geologic Map of the San Francisco Bay Region* (USGS/CGS Scientific Investigations Map 2918), 2006.

Jennings, C.W. and Bryant, W. A., *2010 Fault Activity Map of California*, CGS Geologic Data Map No. 6, online: http://www.quake.ca.gov/gmaps/FAM/faultactivitymap.html.

Lew, M., *Site Soil Class Determination for Tall Buildings,* Los Angeles Tall Buildings Structural Design Council, LATBSDC White Paper 2020-01, *June 2020*.

McDonald, S.D. et al, Map Showing Thickness of Young Bay Mud, Southern San Francisco Bay, California, (USGS MF-976), 1978.

Nichols, D.R., and Wright, N.A., *Preliminary Map of Historic Margins of Marshlands, San Francisco Bay, California* (USGS OF-71-216), 1971.

Structural Engineers Association of California, *Seismic Design Maps*: https://seismicmaps.org/

USGS, *Unified Hazard Tool:* http://earthquake.usgs.gov/hazards/interactive/

USGS, *Liquefaction Susceptibility:* https://earthquake.usgs.gov/learn/topics/geologicmaps/liquefaction.php

Youd, T.L. and Garris, C.T., *Liquefaction-Induced Ground-Surface Disruption, ASCE Journal of Geotechnical Engineering,* November 1995.

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

CELEBRATING 35 YEARS 1986 2021 NINYO & MOORE

March 24, 2021
Project No. 403967001

Mr. Jason Hallare, PE
City of South San Francisco
315 Maple Avenue
South San Francisco, California 94080

Subject: Geotechnical Peer Review
121 East Grand Avenue
South San Francisco, California

Dear Mr. Hallare:

In accordance with your request, we have performed a geotechnical peer review of a preliminary geotechnical investigation report (Geocon, 2021) for the proposed mixed-use development at 121 East Grand Avenue in South San Francisco, California. Our peer review was conducted to provide an opinion regarding whether the Consultant, Geocon, has adequately addressed the geotechnical issues at the subject property.

SITE AND PROJECT DESCRIPTION

The site consists of an irregular shaped property that covers approximately 3¼ acres and is comprised of four adjacent parcels at the northeast corner of Poletti Way and East Grand Avenue in South San Francisco. Regional topographic data indicates that the site is relatively flat (Google, 2021). The ground elevation across the property generally ranges between approximately 6 to 9 feet above mean sea level (MSL). The site is currently occupied by a three-story hotel and associated courtyard areas and surface parking.

According to Geocon (2021), the scope of the proposed project includes construction of a 7-story structure with a 3-level subterranean parking garage. The building will contain 803,000 square feet of office space and 342,000 square feet of parking space. Geocon anticipates that cuts up to 40 feet will be required for foundation construction.

GEOLOGIC SETTING AND SUBSURFACE CONDITIONS

Our review of regional geologic mapping indicates that the subject property is underlain by artificial fills over Bay Mud deposits (Bonilla, 1998). The geotechnical consultant conducted a site investigation in 2017 and 2020 that consisted of site reconnaissance, subsurface exploration, and

laboratory testing. The subsurface exploration consisted of six borings drilled to depths that ranged between approximately 31½ and 112 feet below grade and ten CPT soundings to maximum depths of approximately 85¼ feet below the existing ground surface utilizing a truck-mounted CPT rig. Seismic shear wave velocity measurements have been collected at 5-foot intervals at two of the CPT locations.

The geotechnical consultant performed laboratory testing to evaluate in-place soil moisture content, plasticity index, shear strength, and grain size distribution. The results of the laboratory tests and the boring logs presented in the report with the recorded equivalent penetration resistance indicate that the borings generally encountered loose to dense clayey sand, soft to medium stiff high plastic clay, sand and silty sand. Groundwater was measured at depths between 4½ and 16 feet during the subsurface exploration.

GEOLOGIC ISSUES AND GEOTECHNICAL CONCERNS

The geotechnical consultant addressed the following geologic issues and geotechnical concerns in the referenced report:

- The geotechnical consultant concluded that the potential for ground surface fault rupture is low since the site is not in an earthquake fault zone established by the California Geological Survey.
- Based on the subsurface conditions encountered during the exploration, the geotechnical consultant concluded that liquefaction may occur during an earthquake and may result in total free field settlements of up to approximately 3½ inches. Considering the upper 35 feet of soil will be removed during excavation for the underground parking levels, the potential total dynamic settlement is estimated to be less than approximately ¾ inch.
- The geotechnical consultant identified a potential for future seismic ground shaking and provided recommendations for seismic design parameters consistent with the 2019 California Building Code. The seismic design parameters were estimated using site class C and risk category III.
- The geotechnical consultant provided recommendations for mat foundations planned at the subterranean level. Allowable bearing capacity, modulus of subgrade, lateral earth pressure, and coefficient of friction for mat foundation are estimated. The geotechnical consultant recommended to consider potential hydrostatic uplift pressure to design and construct the structure.
- The geotechnical consultant provided recommendations for the installation of tiedown anchors where the dead weight of the building is not sufficient to resist hydrostatic uplift pressures.
- The geotechnical consultant provided recommendations for temporary excavation considering Type C soil in accordance with OSHA guidelines.
- The geotechnical consultant provided recommendations for temporary shoring using solider piles and tiebacks.
- The geotechnical consultant provided recommendations for retaining walls and for lateral earth pressures and seismic lateral pressures against the retaining walls and buried structures greater than 15 feet. The geotechnical consultant provided recommendations for drained conditions for

retaining walls greater than 2 feet. The geotechnical consultant has recommended that potential surcharges from adjacent structures and other improvements be reviewed by them.

- The geotechnical consultant provided recommendations for concrete pavement design. The geotechnical consultant recommended at least 6 inches of compacted Class 2 Aggregate Base be used below rigid concrete. The concrete pavement is recommended to be a minimum of 6 inches thick and reinforced with No. 3 steel reinforcing bars placed 18 inches on center in both horizontal directions.

GEOTECHNICAL REVIEW CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations from our review of the referenced documents are as follows:

1. Although the geotechnical consultant has identified expansive soil as a design concern, we recommend performing expansion index testing on the soil samples to evaluate the potential for expansion. While Bay Mud is typically expansive, the surficial fill soil at this site is primarily a granular material. Furthermore, expansive soil is typically not a design concern below the groundwater level.
2. The geotechnical consultant should evaluate and provide estimates of span at which the estimated differential settlement occurs.
3. The geotechnical consultant should estimate the uplift pressure under the proposed mat slab foundation.
4. The geotechnical consultant has provided information about the geological setting of the area however it is recommended that appropriate geology map of the area be added to the report.
5. The geotechnical consultant should discuss the potential for ongoing secondary consolidation of the ground surface from the initial land reclamation fill, including potential differential settlement of underground utilities.

LIMITATIONS

The geotechnical services described in this report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty, expressed or implied, is made regarding the conclusions and opinions presented in this report. Our conclusions are based on our review of the references listed.

We appreciate the opportunity to be of service.

Sincerely,
NINYO & MOORE



Ransom Hennefer, PE, GE
Senior Engineer



Abbas Abdollahi, PhD, PE
Project Engineer

RH/AA/gvr

Attachment: References

REFERENCES

Bonilla, M.G., 1998, Preliminary Geologic Map of the San Francisco South 7.5' Quadrangle and Part of the Hunters Point 7.5' Quadrangle, San Francisco Bay Area, California, Scale 1:24000.

Geocon Consulting Inc., 2021, Preliminary Geotechnical Investigation, 121 East Grand Avenue, South San Francisco, California, Project No. E8961-04-02, Dated March 1.

Google, 2021, Google Earth Pro 7.3.3.7786, http://earth.google.com/.

Project No. E8961-04-02
April 21, 2021

OCI San Fran, LLC
PO Box 927729
San Diego, California 92192

Attention: Mr. Adam Cashner

Subject: PROPOSED MIXED-USE DEVELOPMENT
121 EAST GRAND AVENUE
SOUTH SAN FRANCISCO, CALIFORNIA
RESPONSE TO PEER REVIEW COMMENTS

References:
1. *Preliminary Geotechnical Investigation, Proposed Mixed-Use Development, 121 East Grand Avenue, South San Francisco, California,* dated April 21, 2021.
2. Peer Review Comments: *Geotechnical Peer Review, 121 East Grand Avenue, South San Francisco, California,* prepared by Ninyo & Moore, dated March 24, 2021 (N&M Project No.403967001).

Dear Mr. Cashner:

We have prepared this correspondence to respond to peer review comments provided by the City of South San Francisco relative to our referenced preliminary geotechnical investigation report for the 121 East Grand Avenue project. Each peer review comment and our response are presented below. Where applicable, pertinent sections our report have been updated.

Review Comment 1: *Although the geotechnical consultant has identified expansive soil as a design concern, we recommend performing expansion index testing on the soil samples to evaluate the potential for expansion. While Bay Mud is typically expansive, the surficial soil at this site is primarily a granular material. Furthermore, expansive soil is typically not a design concern below the groundwater level.*

Response: The basis for this review comment is not clear. While our report indicates the Bay Mud and alluvial soils encountered at the site should be considered expansive as defined in 2019 California Building Code, we do not conclude that the presence of those potentially expansive soils is a particular design concern. As the reviewer notes, the surficial soils at the site are predominantly granular and expansive soils are typically not a design concern below groundwater level. The development proposes to utilize a mat foundation system founded in sandy soils below groundwater. Surface improvements around the perimeter of the development are expected to be constructed near existing grade.

Review Comment 2: *The geotechnical consultant should evaluate and provide estimates of span at which the estimated differential settlement occurs.*

Response: Design mat foundation loadings are not yet available as project design is in its early stages. Assuming relatively uniform mat foundation pressures, we estimate differential settlement under dead plus live load conditions will be ¼ inch or less across a horizontal distance of 50 feet.

Review Comment 3: *The geotechnical consultant should estimate the uplift pressure under the proposed mat slab foundation.*

Response: Recommendations for design uplift pressure have been included in our updated geotechnical report.

Review Comment 4: *The geotechnical consultant has provided information about the geological setting of the area however it is recommended that appropriate geology map of the area be added to the report.*

Response: A Geology Map depicting mapped geology in the project area is included in our updated geotechnical report as Figure 3.

Review Comment 5: *The geotechnical consultant should discuss the potential of ongoing secondary consolidation of the ground surface from the initial land reclamation fill, including potential differential settlement of underground utilities.*

Response: Bay Mud deposits were encountered in our Borings B1, B3, B4, and B5 with the maximum observed thickness of those deposits being approximately 8 feet in Boring B1. Given the age of the fills placed atop the Bay Mud during original development in the area, as well as the surcharge effects of the nearby East Grand Avenue overcrossing embankment that was constructed in the 1980s, the potential for ongoing secondary compression in the Bay Mud is considered low.

Our professional services were performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices used in the site area at this time. No warranty is provided, express or implied.

We appreciate the opportunity to continue our professional services on this project. Please contact us if you have any questions regarding this correspondence or if we may be of further service.

Sincerely,
GEOCON CONSULTANTS, INC.





Shane Rodacker, GE
Senior Engineer

(1/e-mail) M-RAD Architecture
Attention: Ms. Margerie Bonnet
(1/e-mail) M-RAD Architecture
Attention: Ms. Kristy Velasco

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

CELEBRATING 35 YEARS 1986 2021 NINYO & MOORE

April 28, 2021
Project No. 403967001

Mr. Jason Hallare, PE
City of South San Francisco
315 Maple Avenue
South San Francisco, California 94080

Subject: Geotechnical Peer Review Update
121 East Grand Avenue
South San Francisco, California

Dear Mr. Hallare:

In accordance with your request, we have reviewed Geocon's updated preliminary geotechnical investigation report (Geocon, 2021a) and Geocon's response to our review comments (Geocon, 2021b). Our review comments were summarized in our letter dated March 24, 2021 (Ninyo & Moore, 2021). Based on our review of the referenced documents, the Consultant, Geocon, has adequately addressed the geotechnical issues at the subject property.

We appreciate the opportunity to be of service.

Sincerely,
NINYO & MOORE

Ransom Hennefer, PE, GE
Senior Engineer

REGISTERED PROFESSIONAL ENGINEER
RANSOM H. HENNEFER
GE 3152
GEOTECHNICAL
STATE OF CALIFORNIA
April 28, 2021

Abbas Abdollahi, PhD, PE
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
ABBAS ABDOLLAHI
No. C90832
Exp. _____
CIVIL
STATE OF CALIFORNIA
April 28, 2021

RH/AA/gvr

Attachment: References

REFERENCES

Geocon Consulting Inc., 2021a, Preliminary Geotechnical Investigation, 121 East Grand Avenue, South San Francisco, California, Project No. E8961-04-02, Dated April 21.

Geocon Consulting Inc., 2021b, Response to Peer Review Comments, 121 East Grand Avenue, South San Francisco, California, Project No. E8961-04-02, Dated April 21.

Ninyo & Moore, 2021, Geotechnical Peer Review, 121 East Grand Avenue, South San Francisco, California, Project No. 403967001, Dated March 24.

PARTNER

SEISMIC RISK ASSESSMENT

San Francisco Bay Development
121 East Grand Avenue
South San Francisco, California 94080

Report Date: June 8, 2020
Partner Project Number: 20-281457.2

Prepared for:

Phase 3 Properties, Inc.
San Diego, California 92192



Engineers who understand your business

PARTNER

June 8, 2020

Ms. Corrine Gulutz
Phase 3 Properties, Inc.
P.O. Box 927729
San Diego, California 92192

Subject: **Seismic Risk Assessment**
San Francisco Bay Development
121 East Grand Avenue
South San Francisco, California 94080
Partner Project Number: 20-281457.2

Dear Ms. Gulutz:

Partner Engineering & Science, Inc. is pleased to provide the results of the seismic risk assessment (SRA) performed on the above-referenced property.

The purpose of this Seismic Risk Assessment is to assess expected earthquake performance of the subject property to facilitate completion of due diligence as a secured lender. The findings of this report are intended to be used in support of securing the debt created through the prospective financing for which the subject property serves as collateral. This report may not be used for any other purpose, including, without limitation, use by Owner, borrower or tenant for evaluating life safety performance, compliance with any building codes or mandatory retrofit programs, earthquake resilience of specific building components and systems, or as an instrument in negotiations related to the acquisition or disposition of the property.

We appreciate the opportunity to provide assessment services to Phase 3 Properties, Inc.. If you have any questions concerning this report, please contact Mark Lambson at (619) 757-1119.

Sincerely,

DRAFT

Mark Lambson
Relationship Manager
Partner Engineering & Science, Inc.

User Reliance

Partner was engaged by Phase 3 Properties, Inc. (Client), or their authorized representative, to perform this assessment. The engagement agreement specifically states the scope and purpose of the assessment, as well as the contractual obligations and limitations of both parties. This report and the information therein, are for the exclusive use of the Client. This report has no other purpose and may not be relied upon, or used, by any other person or entity without the written consent of Partner. Third parties that obtain this report, or the information therein, shall have no rights of recourse or recovery against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, the Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such use. Unauthorized use of this report shall constitute acceptance of, and commitment to, these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted the Terms and Conditions for which this report was completed. A copy of Partner's standard Terms and Conditions can be found at http://www.partneresi.com/terms-and-conditions.php.

TABLE OF CONTENTS

1.0 Summary of Findings 1
1.1 Identified Mandatory Seismic Retrofit Ordinance 2
1.2 Recommendations 2
1.3 Opinion of Cost and Scope of Work 2
2.0 Introduction 3
2.1 Purpose 3
2.2 Scope of Work 3
2.3 Limitations 3
2.4 Level of Investigation 4
2.5 ASTM Deviations 4
2.6 Deviations from Client Seismic Risk Policy 4
2.7 Limiting Conditions 4
3.0 Subject Property 5
3.1 Site Access 5
3.2 General 5
3.3 Document Review 5
3.4 Property Overview 6
3.5 Design Review 6
4.0 Seismic Ground Motion Hazard Assessment [G] 8
4.1 Site Ground Motions 8
5.0 Building Damageability Assessment [BD] 9
5.1 Loss Estimation Terminology 9
5.2 Damage Loss Model (Thiel & Zsutty - Earthquake Spectra 1987) 10
6.0 Building Stability Assessment [BS] 12
6.1 Building Stability Procedures 12
6.2 Building Stability Summary 12
7.0 Site Stability [SS] 13
7.1 Site Stability Summary 13
7.2 Liquefaction Susceptibility 13
7.3 Surface Fault Rupture 14
7.4 Earthquake Induced Landslide Susceptibility 15
7.5 Tsunami Inundation 15
7.6 Other Site Hazards 15

SUPPORTING DOCUMENTS

The following report Figures and Appendices are attached at the end of this report.

Figures	Figure 1:	Site Hazard Maps
	Figure 2:	Site Plan
Appendices	Appendix A:	Site Photographs
	Appendix B:	Supporting Documentation (if applicable)

Reference Material:

Retrofit Code & Process Guidance (If applicable)

Provider Qualifications (Resumes)

1.0 SUMMARY OF FINDINGS

Partner has performed a probable maximum loss (PML) evaluation for earthquake due diligence assessment in conformance with the scope and limitations of Guide E2026 and Practice E2557 for a Level-1 Seismic Risk Assessment of: South Bay Development, 121 East Grand Avenue, South San Francisco, California. Any exceptions to or deletions from this practice are described in section 2.5 of this report. The probable maximum loss (PML) evaluation for earthquake due diligence assessment has determined the PML to be (listed below):

Buildings	SEL-475	SUL-475
Building A	15%	24%
Building B	15%	24%
Building C	15%	24%
Building D	15%	24%
Aggregate	**15%**	**24%**

Field Assessment Performed By: Mark S. Prock, P.E. (CA C42806)

Field Assessment Date: June 1, 2020

Evaluation Performed By: Mark S. Prock, P.E. (CA C42806)

PML Defined As: SEL, Scenario expected loss (475-year return period)

Design Documents Reviewed: Yes (refer to section 3.0)

Methods to Determine Site Ground Motions: United States Geological Survey (USGS) and ASCE-7

Methods to Determine Site Stability: Publicly available hazard data

Site Stability: Site is categorized as low risk

Procedures Used to Determine PML: Thiel and Zsutty (1987)

Procedures Used to Determine Building Stability: Combined methods

ASTM E2026 and E2557 Level of Review: G[1] BD[1] BS[1] SS[1]

The report includes the Following Exceptions to ASTM Requirements: Refer to section 2.5

DRAFT

Name and License: Mark S. Prock, P.E. (CA C42806)
Company: Partner Engineering & Science, Inc.

1.1 Identified Mandatory Seismic Retrofit Ordinance

None noted.

1.2 Recommendations

No recommendations are provided.

- The buildings were found to have acceptable damageability with PML score below 20%.
- The buildings' structural systems are anticipated to provide continued gravity support under expected inelastic deformations caused by design-basis ground motions that are specified in the current International Building Code (IBC).

1.3 Opinion of Cost and Scope of Work

Not applicable.

2.0 INTRODUCTION

2.1 Purpose

The purpose of this Seismic Risk Assessment is to assess expected earthquake performance of the subject property to facilitate completion of commercial real estate due diligence. This report may not be used for any other purpose, including, without limitation, use by Owner, borrower or tenant for evaluating life safety performance, compliance with any building codes or mandatory retrofit programs, or earthquake resilience of specific building components and systems.

2.2 Scope of Work

This assessment was performed in accordance with the scope and limitations as set forth by the following standards or scopes of work.

- ASTM Standard Guide for Seismic Risk Assessment of Buildings E2026-16a and Standard Practice for Probable Maximum Loss (PML) Evaluations for Earthquake Due-Diligence E2557-16a.

2.3 Limitations

The scope of assessment is strictly limited by the agreed scope of services. Additional assessment such as full conformance with ASCE 41-13 criteria, research of municipal records on file with the jurisdiction, etc. may be provided upon request at additional cost. This assessment is subject to limitations in the agreed scope of services, including, without limitation:

Specific Point in Time – The assessment is based upon information obtained during completion of the work and the state of earthquake knowledge at the time of the assessment and is intended to be as-of the date of site reconnaissance. Conditions at the property and knowledge of earthquake faults, regional seismicity and building performance may change over time.

This assessment is not intended to be perceived as an engineering work product or engineering report. No structural calculations or life safety evaluations were performed for this assessment.

Uncertainty is Not Eliminated – No assessment can wholly eliminate uncertainty concerning the performance of properties as a result of ground shaking. Seemingly identical properties on adjoining sites may perform quite differently as a result of site-specific ground motions, building design, construction or other factors. Methodologies used in the evaluation of building performance are statistical and may rely upon unverified information provided or developed by others. As a result, the actual performance of the property is expected to vary.

Mandatory seismic retrofit ordinances may exist and apply to the subject property that the author is unaware of. Partner does not guarantee reporting of all municipal seismic retrofit programs either past or currently enforced.

Representative, Readily Observable Conditions – Observations at the property were limited to readily observable conditions in areas believed to be representative of site conditions. For example, the observation of an installation detail in one location may be presumed to be typical throughout. In some instances,

relevant conditions may be concealed or obscured by architectural finishes, structural components, equipment, stored materials, debris, etc., or may be located within plenums, crawl spaces, shafts, or other areas which potentially pose a risk to the Assessor. The observation of such conditions, along with all testing of materials or assemblies and evaluation of the design adequacy or code compliance is beyond the scope of this assessment and related assumptions may be employed in our evaluation of the property.

Review of construction documents and as-built plans does not guarantee that the existing building components conform to them, or that structural or material defects do not exist within the existing structure.

Building replacement costs and costs to repair damage may vary due to unforeseen circumstances such as post-earthquake inflated costs or demand surge, fluctuations in market conditions for construction and demolition, and other unforeseen deviations from damage-loss model assumptions.

Proximity to active fault traces is estimated based on available data. State fault maps and fault hazard maps are often imprecise as are boundaries of fault zones or special study zones. Partner provides no guarantee that distance to surface fault traces is accurate. In cases when accurate studies are required by the User, the involvement of an engineering geologist is recommended.

Damage due to collapse and fall hazards from adjacent buildings and nearby tall structures are not considered in this report. Damage due to pounding or interaction with adjacent buildings may not be fully assessed without detailed consideration of the adjacent structural systems.

2.4 Level of Investigation

For this assignment Partner was engaged to conduct a Level-1 Seismic Risk Assessment. As stated in the contract for this engagement the levels of investigation are dependent on the information accessed during the engagement. The following investigations are considered in this seismic risk assessment.

- Ground Motion [G] **Included** refer to section 4.0
- Building Damageability [BD] **Included** refer to section 5.0
- Building Stability [BS] **Included** refer to section 6.0
- Site Stability [SS] **Included** refer to section 7.0
- Business Interruption [BI] Excluded
- Building Contents [C] Excluded

2.5 ASTM Deviations

- No deviations are noted.

2.6 Deviations from Client Seismic Risk Policy

- No specific risk policy was referenced in the agreement for this assignment.

2.7 Limiting Conditions

- During this assignment construction drawings were not provided for review. This assessment is based on field observations only.
- No site-specific geotechnical investigation (soil report) was provided for review.

3.0 SUBJECT PROPERTY

3.1 Site Access

Site Access	
Onsite access provided by	Ms. Tonette Tamayo, Property Representative
Contact information	(650) 580-5776
Weather conditions	Clear / sunny

3.2 General

Property Summary Data	
Number of Buildings	Four
Number of Stories	Three
Approximate Building Area	109,000 square feet
Dates of Construction	1986
Design Code Year	1982 Uniform Building Code (UBC) *(assumed)*
Retrofit Design Code Year	Not Applicable
Structural Classification	
ASCE-41-13 table 4.6	W1 - Wood Light Frames

3.3 Document Review

The following documents were requested, and if available, reviewed as part of this assessment. Information obtained from the documents is incorporated into the appropriate Sections of this report. If available, copies or excerpts of the referenced documents may be included in the appendices.

Documents Reviewed	
Structural Drawings	Not available
Architectural Drawings	Not available
Seismic Retrofit Drawings	Not Available
Geotechnical Report	Not available
Prior Reports	Not provided

3.4 Property Overview

The subject property is improved with four 3-story guestroom buildings containing a total of 169 guestroom units. The guestroom buildings are identified as Buildings A, B, C & D. The buildings, constructed in 1986, are of wood-frame construction with stucco exterior walls. Upper floor access between the buildings is provided by wood framed walkway bridges. The main building (Building A) includes the reception desk, dining area and administrative offices at the ground floor level. A steel framed port cochere is located at the front of the main building. The four buildings have regular shaped plan configurations. There were no construction drawings provided for review. The foundations are assumed to consist of standard reinforced concrete footings. The ground floor levels are concrete slab-on-grade construction. The terrain is generally flat at the site.

Foundation System

The building foundations are assumed to consist of continuous and spread concrete footings supporting load bearing walls and columns. The ground floor levels are of concrete slab-on-grade construction.

Gravity Load Resisting System

Gravity loads (dead and live) at the buildings are supported by standard light wood framed stud bearing walls and wood posts. The roof systems include plywood sheathing over pre-manufactured light wood framed truss joists and wood beams. The guestroom buildings' upper floor systems have concrete topping slabs over plywood sheathing supported by pre-engineered wood joists and wood beam framing.

Seismic Force Resisting System

The lateral force resisting systems (LFRS) are characterized as plywood sheathed wood framed shear wall. The LFRS consist of the plywood sheathed upper floors and roof acting as deep beams, also referred to as diaphragms, transmitting the wind and earthquake loads to the plywood sheathed wood framed shear walls that transfer loads to the foundations. Shear walls also include the exterior stucco finished walls and the interior sheetrock covered wood framed cross walls.

Building Envelope and Cladding

The building envelopes are stucco.

3.5 Design Review

The subject property has attributes that contribute both positively and negatively to the seismic performance of the structure. In general, lighter weight structures with regular configuration and a redundant and ductile seismic force resisting system (SFRS) will have more favorable performance than a building with limited redundancy and irregular shape due to horizontal and vertical setbacks. The subject property has structural characteristics that inform our understanding of expected seismic behavior of the structure. Relevant building characteristics that influence the damage loss prediction model are listed below.

Positive Structural Attributes

- The buildings were designed and constructed in accordance with the 1982 Uniform Building Code. The design requirements include complete load paths from roof-to-foundation. Structural

elements in the superstructures have the connectivity needed to limit major damage during design level seismic shaking.

- The mass distribution is fairly uniform throughout the buildings. The buildings are relatively lightweight resulting in reduced force demands on the LFRS.
- The buildings are constructed of standard light wood framed construction with plywood sheathed wood framed shear walls. Standard light wood framed structures have performed well with limited damage during previous earthquakes. Redundancy is considered good for this type of construction.
- The buildings appear to have numerous cross walls sheathed with plywood and/or sheetrock to provide adequate resistance during earthquake ground shaking.
- The buildings have regular shaped plan configurations with not significant plan shape or vertical out-of-plane irregularities.

Negative Structural Attributes

- Based on the year of construction (1986), the buildings do not meet the "benchmark" code criteria as defined in ASCE-41-13. The buildings at this site could be compared with similar buildings (with similar design attributes). The subject structures would be expected to have lower than average performance when compared to those buildings designed with or after the benchmark model building code, the 1997 UBC. This is considered in the loss estimate and stability determination.
- The buildings were presumably designed and constructed in accordance with the 1982 Uniform Building Code. Limited vertical and horizontal lateral load resisting elements and shear transfer detailing exists compared to similar buildings designed to more recent building code requirements. Vulnerable elements include the exterior stucco siding and the interior sheetrock sheathing materials. Stucco siding is brittle and has limited shear capacity. Sheetrock sheathing tends to be easily damaged during strong earthquake ground shaking. These conditions result in possible isolated damage during strong earthquake ground shaking.
- Shear walls at the buildings may not be adequately interconnected between the upper floors to transfer overturning and shear forces through the upper floors. This discontinuity prevents shear and overturning forces from being transferred between shear walls in between the upper floor levels. Also, wood framed shear walls may lack adequate hold down and sill plate anchorage at the foundation to resist expected overturning and shear forces. Limited anchorage between the sill plates and foundations creates a potential gap in the load path that limits the ability of the shear walls to resist seismic forces.
- Upper floor access between the buildings is provided by wood framed walkway bridges. Relative movement between the buildings during strong earthquake ground shaking could cause damage to these walkway bridges.
- The 475-Year PGA (10% probability of exceedance in 50-years) is above average for this seismic zone. This condition results in higher seismic forces and an increase in potential earthquake damage at this property.

Non-Structural Components

- Accessible non-structural components were assessed but not found to substantially alter the baseline damage loss parameters.

4.0 SEISMIC GROUND MOTION HAZARD ASSESSMENT [G]

Ground motion data is sourced from the United States Geological Survey (USGS) using the USGS 2014 NSHM Dynamic Hazard Model. The National Seismic Hazard Maps (NSHM) compile known earthquake sources in proximity from the specified site and consider their distance and geologic attenuation to project the maximum expected ground motions at this site over a particular period (typically 50 years). Unless otherwise noted, the selected probability of exceedance used for this assessment is 10% in 50 years or a time horizon of 475 years (*return period*). Probabilistic peak ground accelerations (PGA) used for the loss estimate are not risk targeted ground motion estimates.

The first reported ground motion below is the peak horizontal ground acceleration (PGA) based on a shear wave velocity in the top 30m of soil (Vs30) of 760 (m/s). This is equivalent to a soft rock or boundary condition value B/C as defined in ASCE 7. Acceleration values are site-adjusted through the loss model. In cases where Thiel & Zsutty loss models are applied, the boundary condition case is used for the acceleration parameter.

- Site soil class is estimated based on geotechnical or site information available during the course of the assessment.
- MMI values are derived from the site adjusted peak ground acceleration and estimated using the Trifunac & Brady relationship published in the 2002 ATC-13-1 Commentary (King).
- The seismic zone designation is approximated based review of the 1997 Uniform Building Code (UBC) seismic zone map and or equivalent estimation procedures offered in ASTM E2557-16a.

4.1 Site Ground Motions

Ground Motion Hazard Level	
Peak Ground Acceleration (PGA) *boundary condition*	**0.49g** Vs30 760 (m/s)
Estimated site soil class (per ASCE-7 or NEHRP classification)	**Site Class B/C**
Site soil adjusted peak ground acceleration (PGA)	**0.54g** Vs30 637 (m/s)
Estimate of corresponding Modified Mercalli Intensity (MMI)	**9.03**
1997 UBC seismic zone designation	**Zone 4**

5.0 BUILDING DAMAGEABILITY ASSESSMENT [BD]

This section addresses expected physical damage to the property from site and building response and does not include estimated damage or losses that result from special earthquake hazards such as tsunami, landslide, dam failure, surface fault rupture, and ground failure. The estimate of expected Building Damage [BD] is modeled using probabilistic seismic hazards and derived from earthquake damage-loss assessment models listed in ASTM E2557-16a Section X3.

5.1 Loss Estimation Terminology

ASTM E2026 and E2557 define Probable Maximum Loss (PML) as a general non-specific term, which has been historically used to characterize building damageability. A PML can be defined in a variety of probabilistic and deterministic approaches within the ASTM E2026 and E2557 standards. According to ASTM; PML shall be User defined. The following terminology is relevant for this evaluation and may prove assistive to the reader or User:

- **Probable Loss (PL):** Earthquake loss to the building systems that has a specified probability of being exceeded in a given time period, or an earthquake loss that has a specified return period of exceedance.
- **Scenario Loss (SL):** Earthquake loss to the building systems associated with specified earthquake events (probabilistic return period or earthquake of specified size and location) on specific fault(s) affecting the building.
- **Scenario Expected Loss (SEL)**: Defined as the expected value of the Scenario Loss (SL) resulting from the specific earthquake ground motion of the earthquake scenario selected. In the SEL, the earthquake loss to a building would be represented by the average or mean amount of loss that a building is estimated to experience from a specified earthquake ground motion. As the average loss, the SEL has an approximate 50% possibility of exceedance. For the purposes of this document, the SEL is defined as the expected or mean loss resulting from the damage experienced due to a 475-year return period earthquake. This form of the SEL is often referred to as the SEL-475. The SEL is sometimes referred to as the PML50.
- **Scenario Upper Loss (SUL)**: Defined as the Scenario Loss (SL) that has a 10% probability of exceedance due to the specified earthquake ground motion of the scenario considered. It is also referred to as the 90% non-exceedance probability or the upper-bound loss. If 10 buildings of equivalent configuration and construction were subjected to the same earthquake ground shaking, the earthquake repair costs would be expected to exceed the SUL for only one of the ten buildings, or 10%. For all practical purposes the reported SUL will exceed a reported SEL for any given earthquake scenario. Similar to the SEL, the most common representation of the SUL is the SUL-475, associated with the 90% confidence loss estimation resulting from the damage experienced due to a 475-year return period earthquake. The SUL is sometimes referred to as the PML90.

5.2 Damage Loss Model (Thiel & Zsutty - Earthquake Spectra 1987)

Two peer-reviewed and published earthquake loss estimation methodologies were used to determine the earthquake damage loss estimate. The following methodologies have been used in combination to provide the seismic loss estimation.

The Thiel-Zsutty earthquake loss estimation methodology was used to calculate the mean or expected scenario losses. The methodology was published originally in 1987 (Charles C. Thiel, Jr. and Theodore C. Zsutty, "Earthquake Spectra" Vol. 3, No. 4: Nov. 1987 titled Earthquake Characteristics and Damage Statistics).

ATC-13 "Earthquake Damage Evaluation Data for California" developed by the Applied Technology Council under a contract with the Federal Emergency Management Agency (FEMA). (Published 1985, 492 pages); and ATC-13-1 "Commentary on the Use of ATC-13 Earthquake Damage Evaluation Data for Probable Maximum Loss Studies of California Buildings" (Published 2002, 66 pages). ATC-13 provides loss estimation data for 78 classes of structures.

The Thiel-Zsutty (T-Z) method employs the following parameters for determination of the SEL.

T-Z Method Parameter	***Description***
Peak Ground Acceleration (PGA) **a**	Any level of ground acceleration can be used with this methodology depending on the requirements of the User. The Peak Ground Acceleration (PGA) is used within this assessment based on a probabilistic earthquake scenario with a 475-year reoccurrence. This PGA has a 10% probability of exceedance in 50-years.
Site Soil Coefficient **s**	This value is representative of the soil composition and Site Class at the subject property. In general, sites on firm soils and rock will tend to have different shaking intensities than those sites with soft soils when subjected to the equivalent seismic ground motion. The value is higher for soft soils with high ground water table, susceptible to liquefaction (1.56 to 1.95), moderate for firm soils with deeper ground water and low to moderate liquefaction susceptibility (1.25 to 1.56), and low for rock and very hard soils with no liquefaction susceptibility (0.8 to 1.25). The value for **s** is assigned on the basis of soil and liquefaction data obtained from public sources and or site specific geotechnical reports, when available.
Spectral Modification Parameter **m**	This value has a range of 0.5 to 2.0. The determination of this parameter generally requires a site-specific geotechnical investigation of the site and a dynamic analysis of the building to characterize the fundamental period. For structures founded on a site with the equivalent periods the value of m would be as high as 2.0. For structures founded on a site with vastly different periods the value of m can be as low as 0.5. Without any site specific information or dynamic analysis data the default value for m is 1.0

T-Z Method Parameter	*Description*
Building Vulnerability Parameter **b**	This value represents the relative damageability of the building. The value of b ranges from 0.11 for light gage metal bearing wall structures (best performing) to 1.25 for unreinforced masonry bearing wall structures with no seismic retrofit. The value for b is based on the characterization of the lateral system, the design review, guidance by the authors from recent publications, and professional judgment.

The Scenario Expected Loss is calculated using the equation listed below. The Scenario Upper Loss is based on facility class damage matrices published by the Applied Technology Council in ATC-13.

Aggregate mean losses (SEL) for groups of buildings are provided. The aggregate value is based on weighted average calculation using gross square area of each building or building section considered.

$$\textbf{PML (SEL)} = 0.554\,(b\ m\ s)a^{0.630}$$

Thiel-Zsutty Method Calculation	*Coefficient*	*Value*
475-year Peak Ground Acceleration (PGA)	**a**	**0.49**
Site Soil Coefficient	**s**	**1.56**
Spectral Modification Parameter	**m**	**1.00**
Building Vulnerability Parameter(s)	**b**	
Building A		**0.28**
Building B		**0.28**
Building C		**0.28**
Building D		**0.28**

6.0 BUILDING STABILITY ASSESSMENT [BS]

Building Stability assesses expected performance such that the subject building(s) structural system provides continued gravity support under expected inelastic deformations caused by seismic forces. In many instances, not enough information is available during a Level-1 assessment to provide a nuanced analysis of expected inelastic deformations relative to building stability. In these cases, a higher level of study such as a Level-2 or Level-3 Assessment will often prove more useful in quantifying expected drift and deformations of the seismic and gravity resisting systems of the building.

6.1 Building Stability Procedures

- When buildings appear to have been designed after or indicate compliance with benchmark code years defined in the *American Society of Civil Engineers (ASCE) Seismic Evaluation and Retrofit of Existing Buildings* **ASCE-41-13** Table 4-6, building stability is reported as acceptable unless substantial deficiencies are identified. When the building(s) are "pre-benchmark", and complete structural plans are available, ASCE 41, Tier-1 screening procedures may be used to identify the presence or absence of key structural items and or available strength, ductility, and redundancy in the lateral force resisting system (LFRS). In this way, potential building instability may be inferred from the results of quick check procedures. The BSE-1N hazard level is applied unless client policy or client direction specifies otherwise.
- **FEMA P-154** *Rapid Visual Screening of Buildings for Potential Seismic Hazards; Third Edition March 2016.* A scoring system based on observed seismic & structural attributes of the subject building(s) is utilized to develop a Level-2 FEMA RVS Score that is used to generate a collapse probability keyed to IBC design-basis ground motions 2/3MCEr (*risk targeted*). This score directly correlates to a probability of structural collapse and is based on extensive research by the Applied Technology Council, FEMA and the engineering and seismology communities.
- **Engineering Knowledge and Experience**- In cases where structural conditions either identified or inferred from the design code year that have a well-documented history of causing or contributing to building collapse, these conditions may result in an experience and knowledge-based procedure to estimate expected stability. Obvious structural deficiencies or knowledge of changes to building code requirements or standards of practice do not always require rigorous analysis. Other methods may be employed within the context of knowledge-based procedures or these three methods may be combined.

6.2 Building Stability Summary

Based on this assessment, the subject buildings' structural systems are expected to provide continued gravity support under expected inelastic deformations caused by design-basis seismic forces.

7.0 SITE STABILITY [SS]

Site stability is an assessment of the potential for earthquake induced ground failure or permanent ground deformations at the site. The site stability assessment is based on available resources (public, private, and or site specific) and is a qualitative assessment that includes examination of documented geologic hazards and their potential to cause damage to the building structural elements. When geotechnical reports are not furnished by the client or discovered during the field assessment, public resources are used to make determinations. Site stability risk is reported herein as either:

1. "low risk"
2. "a special hazard may exist"
3. "site does not meet stability requirements"

This qualitative site stability rating incorporates liquefaction susceptibility, potential for surface fault rupture and earthquake induced landslide. When possible, other hazards are identified such as dam failure, earthquake induced flooding, dike failure & tsunami inundation. These Other Hazards are not included in the site stability assessment. The report User may elect to consider these Other Hazards in evaluating overall risks to the real estate asset.

7.1 Site Stability Summary

Based on our review of the available site geologic information & site hazards information**,** there is a low risk of earthquake induced ground failure at this site. Refer to the remainder of Section 7 for more detail.

7.2 Liquefaction Susceptibility

Earthquake induced soil liquefaction describes a phenomenon whereby a saturated or partially-saturated soil substantially loses strength and stiffness in response to an applied stress, usually earthquake shaking or other sudden change in stress condition, causing the soil to behave like a liquid. The phenomenon is most often observed in saturated, loose (low density or poorly compacted), sandy soils. Soil liquefaction can result in a loss of bearing capacity and support of the foundation system, resulting in ground failure or differential settlement or tilting of the building. This rapid settlement can result in increased damage levels beyond that estimated due to ground shaking alone.

This site is located within an area mapped as having moderate potential for soil liquefaction. This is relative to a rating from "Very Low" to "Very High". (refer to Hazard Maps; Figure 1 appended to this report). Sites with elevated risk of liquefaction may warrant a more detailed assessment by an engineering geologist depending on the User(s) risk tolerance.

It is important to note that inclusion of a site in a public agency site hazards zone does not mean that the hazard exists at the site nor does it quantify the magnitude of the hazard. It simply means that characteristics of the site require investigation for the potential hazard, typically during the design of new structures.

7.3 Surface Fault Rupture

A building founded directly over an active fault or within close proximity to a documented, active fault trace could be at risk of damage due to movement of the subsurface due to fault rupture or surface creep. Not all states have clearly mapped seismic hazard zones around known faults with known surface fault traces. The State of California acknowledged this risk of fault rupture to existing and future structures following the 1971 San Fernando earthquake. In response, the Alquist-Priolo Earthquake Fault Zoning Act was enacted in California in 1972 to mitigate the hazard of surface faulting to structures with human occupancy.

The act in its current form has three main provisions:

1. It directs the state's California Geological Survey agency (then known as the California Division of Mines and Geology) to compile detailed maps of the surface traces of known active faults. These maps include both an approximate location where faults cut the surface and a buffer zone around the known trace(s) typically about one quarter mile wide.
2. It requires property owners (or their real estate agents) to formally and legally disclose that their property lies within the zones defined on those maps before selling the property; and
3. It prohibits new construction of houses within these zones unless a geologic investigation shows that the fault does not pose a hazard to the proposed structure.

Our review of published hazard maps for this site, indicate the subject property **is not** located within a documented fault zone or special study zone with known regulatory implications.

Closest Earthquake Fault Traces or Systems

The closest mapped fault trace is the San Andreas - Peninsula fault section mapped approximately 3.1 miles distance from the subject site.

The following fault traces and fault sections contribute to the probabilistic ground shaking hazard at this site. Their approximate distances to the subject property are included along with their relative contribution ranking to the shaking hazards at this site.

Fault Name and Rupture	Magnitude	Distance from Site [mi]	Azimuth	Epsilon	Percent Contribution
UC33brAvg_FM32	7.72	4.94	--	0.49	46.01%
San Andreas (Peninsula) [10]	7.80	3.10	231.72	0.22	34.46%
San Gregorio (North) [6]	7.67	8.51	251.37	1.04	3.64%
Hayward (No) [0]	7.35	15.38	54.59	1.85	1.78%
Pilarcitos [9]	7.30	6.66	219.86	0.93	1.30%
UC33brAvg_FM31	7.72	4.93	--	0.48	45.26%
San Andreas (Peninsula) [10]	7.80	3.10	231.72	0.22	34.17%
San Gregorio (North) [6]	7.67	8.51	251.37	1.04	3.79%
Hayward (No) [0]	7.34	15.46	54.60	1.85	1.74%
UC33brAvg_FM31 (opt)	5.82	6.54	--	1.58	4.36%
UC33brAvg_FM32 (opt)	5.82	6.54	--	1.58	4.36%

Source: *U.S. Geologic Survey, Dynamic: Conterminous U.S. 2014 (update) (v4.2.0) [https://earthquake.usgs.gov/hazards/interactive/]*

7.4 Earthquake Induced Landslide Susceptibility

This site does not appear to be at risk from earthquake induced land-sliding.

7.5 Tsunami Inundation

Based on the proximity of the subject property to large bodies of open water that could produce earthquake-induced waves of water due to tsunami the subject property is not located within a Tsunami Risk Zone.

7.6 Other Site Hazards

None identified.

FIGURES

1 Site Hazard Maps

2 Site Plan

PARTNER

SITE SEISMIC HAZARDS REPORT



Report Generated for:

121 E Grand Ave

South San Francisco, CA 94080

Lat / Long: 37.6548703°, -122.4046829°

Date:

May 27, 2020

Report Generated by:

The Site Hazards Module of the

Seismic Performance Prediction Program (SP3)

Seismic Performance Prediction Program
by Haselton Baker Risk Group

Produced for:

Partner Engineering and Science

TABLE OF CONTENTS

1. Introduction . . . . . Page 2
2. Site Location . . . . . Page 2
3. Site Soil Classification Based on Topography . . . . . Page 2
4. Soil Boring Data for Nearby Sites . . . . . Page 3
    Data Source #1 - U.S. Geological Survey Vs30 Boring Data for Nearby Sites . . . . . Page 3
5. Liquefaction . . . . . Page 4
    Data Source #1 - Bay Area Liquefaction . . . . . Page 4
    Data Source #2 - California State Liquefaction . . . . . Page 5
6. Landslide . . . . . Page 6
7. Alquist Priolo . . . . . Page 7
    Data Source #1 - Alquist-Priolo Earthquake Fault Zoning Act . . . . . Page 7
8. Tsunami . . . . . Page 8
    Data Source #1 - Bay Area Tsunami . . . . . Page 8
    Data Source #2 - California State Tsunami . . . . . Page 9
9. Nearby Faults . . . . . Page 10
    Data Source #1 - U.S. Geological Survey Faults . . . . . Page 10
10. Ground Shaking Disaggregation (with Fault Table) . . . . . Page 11
11. Ground Shaking Hazards - PGA, PGV, Sa, and MMI . . . . . Page 12
12. Shake Maps . . . . . Page 13
    Data Source #1 - Loma Prieta Earthquake - M 6.9 (10/17/1989) . . . . . Page 13
    Data Source #2 - 1906 San Francisco Earthquake - M 7.8 (4/8/1906) . . . . . Page 14
    Ground Shaking Scale Description . . . . . Page 15

1. INTRODUCTION

This report was generated using SP3 - Site Hazards of the SP3 platform. It was created by aggregating publically available data at the specified site location with the goal of easily understanding and reporting on site hazards. Each data source is cited and the report is subject to the limitations and accuracy of those data sources.

2. SITE LOCATION

Address: 121 E Grand Ave, South San Francisco, CA 94080

Latitude: 37°39'17"N (37.6548703°)

Longitude: 122°24'16"W (-122.4046829°)

3. SOIL TYPE ESTIMATED FROM TYPOGRAPHY

The following soil types are estimated based on the typography of your site location.

The estimate of soil for this site is as follows:

- Vs30 = 637 m/s
- Soil Class: B/C [660 - 945]

Source: U.S. Geologic Survey, Global Vs30 Model [https://earthquake.usgs.gov/data/vs30]

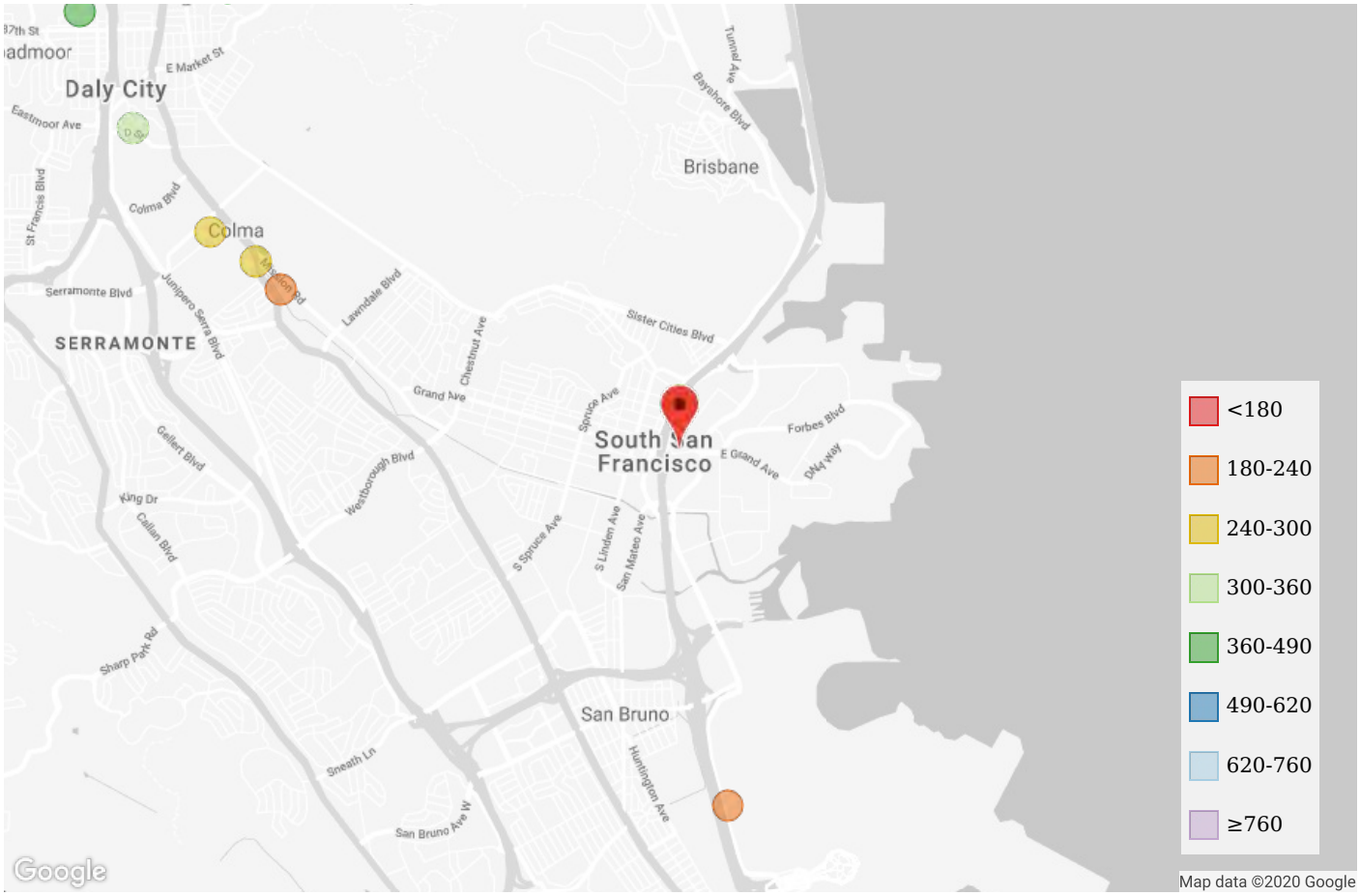
The soil class bins used for assigning soil types are as follows:

Site Class		Site Class Based on VS30* (m/sec)	ASCE 7 Site Class Definition Vs30 (m/sec)
A	Hard Rock	≥1695	≥1500
A/B	A/B Boundary	1315-1695	--
B	Rock	945-1315	760-1500
B/C	B/C Boundary	660-945	--
C	Very dense soil and soft rock	460-660	360-760
C/D	C/D Boundary	315-460	--
D	Stiff soil	225-315	180-360
D/E	D/E Boundary	165-225	--
E	Soft clay soil	<165	<180
*Non-overlapping ranges for known Vs30 to define Site Class as proposed by Bozornia & Bertero, 2006 [https://www.crcpress.com/Earthquake-Engineering-From-Engineering-Seismology-to-Performance-Based/Bozorgnia-Bertero/p/book/9780849314391]			

4. SOIL BORING DATA FOR NEARBY SITES

The following map provides any available soil boring data (with Vs30 estimates) for nearby sites. This comes from a database of Vs30 boring data compiled by the U.S. Geological Survey and other governmental agencies for 3,020 sites in the United States.

Data Source #1 - U.S. Geological Survey Vs30 Boring Data for Nearby Sites



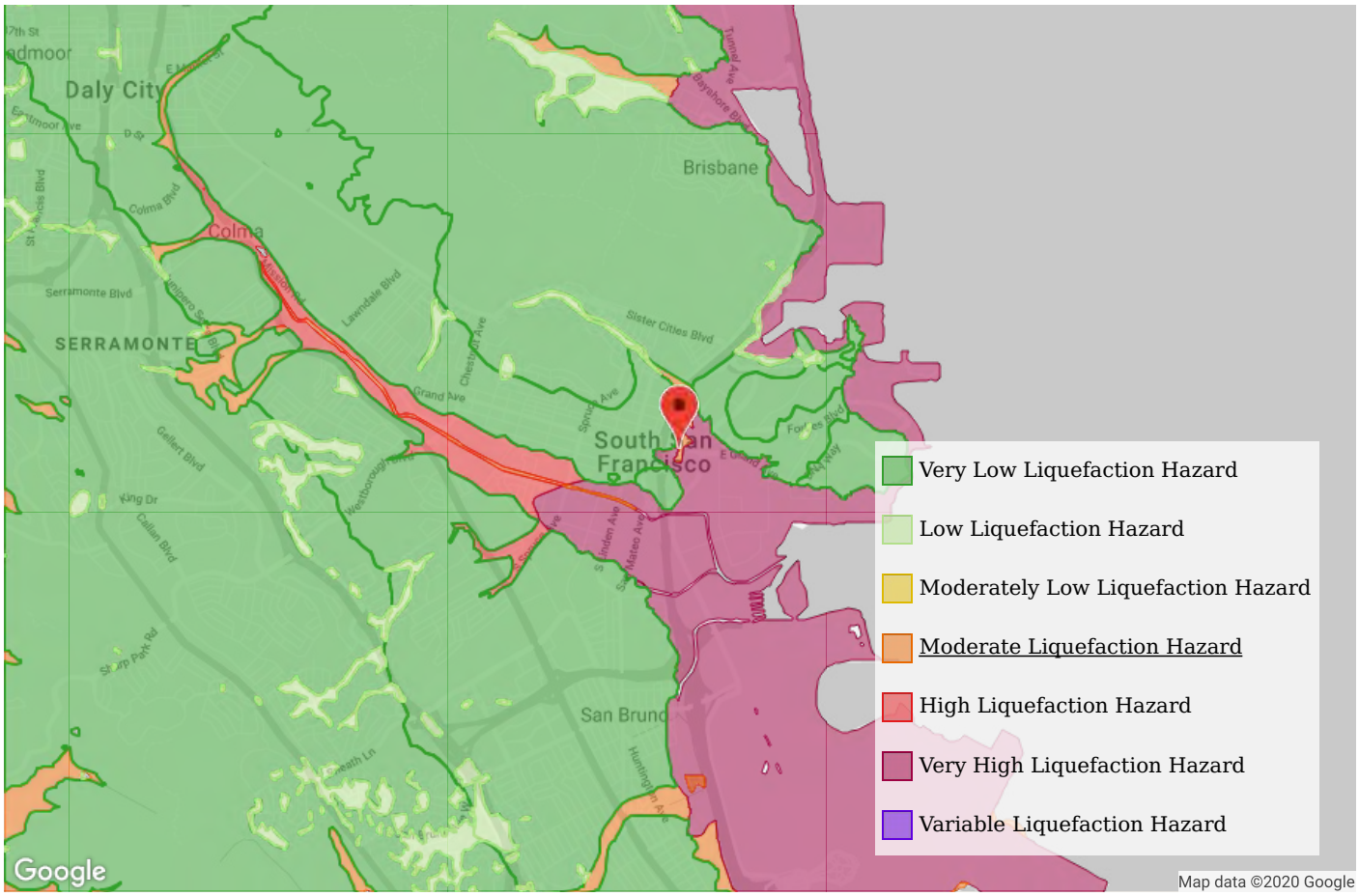
Source: *U.S. Geological Survey [https://earthquake.usgs.gov/data/vs30/us/]*

5. LIQUEFACTION

Liquefaction areas are delineated with respect to the underlying geological materials in a particular area. These maps are meant to provide information on where liquefaction may occur in a future earthquake (but not necessarily that it will occur for this specific site). This map provides a pre-screening approach for liquefaction potential, but a site-specific soil assessment would be needed if a more precise understanding of liquefaction potential is desired.

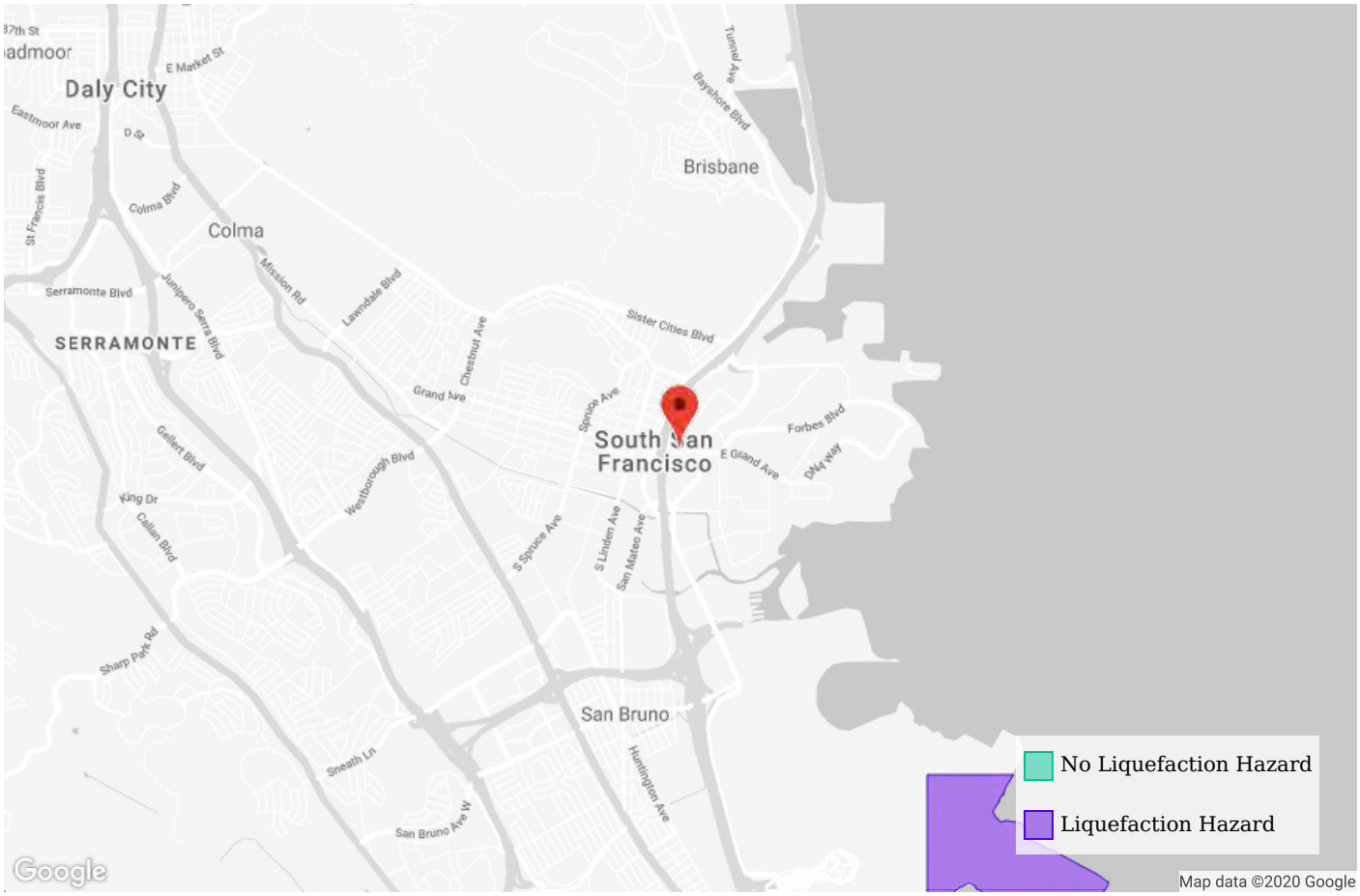
Data Source #1 - Bay Area Liquefaction

Based on the map below, this site is located in a **Moderate Liquefaction Hazard** zone.



Source: *Association of Bay Area Governments [http://resilience.abag.ca.gov/earthquakes/]*

Data Source #2 - California State Liquefaction

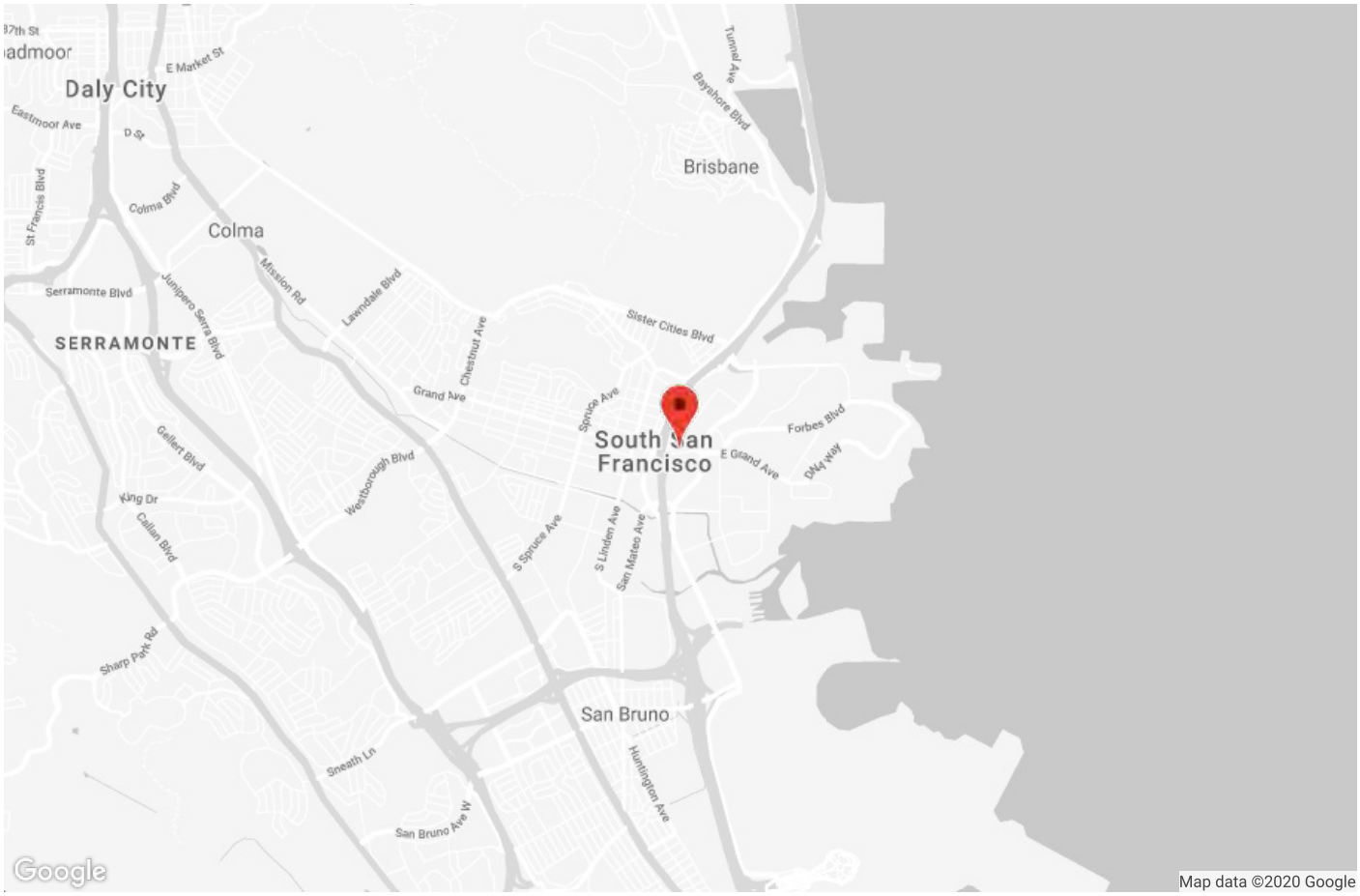


Source: *California Geological Survey [http://maps.conservation.ca.gov/cgs/informationwarehouse]*

6. LANDSLIDE

Landslide susceptibility indicates the severity of seismically induced landslide potential in an area.

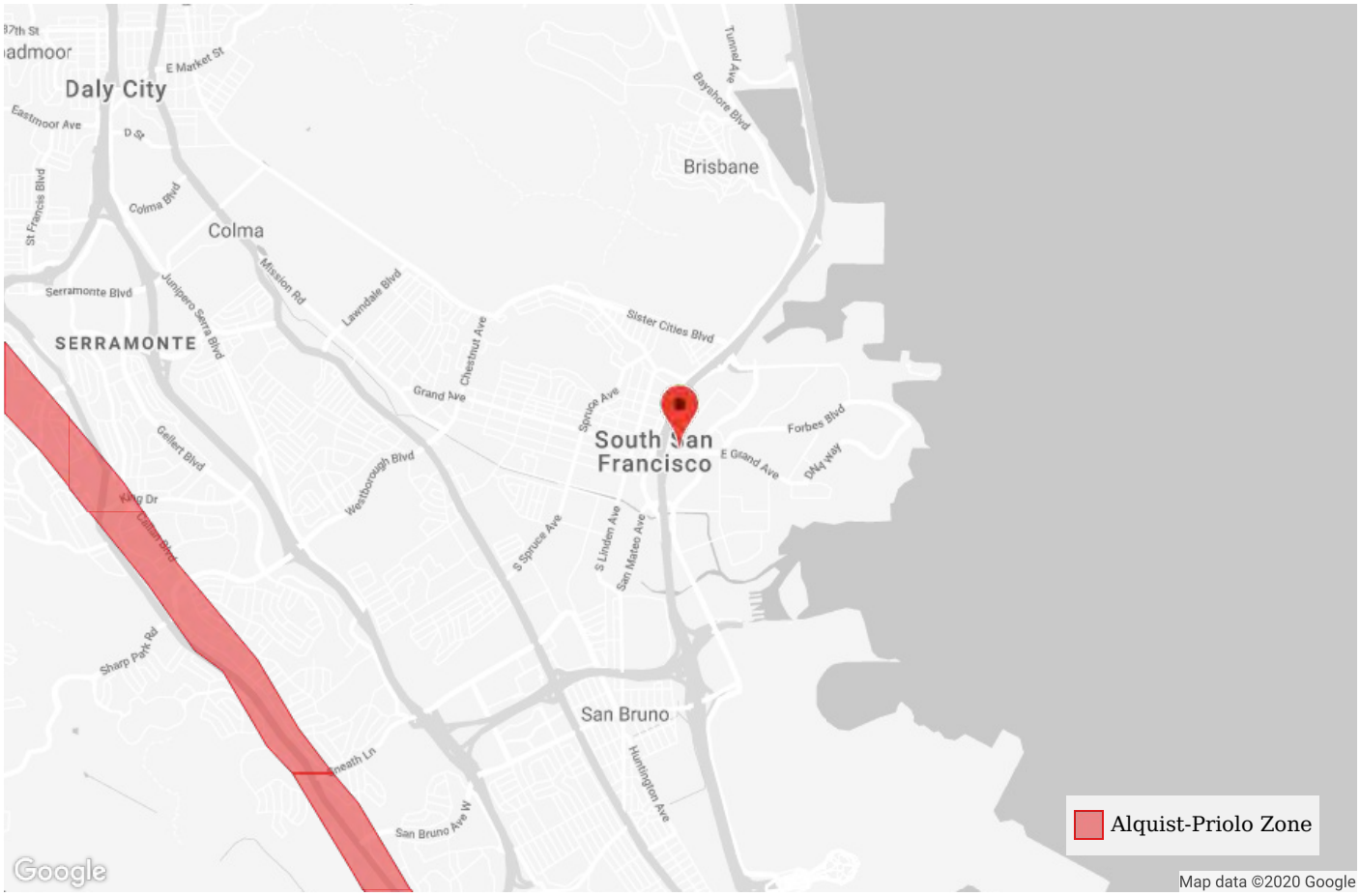
There was no Landslide data found in the mapped region below. This could either mean that there is no earthquake induced Landslide hazard or that this region was not mapped.



7. ALQUIST PRIOLO

The Alquist-Priolo Earthquake Fault Zoning Act is a California State law put into place to identify areas that may be prone to surface rupture.

Data Source #1 - Alquist-Priolo Earthquake Fault Zoning Act



Source: *California Geological Survey [http://maps.conservation.ca.gov/cgs/informationwarehouse]*

8. TSUNAMI

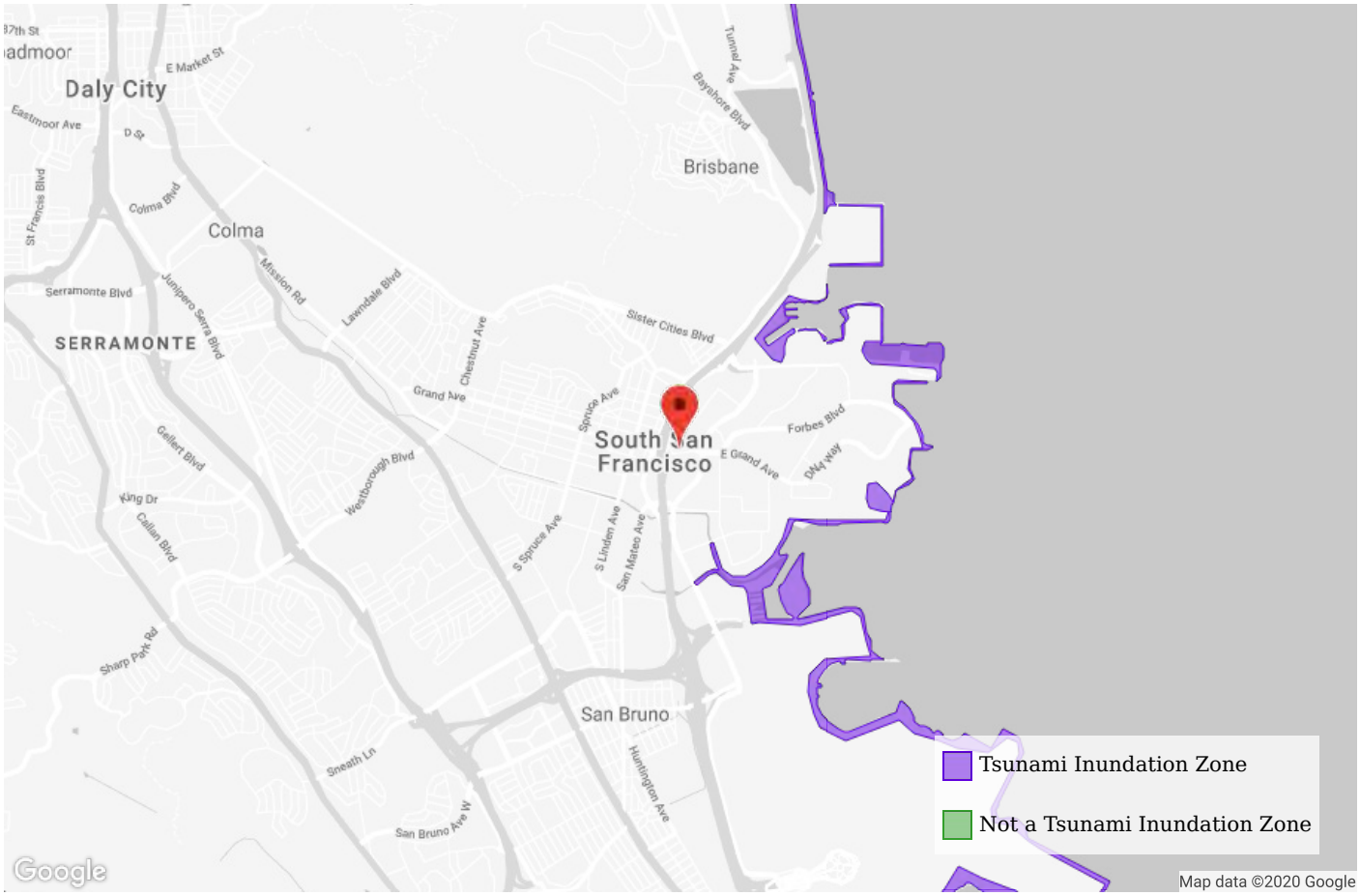
Tsunami inundation zones are determined by modeling a group of maximum considered tsunami events. It is noted that these maps do not meet disclosure requirements for real estate transactions nor for any other regulatory purpose (please see associated disclaimers from California Geological Survey).

Data Source #1 - Bay Area Tsunami



Source: *Association of Bay Area Governments [http://resilience.abag.ca.gov/open-data/]*

Data Source #2 - California State Tsunami

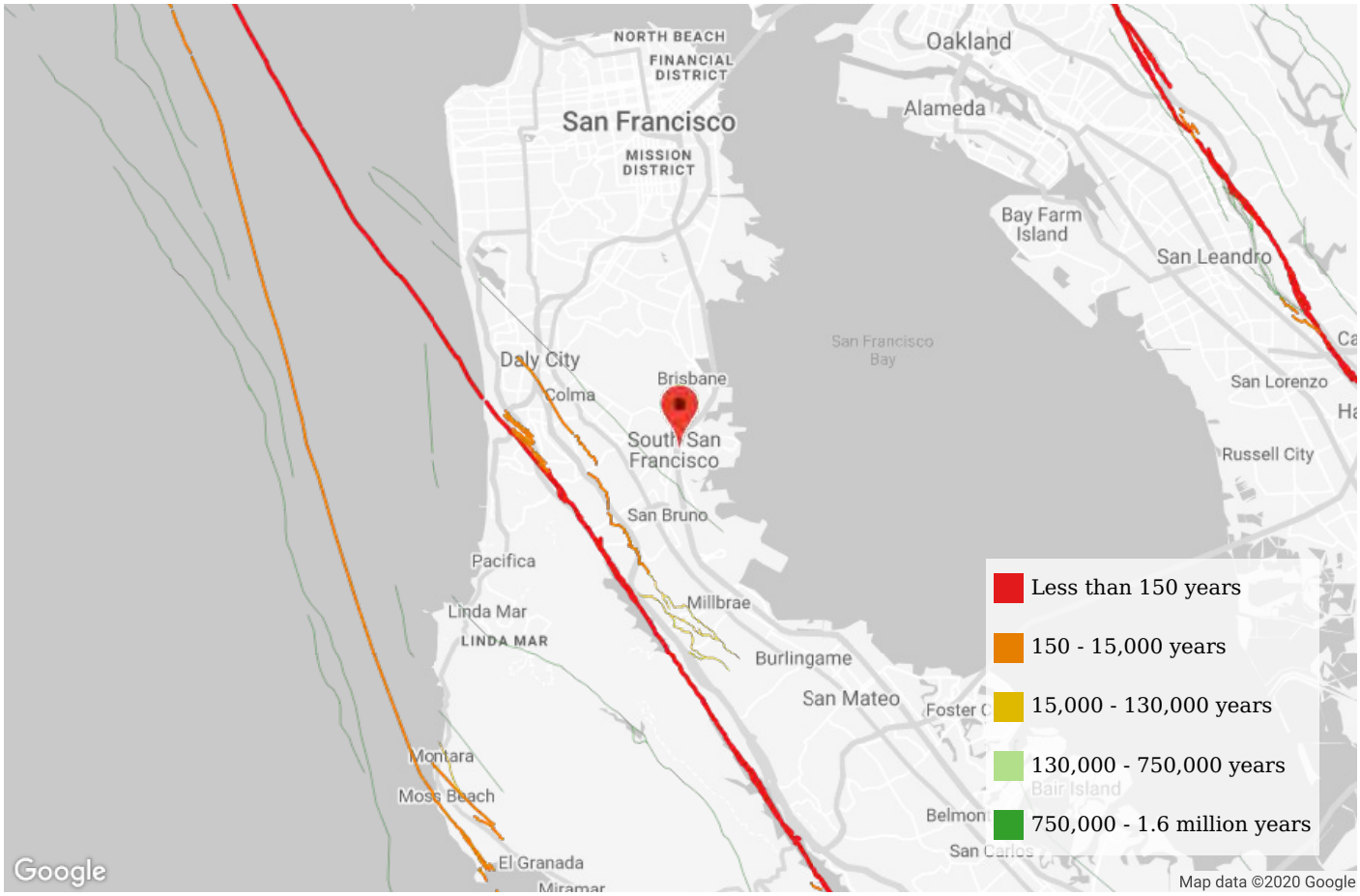


Source: *California Geological Survey*

[http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Inundation_Maps#DownloadData]

Data Source #1 - U.S. Geological Survey Faults

This map shows known faults around this site.



Years shown in legend represent typical return period of characteristic earthquakes on the faults.

Source: *U.S. Geological Survey [https://earthquake.usgs.gov/hazards/qfaults/]*

10. GROUND SHAKING DISAGGREGATION

The following are the faults and possible future earthquake events that contribute to the 10% in 50 year hazard.

Fault Name and Rupture	Magnitude	Distance from Site [mi]	Azimuth	Epsilon	Percent Contribution
UC33brAvg_FM32	7.72	4.94	--	0.49	46.01%
San Andreas (Peninsula) [10]	7.80	3.10	231.72	0.22	34.46%
San Gregorio (North) [6]	7.67	8.51	251.37	1.04	3.64%
Hayward (No) [0]	7.35	15.38	54.59	1.85	1.78%
Pilarcitos [9]	7.30	6.66	219.86	0.93	1.30%
UC33brAvg_FM31	7.72	4.93	--	0.48	45.26%
San Andreas (Peninsula) [10]	7.80	3.10	231.72	0.22	34.17%
San Gregorio (North) [6]	7.67	8.51	251.37	1.04	3.79%
Hayward (No) [0]	7.34	15.46	54.60	1.85	1.74%
UC33brAvg_FM31 (opt)	5.82	6.54	--	1.58	4.36%
UC33brAvg_FM32 (opt)	5.82	6.54	--	1.58	4.36%

Source: *U.S. Geologic Survey, Dynamic: Conterminous U.S. 2014 (update) (v4.2.0) [https://earthquake.usgs.gov/hazards/interactive/]*

11. GROUND SHAKING HAZARDS

The shaking hazard for your site is presented below in terms of peak ground acceleration (PGA) and spectral acceleration (Sa) at periods 0.2s and 1.0s. Where available the shaking hazard is provided for the Site Class specific to this location (based on Vs30 estimated topography section above) and site classes B/C and D.

The Modified Mercalli Index (MMI) is also provided according to Trifunac & Brady (1975) based upon PGA. The Trifunac & Brandy Method is applicable to intensity levels between IV and X; lower intensity levels are approximate.

Intensity		This Site: Site Class B/C				Baseline for Site Class B/C				Baseline for Site Class D			
Exceedance Probability	Return Period [years]	PGA [g]	Sa (T=0.2s) [g]	Sa (T=1.0s) [g]	MMI	PGA [g]	Sa (T=0.2s) [g]	Sa (T=1.0s) [g]	MMI	PGA [g]	Sa (T=0.2s) [g]	Sa (T=1.0s) [g]	MMI
50% in 30 years	43	0.12	0.29	0.09	VII	0.11	0.23	0.06	VII	0.15	0.38	0.18	VII
50% in 50 years	72	0.18	0.42	0.14	VII	0.15	0.34	0.10	VII	0.21	0.52	0.26	VIII
50% in 75 years	108	0.23	0.55	0.19	VIII	0.20	0.46	0.13	VIII	0.27	0.65	0.35	VIII
50% in 100 years	144	0.28	0.66	0.23	VIII	0.24	0.55	0.16	VIII	0.31	0.74	0.42	VIII
20% in 50 years	224	0.36	0.87	0.32	VIII	0.32	0.73	0.22	VIII	0.39	0.90	0.57	IX
10% in 30 years	285	0.42	1.00	0.38	IX	0.37	0.84	0.27	VIII	0.44	1.00	0.67	IX
10% in 50 years	475	0.54	1.30	0.53	IX	0.49	1.12	0.37	IX	0.54	1.21	0.90	IX
10% in 75 years	712	0.66	1.58	0.68	IX	0.59	1.38	0.47	IX	0.64	1.40	1.12	IX
5% in 50 years	975	0.74	1.81	0.79	IX	0.68	1.59	0.56	IX	0.71	1.55	1.30	IX
3% in 50 years	1642	0.91	2.25	1.02	X	0.83	1.97	0.72	X	0.84	1.80	1.63	X
2% in 50 years	2475	1.05	2.59	1.20	X	0.97	2.31	0.85	X	0.96	2.02	1.92	X
1.5% in 50 years	3308	1.14	2.86	1.36	X	1.06	2.54	0.96	X	1.04	2.20	2.15	X
1% in 50 years	4975	1.29	3.29	1.57	X	1.19	2.91	1.11	X	1.16	2.42	2.45	X

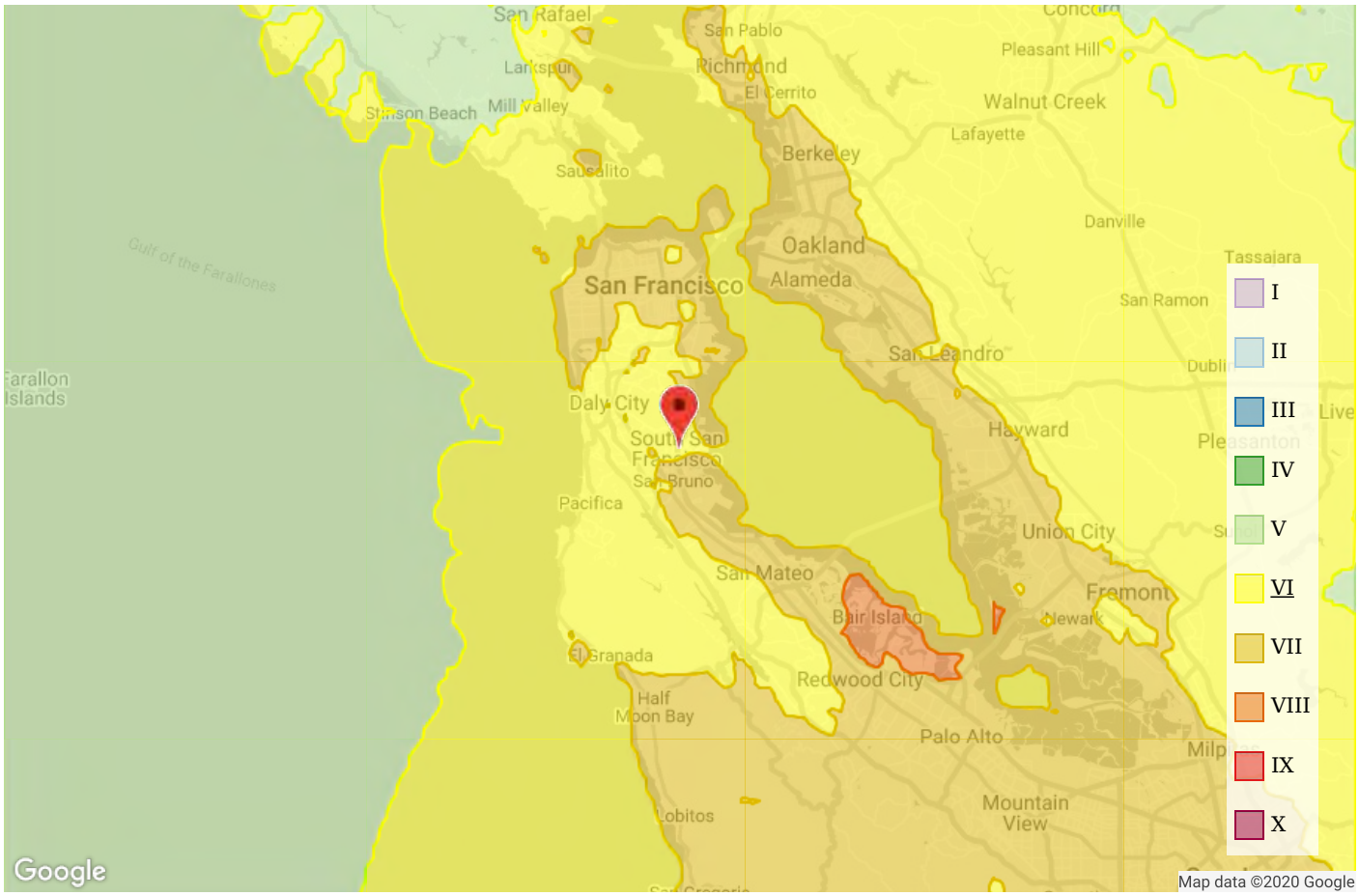
Source: *U.S. Geologic Survey, Dynamic: Conterminous U.S. 2014 (update) (v4.2.0) [https://earthquake.usgs.gov/hazards/interactive/]*

12. SHAKE MAPS

Shake maps present the intensity of seismic shaking over geographic regions during significant earthquakes. The following map(s) provide information on the intensity of shaking demand from past seismic events that are pertinent to this site. Note that these maps estimate the intensity of shaking between observed data points and that a specific site may have experienced a different level of shaking in the event(s) presented below.

Data Source #1 - Loma Prieta Earthquake - M 6.9 (10/17/1989)

Based on the map below, this site is located in an MMI **VI** Zone for this event.



Source: *U.S. Geological Survey [https://earthquake.usgs.gov/earthquakes/eventpage/nc216859#shakemap]*

Mapped Values at Site Location:

MMI: 6

PGA: 0.16 (g)

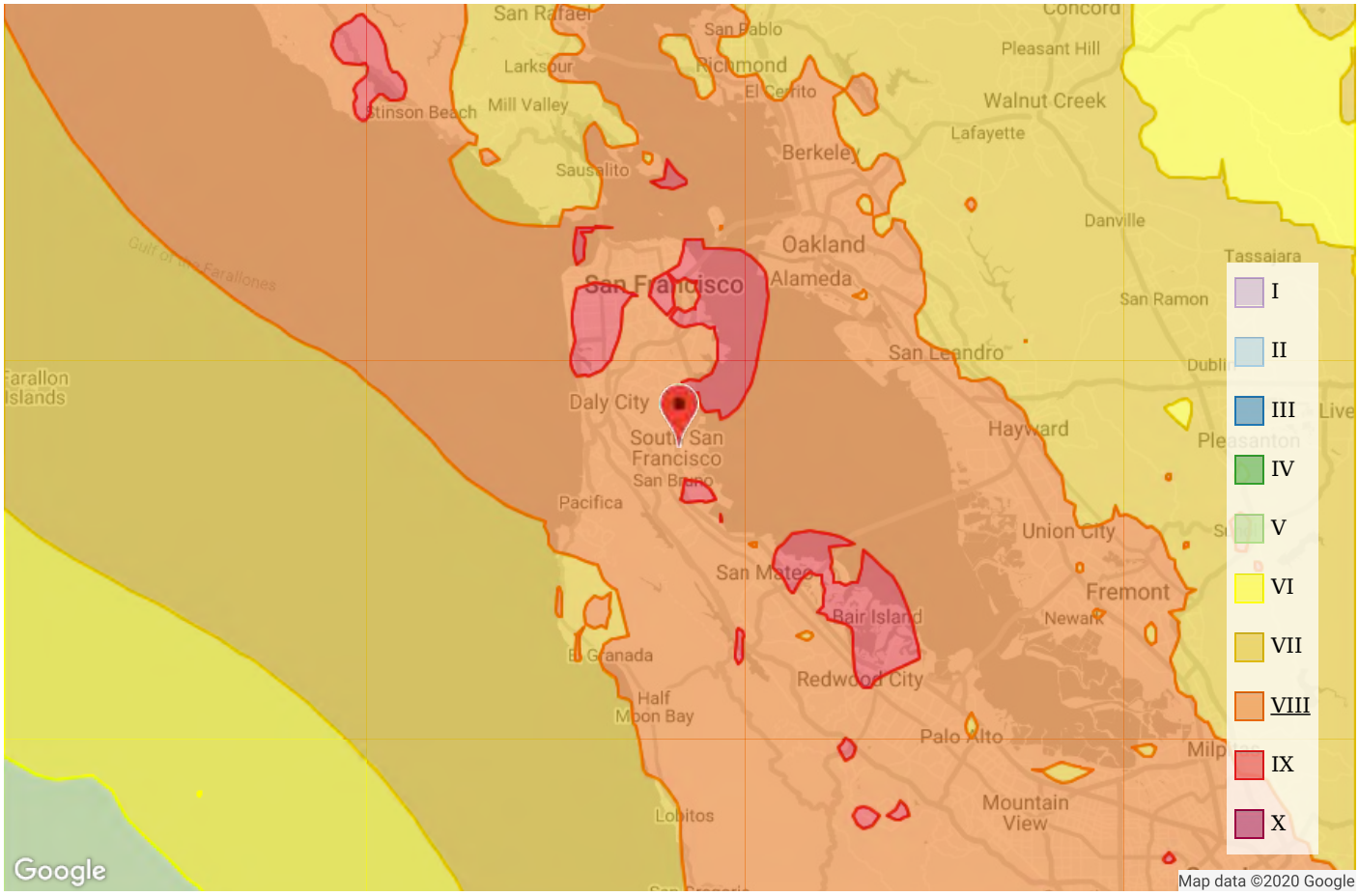
PGV: 12 (cm/s)

Sa (T = 0.3s): 0.32 (g)

Sa (T = 1.0s): 0.12 (g)

Data Source #2 - 1906 San Francisco Earthquake - M 7.8 (4/8/1906)

Based on the map below, this site is located in an MMI **VIII** Zone for this event.



Source: *U.S. Geological Survey [https://earthquake.usgs.gov/earthquakes/events/1906calif/shakemap/]*

Mapped Values at Site Location:

MMI: 8.2

PGA: 0.4 (g)

PGV: 50 (cm/s)

Sa (T = 0.3s): 1 (g)

Sa (T = 1.0s): 0.68 (g)

Ground Shaking Scale Descriptions

Intensity	Shaking	Description/Damage
I	Not felt	Not felt except by a very few under especially favorable conditions.
II	Weak	Felt only by a few persons at rest, especially on upper floors of buildings.
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.
VII	Very Strong	Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.
VIII	Severe	Damage slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned.
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Damage great in substantial buildings, with partial collapse. Buildings shifted off foundations.
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.

Source: *U.S. Geologic Survey*



Aerial photos are obtained from public sources that may not be current. For reference only.

Site North is Up

FIGURE 2: SITE PLAN
Project No. 20-281457.2

PARTNER

APPENDIX A: SITE PHOTOGRAPHS

PARTNER



1. Property street number address signage



2. Port cochere at front of main building



3. Front elevation of main building



4. Rear elevation of main building



5. Front elevation of guestroom building



6. Side elevation of guestroom building



7. Rear elevation of guestroom building



8. View of walkway bridge between guestroom buildings



9. Reception lobby in main building



10. Dining area in main building



11. Corridor at guestroom building



12. View in guestroom

REFERENCE MATERIAL

PARTNER

BOARD FOR PROFESSIONAL ENGINEERS, LAND SURVEYORS, AND GEOLOGISTS

LICENSING DETAILS FOR: 42806

NAME: PROCK, MARK STEPHEN

LICENSE TYPE: CIVIL ENGINEER

LICENSE STATUS: CLEAR

ADDRESS

321 N SAN MATEO DR 108
SAN MATEO CA 94401
SAN MATEO COUNTY

ISSUANCE DATE

AUGUST 21, 1987

EXPIRATION DATE

MARCH 31, 2022

CURRENT DATE / TIME

APRIL 6, 2020
12:49:32 PM

Mark S. Prock, P.E.
Partner Associate

PARTNER
Engineering and Science, Inc.

Education
Bachelor of Science, Civil Engineering/Syracuse University;
Associate of Applied Science, Architecture/Hudson Valley College

Registrations
California Professional Registered Licensed Engineer/42806

Summary of Professional Experience
Mr. Prock is an experienced consulting engineer with over 25 years experience in performing building engineering design and analysis, seismic building evaluations and construction site inspections. He has several years experience performing structural design of high rise office buildings, regional shopping malls and industrial facilities. He has inspected and evaluated hundreds of structures during his career and designed seismic retrofits and upgrades for un-reinforced masonry and concrete tilt-up buildings. This work included developing construction project budgets, selecting and scheduling contractors, and approving final construction. His construction management background also includes conducting building infrastructure evaluations and commissioning efforts to verify as-built building code compliance and identify liability issues such as ADA requirements and employee safety conditions.

Mr. Prock has successfully completed Due Diligence site inspections and Property Condition Assessments to evaluate large commercial real estate throughout California. Mr. Prock has determined the physical condition of building mechanical and electrical systems along with providing a professional opinion regarding future anticipated issues that may result in financial risk or liability.

Mark has completed Probable Maximum Loss Evaluations on retail centers, industrial facilities, office buildings and multi-family residential complexes. He brings a proven record of engineering and management expertise and the abilities to provide clients with a wide array of services.

Mr. Prock has performed structural design and analysis for new building construction and building sites throughout California and has been responsible for building operations, maintenance and facility improvement projects. He has also supervised technical and administrative staff and directed outside service vendors and contractors.

Education

Bachelor of Science, Civil Engineering, Emphasis in Building Science, University of Southern California

Registrations

ASTM E2018 Property Condition Assessment Training
Inspection Training Associates (ITA) Commercial Buildings Training
Advanced Institute of Pest Technology (AIPT) Branch III Technical training (Pest Identification, Safety, and Construction Techniques)
MBA - Fannie Mae and Freddie Mac Multifamily Property Inspection

Highlights

15 years of experience in the Environmental Consulting and Facility Management Industry
10 years of Project Management experience
Equity-level, Fannie Mae, and Freddie Mac PCA qualified.
Property Insurable Value Evaluations
HUD PML Assessments

Experience Summary

Mr. Talavera has 15 years of experience in the environmental consulting and in facility management industries. Mr. Talavera has several years of direct project management experience in the civil/structural engineering field, particularly in conducting property condition assessments, property condition evaluations, property needs assessments, and seismic evaluations. Mr. Talavera has served as a building assessor, project manager, and senior author on over thousands of real estate transactions.

Mr. Talavera has experience as a senior project manager in the building sciences/construction field. His background in building assessments allows him to provide complete and thorough assessments and evaluations to serve a client's specific needs. In addition to providing consulting services, Mr. Talavera has conducted senior report reviewing and employee training in the building sciences department on a national scale.

Mr. Talavera has assisted in the development of a product called Property Condition Evaluations to meet equity transaction needs. A competent building engineer and assessor, Mr. Talavera often serves as the sole building assessor for Property Condition Assessments. When performing more in-depth evaluations, he serves as a project manager providing expert aggregation of specialty services within the field of building sciences.

Mr. Talavera has performed assessments on numerous commercial, multi-family and industrial facilities. Most recently he has assessed several well-known properties, such as the Edgemar Mall by Frank Gehry, the New Otani Hotel in Los Angeles, and the Queen Seaport Development (the Queen Mary) in Long Beach.

Customizing unique report styles, Mr. Talavera has assisted the Culver City local government with the development of a specialized report to include over 30 municipal owned facilities consisting of city offices, fire and police stations, maintenance yards and pump stations. The objective of the portfolio was to assist

the Public Works Department to develop a capital reserve budget for all deferred maintenance to all of their facilities.

Mr. Talavera is familiar with all standards of Due Diligence Property Assessments and the needs and requirements of a varied number of reporting standards, including the Property Condition Assessment ASTM E2018, Fannie Mae, Freddie Mac, Property Insurable Value Evaluation and customized client formats or scopes. He has also senior authored Probable Maximum Loss (PML) Assessments, Property Condition Assessments, Property Condition Evaluations, HUD FEMA-310 PML Assessments, Property Inspection Reports, Structural Evaluations, and Alta Surveys.

Real estate investors, CMBS lenders, and real estate equity funds have come to rely on his advice and judgment to assist them with their real estate business decisions.

Prior to Partner, Mr. Talavera had several interesting career stops including: department manager of the building science division of a nationwide environmental due diligence company, facility manager trainee for three years on a 150,000 square foot transportation and air hub, and two as an assistant project engineer in the industrial engineering division assisting in building retrofitting and conveyor system installation project management.

In addition, Mr. Talavera has had direct experience in the environmental permitting process for a nationwide delivery company, which included the creation, implementation, and employee training of the following programs:

- Right to Know (RTK) Disclosure to employees
- Hazardous Materials Business Plan (HMBP), Business Emergency Plan (BEP), and
- Hazardous Materials Inventory Statements (HMIS)
- Storm Water Pollution Prevention Plan (SWPPP)
- Lockout/Tagout (LOTO) Plan
- Injury Illness Prevention Plan (IIPP)

Affiliations

Member, International Facility Management Association

Contact

htalavera@partneresi.com

Education

Bachelor of Arts, Public Administration & Economics, San Diego State University
Executive MBA Program, 2000-2003

Highlights

Over 20 years of experience in the environmental and engineering consulting industry
Property Condition Assessments (PCAs)
Fannie Mae, Freddie Mac, and HUD due diligence

Experience Summary

Mr. Lambson is a true veteran of the commercial real estate services industry. He has over 20 years of experience managing and performing environmental and engineering consulting projects on a national level. Mr. Lambson serves as a Principal for Partner and is located in Partner's San Diego County office. Mr. Lambson currently provides client management and consulting to a nationwide client base and specializes in advising "equity" clients during the acquisition phase of commercial property transactions in the U.S., Mexico, and Canada.

Mr. Lambson has assisted clients on over 10,000 commercial real estate transactions throughout his career. His due diligence resume includes experience at all levels, and includes advising REITs, developers, property managers, retail companies, commercial real estate brokers, mortgage brokers, attorneys, lenders, universities, and real estate investment groups with the following nationwide services:

- Property Condition Assessments (PCAs)
- Individual Building System Inspections for Roof, Mechanical Electrical Plumbing (MEP), Elevator, Structure, Façade, and ADA/Accessibility
- Phase I Environmental Site Assessments (ESAs)
- Phase II Subsurface Investigations (Soil and groundwater sampling and analysis)
- Phase III Environmental Remediation Services
- Asbestos, Lead, Radon, Mold Sampling
- Seismic and Structural Assessments (PMLs)
- Energy Audits, Benchmarking, AB1103 Energy Disclosure, and LEED-related services
- Hydrology, Water Conservation and Efficiency
- Fannie Mae / Freddie Mac / HUD Due Diligence
- Geotechnical and Soils Reports
- Zoning Reports
- ALTA Surveys

Building Sciences

Property Condition Assessment, MEP Report, Roof Report, Elevator Report, Structural and Seismic Assessment for a high-profile Class A office campus acquisition in the San Francisco Bay Area

ADA Compliance and Accessibility Reviews for a national bank branch portfolio

Fannie Mae Property Condition / Physical Needs Assessment services for a 5400-unit multifamily portfolio in Nevada

Environmental Assessments
Phase I and Phase II Environmental Assessments for a 75-acre aerospace facility in the Northwest United States

Over 500 Phase I Environmental Site Assessments for a national fast-food chain

Environmental consulting for over 1 million acres of desert land in California, Nevada, and Arizona

Land Surveys
ALTA Surveys for 2400-unit apartment portfolio in the Midwest

Multi-Site Portfolios
113-site office portfolio acquisition for a national REIT

122-site hotel portfolio for a national lending institution

55-site hotel portfolio acquisition for a private investment group

68-site healthcare portfolio acquisition for a national REIT

50-site country club/golf course acquisition for a private investment group

Energy and Water Efficiency
Energy & Water consulting for a national property owner that operates and manages 30 retail and office centers on the West Coast and Texas

Affiliations

National Association of Real Estate Investment Trusts (NAREIT)
International Council of Shopping Centers (ICSC)
U.S Green Building Council (USGBC)
Society of Industrial and Office Realtors, San Diego County (SIOR)
National Association of Industrial & Office Parks, Southern California (NAIOP)
San Diego Habitat Conservancy, Board of Directors. 2010 - 2014

Speaking

Bisnow Conference, Panel Moderator, La Jolla, CA, October 2014. Moderated panel on Southern California Real Estate Trends.

Globestreet, ICSC Western States Conference, San Diego, CA May 2013. Video interview regarding retail real estate trends and due diligence.

Publications

Shopping Centers Today, 2010. Authored article on LEED applications for shopping centers and retail assets.

Contact

mlambson@partneresi.com

PROJECT DESCRIPTION

The 121 East Grand project is located in South San Francisco, California, between East Grand Avenue, Grand Avenue, and Poletti Way. The 17-story tower will contain approximately 837,000 gross square feet of life science lab and office space. There are an additional two levels below-grade totaling 210,000 gross square of car-stacker parking, as well as the amenity, lobby, retail, and exterior plaza area of approximately 107,000 gross square feet.



Figure 1: 3D Rendering of Project

The structural systems for the various building components are summarized below:

FOUNDATION

A geotechnical report prepared by Geocon dated March 1, 2021 is referenced for geotechnical and foundation recommendations. The soil conditions consist of medium to loose sand fill, bay mud with sandy clay, and clay and sand alluvium layers.

The lowest basement level is planned at 25 – 30 feet below grade. Below the lowest level, the foundation system consists of a 3-to-10-foot-thick mat foundation. The mat foundation bears on medium dense clayey sands, with a maximum bearing pressure of 5,000 psf for static loads. Lateral resistance is provided by passive resistance on the mat foundation and by shear friction on the underside of the mat.

The preliminary geotechnical report suggests ground water was encountered approximately 4 ½ to 16 feet below grade. Due to a deep planned excavation, tie down anchors will be required to resist hydrostatic uplift forces. Anchor size and spacing will vary across the site dependent upon the weight of the structure above.

GRAVITY FRAMING

The above-grade tower gravity framing consists of structural steel columns supporting composite steel beams and concrete slabs on steel deck. Level 1 and below-grade gravity framing is composed of mild reinforced concrete slabs, wide-shallow beams, and concrete columns. A summary of the floor gravity framing system is as follows:

- Typical lab/office levels: 3-1/4" LWC on 3" metal deck
- Level 1: 14" concrete slab with mild reinforcing with 26-in deep wide-shallow beams in the north-south direction
- Below-grade parking levels: 10" concrete slabs with 24" deep wide-shallow beams in the north-south direction

LATERAL FORCE-RESISTING SYSTEM

The lateral force-resisting system (LFRS) consists of Buckling Restrained Brace Frames (BRBF) around four cores. At the ground floor (the seismic base), the central cores transition to concrete shear walls which continue down to the mat foundation. Shear forces from the wing cores transfer through the ground level diaphragm to the basement walls while the corner columns supporting overturning forces continue to the foundation.

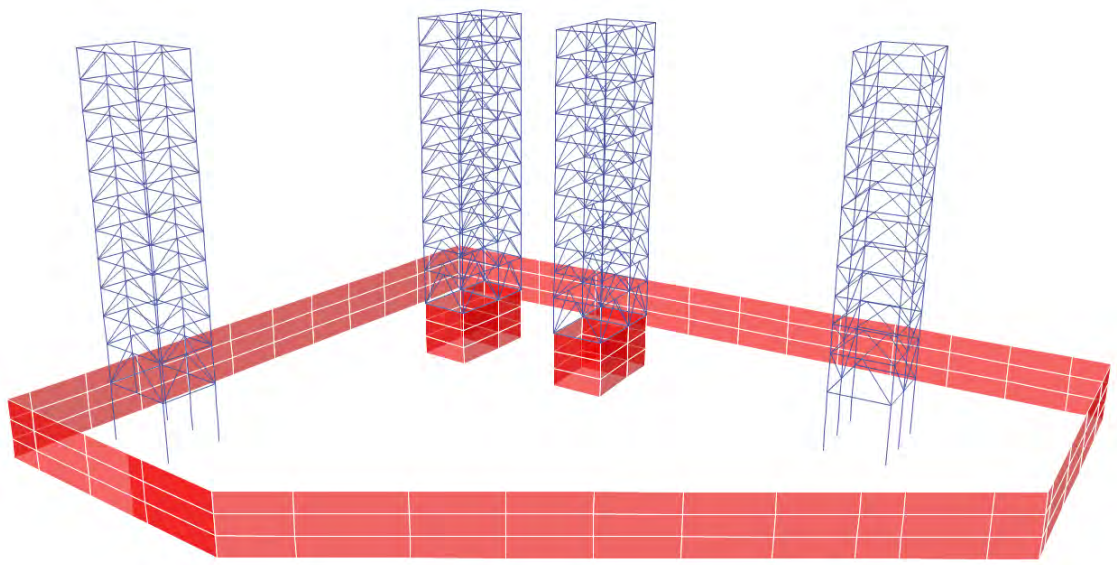


Figure 2: 3D View of Lateral Force-Resisting System

BUILDING CODES

The project is designed in accordance with the following building and material codes:

BUILDING CODE

- *California State Building Code*, 2019 Edition, references and amends the 2018 *International Building Code*, (IBC-2018) which references the American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures, 2016 Edition (ASCE 7-16).

MATERIAL CODES

- Reinforced Concrete: American Concrete Institute, *Building Code Requirements for Structural Concrete and Commentary,* 2014 Edition (ACI 318-14).
- Structural Steel: American Institute of Steel Construction, *Specification for Structural Steel Buildings,* 2016 Edition (ANSI/AISC 360-16).
- Structural Steel: American Institute of Steel Construction, *Seismic Provisions for Structural Steel Buildings*, 2016 Edition (ANSI/AISC 341-16).
- Reinforced Masonry: The Masonry Society, *Building Code for Masonry Structures*, 2016 Edition (TMS 402-16).

LOADING CRITERIA

A summary of the project-specific loading criteria follows. This loading meets or exceeds the requirements of the CBC and incorporates loading requirements specific to this project.

GRAVITY LOADING

The following loads are in addition to the self-weight of the structure. The minimum loading requirements have been taken from Table 4-1 of ASCE 7. For more detailed gravity loading assumptions, refer to the load maps included in the structural drawings. Live loads are reduced where permitted in accordance with Section 4-7 of ASCE 7. Loads are given in pounds per square foot (psf).

Table 1. Gravity Loads

Use	Live Loading	Superimposed Dead Loading
Corridors and Stairs	100 psf (not reduced)	15 psf
Light Storage	125 psf (not reduced)	10 psf
Loading Dock	250 psf (not reduced) or HL-93	15 psf
Mechanical/Electrical	125 psf (not reduced)	10 psf
Assembly	100 psf (not reduced)	30 psf
Office	80 psf	10 psf
Lab	100 psf	10 psf
Outdoor Terraces	100 psf (not reduced)	60 psf
Parking (Garages)	100 psf (not reduced except for columns)	5 psf
Roof	50 psf	25 psf
Stores (Retail)	100 psf + partitions	15 psf

In addition to these uniform slab loads, a perimeter dead load is applied to the structure to account for the weight of the cladding system.

Table 2. Cladding Loads

Load Type	Load (psf)
Exterior Cladding (curtain wall)	15 psf (wall area)

WIND DESIGN CRITERIA

Wind loading is in accordance with the CBC and ASCE 7 requirements.

Table 3. Wind Design Criteria

Parameter	Value
Basic Wind Speed, 3-second gust *(V)*	99 mph
Risk Category	III
Exposure	B
Enclosure Classification	Enclosed
Internal Pressure Coefficient *(GC_{pi})*	+/- 0.18
Mean Roof Height	262 ft

SEISMIC DESIGN CRITERIA

Seismic loads are in accordance with the CBC and ASCE 7 requirements.

Table 4. Seismic Design Criteria

Parameter	Value
Building Latitude	37.655°N
Building Longitude	122.404°W
Risk Category	III
Importance Factor *(I_e)*	1.25
Mapped Spectral Acceleration	S_s = 1.946; S_1 = 0.801
Site Class	C
Site Class Coefficients	F_a = 1.2; F_v = 1.4
Spectral Response Coefficients	S_{DS} = 1.557; S_{D1} = 0.801

Parameter	Value
Seismic Design Category	E
Lateral System	Buckling-Restrained Braced Frames Concrete Shear Walls
Response Modification Coefficient *(R)*	8 for BRBs and 5 for shear walls
Deflection Amplification Factor *(C_d)*	5.0 for BRBs and shear walls
Overstrength Factor (Ω_0)	2.5 for BRBs and shear walls
Seismic Response Coefficient	North-South: $C_s = 0.086$ East-West: $C_s = 0.086$
Design Base Shear	North-South: $V = 13{,}500$ kips East-West: $V = 13{,}500$ kips
Analysis Procedure Used	Modal Analysis Procedure

MINIMUM LATERAL FORCE

A notional load equal to 1 percent of the building's weight is considered as the minimum lateral design force for the building.

OWNER-SPECIFIED DESIGN REQUIREMENTS

The north and west portions of the floor plates are designed for lab space with vibration limits of 4,000 mips and 0.5% g. The office portions are additionally designed for future tenant flexibility with vibration limits of 16,000 mips and 0.5% g.

OCCUPANCY AND CONSTRUCTION TYPE

The occupancy classification is Mixed Use: Office and Parking. The construction type is Type 1A fire-resistive construction.

MATERIALS

The material properties used for the design include the following:

Table 5. Structural Steel Properties

Member	Standard, Strength
Wide Flange Shapes	ASTM A992, F_y = 50 ksi ASTM A913, F_y = 50 ksi
Wide Flange Shapes Designated as 65 ksi	ASTM A913, Fy = 65 ksi
Tube Sections	ASTM A500, Grade C, F_y = 50 ksi (Rectangular) F_y = 46 ksi (Round)
Pipe Sections	ASTM A53, Type E or S, Grade B, F_y = 35 ksi
Angle and Channel Sections	ASTM A36, F_y = 36 ksi
Buckling-Restrained Brace Core Material	ASTM A36, $F_{y,sc}$ = 42 ksi (+/- 2 ksi)
Miscellaneous Plates and Connection Material	ASTM A572, F_y = 50 ksi ASTM A588, F_y = 50 ksi
Miscellaneous Plates and Connection Material Designated as 65 ksi	ASTM A572, F_y = 65 ksi
High-Strength Bolts 7/8" diameter and smaller 1" diameter and larger	 ASTM A325 ASTM A490

Table 6. Concrete Properties

Member	Strength*
Slab on Ground, Sidewalks, Curbs, Mechanical Pads	f'_c = 4.0 ksi
Basement Walls, Footings	f'_c = 5.0 ksi
Mat Foundation	f'_c = 6.0 ksi at 56 days
Level 1 and below grade floor slabs and beams	f'_c = 5.0 ksi
Composite Floor Slabs	f'_c = 4.0 ksi lightweight
Shear Walls	f'_c = 8.0 ksi at 56 days

*28-day strength, unless noted otherwise.

Table 7. Reinforcement and Post-Tensioning Properties

Standard	Strength
ASTM A615, Grade 60	f_y =60 ksi
ASTM A615, Grade 80	f_y =80 ksi
ASTM A706, Grade 60	f_y =60 ksi
ASTM A706, Grade 80	f_y =80 ksi

QUANTITIES

The following tables provide estimated building quantities:

Table 8. Steel Quantity Estimates

Structural Element	Steel Estimate	Notes
Floor beams and girders	12.0 psf (Roof) 16.0 psf (Typical levels)	
Columns	3.0 psf	
Buckling-restrained braces (BRBs)	16 in^2 average core per level	Level 1 to Roof
Lateral columns and beams for BRB frames	180 tons per level 70 tons per level	Level 1 to Roof Foundation to Level 1

Table 9. Concrete Quantity Estimates

Structural Element	Steel Estimate	Notes
3 ¼" on 3" LWC metal deck	2.5 psf	A615 GR 60
Mat foundation	300 pcy	A615 GR 80 (T&B) A615 GR 60 (Vert)
Basement walls	250 pcy	A615 GR 60
Columns	525 pcy	A615 GR 60 (Vert) A615 GR 80 (Ties)
Composite concrete columns	500 pcy	A706 GR 60 (Vert) A615 GR 80 (Ties)
Beams	400 pcy	A615 GR 60
Slabs	5.0 psf (Parking) 15.0 psf (Level 1)	A615 GR 60
Shear walls	500 pcy	A706 GR 60 (H&V) A615 GR 80 (Ties)
Built-up-slabs and topping slabs	2.5 psf	
Hold down anchors	400 hold downs at podium spaced at 10'-0" o.c.	100k capacity per hold down with 20'-0" hold down length

Geosyntec consultants

engineers | scientists | innovators

Prepared for:
OCI San Fran LLC
P.O. Box 927729
San Diego, CA 92192

DRAFT PHASE I ENVIRONMENTAL SITE ASSESSMENT

Site: 121 East Grand Avenue

South San Francisco, California 94080

Prepared by

Geosyntec Consultants, Inc.
1111 Broadway St., 6th Floor
Oakland, California 94607

Project Number: WR3122

April 2022

EXECUTIVE SUMMARY

This Executive Summary presents the results of the Phase I Environmental Site Assessment (ESA) performed by Geosyntec Consultants, Inc. (Geosyntec) for the property located at 121 East Grand Avenue, South San Francisco, California 94080 (the "Site"). This Phase I ESA was performed in accordance with the scope of work, terms, and conditions described in Geosyntec's February 25, 2022 proposal. This Phase I ESA was performed in accordance with ASTM International (ASTM) Practice E1527-13. The objective of performing this Phase I ESA was to identify, to the extent feasible, "Recognized Environmental Conditions" (RECs) at the Site as the "REC" term is defined by ASTM E1527-13.

The Site is an approximately 2.91-acre property developed with one three-story hotel and associated courtyard areas owned by OCI San Fran LLC. The current building was constructed in 1986, totaling approximately 57,625 square feet. The current use of the Site is a Comfort Inn and Suites and associated paved parking area. Prior to the development of the Site in 1986, the Site was part of the Bethlehem Steel facility, a metal processing plant, that extended to the northeast and east of the Site. The Bethlehem Steel facility was present from at least 1903 to 1977. Between 1977 and 1982, the Bethlehem Steel facility was removed, and the Site was redeveloped. Historical Site features included a drainage feature from at least 1946 and filled in by 1956, two surface impoundments from at least 1968 and filled in by 1974, and a railroad spur that traversed the eastern portion of the Site from at least 1956 to 1980.

No water damage or mold issues were identified during the Site reconnaissance conducted during the preparation of this Phase I ESA.

The Phase I ESA performed by Geosyntec has revealed the following conditions as defined by ASTM:

Recognized Environmental Conditions (RECs)

- No RECs were identified during the course of this assessment.

Controlled Recognized Environmental Conditions (CRECs)

- No CRECs were identified during the course of this assessment.

Historical Recognized Environmental Condition (HREC)

- **Historical Land Use Restriction:** The Site and adjoining land to the northeast and east were historically occupied by Bethlehem Steel, a metal processing plant, from at least 1903 to 1977. Portions of the Bethlehem Steel facility to the northeast were identified as impacted with metals and polychlorinated biphenyls, and in 1984 a Declaration of Covenants, Conditions & Restrictions (Covenant) was executed for the Site (identified as parcels 8A and 8B in the Covenant) and other parcels associated with the former Bethlehem Steel facility with the Department of Toxic Substances Control. The Covenant for the Site

and several other parcels and lots were rescinded in 2001. Therefore, this finding is an HREC for the Site.

De Minimis Conditions

- **Historical On-Site and Adjoining Railroad Spur**: A railroad spur traversed the eastern portion of the Site from at least 1956 to 1980 and a mass transit railroad has bordered the Site to the west since at least 1896. Railroads can be associated with the use of petroleum products, pesticides, and heavy metals, which may have impacted shallow soils at the Site. However, because these uses cannot be ascertained, they are classified as a de minimis condition.

Business Environmental Risk

- A business environmental risk is defined by ASTM International Standard E1527-13 as a risk that can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of the parcel or commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. As discussed above, the Site was historically part of the former Bethlehem Steel property, and metals and polychlorinated biphenyl impacted soils and material were identified and remediated in other portions of the former Bethlehem Steel property. Land use restrictions associated with the remedial activities have been rescinded. Independent of contamination identified and remediated in association with the historical operations, a review of the aerial photographs indicates that a drainage feature and surface impoundments were present on the Site from at least 1943 to approximately 1974. No information was available regarding the use of the drainage feature or surface impoundments; however, artificial fill was identified on the Site during a geotechnical investigation conducted in 2017. The source of the fill material is unknown, and therefore there is the potential for residual contamination. In addition, current regulatory screening levels for evaluating hazardous materials are more stringent than when DTSC rescinded the Covenant. In support of proposed redevelopment activities, pre-characterization sampling for construction management purposes could evaluate the presence of residual chemicals that exceed current screening levels. With the proposed redevelopment of the Site that includes two to three levels of subterranean parking, it is likely that the soil excavation activities during construction would mitigate any remaining residual soil contamination. For this reason, the potential presence of residual chemicals has been identified as a BER.

Following the investigation, it appears that “data gaps” as defined by ASTM exist for the Site. However, in Geosyntec’s opinion, none are considered to be significant with respect to the identification of additional RECs for the Site.

TABLE OF CONTENTS

EXECUTIVE SUMMARY ES-1

1. INTRODUCTION 1
   - 1.1 Purpose 1
   - 1.2 Scope of Services 1
   - 1.3 Significant Assumptions 2
   - 1.4 Limitations, Deviations, and Exceptions 2
   - 1.5 Special Terms and Conditions 2
   - 1.6 User Reliance 3

2. SITE DESCRIPTION 3
   - 2.1 Site Location and General Characteristics 3
   - 2.2 Current and Former Uses of the Site 3
   - 2.3 Current Use of Adjoining and Nearby Notable Properties 4
   - 2.4 Physical Setting 5
     - 2.4.1 Topography and Geology 5
     - 2.4.2 Hydrology 5

3. USER-PROVIDED INFORMATION 6
   - 3.1 Title Records 6
   - 3.2 Environmental Liens or Activity and Use Limitations 6
   - 3.3 Specialized Knowledge 6
   - 3.4 Commonly Known or Reasonably Ascertainable Information 6
   - 3.5 Valuation Reduction for Environmental Issues 6
   - 3.6 Owner, Property Manager, and Occupant Information 7
   - 3.7 Reason for Performing This Phase I ESA 7
   - 3.8 Additional Information 7

4. RECORDS REVIEW 8
   - 4.1 Environmental Database Search 8
     - 4.1.1 Overview 8
     - 4.1.2 Results – Site 8
     - 4.1.3 Results – Vicinity Sites 9
     - 4.1.4 Unplottable Properties 12
   - 4.2 Historical Use Information 12
   - 4.3 Property Tax Records 14
   - 4.4 Local, County, State, and Federal Files 14

TABLE OF CONTENTS (continued)

4.4.1 Local Records 14
4.4.1.1 San Mateo County Environmental Health Department 14
4.4.1.2 City of South San Francisco Fire Department 14
4.4.1.3 City of South San Francisco Public Works Department 14
4.4.1.4 City of South San Francisco Building Department (CSSFBD) 14
4.4.1.5 Bay Area Air Quality Management District (BAAQMD) 15
4.4.2 State Records 15
4.4.2.1 Regional Water Quality Control Board (RWQCB), San Francisco Bay Region 15
4.4.2.2 Department of Toxic Substances Control (DTSC) – Region 2 15
4.4.2.3 Cal Fire - Office of the State Fire Marshal 15
4.4.2.4 State of California State Water Resources Control Board (SWRCB), GeoTracker Database 15
4.4.2.5 State of California, DTSC, EnviroStor Database 16
4.4.2.6 California Department of Conservation Geologic Energy Management Division Database 19
4.4.3 Federal Records 20
4.5 Client- or Owner-Provided Environmental Assessment Documents 20

5. SITE RECONNAISSANCE 20
5.1 Methodology and Limiting Conditions 20
5.2 Utility Service & Materials Management Provider Information 21
5.3 Interior and Exterior Observations 21
5.4 Adjoining Property Reconnaissance 23

6. INTERVIEWS 23
6.1 Interview with Current Owner/Occupant 23
6.2 Interview with Previous Owner/Occupant 24
6.3 Interview with Local Agencies 24

7. FINDINGS, OPINIONS, AND DATA GAPS 24
7.1 Findings and Opinions 24
7.2 Business Environmental Risk 25
7.3 Data Gaps 25
7.4 Non-Scope Considerations 26
7.4.1 Water Damage or Mold 26
7.5 Conclusions 26

TABLE OF CONTENTS (continued)

8. REFERENCES 27

9. SIGNATURE BY ENVIRONMENTAL PROFESSIONAL 28

LIST OF TABLES

Table 1 Historical Records Review

LIST OF FIGURES

Figure 1 Site Location Map

Figure 2 Site Layout Map

Figure 3 Site Vicinity

LIST OF APPENDICES

Appendix A User or Owner Provided Documents

Appendix B Radius Database Search Report and Historical Resources User Provided Information

Appendix C Agency Records

Appendix D Historical Records and Data

Appendix E Site Photographs

Appendix F Environmental Professional Resume

1. INTRODUCTION

Geosyntec Consultants, Inc. (Geosyntec) was retained on behalf of OCI San Fran LLC (the Client) to perform a Phase I Environmental Site Assessment (ESA) for the property located at 121 East Grand Avenue, South San Francisco, California 94080 (the "Site", Figure 1). The Site location, a recent layout, and Site vicinity are provided on the appended Figures.

1.1 Purpose

This Phase I ESA was conducted in general accordance with the scope and limitations of the guidance contained within the ASTM International (ASTM) Practice E1527-13. Deviations or exceptions to the guidance contained in the ASTM E1527-13 standard of practice are described in Section 1.4. The intent of Geosyntec's effort is to provide the User with a Phase I ESA that includes a search for the existence of potential or known surface or subsurface environmental impacts at the Site. For the purposes of this Phase I ESA report, OCI San Fran LLC represents the "User," defined as "the party seeking to use Practice E1527-13 to complete an environmental site assessment of the property…"

The Phase I ESA was conducted to identify, to the extent feasible, "Recognized Environmental Conditions[1]" (RECs) at the Site, as the "REC" term is defined by ASTM E1527-13. This REC definition eliminates from consideration a number of conditions that could fall under the general definition of "environmental" issues and focuses the Phase I ESA on known or potential releases of hazardous substances and petroleum products that Geosyntec believes could have impacted the soil, groundwater, and/or soil vapor at the Site. Such conditions include radon, wetlands, etc.; unless in the case where these out of scope items are specifically included in the Client's scope of work.

1.2 Scope of Services

Geosyntec was authorized by OCI San Fran LLC to conduct the scope of work specified in Geosyntec's proposal on February 25, 2022. The Phase I ESA scope of work included: (i) review of pertinent information/documents provided by OCI San Fran LLC; (ii) review of environmental databases for the Site and in the vicinity of the Site pursuant to the ASTM E1527-13 Standard; (iii) review of historical land usage via historical aerial photographs, fire insurance maps (if available), city directories, topographic maps, and past reports on the Site, as available; (iv) a Site visit to perform a visual reconnaissance of the major Site features; and (v) a report.

[1] As defined by ASTM E1527-13, a Recognized Environmental Condition is: "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. De minimis conditions are not recognized environmental conditions."

This Phase I ESA was conducted under the supervision of Kimberly Brandt, Senior Geologist. Under her direction and oversight, the Site visit was conducted on March 17, 2022 by Megan Ogburn and Kimberly Brandt, and the report was drafted by Megan Ogburn and Ryan Charney, peer reviewed by Maya Sederholm, and senior reviewed by Kimberly Brandt. Ms. Brandt is an "Environmental Professional" (as defined under the ASTM Practice E152713). The professional qualifications of the "Environmental Professional" above are presented in Appendix F.

1.3 Significant Assumptions

Except as may be noted in Geosyntec's proposal, no significant assumptions were taken into account by Geosyntec as part of this project.

1.4 Limitations, Deviations, and Exceptions

This Phase I ESA was performed according to the agreed upon scope of work with OCI San Fran LLC consistent with the ASTM Practice E1527-13, except as follows:

- Due to time and scope limitations in preparing the Phase I ESA, no in-person file review was conducted with local, state, or federal agencies.
- Three elevator shafts are located on the northwest, northeast, and southeast corners of the building. Geosyntec was unable to observe the entirety of the elevator shafts. Geosyntec was also unable to access the mechanical rooms associated with two of the elevators and the interiors of the containers located in the parking lot on the northside of the Site.
- Geosyntec was unable to identify contact information and did not interview former owners/operators of the Site.

This Phase I ESA contains a property description and history, an environmental database review, a summary of visual observations made during the Site reconnaissance, and descriptions of information obtained during interview(s) of person(s) knowledgeable with the Site. The findings and conclusions presented in this Phase I ESA are the result of professional interpretation of the information collected at the time of this study. The Phase I ESA does not necessarily include an exhaustive search of all available records, nor does it include detailed assessment of all Phase I ESA findings. Therefore, Geosyntec cannot "certify" or guarantee that any property is free of environmental impairment; no warranties regarding the environmental quality of the property are expressed or implied.

1.5 Special Terms and Conditions

Except as may be noted in Geosyntec's proposal, no special contractual terms or conditions were taken into account as part of this project.

1.6 User Reliance

This Phase I ESA report has been prepared solely for the benefit of Geosyntec's Client, OCI San Fran LLC and its subsidiaries and affiliated entities. Except as specifically set forth in Geosyntec's proposal to Client to perform this work, no other party shall have the right to rely on Geosyntec's opinions rendered in connection with the Services without Geosyntec's written consent which may be conditioned on the third party's agreement to be bound to acceptable conditions and limitations similar to this Agreement. Please note that Geosyntec's consent to provide a right-to-rely on this report is subject to Client's approval and to agreement to Geosyntec's terms and conditions associated with Geosyntec's performance of this specific scope of work.

2. SITE DESCRIPTION

This section provides a description of the key characteristics of the Site. This description is derived from information provided by the Client and information gathered during the reconnaissance unless referenced otherwise.

2.1 Site Location and General Characteristics

According to the San Mateo County Assessor's Office, the Site consists of San Mateo County Assessor Parcel Number (APN) 015024230, which encompasses approximately 2.91 acres. The Site is located southeast of Poletti Way and between East Grand Avenue (south of the Site) and East Grand Avenue (north of the Site) in South San Francisco, California (see Figures 1 & 2). The Site is currently owned by OCI San Fran, LLC. General vicinity use consists primarily of commercial and industrial properties. The Site is accessed from East Grand Avenue (south of the Site) or from Poletti Way (northwest of the Site). The Site location and layout are shown on the Figures.

A legal description of the Site was provided to Geosyntec within the Preliminary Report dated September 10, 2020 prepared for the Site by First American Title Insurance Company National Commercial Services (see Appendix A, Preliminary Report). Based on a review of historical resources and parcel information, the full legal address for the Site is 121 East Grand Avenue, South San Francisco, California. Current tax parcel/map information is provided in Appendix C.

2.2 Current and Former Uses of the Site

The Site is developed with one three-story hotel and associated courtyard areas (see Figure 2). The hotel building with an approximately 57,623-square-foot footprint, was constructed in 1986, according to the San Mateo County Assessor's Office. Remaining areas of the Site consist of paved parking and landscaped areas.

Based on a review of historic topographic maps, the Site consisted of a small structure on the western side of the Site from at least 1896 to 1899. Based on a review of additional historical

resources, including historical aerial photos, the Site appeared mostly undeveloped, with an unimproved road passing through the southeast corner of the Site from at least 1930 to 1946. By 1946, a drainage feature was observed in the center of the Site. By 1956, the drainage feature was no longer observed, and a rail spur was added parallel to the improved road and the land east of the road paved; infrastructure/equipment extended onto the Site from the structure north of the Site until removed by 1968; and a small structure was observed in the western corner of the Site. By 1968, two man-made surface impoundments were present in the center of the Site. In aerial photographs the Site appeared to be graded in 1974 and 1982. By 1982, the eastern road, rail spur, and paved area were removed. By 1993, the small structure in the western corner of the Site was removed, and the current on-Site building and associated parking lot was observed. The Site was first listed as Comfort Suites in the 1996 city directory. By 2006, the Site was listed as Comfort Suites and Paramount Hospitality Management, by 2012 as Comfort Inn-Airport North, and by 2016 as Comfort Inn.

2.3 Current Use of Adjoining and Nearby Notable Properties

The vicinity is currently a mix of commercial, industrial, and manufacturing, including offices, retail, and biotechnology research/laboratories (see Figure 3). Current uses are summarized below:

- Northwest: Poletti Way followed by railroad tracks, East Grand Avenue, Dubuque Avenue, Bayshore Freeway, Airport Boulevard, and Cadence Apartments (400 Cypress Avenue);
- North: Poletti Way followed by railroad tracks, East Grand Avenue, a vacant lot, and an electrical power station (590 Dubuque Avenue);
- Northeast: East Grand Avenue followed by Audentes Therapeutics and DistributedBio (225 Gateway Boulevard) and Astellas Gene Therapies (201 Gateway Boulevard);
- East: Intersection of East Grand Avenue and East Grand Avenue and then Embassy Suites by Hilton (250 Gateway Boulevard);
- Southeast: East Grand Avenue followed by Jack Drago Park (130 Grand Avenue), a substation (183 Gateway Boulevard), and multi-tenant retail (190 E Grand Avenue);
- South: East Grand Avenue followed by Prologis and Balfour Beatty (100 East Grand Avenue), Max's Bakery and Kitchen (120 East Grand Avenue), and a vacant building (130 East Grand Avenue);
- Southwest: Poletti Way followed by rail tracks, Bayshore Freeway, a building under construction (214-178 Airport Boulevard), and Altitude Apartments (150 Airport Boulevard); and
- West: Poletti Way followed by rail tracks, East Grand Avenue, Bayshore Freeway, Airport Boulevard, Pinefino Apartments (100 Baden Avenue), 76/Circle K (221 Airport

Boulevard), Peet's Coffee (102 Grand Avenue), Furniture & Mattress Liquidators (305 Airport Boulevard), and Cadence Apartments (398 Cypress Avenue).

2.4 Physical Setting

2.4.1 Topography and Geology

The Site is depicted on the United States Geological Survey (USGS) 7.5-minute quadrangle map, San Francisco South, CA. Geosyntec obtained a physical setting report for the area of the Site from Environmental Risk Information Services (ERIS). According to the ERIS report (see Appendix B; ERIS, 2022), the Site has an elevation of approximately 18 feet above mean sea level with a regional decreasing topographic gradient to the southeast. The ERIS report identified Site soils as well-drained urban land – Orthents, and Site geology as Pliocene to Holocene Quaternary alluvium and marine deposits.

2.4.2 Hydrology

According to the USGS quadrangle map, the nearest surface water bodies are Colma Creek (an unlined drainage feature that runs east, south, then east in the vicinity of the Site) approximately 0.4-mile south of the Site, Oyster Point Channel (an extension of San Francisco Bay with piers and harbors) approximately 0.8-mile northeast of the Site, and San Bruno Channel (an extension of San Francisco Bay) approximately 1.4 miles east of the Site.

According to the United States Fish and Wildlife Service, no wetlands are located on the Site. The Site is located in an area of minimal flood hazard as indicated on the Federal Emergency Management Agency Flood Insurance Rate Map for the Site.

According to a geotechnical investigation report prepared by Geocon Consultants, Inc. (Geocon, 2017) for the Site, described in Section 4.5, first groundwater was encountered at depths between 4.5 and 8 feet below ground surface (feet bgs); however, Geocon noted that actual groundwater levels fluctuate seasonally and with variations in rainfall, temperature, and other factors. Geocon did not conclude what direction groundwater flows at the Site (Geocon, 2017). According to the March 2021 Semi-Annual Multimedia Sampling Report, Associated Road Parcel, 0 Associated Road, South San Francisco, California dated April 20, 2021 prepared by Ramboll US Consulting, Inc. (Ramboll) for a property at 0 Associated Road (approximately 500 feet south-southwest of the Site), between 2009 and 2021, first groundwater was encountered at depths between 5.30 and 10.68 feet below ground surface feet bgs and consistently flowed to the southeast, toward San Bruno Channel (Ramboll US Consulting, Inc., 2021). This multi-media sampling report was obtained from the California State Water Resource Control Board's GeoTracker database (GeoTracker Database).

ERIS conducted a search of federal and state water well databases within one mile of the Site (see Appendix B, ERIS, 2022). ERIS identified over 1,000 water well records within one mile of the

Site. Two of the listings were identified in the Public Water Systems Violations and Enforcement database and were located over 0.5 miles north-northwest of the Site; no further information on these wells was identified. The nearest reported water well record is associated with the California Department of Water Resources and is reported approximately 162 feet west of the Site. The depth and construction details of the wells and the depth of groundwater could not be obtained from the provided records. Geosyntec identified a current Public Sampling Point for groundwater monitoring/vapor at 580 Dubuque Avenue, approximately 300 feet from the Site (San Mateo County [SMCo] Health Environmental Health Services, 2021). These wells are associated with a pumping test for future dewatering at this location.

3. USER-PROVIDED INFORMATION

This section describes the information provided to Geosyntec by OCI San Fran LLC (the User of this Phase I ESA). Per ASTM E1527-13, a User Questionnaire was provided to the User to inquire about specialized information related to the Site which was completed and returned to Geosyntec (see Appendix A).

3.1 Title Records

Geosyntec was provided with a Preliminary Report dated September 10, 2020 prepared for the Site by First American Title Insurance Company National Commercial Services. Review of the title report did not identify environmental conditions associated with the Site.

3.2 Environmental Liens or Activity and Use Limitations

The User was not aware of records of liens or activity and use limitations for the Site.

3.3 Specialized Knowledge

The User did not have specialized knowledge of environmental conditions on the Site.

3.4 Commonly Known or Reasonably Ascertainable Information

The User was not aware of commonly known or reasonably ascertainable information (as defined in USEPA All Appropriate Inquiries [AAI]) regarding the Site.

3.5 Valuation Reduction for Environmental Issues

The User was not aware of the valuation of the Site having been reduced or otherwise impacted by environmental issues (as defined in AAI) at the Site.

3.6 Owner, Property Manager, and Occupant Information

For this Phase I ESA, the User supplied Geosyntec with the following contact for the Site: Tonette Tamayo, General Manager, Comfort Inn & Suites SFO Airport North (CA801). Ms. Tamayo provided Geosyntec with access to the Site.

3.7 Reason for Performing This Phase I ESA

Geosyntec understands that the Client engaged Geosyntec to perform this Phase I ESA for the Site to identify "Recognized Environmental Conditions" (as defined in ASTM E1527-13) and potential environmental liabilities associated with the Site in preparation for purchasing the Site.

3.8 Additional Information

The User provided Geosyntec with several documents related to assessments previously prepared for the Site, including the following:

- Phase I Environmental Site Assessment Report, San Francisco Bay Development, 121 East Grand Avenue, South San Francisco, California 94080 dated June 11, 2020 prepared for Phase 3 Properties, Inc. by Partner Engineering and Science, Inc. (Partner).

  At the time of their investigation, Partner did not have any significant findings in the form of a REC, HREC, CREC, or environmental issue. Pertinent features at the Site were the four buildings plus a storage shed, spa, concrete-paved patios and walkways, asphalt-paved parking areas, and landscaped areas. They identified that the Site is designated for commercial development by the City of South San Francisco. In their search of city directories, they found that the Site was occupied by Prime Sou in 1987, Bay City Hospitality Inc. and Comfort Suite in 2005, and Comfort Suites in 2010 and 2014.

  In their database search, Partner identified that the Site was listed on Hazardous Waste Tracking System (HWTS) and Waste Manifest Data (HAZNET) databases in 1997 because "0.23 tons of waste oil and mixed oil were transported to an offsite disposal facility." They did not find this was a significant environmental concern.

  Partner identified two ponds on the Site in the 1963 and 1968 aerial photographs. They concluded that the ponds are not a significant environmental concern, stating that, "It is possible that the ponds were present at the property for sixteen years from 1957 to 1973. Based on the length of time since the ponds were present (at least 39 years), any potential contamination resulting from the ponds is likely to have degraded due to natural attenuation. Also, it is likely that the surface soils at the property were removed, graded, and covered with engineered fill during the construction of the current buildings."

- Geotechnical Investigation, Proposed Mixed-Use Development, 121 East Grand Avenue, South San Francisco, California dated June 30, 2017 prepared for OCI San Fran LLC by Geocon Consultants, Inc.;
- Seismic Risk Assessment, San Francisco Bay Development, 121 East Grand Avenue, South San Francisco, California 94080 dated June 8, 2020 prepared for Phase 3 Properties, Inc. by Partner Engineering & Science, Inc.;
- Zoning Report, Comfort Inn & Suites, 121 East Grand Avenue, South San Francisco, California 94080 dated July 2, 2020 prepared for OCI San Fran LLC by National Due Diligence Services a Division of American Surveying and Mapping, Inc.; and
- Several as-built and site plan figures associated with the Site.

Copies of the pertinent documents with respect to the environmental condition of the Site are included in Appendix A.

4. RECORDS REVIEW

Geosyntec's records review consisted of the following, to the extent available and reasonably ascertainable within the timeframe of the report preparation: i) review of identified federal, state, and local environmental databases; ii) review of historical aerial photographs; iii) review of historical topographic maps; iv) review of city directories; v) review of select public and Client/owner-provided records related to environmental matters; and vi) review of available property tax information.

4.1 Environmental Database Search

4.1.1 Overview

Geosyntec contracted with ERIS to provide portions of the records reviewed as described below. The environmental database search was performed by ERIS in an attempt to ascertain whether the Site or neighboring properties were suspected of having environmental conditions that could have impacted the surface or subsurface at the Site. Specific records and search distances (from the approximate Site boundaries) for the environmental databases were reported by ERIS to be consistent with ASTM Practice E1527-13 and are discussed in the ERIS Database Report (presented in Appendix B). Database descriptions are also included in the ERIS report. Relevant results for the Site and vicinity are discussed in the following sections.

4.1.2 Results – Site

The Site was identified by ERIS under one listing, described below:

- Comfort Suites Hotel is listed on the HAZNET database. The documented wastes associated with the property in 1997 include waste oil and mixed oil.

4.1.3 Results – Vicinity Sites

ERIS identified numerous sites (located within 1/8 miles or projected to be upgradient of the Site) in databases potentially indicative of release (e.g., leaking underground storage tanks, cleanup sites) or in a database indicative of solid waste disposal (SWF/LF) or land use concerns (e.g., historical military sites). Of these, the following were considered to have at least a moderate potential to have impacted the soil, groundwater, and/or soil vapor at the Site:

- South San Francisco Fire Department/Pony Express Corporation/Pony Express Courier Container/Somerset Studios at 110 E. Grand Avenue and 108 Sylvester Road, adjoining the Site approximately 70 feet to the south and hydraulically downgradient of the Site. These properties were identified on the California Hazardous Material Incident Report System (CHMIRS), San Mateo Local Oversight Program List (LOP SANMATEO), and Leaking Underground Storage Tank (LUST) databases (among others). A diesel tank on a big rig spilled 30 gallons which were cleaned up by the Fire Department in 1997. Based on the cleanup by the Fire Department, this incident is not anticipated to have adversely impacted the Site.

  The property also had a reported release of gasoline from an Underground Storage Tank (UST) in 1988 with soil impacted. ERIS indicated that the Site has been completed and closed as of March 16, 2000 as referenced on the GeoTracker Cleanup Sites database. Review of the GeoTracker database did not identify readily available analytical data. Based on the soil only impacts, the reported closure in 2000, and hydraulically downgradient location of this property, this property is not anticipated to have adversely impacted the Site.

- Homart Development Corp./Bethlehem Steel at 801 Gateway Boulevard and 430 Industrial Way, historically occupied the Site and the property to the northeast and east of the Site. This property was identified on the EnviroStor database (among others). This property is further discussed in Section 4.4.2.

- Ryder Truck Rental/Olympian/1X Olympian/Paper Transport/Pacific Gas & Electric (PG&E) East Grand Substation at 122 and 186 E. Grand Avenue, adjoining the Site approximately 90 feet to the southwest and hydraulically downgradient of the Site. This property was identified on the Underground Storage Tank Statewide Environmental Evaluation and Planning System (UST SWEEPS), LUST, GeoTracker, and LOP SANMATEO databases (among others). This property is further discussed in Section 4.4.2.

- Union Pacific Property/Southern Pacific Option Property/Bressie & Company at 0, 500, 600-700, and 600-790 Dubuque Avenue, and Dubuque Avenue adjoining the Site approximately 210 feet to the northwest and hydraulically upgradient or cross-gradient of the Site. This property was identified on the GeoTracker, Voluntary Cleanup Program

(VCP), EnviroStor, UST CLOSURE, LOP SANMATEO, CLEANUP SITES, and LUST databases (among others). This property is further discussed in Section 4.4.2.

- Fibrogen Corporation/Brittania Gateway/CBRE-Britannia Gateway II, LP/Charles River Laboratories/And others at 225 Gateway Boulevard, adjoining the Site approximately 120 feet to the northeast and hydraulically cross-gradient of the Site. This property was identified on the Resource Conservation and Recovery Act (RCRA) Large Quantity Generator (RCRA LQG), GeoTracker, and RCRA non-Corrective Action (CORRACTS) Treatment Storage and Disposal (TSD) Facility (RCRA TSD) databases (among others). This property is further discussed in Section 4.4.2.

- Associated Road Parcel at 0 Associated Road, approximately 400 feet south and hydraulically downgradient of the Site. This property was identified on the CLEANUP SITES database. Additional documents were reviewed and discussed in Section 4.4.2.

- Caltrans Maintenance Station/Caltrans District 4/Caltrans Maintenance STA-SSF/S San Francisco at 296 Airport Boulevard, adjoining the Site approximately 550 feet to the southwest and hydraulically downgradient or cross-gradient of the Site. This property was identified on the LOP SANMATEO, RCRA Small Quantity Generator (RCRA SQG), LUST, and Historical Hazardous Substance Storage Container Information (HIST TANK) databases (among others). Additional documents were reviewed and are discussed in Section 4.4.2.

- South City Ford/90645/Chevron 9-0645/Al Ames Chevron Service/South City Ford Service Center, collectively Airport Boulevard Properties, at 309, 315, 401, 411, and 421 Airport Boulevard, as well as 401 and 407 Cypress Avenue and 216 Miller Avenue, adjoining the Site approximately 600 feet to the west and hydraulically upgradient of the Site. This property was identified on the LUST, Certified Unified Program Agency San Mateo (CUPA SANMATEO), HIST TANK and RCRA SQG databases. Additional documents were reviewed and are discussed in Section 4.4.2.

Geosyntec reviewed the State of California, SWRCB GeoTracker database for information regarding closed cases of LUSTs. Records were on file for vicinity properties but not for the Site. The search identified 16 properties within approximately one-half mile that could be hydraulically upgradient or cross-gradient. Based on their reported closures with regulatory agencies, they are

not anticipated to have adversely impacted the Site, and are therefore they are listed below, but not independently reviewed.

- Housing Construction; 821 Cypress, South San Francisco, CA 94080; approximately 1,800 feet north.
- Price Company; 479 Airport Boulevard S, South San Francisco, CA 94080; approximately 1,300 feet north.
- Rollin J. Lobaugh; 930 Linden, South San Francisco, CA 94080; approximately 2,300 feet north.
- Patel Property; 720 Cypress, South San Francisco, CA 94080; approximately 1,350 feet north.
- Texaco South City (INDEP); 905 Linden, South San Francisco, CA 94080; approximately 2,550 feet northwest.
- Lonati Properties; 900 Linden, South San Francisco, CA 94080; approximately 2,400 feet northwest.
- Liberty Market; 812 Linden, South San Francisco, CA 94080; approximately 2,050 feet northwest.
- Volonte Automotive; 616 Linden, South San Francisco, CA 94080; approximately 1,350 feet northwest.
- Shell; 515 South Airport Boulevard, South San Francisco, CA 94080; approximately 850 feet northwest.
- Blandini Trust; 545 Airport Boulevard, South San Francisco, CA 94080; approximately 700 feet northwest.
- Olympic Auto Service; 401 Linden, South San Francisco, CA 94080; approximately 1,400 feet west.
- Galli's Bakery; 324 Grand Avenue, South San Francisco, CA 94080; approximately 1,500 feet west.
- Unocal Station; 221 Airport Boulevard, South San Francisco, CA 94080; approximately 750 feet west.
- Pierce Trucking; 201 South Linden Avenue, South San Francisco, CA 94080; approximately 1,500 feet west.
- Airport Boulevard Service Station; 190 Airport Boulevard, South San Francisco, CA 94080; approximately 850 feet southwest.

4.1.4 Unplottable Properties

ERIS identified 20 "unplottable sites" which could not be mapped by ERIS due to the lack of sufficient address information. Geosyntec attempted to identify the relative location of these sites. Listings were either incorporated into previously discussed pertinent sites or identified as not being associated with the Site. Based on information reviewed, in Geosyntec's opinion, these listings are unlikely to have adversely impacted the Site.

4.2 Historical Use Information

Geosyntec contracted ERIS to provide standard historical records, including aerial photographs, topographic maps, fire insurance maps, and city directories. The following documents were provided to Geosyntec for review and are included in Appendix B:

- Historical aerial photographs – 1930, 1941, 1946, 1956, 1960, 1968, 1974, 1982, 1993, 2000, 2005, 2006, 2010, 2012, 2014, 2016, 2018, and 2020;
- Historical topographic maps – 1896, 1899, 1915, 1939, 1947, 1950, 1956, 1968, 1973, 1980, 1995, 1996 and 2015;
- Fire insurance maps – no information was found for the Site or adjacent properties; and
- City directories – 1961, 1966, 1970, 1977, 1982, 1987, 1991, 1996, 2001, 2006, 2012, 2016 and 2020.

A summary of the findings from the review of the historical sources is provided in Table 1 and is summarized below:

- Site – By 1896 and through at least 1899, a small structure was depicted on topographic maps on the western side of the Site. By 1930, an unimproved road was observed in aerial photographs passing through the southeast corner of the Site. By 1947, the road was depicted on a topographic map as improved. A drainage feature was observed in the Site center by 1946 which was not observed by 1956. Two man-made surface impoundments were observed in the Site center by 1968. By 1956, a rail spur was added parallel to the improved road (present through at least 1980) and the land east of the road paved; infrastructure/equipment extended onto the Site from the structure north of the Site until removed by 1968; a small structure was observed in the western corner of the Site which remained until construction of the hotel by 1993. In aerial photographs the soil was observed as graded in 1974 and 1982. By 1982, the eastern road, rail spur and paved area were removed. By 1993, the on-Site building and associated parking lot were observed. The Site was first listed as Comfort Suites in the 1996 city directory. By 2006, the Site was listed as Comfort Suites and Paramount Hospitality Management, by 2012 as Comfort Inn-Airport North, and by 2016 as Comfort Inn.

- Surrounding vicinity – By 1896, the Southern Pacific Railroad ran northeast-southwest and east-west within approximately 0.125 miles to west and approximately 0.25 miles to south of the Site. A road ran along the southern border of the Site, immediately north of the San Bruno Canal and San Francisco Bay. A collection of roads and small structures were observed west of the railroad which increased in quantity by 1915. Also by 1915, the Southern Pacific Railroad moves to border the western side of the Site and a spur extends around the peninsula. By 1930, the surrounding land is used industrially, with various large structures observed within approximately 500 feet of the Site. The Bayshore Highway was observed running north-south approximately 400 feet west of the Site. By 1939, a railway was added running east-west across the road from the southern border of the Site. The Bay was filled to the south such that marsh was present within approximately 0.125 miles of the Site; the Bay was then observed within approximately 0.5 miles southeast of the Site. The density of structures west of the freeway increased in 1930, 1939, and 1941. By 1946, a storage yard was observed in aerial photographs within approximately 250 feet of the Site. By 1947, the road south of the Site was developed into a secondary highway, the Bayshore Highway was expanded, and a train station was added to the Southern Pacific Railroad. By 1956, the marsh was filled in such that only a small strip lies to southeast within approximately 0.125 miles and Colma Creek was delineated approximately 2000 feet south of the Site. The storage yard was expanded onto the Site and the surrounding area was developed with large structures to the south, east, and north of the Site. By 1968, further commercial/industrial structures were observed in the surrounding area and the peninsula expands into the San Bruno Canal and San Francisco Bay between Oyster and San Bruno points approximately 1 mile from the Site. In 1974 the structure immediately north of the Site was no longer present. By 1980, a freeway interchange was observed connecting Bayshore Freeway with Interstate 380. By 1993, a highway off-ramp was constructed immediately west and north of the Site such that the Site was surrounded by roads on all sides. City directories list the surrounding properties as commercial, industrial, and manufacturing, including architecture/construction firms, offices, retail, auto shops, chemical, biotechnology research/laboratories, petroleum-related businesses, etc. By 2000, the surrounding areas were developed and appeared similar to present day. Pertinent entities include Stryco Manufacturing Co. (bandsaw welder manufacturer at 129 Sylvester Road; 1982-1987), M&T Chemicals Inc. (producer of chemicals, pesticides, petroleum products at 270 E Grand Avenue; 1966-1982), Pressed & Welded Products (steel company at 216 E Grand Avenue; 1977-1982), and Southern Pacific Depot (railway and train station; 1961-1966).

In summary, the review of aerial photographs, topographic maps, and city directories indicated the Site vicinity historically consisted of manufacturing and industrial operations as well as railroads since at least the late 1800s. There was possible usages indicative of hazardous materials/chemical storage, management/usage, or disposal at the Site that could pose a threat to the soil, groundwater, and/or soil vapor quality at the Site as identified in aerial photographs from 1946 and 1968. Prior

investigation activities associated with the Site and/or historical operations are further described in Section 4.1.3 and 4.4.2.

4.3 Property Tax Records

Based on information provided by the San Mateo County Assessor's Office, the Site address is identified as APN 015024230 (address identified as 121 East Grand Avenue, South San Francisco, California) and owned by OCI San Fran LLC. The Site consists of 2.91 acres improved with a three-story, 57,623 square foot hotel constructed in 1986. The retrieved tax map parcel information is provided in Appendix C of this report.

4.4 Local, County, State, and Federal Files

Geosyntec searched local, county, state, and federal agencies' online databases to search for records regarding the Site. In addition, Geosyntec contracted with Environmental Support Services (ESS) to contact local and state agencies to request and obtain available current or previous documentation of hazardous materials use, storage, and/or unauthorized releases associated with the Site, as readily available. The information ESS received from the agencies is provided in Appendix C. Relevant information is summarized below.

4.4.1 Local Records

4.4.1.1 San Mateo County Environmental Health Department

ESS requested records from the County Environmental Health Department on February 11, 2022. The County responded on February 16, 2022 stating that they had no records for the Site.

4.4.1.2 City of South San Francisco Fire Department

ESS requested records from the Fire Department on February 11, 2022. The Fire Department responded on February 17, 2022 stating that they had no records for the Site.

4.4.1.3 City of South San Francisco Public Works Department

ESS requested records from the City Public Works Department on February 11, 2022. The Public Works Department responded on February 22, 2022 stating that they had no records for the Site.

4.4.1.4 City of South San Francisco Building Department (CSSFBD)

ESS requested records from the City Building Department on February 11, 2022. The Building Department identified records for the Site and responded on February 18, 2022. By 1985, the Site was associated with address 121 East Grand Ave, when the Site was developed into the existing hotel. A Certificate of Occupancy from 1986 lists the owner as R. P. Warmington Company. A Certificate of Occupancy from 1987 lists the owner as Prime South San Francisco. The CSSFBD identified many permits and inspections, of which Geosyntec attempted to review representative

permits and inspections. These documents generally appeared to be related to renovations, elevator inspections, electrical, and plumbing-type work (see Appendix C).

4.4.1.5 Bay Area Air Quality Management District (BAAQMD)

ESS requested records from BAAQMD on February 11, 2022. BAAQMD responded on February 18, 2022 stating that they had no records for the Site.

4.4.2 State Records

4.4.2.1 Regional Water Quality Control Board (RWQCB), San Francisco Bay Region

ESS requested records from SFB-RWQCB on February 11, 2022. SFB-RWQCB responded on February 18, 2022 stating that they had no records for the Site, and that the lead agency is San Mateo County Environmental Health Department.

ESS requested records for pertinent surrounding properties on March 30, 2022. SFB-RWQCB identified State Water Control Board Stormwater Multiple Application and Report Tracking System (SMARTS) records and responded on April 7, 2022. In 2018, 201 Gateway Boulevard and 1000 Gateway Boulevard both issued a Notice of Intent general permit to discharge storm water associated with construction activity (see Appendix C). The 1000 Gateway Boulevard file also includes a risk assessment stating that the site sediment risk factor is low.

4.4.2.2 Department of Toxic Substances Control (DTSC) – Region 2

ESS requested records from DTSC on February 11, 2022. DTSC responded on February 16, 2022 stating that they had no records for the Site.

4.4.2.3 Cal Fire - Office of the State Fire Marshal

ESS requested records from the State Fire Marshal on February 11, 2022. On February 24, 2022 the State Fire Marshal requested an extension to March 9, 2022. The State Fire Marshal responded on March 3, 2022 stating that they had no records for the Site.

4.4.2.4 State of California State Water Resources Control Board (SWRCB), GeoTracker Database

Geosyntec reviewed the State of California Water Resources Control Board GeoTracker database for additional information regarding the Site and adjacent properties between March 11 and 21, 2022. Records were on file for vicinity properties but not for the Site. These records are summarized below.

- Ryder Truck Rental/Olympian/1X Olympian/Paper Transport/PG&E East Grand Substation at 122 and 186 E Grand Avenue, adjoining the Site approximately 90 feet to the southwest and hydraulically downgradient of the Site. This property had a reported release of gasoline from a UST to groundwater in 1990. ERIS indicated that the Site has been

completed and closed as of February 23, 1996 as referenced on the GeoTracker Cleanup Sites database. Due to the reported closure and the hydraulically downgradient location of this property, this property is not anticipated to have adversely impacted the Site.

- Fibrogen Corporation/Brittania Gateway/CBRE-Britannia Gateway II, LP/Charles River Laboratories/And others at 225 Gateway Boulevard, adjoining the Site approximately 120 feet to the northeast and hydraulically cross-gradient of the Site. Soil samples were collected and analyzed for volatile organic compounds (VOCs) in 1997; VOCs were not detected in either the soil or groundwater samples. However, two metals were detected at or above maximum contaminant levels (MCLs) for drinking water: arsenic in groundwater at a concentration of 0.05 milligrams per liter (mg/L; the maximum contaminant level [MCL] is 10 µg/L) and barium at 1.0 mg/L (MCL is 1.0 mg/L). A soil boring in the southwest corner of the property identified lead in soil at a concentration of 250 milligrams per kilogram (mg/kg), below the San Francisco Bay Regional Water Quality Control Board's (Water Board's) Environmental Screening Level (2019, rev. 2) for commercial land use of 320 mg/kg for cancer risk. Based on the analytical results reported and the hydraulically cross-gradient location of this property, this property is not anticipated to have adversely impacted the Site.

- Caltrans Maintenance Station/Caltrans District 4/Caltrans Maintenance STA-SSF/S San Francisco at 296 Airport Boulevard, adjoining the Site approximately 550 feet to the southwest and hydraulically downgradient or cross-gradient of the Site. This property had two 2,000-gallon USTs containing gasoline and diesel associated with a past Caltrans station. The tanks were removed, and impacted soil excavated and removed from the property (TEC Environmental, 2012). Due to the reported case closure and the hydraulically downgradient or cross-gradient located of this property, this property is not anticipated to have adversely impacted the Site.

4.4.2.5 **State of California, DTSC, EnviroStor Database**

Geosyntec reviewed the State of California, DTSC EnviroStor database for additional information regarding the Site and the adjacent properties between March 11 and 21, 2022. Listings for Union Pacific Property on Dubuque Avenue and Airport Boulevard Properties on Airport Boulevard were identified. The pertinent records are summarized below and included in Appendix D.

- Union Pacific Property/Southern Pacific Option Property/Bressie & Company at 0, 500, 600-700, and 600-790 Dubuque Avenue, and Dubuque Avenue adjoining the Site approximately 210 feet to the northwest and hydraulically upgradient or cross-gradient of the Site. Union Pacific RR operated at this location from the 1940s onward and was later split between an improved retail building and land owned by the City of South San Francisco.

In 2017, AllWest Environmental conducted a Phase I ESA that identified an REC of "the potential presence of undocumented bay fill material, associated chemicals that may have been used for dust suppression and weed control along the rail lines including pesticides, herbicides, petroleum hydrocarbons, and toxic preservatives that were used on the wooden rail ties" (Langan, 2021). Between September 21 and 23, 2020 Langan collected groundwater samples which revealed the following:

- Groundwater was measured at the property between 5.5 feet bgs and 11 feet bgs.
- Tetrachloroethene (PCE) was detected at a concentration of 0.42 micrograms per liter (µg/L) in boring E1. This is below its MCL for PCE of 5.0 µg/L.
- Mercury was detected at a concentration of 0.067 µg/L in boring E8 which is below its MCL of 2.0 µg/L.
- Arsenic was detected in groundwater at both borings E1 and E8 at concentrations of 1.7 and 1.4 µg/L, respectively, and below its MCL of 10 µg/L.

The Water Board issued a closure of the UST case on January 28, 2015 stating that groundwater monitoring data indicates that the petroleum plume associated with Tanks 1 and 2 does not extend off-site (Water Board, 2015). A GeoTracker Cleanup Sites database provided in the ERIS report indicates that Tank 3 did not impact the subsurface and disposed of in 2007. The SMCo Health System issued a closure letter for another UST case on March 16, 2011 for Tank 4, although they indicate that "an unknown amount of VOC impacted soil, as well as impacted groundwater, remains in the subsurface at the site in the vicinity of former tank #4" (SMCo Health System, 2011).

Geosyntec identified a current Public Sampling Point for groundwater monitoring/vapor at 580 Dubuque Avenue, approximately 300 feet from the Site (SMCo Health Environmental Health Services, 2021). These wells are associated with a pumping test for future dewatering during development at this location.

Based on the review of the analytical data and the distance of the property from the Site, it is unlikely that this property could adversely impact the Site.

- Airport Boulevard Properties, at 309, 315, 401, 411, and 421 Airport Boulevard, as well as 401 and 407 Cypress Avenue and 216 Miller Avenue, adjoining the Site approximately 600 feet to the west and hydraulically upgradient of the Site. This property was identified by the State Water Resources Control Board's Site Cleanup Program based on elevated trichloroethylene (TCE) detected onsite. An aquifer used for drinking water supply as well as indoor air are potential media of concern, potentially contaminated with dichloroethene (DCE), TCE, and vinyl chloride. The properties are also associated with LUST which had reported releases of gasoline and diesel.

In 2016, West Environmental Services & Technology, Inc. (WEST), conducted a Phase I ESA at Airport Boulevard Properties. The Phase I identified RECs including:

- Releases to groundwater, soil, and soil gas from gasoline USTs and waste oil USTs
- Lead in soil from lead-based paint from pre-1978 building structures
- Potential hazardous substances in soil, soil gas and groundwater from releases during automobile service operations
- Potential migration of VOCs from former automobile repair operations
- Potential hazardous substances and petroleum products in soil from blacksmith shop operation
- Potential for releases of dry-cleaning wastewater at 204 Miller Avenue to migrate beneath the property and for releases of dry-cleaning solvents to soil gas and groundwater
- Potential presence of hazardous substances and petroleum products in soil from releases during use of the property for vehicle parking
- Potential for residual petroleum products and hazardous substance in groundwater
- Potential migration of VOCs in soil gas from historical releases at 305 and 315 Airport Boulevard
- Potential for releases of petroleum hydrocarbons and VOCs to groundwater at 305 and 315 airport boulevard

WEST conducted a Phase II ESA to collect soil, soil gas, and water samples. The response actions taken included excavating approximately 8 feet of soil beneath 400 Cypress Avenue. After those actions, the current environmental Site conditions were summarized as such (West, 2021):

- 398 Cypress Avenue: lead in soil up to 776 mg/kg, above its DTSC-screening level (SL) of 80 mg/kg for residential use. The 95 percent UCL for lead in soil was calculated at 220 mg/kg, which was below the applicable DTSC-SL of 320 mg/kg for commercial use.
- TCE up to 14,000 micrograms per cubic meter (µg/m3), equal to the Site-specific screening level for its intended use as a lobby.
- Groundwater at 8-10 feet below the foundation, flowing to the southeast. VOCs and petroleum hydrocarbons below applicable screening levels, but with high salinity so the groundwater not suited for municipal, industrial, or agricultural uses.

Based on the review of the analytical data and the distance of the property from the Site, it is unlikely that this property could adversely impact the Site.

- Homart Development Corp./Bethlehem Steel at 801 Gateway Boulevard and 430 Industrial Way, historically occupied the Site and property to the northeast and east of the Site. Homart acquired the property in 1980. According to the listings, the Homart property was formerly occupied by Bethlehem Steel, a steel manufacturing/mill/fabrication plant which operated at least 1903 to 1977.

  The Homart property was identified by DTSC to be impacted with metals (including lead, zinc, nickel, and chromium), polychlorinated biphenyls (PCBs), and Total Petroleum Hydrocarbons (TPH). During redevelopment, the California Department of Health Services (now DTSC) and the San Francisco Bay RWQCB requested that Homart investigate the presence of hazardous wastes and potential for a risk to human health.

  In 1982, Kennedy/Jenks Engineers (KJE, 1982) conducted an investigation and remediation in the northwestern portion of the former Bethlehem Steel facility to remove soil, product containing oil, and PCBs. In November 1983, the remediation was certified as being completed by the Department of Health Services. In 1984, a Declaration of Covenants, Conditions, and Restrictions (Declaration) was recorded between Simon-Woolley South San Francisco Hotel and the Department of Health & Human Services (DHS) for Lots 1, 2, 4, 5, 6 and 7, and Parcels 3A, 3C, 8A, and 8B restricting the property to commercial uses with notification requirements to the DHS for soil excavation activities. The Site is located within Parcels 8A and 8B.

  A 1998 report was prepared by Erler & Kalinowski, Inc. (EKI, 1998) to support the reevaluation of Covenant for Parcels A, B, C, 2A, 2B, 2C, Lots 1, 3A, 3B, and 9. Parcels 8A and 8B were not included in this reevaluation. However, based on the analytical data reported in EKI's 1998 report, the DTSC amended the Covenant in 2000 to limit the restrictions to only Parcels 4 and 5 of Lot 9 and Parcel 1 of Lot 1; these parcels are located northeast of the Site. The restrictions for the remaining parcels and lots, including the Site, were rescinded in 2001 (DTSC, 2001).

4.4.2.6 California Department of Conservation Geologic Energy Management Division Database

Geosyntec searched the online California Department of Conservation Geologic Energy Management Division (CalGEM)[2] database for information pertaining to oil and gas wells on the Site. No oil/gas wells or oil fields were identified on the Site or in the general vicinity of the Site.

[2] https://maps.conservation.ca.gov/doggr/wellfinder/#openModal

4.4.3 Federal Records

Review of the USEPA Enforcement and Compliance History Online (ECHO)[3] database did not identify records in connection with the Site. Vicinity listings did not have reported violations that are likely to have adversely impacted the Site. This database is used to track compliance, releases, and other information for facilities handling hazardous materials.

Review of the USEPA National Priorities List (NPL)[4] database did not reveal records in connection with the Site or surrounding properties. This database lists sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories.

Review of the USEPA Envirofacts[5] database did not identify records in connection with the Site addresses. This database is used to track EPA environmental data that may affect air, water, and land anywhere in the United States.

Review of the Air Force Civil Engineer Center website[6] and Base Realignment and Closures Sites website[7] did not reveal military sites in the vicinity of the Site.

4.5 Client- or Owner-Provided Environmental Assessment Documents

The client provided a geotechnical investigation report performed by Geocon Consultants, Inc. in June of 2017. This investigation identified artificial fill at the Site at depths ranging from 7 to 11 feet. One boring contained fill with signs of "lime- or cement-treatment" (see Appendix A, Geocon, 2017). Additionally, Bay Mud was encountered in three soil borings up to a depth of approximately 15.5 feet. The material was described as "soft to medium stiff organic-rich, highly plastic clays with fine sands." No additional pertinent information was obtained from the report.

5. SITE RECONNAISSANCE

5.1 Methodology and Limiting Conditions

A reconnaissance of the Site was conducted by Geosyntec representatives Megan Ogburn and Kimberly Brandt on March 17, 2022. Photographs taken during the reconnaissance are included in Appendix E. Adjoining properties were peripherally observed from the perimeter of the Site.

---

3 https://echo.epa.gov

4 https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=33cebcdfdd1b4c3a8b51d416956c41f1

5 https://enviro.epa.gov/

6 https://ar.afcec-cloud.af.mil/Search.aspx

7 https://www.epa.gov/fedfac/base-realignment-and-closure-brac-sites-state

As part of the Site reconnaissance, Geosyntec looked for evidence of the presence of hazardous substances used, stored, or discarded, and inspected the Site for areas of disturbed or discolored soil, suspect equipment and/or building materials which may contain hazardous substances, areas of distressed vegetation, wastewater discharge areas, storage tanks/septic systems, waste management/disposal areas, lagoons, pits, sumps, surface water management areas, and stained surfaces.

Geosyntec was unable to observe the entirety of the elevator shafts. In addition, Geosyntec was not able to access two of the three mechanical rooms associated with the elevators or access the containers located in the parking lot on the north side of the Site.

5.2 Utility Service & Materials Management Provider Information

At the time of the Site visit, electricity, potable water/sewer, and natural gas were provided at the Site. No overhead electrical lines were observed throughout the Site. Electricity and natural gas are supplied by PG&E, solid waste removal is provided by South San Francisco Scavenger Company, potable water is provided by California Water Service, and additional disposal provided by Blue Line Transfer Inc. No used oil, hazardous waste, or used batteries were reportedly generated at the Site.

5.3 Interior and Exterior Observations

Observations made by Geosyntec during the Site reconnaissance are documented as follows:

Geosyntec Site Reconnaissance Observations		
ASTM Section	**Feature or Condition**	**Description**
Interior and Exterior Observations		
9.4.2.3 & 9.4.2.8	Hazardous Substances or Petroleum Products	A flammable cabinet containing cleaning products and hazardous substances was observed (see photograph 9). No staining or releases associated with the cabinet. Chemicals in the cabinet included: - Five one-gallon gasoline canisters used for landscaping purposes - Eight bottles of aerosol paints - Eight 1-gallon containers of wood stains - Four 1-gallon containers of concrete compound - None tubes of caulk - Six one-gallon containers of paint and paint thinner - One quart of engine oil - Three 1-gallon cans of acetone Approximately four 1-gallon and three 5-gallon containers of paint were observed stacked on the maintenance room floor. One 5-gallon

Geosyntec Site Reconnaissance Observations		
ASTM Section	**Feature or Condition**	**Description**
		container of concrete compound and tile adhesive were also observed. No staining indicative of a spill was observed near the products.
9.4.2.4	Underground Storage Tanks (USTs)	No evidence of USTs was identified.
9.4.2.4	Aboveground Storage Tanks (ASTs)	No evidence of ASTs was identified.
9.4.2.5	Odors	No notable odors were identified. Geosyntec's interviewing effort addressed but did not identify past odor conditions of concern.
9.4.2.6	Pools of Liquids	No pools of liquid indicative of a chemical release were identified. Geosyntec's interviewing effort addressed by did not identify past pools of liquid at the Site.
9.4.2.7	Drums and Containers > 5 Gallons	No drums or containers greater than 5 gallons were identified during Geosyntec's reconnaissance of the Subject Property. Geosyntec's interviewing effort addressed but did not identify such containers.
9.4.2.9	Unidentified Substances/Containers	No unidentified containers were identified during Geosyntec's reconnaissance of the Subject Property. Geosyntec's interviewing effort addressed but did not identify such containers.
9.4.2.10	Polychlorinated Biphenyl (PCB) Items	Four pad-mounted transformers were present at the Site. One transformer was public utility owned transformer (see photograph 13), and three privately-owned transformers were associated with elevators on Site (see photograph 12). The age and PCB content (if any) of the transformers was not reported, and PCB labels were not observed. There was no staining visible on or beneath the transformers. Each of the three elevators was equipped with a hydraulic elevator motor. The PCB content of the hydraulic oil is unknown.
Interior Observations		
9.4.3.1	Heating and Cooling Systems	Forced air heating and cooling systems were observed throughout the building. The rooms were equipped with air conditioning units.
9.4.3.2	Stains/Corrosion	No interior staining was observed. Geosyntec's interviewing effort addressed but did not identify past staining at the Site.
9.4.3.3	Drains and Sumps	Storm drains were observed in the courtyards and parking lot (see photograph 18). Sumps associated with ice machines pump water to floor drains in six vending areas (see photograph 8). One sump and drain were observed in the food preparation room.
Exterior Observations		
9.4.4.1	Pits, Ponds, or Lagoons	No pits, ponds, or lagoons were observed.
9.4.4.2	Stained Soil or Pavement	Staining that appeared to be associated with storm water runoff toward a drain was observed on a cement pad outside the maintenance office. The stain was not oily and is likely stormwater runoff containing dirt (see photograph 19). Staining from vehicle parking was observed on the parking lot (see photograph 16).

Geosyntec Site Reconnaissance Observations		
ASTM Section	**Feature or Condition**	**Description**
9.4.4.3	Stressed Vegetation	No obviously stressed vegetation indicative of a chemical discharge or application was observed at the Site.
9.4.4.4	Solid Waste	General refuse waste and recycling bins were observed on the north side of the building (see photograph 15). No other notable amounts of solid waste were observed at the Site.
9.4.4.5	Wastewater or Stormwater Discharge	No wastewater discharge was observed on the Site, with the exception of domestic waste. Stormwater at the Site drains from the roof of the building through gutters that empty out at the base of the building and runs towards storm drains in the courtyard and parking lot.
9.4.4.6	Wells	No wells (water production or monitoring) were observed at the Site.
9.4.4.7	Septic Systems	No evidence of septic systems was observed at the Site during Geosyntec's visit.

5.4 Adjoining Property Reconnaissance

Geosyntec did not visit the adjoining properties but did observe them from vantage points on the Site and on public roads near the Site. Our limited inspection of adjoining and vicinity properties did not reveal conditions suggesting obvious environmental impairments with the ability to impact the Site at the adjoining properties during the time of our Site reconnaissance.

6. INTERVIEWS

6.1 Interview with Current Owner/Occupant

On March 17, 2022, Ms. Megan Ogburn and Mrs. Kimberly Brandt conducted an interview with Ms. Tonette Tamayo, General Manager of the Comfort Inn & Suites SFO Airport North and the Site owner's representative. Ms. Tamayo indicated that she has been associated with the Site for 16 years. Ms. Tamayo supplied information regarding Site features, operations, and history. The information gathered during the interview is included in this document.

Ms. Tamayo provided us with the utility providers for the Site and indicated that the building was constructed in 1986 and is 57,623 square feet. She indicated that the building has always been a Comfort Inn & Suites but was previously owned by SSF Investments. She has no knowledge of the Site's historical use.

Ms. Tamayo was not aware of any stained soil, sumps, wells, septic tanks, odors, pools of liquid, underground storage tanks, or the condition of the elevator pits at the Site.

The information provided by Ms. Tamayo was in agreement with the information presented throughout this report.

6.2 Interview with Previous Owner/Occupant

Geosyntec was not provided with contact information for any of the former property owners; Geosyntec did not conduct an interview with former owner representatives.

6.3 Interview with Local Agencies

In accordance with the Client agreed-to scope of work associated with this Phase I ESA, Geosyntec did not interview local agency personnel.

7. FINDINGS, OPINIONS, AND DATA GAPS

In the following sections, Geosyntec presents our findings and opinions, data gaps, and conclusions (Sections 7.1 through 7.3) regarding any identified RECs, Controlled RECs (CRECs), Historical RECs (HRECs), and/or de minimis conditions associated with the Site.

7.1 Findings and Opinions

Geosyntec has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of the Site described herein. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report. The Phase I ESA performed by Geosyntec has revealed the following conditions as defined by ASTM:

Recognized Environmental Conditions (RECs)

- No RECs were identified during the course of this assessment.

Controlled Recognized Environmental Conditions (CRECs)

- No CRECs were identified during the course of this assessment.

Historical Recognized Environmental Condition (HREC)

- Historical Land Use Restriction: The Site and adjoining land to the northeast and east were historically occupied by Bethlehem Steel, a metal processing plant, from at least 1903 to 1977. Portions of the Bethlehem Steel facility to the northeast were identified as impacted with metals and polychlorinated biphenyls, and in 1984 a Declaration of Covenants, Conditions & Restrictions (Covenant) was executed for the Site (identified as parcels 8A and 8B in the Covenant) and other parcels associated with the former Bethlehem Steel facility with the Department of Toxic Substances Control. The Covenant for the Site and several other parcels and lots were rescinded in 2001. Therefore, this finding is an HREC for the Site.

De Minimis Conditions

- Historical On-Site and Adjoining Railroad Spur: A railroad spur traversed the eastern portion of the Site from at least 1956 to 1980 and a mass transit railroad has bordered the Site to the west since at least 1896. Railroads can be associated with the use of petroleum products, pesticides, and heavy metals, which may have impacted shallow soils at the Site. However, because these uses cannot be ascertained, they are classified as a de minimis condition.

7.2 Business Environmental Risk

- A business environmental risk is defined by ASTM International Standard E1527-13 as a risk that can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of the parcel or commercial real estate, not necessarily limited to those environmental issues required to be investigated in this practice. As discussed above, the Site was historically part of the former Bethlehem Steel property, and metals and polychlorinated biphenyl impacted soils and material were identified and remediated in other portions of the former Bethlehem Steel property. Land use restrictions associated with the remedial activities have been rescinded. Independent of contamination identified and remediated in association with the historical operations, a review of the aerial photographs indicates that a drainage feature and surface impoundments were present on the Site from at least 1943 to approximately 1974. No information was available regarding the use of the drainage feature or surface impoundments; however, artificial fill was identified on the Site during a geotechnical investigation conducted in 2017. The source of the fill material is unknown, and therefore there is the potential for residual contamination. In addition, current regulatory screening levels for evaluating hazardous materials are more stringent than when DTSC rescinded the Covenant. In support of proposed redevelopment activities, pre-characterization sampling for construction management purposes could evaluate the presence of residual chemicals that exceed current screening levels. With the proposed redevelopment of the Site that includes two to three levels of subterranean parking, it is likely that the soil excavation activities during construction would mitigate any remaining residual soil contamination. For this reason, the potential presence of residual chemicals has been identified as a BER.

7.3 Data Gaps

In accordance with ASTM E1527-13, this section documents data gaps in the information obtained and reviewed as part of this Phase I ESA and discusses the associated significance. A data gap is defined as being "a lack of or inability to obtain information required by this practice

[ASTM E1527-13] despite good faith efforts by the environmental professional to gather such information". Data gaps identified included the following:

- Due to time and scope limitations in preparing the Phase I ESA, no in-person file review was conducted with local, state, or federal agencies.
- Three elevator shafts are located on the northwest, northeast, and southeast corners of the building. Geosyntec was unable to observe the entirety of the elevator shafts.
- Environmental Support Services corresponded with the City of South San Francisco Building Department and identified building permits and inspections for the Site. Geosyntec attempted to review representative permits and inspections. These documents generally appeared to be related to renovations, elevator inspections, electrical, and plumbing-type work (see Appendix C).
- Geosyntec was unable to identify contact information and did not interview former owners/operators of the Site.

Collectively, in Geosyntec's opinion, none are considered to be significant with respect to identification of additional RECs for the Site. These data gaps have been considered in our findings.

7.4 Non-Scope Considerations

7.4.1 Water Damage or Mold

The Site building was constructed in 1986. Ms. Tonette Tamayo, General Manager of the Comfort Inn & Suites SFO Airport North, was not aware of reported water damage or mold issues associated with the Site buildings. In addition, Geosyntec's reconnaissance did not identify readily observable indications of water damage or potential mold. Note that our assessment did not include a thorough review of all building spaces and areas of water damage or mold may be present in areas not readily observable.

7.5 Conclusions

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527 of 121 East Grand Avenue, South San Francisco, California 94080 the property. Any exceptions to, or deletions from, this practice are described in Section 1.4 of this report.

This assessment has revealed no evidence of CRECs in connection with the Site except for the REC described in Section 7.1. One REC, one HREC, and two *de minimis conditions* were identified.

8. REFERENCES

ASTM, 2013, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment.

Department of Toxic Substances Control, 2001. Release of Environmental Covenants Conditions and Restrictions. October 9.

Environmental Risk Information Services (ERIS), 2022 City Directory, 121 East Grand Avenue, South San Francisco, California, Order No. 220211010031. February 14.

ERIS, 2022. Database Report, Order No. 220211010031. February 16.

ERIS, 2022. Fire Insurance Maps, 121 East Grand Avenue, South San Francisco, California, Order No. 220211010031. February 13.

ERIS, 2022. Historical Aerials, 121 East Grand Avenue, South San Francisco, California, Order No. 220211010031. February 16.

ERIS, 2022. Physical Setting Report, 121 East Grand Avenue, South San Francisco, California, Order No. 220211010031. February 16.

ERIS, 2022. Topographic Maps, 121 East Grand Avenue, South San Francisco, California, Order No. 220211010031. February 17.

Erler & Kalinowski, Inc. (EKI), 1998. Reconsideration of Land Use Restrictions, The Gateway, South San Francisco, California, (EKI 960016.01). July 10.

First American Title Insurance Company National Commercial Services, 2020. Preliminary Report. September 10.

Geocon Consultants, Inc., 2017. Geotechnical Investigation, Proposed Mixed-Use Development, 121 East Grand Avenue, South San Francisco, California. June.

Kennedy-Jenks Engineers (KJE), 1982. Cleanup Report, Former Fuel Oil Tank Site at The Gateway Project, Homart Development Co., South San Francisco, CA. August.

National Due Diligence Services a Division of American Surveying and Mapping, Inc., 2020. Zoning Report, Comfort Inn & Suites, 121 East Grand Avenue, South San Francisco, California 94080. July 2.

Partner Engineering & Science, Inc., 2020. Seismic Risk Assessment, San Francisco Bay Development, 121 East Grand Avenue, South San Francisco, California 94080. June 8.

Ramboll US Consulting, Inc., 2021. March 2021 Semi-Annual Multimedia Sampling Report, Associated Road Parcel, 0 Associated Road, South San Francisco, California. April 20.

San Mateo County Health Environmental Health Services, 2021. 2010 Monitoring Wells-Installation/Destruction. October 13.

San Mateo County Health Services Agency Environmental Health Services Division, 1997. Environmental Health Permit. May 28.

San Mateo County Health System, Case Closure, Remedial Action Oversight of Former Tank #4, Bressie and Company, 600-790 Dubuque Avenue, South San Francisco, California. March 16.

State Water Resources Control Board, 2015. Order WQ 2015-0005-UST. January 25.

TEC Environmental, 2012. Monitoring Well Installation and Sampling Report. November 29.

WEST, 2021. Operation and Maintenance Plan, Cadence-Phase 1, Airport Boulevard Properties, South San Francisco, California. October.

9. SIGNATURE BY ENVIRONMENTAL PROFESSIONAL

"I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312." The below-signed professional's qualifications are included in Appendix F.

DRAFT

_____

Signed by Kimberly Brandt, Senior Geologist - Geosyntec Consultants

TABLES

Table 1
Historical Records Review – Geosyntec Observations
121 East Grand Avenue
South San Francisco, California

Aerial Photographs [1]	Topographic Maps	City Directories
Site: 1930: An unimproved road traverses through the southeast corner of the Site; disturbed soil is noted west of the road. No structures are on the Site. 1941: The road is still present and no structures are on the Site. 1946: A drainage feature is located in the center of the Site and the road is still present. 1956-1960: A drainage feature is located in the center of the Site and the road is still present. The land east of the road is paved. Infrastructure/equipment north of Site extends onto Site. A small structure is present in the western corner of the Site. 1968: Infrastructure equipment associated with the north structure has been removed. Two surface impoundments are located in the center of the Site; however, the resolution of the photograph is low. 1974: The eastern road and paved area still remain; the small western structure remains. The soil at the Site appears to have been graded. 1982: The eastern road and paved area have been removed. The small western structure still remains. The soil at the Site appears to have been graded. 1993: A hotel is present on the Site; the land surrounding the hotel has been paved for parking. 2000-2020: No change. **Vicinity:** 1930: Land northeast to southeast of Site are used industrially: various large structures within approximately 500 feet and heavily disturbed soil. A large road on the south border of Site; marshland is south of the road. A rail line runs northeast-southwest within approximately 100 feet west of the Site. The freeway runs north-south approximately 400 feet west of the Site; the land west of the freeway is used residentially and commercially. 1941: Higher density of structures area west of the freeway. 1946: Marshland south of the road is partially filled in. A storage yard is within approximately 250 feet of the Site. 1956-1960: Increased fill of marshland; delineation of Colma Creek approximately 2000 feet south of Site. Expansion of storage yard onto Site. Commercial/industrial development of large	**Site:** 1896: Small structure depicted on the western side of Site. 1899: Land grant boundary through middle of Site running southwest to northeast. Small structure no longer depicted. 1915: The Site is vacant. 1939: Unimproved road through southeast corner of Site. 1947-1950: Land grant boundary reappears, passes through the middle of Site running southwest to northeast. Road in southeast corner of Site was improved. 1956: Rail spur (present through at least 1980) parallel to improved road in southeast corner of Site. 1968-80: Two small structures depicted on western side of Site. 1995: No structures depicted. Land grant boundary feature remains. **Vicinity:** 1896-1899: Small structures present along roadways within approximately 0.125 miles west of the Site. Southern Pacific Railroad runs northeast-southwest and east-west within approximately 0.125 miles to the west and approximately 0.25 miles to the south of Site. The Site is bordered by a road on its southern side and located immediately north of San Bruno Canal and San Francisco Bay. A mountainous area lies approximately 1 mile north of the Site. 1915: Increased development of the northeast-southwest railway which now immediately borders the western side of the Site. A railway spur extends around the peninsula. The appearance of small and large structures on the peninsula and an increased number of structures west of the Site. 1939: Bayshore Highway runs generally north-south approximately 0.2 miles west of Site. Increased roads surrounding Site; a road is between railway and western border of Site. Increased number of structures along rail the way; two large structures within approximately 0.25 miles northeast of Site. Addition of a railway running east-west across the road from the southern border of Site; the Bay is filled in such that marsh is present within approximately 0.125 miles south of Site and the Bay is within approximately 0.5 miles southeast of Site. 1947-1950: Road directly south of Site developed into secondary highway; large structures (commercial/industrial) within 0.25 miles east and north of Site and around the peninsula. Train station added to Southern Pacific Railroad on the western border of Site. Expansion of Bayshore Highway. Belle Air Reservation approximately 1 mile south of Site. 1956: Large structures appear within approximately 0.125 miles south of the Site. The marsh is filled in such that only a small strip lies to the southeast within approximately 0.125 miles. 1968: Commercial/industrial development of the surrounding area with many structures. More parts of the marshes/San Bruno Canal/Bay filled in and developed; extension of land between Oyster and San Bruno points approximately 1 mile from Site; addition of a marina east of Oyster Point; extension of land at Sierra Point over 1 mile from Site. 1973: Higher density of structures; expansion of land at Oyster Point.	**Site:** 1961-1991: Street address not listed. 1996-2001: Street address listed as Comfort Suites. 2006: Street address listed as Comfort Suites and Paramount Hospitality Management. 2012: Street address listed as Comfort Inn-Airport North. 2016-2020: Street address listed as Comfort Inn. **Vicinity:** 1961: Sylvester Road not listed. Businesses listed on East Grand Avenue are commercial/industrial, including offices, retail, auto shops, electric, petroleum-related businesses, etc. Pertinent entities include Southern Pacific Depot, Bethlehem Steel Co, City of SSF Fire House, Victrylite Candle Co, Applied Electronics, and Dons Auto Wreckers. 1966: Businesses listed on Sylvester Road and East Grand Avenue are commercial/industrial, including offices, retail, electric, chemical, auto shops, petroleum-related businesses, etc. Pertinent entities on Sylvester Road include Nelson Kent Refrigeration and Anderson Electrical Corporation. Pertinent entities on East Grand Avenue include Southern Pacific Depot, Pacific Motor Trucking, Bergeson Wholesale Electric, Proler Steel Corporation, M&T Chemicals Inc, Cocconi Electric Co, and Mence Chemical MFG. 1970: Businesses listed are commercial/industrial/manufacturing including offices, chemical, laboratory, electric, auto shops, petroleum-related businesses, etc. Pertinent entities on Sylvester Road include International Tool Supply Inc and Hunt-Spiller Manufacturing Division. Pertinent entities on East Grand Avenue include Cochin J D Manufacturing Co, Bergesen Wholesale Electric Inc, Whiteway Manufacturer Co, Mine Industries Inc, Goodall Rubber Co, Georgia-Pacific Corporation, M&T Chemicals Inc, Tire Jobbers Inc, California Tire Co. 1977: Businesses listed are commercial/industrial/manufacturing including chemical, medical, retail, construction, offices, auto shops, petroleum-related businesses, etc. Pertinent entities on East Grand Avenue include Bergesen Wholesale Electric, Keiths Tire Center, Georgia Pacific Cntr/Corp, M&T Chemicals Inc, Haleja Construction, Wilkinson Construction, Boss Manufacturing, and Vespa of Amer Corp. Pertinent entities on Sylvester Road include DTC Tool Company, Golden State Wax Co, Sunset Fiber Inds, and Hunt Spiller Mfg. 1982: Businesses listed are commercial/industrial/manufacturing including chemical, medical, retail, construction, offices, auto shops, petroleum-related businesses, etc. Pertinent entities on East Grand Avenue include Bergesen Wholesale Electric, Pressed & Welded Prod, Motoramic Inc, Consltd Electrical Distb, Georgia Pacific Corrugtd/Safety/Tissue, M&T Chemicals Inc, CA Tire Co, and Bosa MFG Co Industr. Pertinent entities on Sylvester Road include DTC Tool Company, Stryco Mfg Co, and Golden St Wax Co. 1987: Businesses listed are commercial/industrial/manufacturing including offices, electric, retail, construction, auto shops, petroleum-related businesses, etc. Pertinent entities on East Grand Avenue include Mallory D N Distb, Bel Elec Supply, Motoramic Inc, Consltd Elctl Distb, Georgia Pacific Corp/Lable/Safety/SL&PLNT/Tissue, and CA Tire Co. Pertinent entities on Sylvester Road include DTC Tool Company, Stryco Mfg Co, and Golden St Wax Co. 1991: Businesses listed are commercial/industrial including retail, construction, electrical, offices, etc. Pertinent entities on East Grand Avenue include Bell Electrical Supply Inc, Consltd electrical Distb, and Georgia Pacific SL&PLNT/Tissue. No pertinent entities on Sylvester Road. 1996: Businesses listed are commercial/industrial including retail, auto shops, construction, laboratory, offices, hospitality, etc. Pertinent entities on East Grand Avenue include Levan Auto Body Parts, LS Distributors, Atlas AC/Furnace/Heating, Desco Drilling Equipment, and Georgia Pacific Corp. No pertinent entities on Sylvester Road. 2001: Businesses listed are commercial/industrial including retail, construction, laboratory, offices, hospitality, etc. Pertinent entities on East Grand Avenue include Atlas Heating & Ventilating Co Ltd. No pertinent entities on Sylvester Road.

Table 1
Historical Records Review – Geosyntec Observations
121 East Grand Avenue
South San Francisco, California

Aerial Photographs [1]	Topographic Maps	City Directories
structures to south, east, and north of Site. Expansion and partial relocation of freeway west of Site. 1968: More structures built to north and south of Site. Structure immediately north of Site decreases in size. 1974: Structure immediately north of Site no longer present. 1982: Buildings removed north-east of Site between southern road and railway. 1993: Road constructed immediately west and north (highway off-ramp) of Site; Site surrounded by roads on all sides. A road within approximately 500 feet east of the Site; three structures have been constructed and the area alongside the road has been paved. 2000: All surrounding area commercially developed. 2005-2020: No change.	1980: More expansive freeway system connecting Bayshore Freeway to Interstate 380; higher density of structures. 1995: Structures no longer depicted on the map. Road constructed along the north border of Site; Site now surrounded by roads. A second marina has been constructed west of Oyster Point. 1996-2015: No notable changes.	2006: Businesses listed are commercial/industrial including retail, laboratory, offices, hospitality, etc. A pertinent entity on East Grand Avenue includes Atlas Heating of Marin/Heating & Ventilating Co LTd. No pertinent entities on Sylvester Road. 2012: Businesses listed on East Grand Avenue are commercial/industrial including retail, restaurants/catering, hospitality, etc. No pertinent entities on East Grand Avenue. Sylvester Road is not listed. 2020: Businesses listed are commercial/industrial including retail, restaurant/catering, hospitality, etc. No pertinent entities on East Grand Avenue. Pertinent entities on Sylvester Road include Edlen Electrical Exhibition and Mina Metals Co.

Notes:
1. Additional aerial photography review was completed using Google Earth when available.
2. Fire insurance maps provided by ERIS do not provide coverage for the Site or immediate vicinity.

FIGURES



Site Location Map

121 East Grand Avenue
South San Francisco, California

Geosyntec consultants

WR3122	April 2022	Figure 1

P:\GIS\Marketing\2022_02\121EGrandAve\Fig01_SiteLocation.mxd 3/18/2022 1:36:54 PM (Author: KWalton)



Legend

- Transformer
- Public Utility Owned Transformer
- Flammable Cabinet
- Trash Dumpsters and Recycling Bins
- Railroad Tracks
- Site Boundary
- Parcel Boundary

Notes:
- Aerial imagery source: Google Earth Pro, August 2020.

N

0 80 Feet

Site Layout

121 East Grand Avenue
South San Francisco, California

Geosyntec consultants

WR3122 | April 2022

Figure 2

P:\GIS\Marketing\2022_02\121EGrandAve\Fig02_SiteLayout.mxd 3/25/2022 11:14:15 AM (Author: KWalton)



Legend

Railroad Tracks

Site Boundary

Parcel Boundary

Notes:
- Aerial imagery source: Google Earth Pro, August 2020.

N

0 170 Feet

Site Vicinity

121 East Grand Avenue
South San Francisco, California

Geosyntec consultants

WR3122 | April 2022

Figure 3

P:\GIS\Marketing\2022_02\121EGrandAve\Fig03_SiteVicinity.mxd 3/25/2022 1:18:32 PM (Author: KWalton)

Mail Processing Center
Federal Aviation Administration
Southwest Regional Office
Obstruction Evaluation Group
10101 Hillwood Parkway
Fort Worth, TX 76177

Aeronautical Study No.
2021-AWP-7652-OE

Issued Date: 09/09/2021

Nick Johnson
Johnson Aviation, Inc.
6524 Deerbrook Road
Oak Park, CA 91377

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure:	Building 121-3b
Location:	South San Francisco, CA
Latitude:	37-39-17.25N NAD 83
Longitude:	122-24-15.00W
Heights:	16 feet site elevation (SE)
	295 feet above ground level (AGL)
	311 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure would have no substantial adverse effect on the safe and efficient utilization of the navigable airspace by aircraft or on the operation of air navigation facilities. Therefore, pursuant to the authority delegated to me, it is hereby determined that the structure would not be a hazard to air navigation provided the following condition(s) is(are) met:

As a condition to this Determination, the structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4,5(Red),&15.

Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

_____ At least 10 days prior to start of construction (7460-2, Part 1)
__X__ Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

See attachment for additional condition(s) or information.

The structure considered under this study lies in proximity to an airport and occupants may be subjected to noise from aircraft operating to and from the airport.

This determination expires on 03/09/2023 unless:

(a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
(b) extended, revised, or terminated by the issuing office.
(c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is subject to review if an interested party files a petition that is received by the FAA on or before October 09, 2021. In the event a petition for review is filed, it must contain a full statement of the basis upon which it is made and be submitted to the Manager of the Rules and Regulations Group. Petitions can be submitted via mail to Federal Aviation Administration, 800 Independence Ave, SW, Washington, DC 20591, via email at OEPetitions@faa.gov, or via facsimile (202) 267-9328.

This determination becomes final on October 19, 2021 unless a petition is timely filed. In which case, this determination will not become final pending disposition of the petition. Interested parties will be notified of the grant of any review. For any questions regarding your petition, please contact Rules and Regulations Group via telephone – 202-267-8783.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

This aeronautical study considered and analyzed the impact on existing and proposed arrival, departure, and en route procedures for aircraft operating under both visual flight rules and instrument flight rules; the impact on all existing and planned public-use airports, military airports and aeronautical facilities; and the cumulative

impact resulting from the studied structure when combined with the impact of other existing or proposed structures. The study disclosed that the described structure would have no substantial adverse effect on air navigation.

An account of the study findings, aeronautical objections received by the FAA during the study (if any), and the basis for the FAA's decision in this matter can be found on the following page(s).

If we can be of further assistance, please contact Daniel Shoemaker, at (206) 231-2989, or dan.shoemaker@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-AWP-7652-OE.

Signature Control No: 480828545-494091127 (DNH)
Steve Phillips
Manager, Obstruction Evaluation Group

Attachment(s)
Additional Information
Map(s)

Aeronautical Study Numbers 2021-AWP-7644-OE through 2021-AWP-7655-OE

Abbreviations

AGL - above ground level	AMSL - mean sea level	RWY - runway
VFR - visual flight rules	IFR - instrument flight rules	nm - nautical mile

Part 77 - Title 14 Code of Federal Regulations (CFR) Part 77, Objects Affecting Navigable Airspace

1. LOCATION OF PROPOSED CONSTRUCTION

This proposal is for a 295-foot AGL (311-foot AMSL) office building, which, at its closest point (2021-AWP-7646-OE), will be located approximately 9914 feet (1.63 nm) north of the RWY 10L threshold at San Francisco International Airport (SFO), CA. The SFO airport elevation is 13 feet AMSL.

To facilitate the public comment process, the 12 corners of the building filed for evaluation were circularized under Aeronautical Study Number 2021-AWP-7652-OE, which is the tallest southeastern-most corner of the building and the highest point of the building closest to the nearest runway. The Aeronautical Study Numbers, coordinates, and heights for these 12 corners are:

2021-AWP-7644-OE	37-39-19.59N	122-24-17.32W	265 ft. AGL/281 ft. AMSL
2021-AWP-7645-OE	37-39-17.65N	122-24-13.60W	265 ft. AGL/281 ft. AMSL
2021-AWP-7646-OE	37-39-16.65N	122-24-14.43W	265 ft. AGL/281 ft. AMSL
2021-AWP-7647-OE	37-39-17.99N	122-24-16.99W	265 ft. AGL/281 ft. AMSL
2021-AWP-7648-OE	37-39-16.81N	122-24-18.15W	265 ft. AGL/281 ft. AMSL
2021-AWP-7649-OE	37-39-17.56N	122-24-19.33W	265 ft. AGL/281 ft. AMSL
2021-AWP-7650-OE	37-39-19.26N	122-24-17.25W	295 ft. AGL/311 ft. AMSL
2021-AWP-7651-OE	37-39-17.83N	122-24-14.51W	295 ft. AGL/311 ft. AMSL
2021-AWP-7652-OE	37-39-17.25N	122-24-15.00W	295 ft. AGL/311 ft. AMSL
2021-AWP-7653-OE	37-39-18.32N	122-24-17.06W	295 ft. AGL/311 ft. AMSL
2021-AWP-7654-OE	37-39-17.52N	122-24-17.86W	295 ft. AGL/311 ft. AMSL
2021-AWP-7655-OE	37-39-17.95N	122-24-18.54W	295 ft. AGL/311 ft. AMSL

2. OBSTRUCTION STANDARDS EXCEEDED

The structure is identified as an obstruction under the following Part 77 standard:

a. Section 77.17(a)(2): A height that is 200 feet above ground level or above the established airport elevation, whichever is higher, within three nautical miles of the established reference point of an airport, excluding heliports, with its longest runway more than 3,200 feet in actual length, and that height increases in the proportion of 100 feet for each additional nautical mile of distance from the airport up to a maximum of 500 feet. The 12 corners of the proposed building would exceed the SFO Part 77.17(a)(2) surface by the following amounts:

2021-AWP-7644-OE	Exceeds by 65 feet.
2021-AWP-7645-OE	Exceeds by 65 feet.
2021-AWP-7646-OE	Exceeds by 65 feet.
2021-AWP-7647-OE	Exceeds by 65 feet.
2021-AWP-7648-OE	Exceeds by 65 feet.
2021-AWP-7649-OE	Exceeds by 65 feet.
2021-AWP-7650-OE	Exceeds by 95 feet.

2021-AWP-7651-OE Exceeds by 95 feet.
2021-AWP-7652-OE Exceeds by 95 feet.
2021-AWP-7653-OE Exceeds by 95 feet.
2021-AWP-7654-OE Exceeds by 95 feet.
2021-AWP-7655-OE Exceeds by 95 feet.

b. Section 77.19(a): The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.17, 77.19, or 77.23. The following corners of the proposed building would exceed the SFO horizontal surface by the indicated amounts:

2021-AWP-7645-OE Exceeds by 118 feet.
2021-AWP-7646-OE Exceeds by 118 feet.
2021-AWP-7647-OE Exceeds by 118 feet.
2021-AWP-7648-OE Exceeds by 118 feet.
2021-AWP-7649-OE Exceeds by 118 feet.
2021-AWP-7651-OE Exceeds by 148 feet.
2021-AWP-7652-OE Exceeds by 148 feet.
2021-AWP-7653-OE Exceeds by 148 feet.
2021-AWP-7654-OE Exceeds by 148 feet.

Section 77.19(b): The surface of a takeoff and landing area of an airport or any imaginary surface established under 77.17, 77.19, or 77.23. The following corners of the proposed building would exceed the conical surface at SFO by the indicated amounts:

2021-AWP-7644-OE Exceeds by 112 feet.
2021-AWP-7650-OE Exceeds by 144 feet.
2021-AWP-7655-OE Exceeds by 148 feet.

3. EFFECT ON AERONAUTICAL OPERATIONS

a. The impact on arrival, departure, and en route procedures for aircraft operating under VFR: The proposed building would exceed the SFO Part 77.17(a)(2) surface by 65 to 95 feet, the SFO Part 77 horizontal surface by 118 to 148 feet, and the SFO Part 77 conical surface by 112 to 148 feet.

b. The impact on arrival, departure, and en route procedures for aircraft operating under IFR: None.

c. The impact on all planned public-use airports and aeronautical facilities: None.

d. The cumulative impact resulting from the proposed construction or alteration of a structure when combined with the impact of other existing or proposed structures: None.

4. CIRCULATION AND COMMENTS RECEIVED

The proposal was circulated for public comment on 2 August 2021. The public comment period ended on 8 September 2021, and no responses were received as of that date.

5. DETERMINATION - NO HAZARD TO AIR NAVIGATION

It is determined that the proposed construction would not have a substantial adverse effect on the safe and efficient use of navigable airspace by aircraft.

6. BASIS FOR DECISION

Part 77 establishes standards for determining obstructions to air navigation. A structure that exceeds one or more of these standards is presumed to be a hazard to air navigation unless the obstruction evaluation study determines otherwise. The fact that a proposed structure exceeds a Part 77 surface does not automatically make it a hazard. In this case, the proposed building would exceed the SFO Part 77.17(a)(2) surface by 65 to 95 feet, the Part 77 horizontal surface by 118 to 148 feet, and the Part 77 conical surface by 112 to 148 feet. However, it would have no effect on instrument procedures, and no VFR issues were identified over the course of the obstruction evaluation or raised as a result of the public comment process. Additionally, the proposed building would have no effect on airport facilities or radio/visual navigation and landing aids, and would have no effect on airspace used by the military. The installation of red obstruction lights on the building will make it more visible to pilots operating in the area at night.

7. CONDITIONS

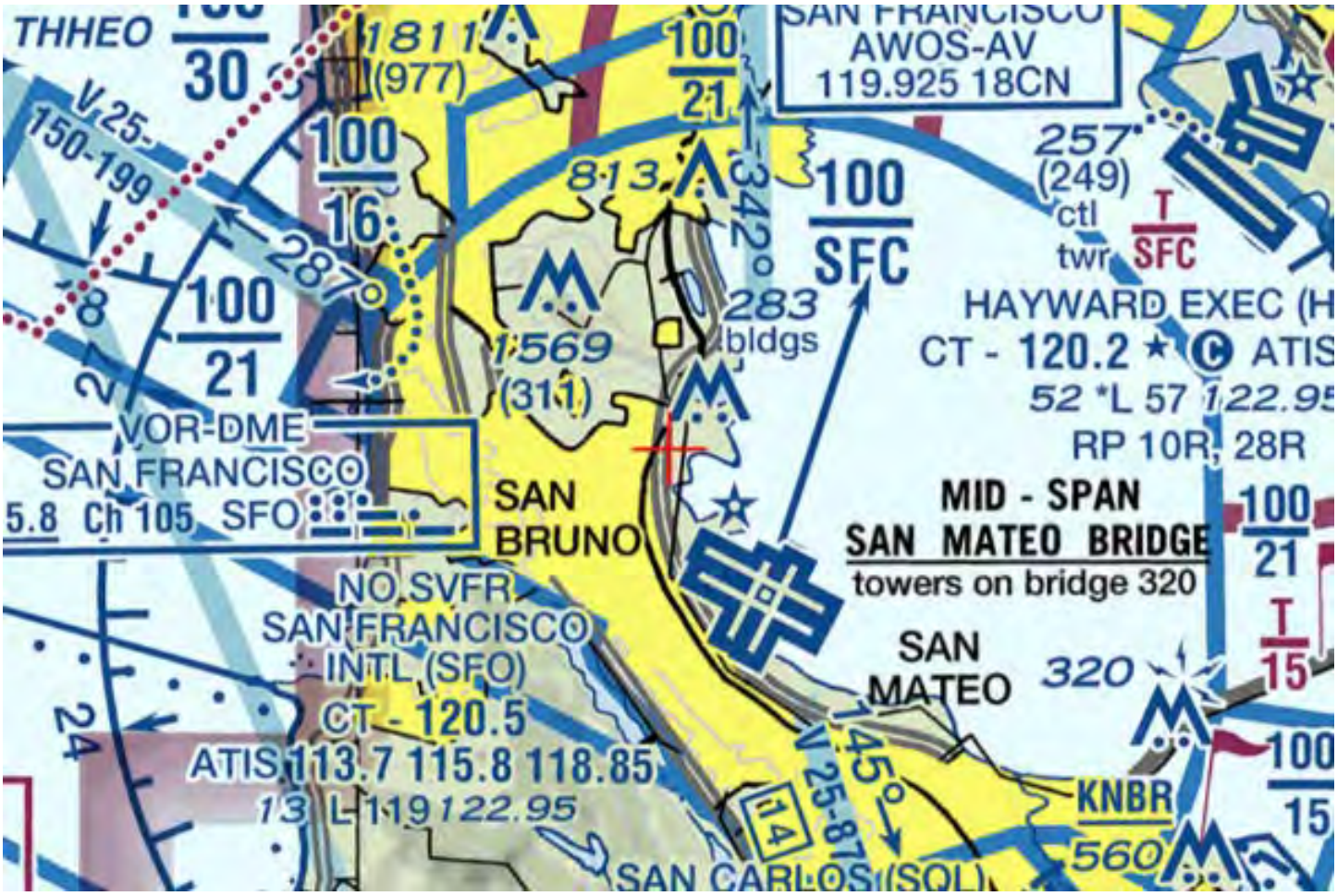
The proposed building would be located in close proximity to the flight paths of aircraft landing on SFO RWYs 10L/R and aircraft departing RWYs 28L/R. Occupants and people outside the building will be exposed to frequent loud jet aircraft noise and the sight of large commercial aircraft operating at very low altitudes near the building. This determination is based only on the effects its physical structure would have on airspace and air traffic control procedures. It does not address compatible land use issues with regard to San Francisco International Airport, which may include further restrictions based on elevation, safety, and noise. The sponsor should contact the SFO Bureau of Planning and Environmental Affairs, at (650) 821-6678, to ensure the proposed use of the land is compatible with the Comprehensive Airport Land Use Compatibility Plan for the Environs of San Francisco International Airport.

NOTE: While the building itself would have no effect on instrument approach or departure procedures at SFO, the cranes used to construct the building may have adverse effects on the instrument procedures. Should the minimum crane height required to construct the proposed building have long-term adverse effects on certain SFO instrument procedures, the crane height restrictions required to avoid those effects may require a reduction of the final height of the building to accommodate the reduced maximum crane height.

TOPO Map for ASN 2021-AWP-7652-OE



Sectional Map for ASN 2021-AWP-7652-OE



3030 Bridgeway Boulevard
Suite 227
Sausalito, CA 94965
415.717.6469
www.sutroscience.com

Hydrology and Water Quality Assessment

121 East Grand Avenue Development Project

121 East Grand Avenue, City of South San Francisco, California.

Prepared for:

Paul Miller
RCH Group, Inc.
6521 Rancho Murieta, CA 95683

April 2022

April 28, 2022

Introduction

Presented here is an assessment of potential adverse effects to water resources from implementation of the 121 East Grand Avenue Project (Project). The assessment has been conducted consistent with evaluation criteria under the California Environmental Quality Act (CEQA). The assessment is based on Project information (i.e., a draft Project Description), as well as other technical reports prepared by the Applicant's consultants, which include a grading plan, a utilities plan, and a stormwater management plan, a Phase I Report, and a Geotechnical Investigation, provided to Sutro Science (Sutro) in March, 2022 by RCH Group.

The following sections provide a summary of the Project, key physical conditions, and regulatory requirements relevant to assessing hydrology and water quality related environmental impacts from implementation of the Project. The existing hydrology and water quality baseline condition relevant to the project site is described, including consideration of surface water features, existing stormwater collection systems, stormwater runoff, groundwater, flood risks, and water quality. Potential adverse effects to water resources that could result from Project implementation, with consideration of regulatory requirements, are then described and are evaluated based on significance criteria relevant to hydrology and water quality presented in Appendix G of the CEQA Guidelines.

Project Background

The Project is located at 121 East Grand (project site) in the City of South San Francisco (City), San Mateo County, California. According to the San Mateo County Assessor, the subject property is 2.91 acres (Assessor Parcel Number 015-024-230).[1] The project site is currently occupied by a Comfort Inn and Suites as well as a single-story laundry/boiler room, asphalt-paved parking areas, spa, concrete-paved patios and walkways, and landscaped areas. The project site is located on the southeast and southwest sides of Grand Avenue and the north side of East Grand Avenue within a mixed commercial and industrial area.

Under the Project, the existing structures on the project site would be demolished and the site cleared, graded, and developed. The Project proposes two 17-story research and development building "wings" connected through a glass atrium atop a two-story podium. The Project would be approximately 280 ft. in height to the top of the mechanical screen and 262 ft to the roof level. The first two floors of the building would provide public amenities and Floors 3 through 17 would include research and development and office uses and would range from 54,843 to 57,145 sq ft in area for a total of 836,865 sq ft. A 700 ft. long lighted and landscaped bicycle and pedestrian lane would traverse the site from Poletti Way, along the western, southern, and eastern frontages of the project site to Grand Avenue and East Grand Avenue. Vehicular parking would include 1,413 spaces and is proposed primarily in two below-grade levels consisting of 229,216 sq ft and an at-grade parking area of approximately 26,191 sq ft. The public amenity space proposed in the first two floors would be 107,100 sq ft. Site coverage would be 69.3%, or 87,849 sq ft. Landscaping is proposed on three of the four sides of the building. The landscape plan proposes trees and bioswale grasses.

[1] Partner, 2020. PHASE I Environmental Site Assessment Report. San Francisco Bay Development. 121 East Grand Avenue, South San Francisco, CA. June 11, 2020.

Environmental Setting

The San Francisco Bay Area has a Mediterranean climate, with cool, dry summers and mild, wet winters. The mean annual precipitation at San Francisco International Airport, located 2 miles southeast, is approximately 20 inches per year with most of the rainfall occurring between November and March.[2] The project site is currently developed. The area surrounding the project site consists of urbanized land, sloping towards San Francisco Bay. No surface water features, including impoundments, wetlands, natural catch basins, settling ponds, or lagoons, are located on the project site. The Project is located in the Colma Creek watershed[3] and the nearest surface water feature to the project site is Colma Creek located approximately 0.40-miles to the south of the subject property. The project site is located approximately 19 feet above mean sea level (MSL) and is generally flat, sloping gently toward the southeast.[4] The depth of groundwater at the project site varies from 4.5 to 16 feet below ground surface (bgs) across the site and fluctuates seasonally between winter and summer based on rainfall and other factors.[5] Shallow groundwater beneath the project site is not utilized for domestic purposes.[6] The direction of groundwater flow is toward San Francisco Bay.

Surface water at the project site is mainly generated by precipitation that cannot be absorbed into the ground in the period following a storm. The majority of the project site is currently characterized as impervious surface. Stormwater from the project site drains primarily as sheet flow across the paved surfaces towards storm water drains located throughout the site and in the public right of way. Site stormwater from roofs, landscaped areas, and paved areas is directed to on-site concrete swales, which drain to the public right of way and to on-site stormwater drains connected to the City's stormwater system which conveys storm runoff to the San Francisco Bay or nearby creeks or channels, such as Colma Creek.

The quality of surface water is primarily a function of land uses in the Project vicinity. Local land uses influence the quality of surface waters through point source discharges (i.e., discrete discharges from discharge pipes) and nonpoint source discharges (e.g., direct storm runoff from slopes). During periods of wet weather, rain carries pollutants and sediments from all parts of a watershed into surface water bodies such as storm drains, streams, rivers, and the San Francisco Bay. In an urban setting, natural drainage patterns have been altered and stormwater runoff, as well as non-storm discharges (irrigation water, accidental spills, washdown water, etc.), pick up sediments and contaminants from land surfaces, and transport these pollutants into surface and groundwater. These diffuse sources of pollutants include parking lots, bare earth at construction sites, and a host of many other sources. Common pollutants of concern from urban stormwater runoff can include pesticides, fertilizers, oils, litter and other debris, and sediment.

Floodplain zones (Special Flood Hazard Areas) are determined by the Federal Emergency Management Agency (FEMA) and used to create Flood Insurance Rate Maps (FIRMs). These tools assist communities in mitigating flood hazards through land use planning. FEMA also outlines specific regulations, intended to be adopted by

---

[2] U.S. Climate Data, San Francisco International Airport, https://www.weather.gov/wrh/Climate?wfo=mtr, accessed April 27, 2022.

[3] Givler and Sowers, 2007. Creek and Watershed Map of Daly City and Vicinity. Historical Wetlands Research by the San Francisco Estuary Institute, published by the Oakland Museum of California.

[4] Partner, 2020. PHASE I Environmental Site Assessment Report. San Francisco Bay Development. 121 East Grand Avenue, South San Francisco, CA. June 11, 2020.

[5] Geocon Consultants, Inc., March 2021. Preliminary Geotechnical Investigation . March, 2021.

[6] Partner, 2020. PHASE I Environmental Site Assessment Report. San Francisco Bay Development. 121 East Grand Avenue, South San Francisco, CA. June 11, 2020.

the local jurisdictions, for any construction, whether residential, commercial, or industrial, within 100-year floodplains. The 100-year floodplain denotes an area that has a 1 percent chance of being inundated during any 12-month period. The 500-year floodplain denotes an area that has a 0.2 percent chance of being inundated during any 12-month period. The Project site is in Flood Zone X, outside the 100-year or 500-year flood zones.[7]

Regulatory Setting

This section describes the water resources related federal, State, and local laws, ordinances, and regulations relevant to the construction and long-term use of the Project. Described are the key regulations and regulatory requirements that are designed to protect water resources and that are applicable to construction and long-term use of the Project.

Clean Water Act - National Pollution Discharge Elimination System

The federal Clean Water Act prohibits discharging pollutants to receiving waters of the United States unless the discharge is in compliance with a National Pollution Discharge Elimination System ("NPDES") permit. Effluent limitations serve as the primary mechanism in NPDES permits for controlling discharges of pollutants to receiving waters. For inland surface waters and enclosed bays and estuaries, the water-quality-based effluent limitations are based on criteria in the National Toxics Rule and the California Toxics Rule, and objectives and beneficial uses defined in the applicable Basin Plan.[8]

NPDES Construction General Permit

The State of California adopted a Construction General Permit on September 2, 2009 (Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ) (CGP). The CGP regulates construction site stormwater management. Dischargers whose projects disturb one or more acres of soil, or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the general permit for discharges of stormwater associated with construction activity. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling or excavation, as well as construction of buildings and linear underground projects, including installation of water pipelines and other utility lines.

For the project site, the CGP is implemented and enforced by the San Francisco Bay Regional Water Quality Control Board (RWQCB), which administers the stormwater permitting program. To obtain coverage under this permit, project operators must electronically file Permit Registration Documents, which include a Notice of Intent, a SWPPP, and other compliance-related documents. The SWPPP identifies BMPs that must be implemented to reduce construction effects on receiving water quality based on potential pollutants. The BMPs include both sediment and erosion control measures as well as other measures to control potential chemical contaminants. Examples of typical construction BMPs include scheduling or limiting certain activities to dry periods, installing sediment barriers such as silt fence and fiber rolls, and maintaining equipment and vehicles used for construction. Non-stormwater management measures include installing specific discharge

---

7 Federal Emergency Management Agency (FEMA), 2008. National Flood Insurance Program, Flood Insurance Rate Map (FIRM). San Mateo County and Incorporated Areas. Panel 44, Map Number 06081C0044F. April, 2019.

8 California Regional Water Quality Control Board San Francisco Bay Region, San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan), incorporating all amendments approved by the Office of Administrative Law as of May 4, 2017.

controls during certain activities, such as paving operations, and vehicle and equipment washing and fueling. The SWPPP also includes descriptions of the BMPs to reduce pollutants in stormwater discharges after all construction phases have been completed at the site (post-construction BMPs).

The CGP includes requirements for a site-specific risk-level assessment,[9] an active stormwater effluent monitoring and reporting program during construction (for Risk Level II and III sites), rain event action plans for certain higher risk sites,[10] and numeric effluent limitations for pH and turbidity as well as requirements for qualified professionals that prepare and implement the plan. The risk assessment and SWPPP must be prepared by a State-qualified SWPPP Developer (QSD) and implementation of the SWPPP must be overseen by a State-qualified SWPPP Practitioner (QSP).

The San Mateo Water Pollution Prevention Program (SMCWPPP)

To comply with the CWA, San Mateo County and the twenty cities and towns in the County, including the City of South San Francisco, formed the San Mateo Water Pollution Prevention Program (SMCWPPP).[11] SMCWPPP is a partnership of the City/County Association of Governments (C/CAG) which share a common NPDES Permit, also referred to as the Municipal Regional Permit (MRP), from the RWQCB. This common permit allows each of the C/CAG co-permittees to discharge stormwater from their storm drain systems to San Francisco Bay. Under the provisions of the MRP, the City is required to take steps within its area of authority to reduce or eliminate pollutants in stormwater to the maximum extent practical.

An amendment to Provision C.3 of the SMCWPPP MRP requires new and redevelopment projects that result in the addition or replacement of impervious surfaces totaling 10,000 square feet or more, such as the proposed project, to include specific construction and post-construction stormwater treatment measures. The goal of Provision C.3 of the MRP is for the municipalities regulated by the permit, to use their permitting authority to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from these projects. This goal is primarily accomplished through the implementation of low impact development (LID) techniques. Projects regulated under C.3 requirements must implement BMPs for reducing the volume of runoff and treating all runoff on-site prior to outfall into the drainage system and also incorporate LID source control, site design, and stormwater treatment design measures onsite.

Approach to Analysis

The hydrologic and water quality assessment for the Project is based on a review of the existing conditions at the site and assessment of the changes that would occur due to the Project. The changes in the hydrological conditions at the project site are assessed to determine if implementing the Project would have a significant adverse effect on water resources, which includes consideration of whether the Project would violate water

---

9 The Construction General Permit defines three levels of risk (Risk Levels I, II, and III) that may be assessed for a construction site. Risk is calculated based on the "project sediment risk," which determines the relative amount of sediment that can be discharged given the project and location details, and the "receiving water risk" (the risk sediment discharges pose to the receiving waters).

10 Those sites that have a high potential for mobilizing sediment in stormwater and drain to a sediment-sensitive water body.

11 County of San Mateo, Planning and Building. Stormwater Treatment Requirements. Accessed online April 27, 2022 at: https://planning.smcgov.org/stormwater-treatment-requirements

quality standards or waste discharge requirements, alter existing drainage patterns of the site or area, contribute to or create polluted runoff, degrade surface and/or groundwater quality, reduce groundwater recharge, release pollutants due to flooding, or conflict with implementation of a water quality control plan. The level of significance is based on the CEQA significance criteria listed in Appendix G of the CEQA Guidelines and the regulatory requirements and standards that are discussed in the regulatory setting. The assessment incorporates consideration of whether compliance with regulatory requirements relevant to construction and operation of the Project would be sufficient to minimize and/or avoid significant hydrology and water quality-related adverse effects.

Hydrologic and Water Quality Assessment

Topic 1: Would Project implementation violate any water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality?

Construction

Construction of the Project would include earthwork activities (i.e., grading, excavation, and other soil-disturbing activities) and the placement of imported engineered soils. Stormwater runoff from disturbed soils associated with construction activities is a common source of pollutants (mainly sediment) to receiving waters. Earthwork activities can render soils and sediments more susceptible to erosion from stormwater runoff and result in the migration of soil and sediment in stormwater runoff to downstream water bodies. Excessive and improperly managed grading or vegetation removal can lead to increased erosion of exposed earth and sedimentation of watercourses during rainy periods. In addition, construction would likely involve the use of various materials typically associated with construction activities such as paint, solvents, oil and grease, petroleum hydrocarbons, concrete and associated concrete wash-out areas. If improperly handled, these materials could result in pollutants being mobilized and transported offsite by stormwater runoff (nonpoint source pollution) and degrade receiving water quality.

Because the Project exceeds one acre in size, construction activities would be required to comply with NPDES regulations and obtain coverage under the State CGP. Under the CGP, the Applicant or their contractor(s) would be required to implement construction BMPs as set forth in a detailed SWPPP. SWPPPs are a required component of the CGP and must be prepared by a Qualified SWPPP Developer (QSD) and implemented by a Qualified SWPPP Practitioner (QSP). SWPPPs must describe the specific erosion control and stormwater quality BMPs being implemented to minimize pollutants in stormwater runoff, and detail their placement and proper installation. The BMPs are designed to prevent pollutants from coming into contact with stormwater and to keep all products of erosion and stormwater pollutants associated with construction activities from moving offsite into receiving waters. Typical BMPs to be implemented at construction sites include placement of fiber rolls or gravel barriers to detain small amounts of sediment from disturbed areas, and temporary or permanent covering of stockpiles to prevent rainfall from contacting the stockpiled material. In addition to erosion control BMPs, SWPPPs also include BMPs for preventing the discharge of pollutants other than sediment (e.g. paint, solvents, concrete, petroleum products) to downstream waters. BMPs for pollutants include conducting routine inspections of equipment for leaks, maintaining containers of supplies such that the contents are clearly labeled, the integrity of the containers is not compromised, and ensuring that construction materials are disposed of in accordance with applicable regulations.

Under the provisions of the CGP, the State-certified QSD is responsible for determining site risk level for sediment transport, developing the SWPPP, and managing its implementation. Site risk level is determined using a combination of the sediment risk of the project and the receiving water quality risk. Projects can be characterized as Risk Level 1, Level 2, or Level 3, and the minimum BMPs (stormwater controls) and monitoring that must be implemented during construction are based on the risk level. Under the direction of the QSD, the QSP is required to conduct routine inspections of all BMPs, conduct surface water sampling, when necessary, and report site conditions to the State and/or Regional Water Quality Control Board as part of CGP compliance monitoring and reporting using the Stormwater Multi-Application Reporting and Tracking System (SMARTS). Compliance with the CGP is required by law and has proven effective in protecting water quality at construction sites.

Compliance with the requirements of the CGP, including the implementation of associated BMPs as part of the SWPPP, would prevent the discharge of pollutants to surface waters or groundwater and minimize or eliminate potential degradation of surface water or groundwater quality during construction of the Project. Based on the current understanding of the Project, water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff from construction of the Project would be less than significant under CEQA.

Post-Construction

The Project would be subject to compliance with the City's stormwater requirements under SMCWPPP for projects that replace over 10,000 square feet of impervious surfaces. As such, the applicant would be required to conform to SMCWPPP Site Design Standards and include post-construction BMPs and LID design measures that would be incorporated into Project plans to reduce stormwater runoff volumes and treat stormwater on-site. As a Regulated Project under SMCWPPP, the Project would be required to provide stormwater treatment through LID treatment measures, including stormwater harvesting and re-use, infiltration, evapotranspiration, or biotreatment. Accordingly, the applicant would be required to design and install adequate LID stormwater treatment controls for the Project, based on the criteria detailed in the C.3 Regulated Projects Guide, as well as ensure that long-term maintenance of the controls is provided. Based on the current understanding of the Project, water quality impacts related to violation of water quality standards or degradation of water quality due to discharge of stormwater runoff following completion of Project construction (post-construction) would be less than significant under CEQA.

Mitigation: None required.

Topic 2: Would Project implementation deplete groundwater supplies or interfere substantially with groundwater recharge?

The Project would not involve long-term groundwater extraction. The water supply for the existing developments on the Project site is the municipal water supply system. Project construction would involve subsurface excavation (for utilities and structural support). Groundwater depths vary from 4.5 to 16 feet bgs at the project site. It is possible that subsurface excavation during Project construction could intercept shallow groundwater tables. Groundwater encountered during excavation activities would have to be pumped out of the construction trench in order to create a dry work area. However, this activity would be temporary and is unlikely to involve extensive dewatering; this activity therefore would not substantially affect groundwater

levels in the vicinity of the Project. The majority of the project site and surrounding urban area is currently covered with impervious surfaces. Under the Project, there would not be a substantial change in impervious surfaces such that groundwater recharge is impeded as compared to baseline. The Project would not lower the groundwater table as a result of groundwater extraction or through a reduction in groundwater recharge. Based on the current understanding of the Project, potential impacts relating to groundwater supply and recharge would be less than significant under CEQA.

Mitigation: None required.

Topic 3: Would Project implementation alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would result in substantial erosion, siltation, or flooding on- or off-site?

As described under Topic 1, the project site is currently developed and the majority covered with impervious surfaces that drain into the existing municipal stormwater collection system. No streams or other surface water bodies traverse the site, and the project site is not located within a natural drainage area. Construction of the Project could temporarily alter local drainage patterns; however, construction activities would be subject to the CGP, and consequently would implement a SWPPP and associated BMPs designed to control stormwater during construction, minimizing potential temporary changes in erosion, sedimentation, or flood patterns. Following construction, the project site would generally be paved or landscaped, which would prevent erosion and maintain existing runoff conditions. Following construction, Project stormwater would drain to the proposed stormwater management system (discussed under Topic 4, below) and then on to the existing municipal stormwater collection system and would be required to comply with SMCWPPP Site Design Standards to control pollutants, including sediment, in stormwater runoff and conform to the MRP. In addition, as discussed under Topic 4, below, the Project includes improvements to the existing storm water collection system to increase capacity of onsite stormwater retention and capture pollutants. Based on the current understanding of the Project, impacts relating to erosion, siltation or flooding as a result of increased stormwater runoff on- and off-site due to altered drainage patterns from implementation of the Project would be less than significant under CEQA.

Mitigation: None required.

Topic 4: Would Project implementation alter the existing drainage pattern of the site or area in a manner that would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

The majority of the project site is currently covered with impervious surfaces that drain into the existing municipal stormwater collection system. Under the Project, the existing 60-inch storm drain would be relocated to the street, but not reduced in conveyance capacity. The location would be approximately parallel

to and 45 feet south from the existing location.[12] During construction, the project would not increase the amount of stormwater runoff to the existing stormwater collection system because areas where construction is proposed are already developed and impervious and the volume and rate of stormwater runoff would be similar to baseline conditions. Stormwater runoff would be managed in accordance with the CGP and SWPPP construction requirements discussed under Topic 1, above, to ensure sediment and other pollutants typically associated with construction activities are not mobilized and/or transported by stormwater runoff.

Following the completion of construction (post-construction), stormwater runoff would be collected, retained onsite, and treated to remove pollutants via the proposed stormwater management system. The proposed storm water management system includes the use of impervious pavers on the building podium to designate the drainage catchment area as self-treating per SMCWPPP C.3 Technical Guidance. The paver section will be designed to store runoff from the design storm within the section voids as recommended by C.3 Technical Guidance. The paver section will also be designed to allow for a collected runoff drawdown time of less than 48 hours as recommended by C.3 Technical Guidance. The podium slab below the paver section will be sloped to drain infiltrated storm water and overflow drains will be located throughout as needed to prevent excessive storage/ponding in the case of extreme storm events. Based on the current understanding of the proposed stormwater management system design and consistency with of the design with SMCWPPP technical guidance, impacts relating to exceeding the capacity of existing or planned stormwater drainage systems or generating additional polluted runoff would be less than significant under CEQA.

Mitigation: None required.

Topic 5: Would Project implementation impede or redirect flood flows or risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones?

Implementation of the Project would not result in the alteration of the course of a stream or river and the project site is not within a 100-year or 500-year flood zone nor is it subject to inundation due to tsunamior seiche. [13] On-site stormwater would be captured, treated, and conveyed via the proposed stormwater management system (as described under Topic 4, above) and would not redirect stormwater flows from large storms in a manner that could redirect flood flows off-site as compared to existing conditions. Therefore, based on the current project understanding, the Project would not cause a significant impact under CEQA related to impeding or redirecting flood flows and would not result in an increased risk of release of pollutants due to Project inundation.

Mitigation: None required.

---

[12] BKF Engineers, undated utility relocation plan C2.0 “Utility Plan”.

[13] Geocon Consultants, Inc., March 2021. Preliminary Geotechnical Investigation . March, 2021.

Topic 6: Would Project implementation conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Refer to Topics 1 and 2 above. No water quality degradation is expected to occur as a result of the Project as compared to baseline conditions. The proposed project would have a less than significant impact to water quality, including groundwater and surface waters, including Colma Creek and San Francisco Bay, which are subject to the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) water quality objectives designed to preserve and enhance water quality and protect the beneficial uses of all regional terrestrial surface water bodies (e.g., creeks, rivers, streams, and lakes), groundwaters, coastal drainages, estuaries, coastal lagoons, and enclosed bays within the RWQCB's jurisdictional area. Construction and operation of the Project would comply with the requirements of the NPDES MRP, CGP, and the SMCWPPP C.3 requirements, which are designed to ensure stormwater discharges comply with regulatory requirements and water quality standards, such as the Basin Plan. The Project would not require ongoing groundwater withdrawals or substantially alter groundwater recharge, and therefore would not conflict with or obstruct implementation of a sustainable groundwater management plan. Based on the current Project understanding, impacts relating to conflicting with or obstruction of implementing a water quality control plan or sustainable groundwater management plan would be less than significant under CEQA.

SOUTH SAN FRANCISCO 121 EAST GRAND AVENUE PROJECT

NOISE TECHNICAL REPORT





Prepared by:

RCH Group

May 2022

TABLE OF CONTENTS

SOUTH SAN FRANCISCO 121 EAST GRAND AVENUE PROJECT NOISE TECHNICAL REPORT

Executive Summary 1

Introduction 2

Checklist 2

Setting 3

Discussion 11

References 16

TABLES

Table 1 – Typical Noise Levels 4

Table 2 – Existing Noise Levels 10

Table 3 – Typical Noise Levels from Construction Equipment (Lmax) 12

Table 4 – Typical Construction Activities Noise Level 13

FIGURES

Figure 1 – Noise Measurement Locations 9

ATTACHMENT

Noise Appendix

EXECUTIVE SUMMARY

This report analyzes the existing noise levels and potential noise impacts from the 121 East Grand Avenue Project (the "Project") in the City of South San Francisco, CA. The Project site is flanked by Poletti Way to the west and East Grand Avenue to the south, and southeast, and Grand Avenue to the north. The Project includes the demolition of existing structures (Comfort Inn & Suites) and development of a 17-story mixed-use life science, office and community serving retail building in the Downtown Station Area Specific Plan.

To quantify existing ambient noise levels, RCH group conducted two long-term (72-hour) and short-term (10-minute) noise measurements at the Project site. The main source of noise in the Project vicinity during the noise measurements was traffic noise from East Grand Avenue, Highway 101, and the nearby rail. To measure existing 24-hour noise levels at the Project site, a noise meter was attached to a tree at the southwest corner of the existing site (Site 1) with clear view of East Grand Avenue and Highway 101 (the primary source of noise at the Project site). Another noise meter was attached to a tree at the east boundary of the existing site (Site 2) with a clear view of East Grand Avenue. Existing 24-hour noise levels at the Project site range from 69-74 dB, CNEL.

Construction activities would occur during the construction hours contained in the South San Francisco Noise Ordinance. The Noise Ordinance exempts noise from construction activities that take place on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m. and 8:00 p.m., and on Sundays and holidays between the hours of 10:00 a.m. and 6:00 p.m.

All noise and vibration impacts were found be less-than-significant.

The Project site is located outside the San Francisco International Airport's 65 dB, CNEL aircraft noise contour. Therefore, aircraft noise would result in a less-than-significant impact.

INTRODUCTION

This report analyzes the noise impacts from the proposed 121 East Grand Avenue Project (the "Project") in the City of South San Francisco, CA. This report is prepared in a format to answer the noise issues identified in the Initial Study Environmental Checklist Form in Appendix G of the CEQA Guidelines (as revised in 2019). This report provides an overview of existing noise levels measured at the Project site, local noise regulatory framework, and an analysis of potential noise impacts that would result from implementation of the Project. Potential noise impacts from the construction and operation of the Project are evaluated.

CHECKLIST

	Would the project result in:	Significant or Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less than Significant	No Impact
a)	Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b)	Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c)	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☒	☐

SETTING

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound pressure level has become the most common descriptor used to characterize the "loudness" of an ambient sound level. Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain. Decibels are measured using different scales, and it has been found that A-weighting of sound levels best reflects the human ear's reduced sensitivity to low frequencies, and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. All references to decibels (dB) in this report will be A-weighted unless noted otherwise.

Several time-averaged scales represent noise environments and consequences of human activities. The most commonly used noise descriptors are the equivalent A–weighted sound level over a given time period (Leq)[1]; average day–night 24-hour average sound level (Ldn)[2] with a nighttime increase of 10 dB to account for sensitivity to noise during the nighttime; and community noise equivalent level (CNEL)[3], also a 24-hour average that includes both an evening and a nighttime sensitivity weighting. **Table 1** identifies decibel levels for common sounds heard in the environment. With regard to increases in A-weighted noise level, the following relationships occur (Caltrans, 1998a):

- Under controlled conditions in an acoustics laboratory, the trained healthy human ear is able to discern changes in sound levels of 1 dB;
- Outside of such controlled conditions, the trained ear can detect changes of 2 dB in normal environmental noise;
- It is widely accepted that the average healthy ear, however, can barely perceive noise levels changes of 3 dB;
- A change in level of 5 dB is a readily perceptible increase in noise level; and
- A 10-dB change is recognized as twice as loud as the original source.

1 The Equivalent Sound Level (Leq) is a single value of a constant sound level for the same measurement period duration, which has sound energy equal to the time–varying sound energy in the measurement period.
2 Ldn is the day–night average sound level that is equal to the 24-hour A-weighted equivalent sound level with a 10-decibel penalty applied to night between 10:00 p.m. and 7:00 a.m.
3 CNEL is the average A-weighted noise level during a 24-hour day, obtained by addition of 5 decibels in the evening from 7:00 to 10:00 p.m., and an addition of a 10–decibel penalty in the night between 10:00 p.m. and 7:00 a.m.

TABLE 1. TYPICAL NOISE LEVELS

Noise Level (dB)	Outdoor Activity	Indoor Activity
90+	Gas lawn mower at 3 feet, jet flyover at 1,000 feet	Rock Band
80-90	Diesel truck at 50 feet	Loud television at 3 feet
70-80	Gas lawn mower at 100 feet, noisy urban area	Garbage disposal at 3 feet, vacuum cleaner at 10 feet
60-70	Commercial area	
40-60	Quiet urban daytime, traffic at 300 feet	Large business office, dishwasher next room
20-40	Quiet rural, suburban nighttime	Concert hall (background), library, bedroom at night
10-20		Broadcast / recording studio
0	Lowest threshold of human hearing	Lowest threshold of human hearing

SOURCE: (modified from Caltrans Technical Noise Supplement, 1998)

Noise Attenuation

Stationary point sources of noise, including construction equipment, attenuate (lessen) at a rate of 6 to 7.5 dB per doubling of distance from the source, depending on ground absorption. Soft sites attenuate at 7.5 dB per doubling because they have an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. Hard sites have reflective surfaces (e.g., parking lots or smooth bodies of water) and therefore have less attenuation (6.0 dB per doubling). A street or roadway with moving vehicles (known as a "line" source), would typically attenuate at a lower rate, approximately 3 to 4.5 dB each time the distance doubles from the source, that also depends on ground absorption (Caltrans, 1998b). Physical barriers located between a noise source and the noise receptor, such as berms or sound walls, would increase the attenuation that occurs by distance alone.

Vibration

Vibration is the periodic oscillation of a medium or object. The rumbling sound caused by the vibration of room surfaces is called structure-borne noise. Sources of ground-borne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or human-made causes (e.g., explosions, machinery, traffic, trains, construction equipment).

Vibration amplitudes are usually expressed in peak particle velocity (PPV) or root mean squared (RMS), as in RMS vibration velocity. The PPV and RMS velocity are normally described in inches per second (in/sec). PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is often used in monitoring of blasting vibration because it is related to the stresses that are experienced by buildings (FTA 2018, Caltrans 2020). Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to

vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2018). This is based on a reference value of 1 μ inch/second. Ground-borne vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2018).

Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground-borne vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate ground-borne vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2018). Construction vibrations can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations result from vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Regulatory Context

Federal and State

There are no federal or state noise standards that regulate noise issues related to the proposed Project.

Local

South San Francisco General Plan

The South San Francisco Noise Element (South San Francisco General Plan, 1999) contains the San Mateo Land Use Commission noise/land use compatibility standards for review of development in noise impacted areas. The compatibility standards are specifically applicable to development within the 65 dB, CNEL noise contour of the San Francisco International Airport (Table 9.2-1 Land Use Criteria for Noise Impacted Areas, South San Francisco General Plan, page 280). The Project is not within the 65 dB, CNEL noise contour of the San Francisco International airport, therefore, the standards are not applicable to the Project.

South San Francisco Noise Ordinance

The City of South San Francisco regulated exterior noise levels through its Noise Ordinance (Chapter 8.32, South San Francisco Municipal Code). The Noise Ordinance contains special provisions for construction activities (§ 8.32.050). Construction activities authorized by a valid city permit shall be allowed on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m. and 8:00 p.m., and on Sundays and holidays between

the hours of 10:00 a.m. and 6:00 p.m.[4], or at such other hours as may be authorized by the permit, as long as they meet at least one of the following noise limitations:

1. No individual piece of equipment shall produce a noise level exceeding ninety dB at a distance of twenty-five feet. If the device is housed within a structure or trailer on the property, the measurement shall be made outside the structure at a distance as close to twenty-five feet from the equipment as possible.

2. The noise level at any point outside of the property plane of the project shall not exceed ninety dB. (Ord. 1088 § 1, 1990).

According to § 8.32.060 of the Noise Ordinance, if the applicant can show to the city manager, or the manager's designee, that a diligent investigation of available noise abatement techniques indicates that immediate compliance with the requirements of this chapter would be impractical or unreasonable, a permit to allow exception from the provisions contained in this chapter may be issued, with appropriate conditions to minimize the public detriment caused by such exceptions. Any such permit shall be of as short a duration as possible, but in no case for longer than six months. These permits are renewable upon a showing of good cause and shall be conditioned by a schedule for compliance and details of compliance methods in appropriate cases. (Ord. 1088 § 1,1990)

South San Francisco Downtown Station Area Specific Plan EIR

The City of South San Francisco Downtown Station Area Specific Plan Environmental Impact Report (EIR) indicates that implementation of the Specific Plan has the potential to expose new development to stationary sources of noise and transportation noise levels that exceed the City's normally acceptable compatibility standards (a potentially significant noise impact). The EIR also indicates that construction activities within the Plan area would result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels (a potentially significant vibration impact). The Specific Plan EIR concludes that the implementation of mitigation measures would reduce these potentially significant impacts to a less-than-significant level. The EIR also indicates a significant and unavoidable impact related to a substantial permanent increase in ambient noise levels due to traffic noise. The following mitigation measures from the Specific Plan EIR are applicable to the Project:

> **Mitigation Measure 4.6-1: HVAC Mechanical Equipment Shielding.** Prior to the approval of building permits for non-residential development, the applicant shall submit a design plan for the project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for a designated receiving land use category as specified in Noise Ordinance Section 8.32.030. Noise control measures may include, but are

[4] Construction activities occurring within the allowable hours of construction are exempt from the City's Noise Ordinance (P. Perry, City of South San Francisco Building Division, personal communication, March 20, 2019). As stated in the Downtown Area Specific Plan EIR, "The City considers impacts resulting from construction noise during these hours to be less than significant."

not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical barriers.

Mitigation Measure 4.6-2: Site-Specific Acoustic Analysis – Nonresidential Development. Prior to the approval of building permits for new non-residential land uses where exterior noise level exceeds 70 dBA CNEL, an acoustic analysis shall be performed to determine appropriate noise reduction measures such that exterior noise levels shall be reduced below 70 dBA CNEL, unless a higher noise compatibility threshold (up to 75 dBA CNEL) has been determined appropriate by the City of South San Francisco. The analysis shall detail the measures that will be implemented to ensure exterior noise levels are compatible with the proposed use. Measures that may be implemented to ensure appropriate noise levels include, but are not limited to, setbacks to separate the proposed nonresidential structure from the adjacent roadway, or construction of noise barriers on site.

Mitigation Measure 4.6-4: Construction Vibration. For all construction activities within the study area, the construction contractor shall implement the following measures during construction:

a. The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.

b. Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c. Trucks shall be prohibited from idling along streets serving the construction site.

Mitigation Measure 4.6-5: Rail Line Groundborne Vibration. Implement the current FTA and Federal Railroad Administration (FRA) guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to groundborne vibration from trains. Specifically, Category 1 uses (vibration-sensitive equipment) within 300 feet from the rail line, Category 2 uses (residences and buildings where people normally sleep) within 200 feet, and Category 3 uses (institutional land uses) within 155 feet of the rail line shall require a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines prior to obtaining a building permit. Vibration control measures deemed appropriate by the site-specific groundborne vibration analysis to meet 65 VdB, 72 VdB, and 75 VdB respectively for Category 1, Category 2, and Category 3 uses, shall be implemented by the project applicant and approved by the City prior to receiving a building permit.

Sensitive Receptors

The South San Francisco General Plan Noise Element defines noise-sensitive land uses as residences, schools, churches, and hospitals. According to the General Plan, industrial and commercial land uses are generally not considered noise-sensitive land uses. There are commercial and industrial land uses north, east, and south of the Project site. An existing Caltrain line and Highway 101 are west of the Project site. The nearest sensitive land use to the Project site is an apartment building (Cadence Apartments) located approximately 690 feet west of the Project site on Airport Boulevard. There are no schools within 1,000 feet of the Project site.

Methodology and Existing Noise Environment

To quantify existing ambient noise levels, RCH group conducted two long-term (72-hour) and short-term (10-minute) noise measurements at the Project site. Metrosonics db308 Sound Level Meters calibrated before and after the measurements were used for the long-term noise measurements. A Larson Davis SoundTrack LxT Sound Level Meter calibrated before and after the measurements was used for the short-term measurements. To measure existing 24-hour noise levels at the Project site, a noise meter was attached to a tree at the southwest corner of the existing site (Site 1) with clear view of East Grand Avenue and Highway 101 (the primary source of noise at the Project site). Another noise meter was attached to a tree at the east boundary of the existing site (Site 2) with a clear view of East Grand Avenue. Existing 24-hour noise levels at the site range from 69-74 dB, CNEL. **Table 2** summarizes the locations and results of the noise measurements. **Figure 1** shows the noise measurement locations on a map.

The **Noise Appendix** includes 24-hour noise plots for Sites 1 and 2 and hourly measurements results. Based on observations from the short-term measurements, the main source of noise in the Project vicinity was traffic noise from East Grand Avenue, Highway 101, and the nearbyrail.

FIGURE 1: NOISE MEASUREMENT LOCATIONS



RCH GROUP planning & environmental consulting

Source: RCH Group 2022 and Google Earth 2022

TABLE 2 EXISTING NOISE LEVELS

Location	Time Period	Noise Levels (dB)	Noise Sources
Site 1: Southwest corner of the site, on a tree, approximately 25 feet north of East Grand Avenue.	March 24, 12:00 a.m. Through March 26, 11:59 p.m., 2022 Thursday - Saturday 72-hour measurement.	Hourly Leq's ranged from: 61-72 CNELs: 74, 74, 73	Unattended noise measurements do not specifically identify noise sources.
Site 1: Southwest corner of the site, on a tree, approximately 25 feet north of East Grand Avenue.	Wednesday March 23, 2022 12:27 p.m. to 12:37 p.m.	5-minute Leq's: 69, 69	Traffic on East Grand up to 75 dB, Heavy truck 70 dB, Constant traffic on HWY 101 up to 69 dB.
Site 1: Southwest corner of the site, on a tree, approximately 25 feet north of East Grand Avenue.	Tuesday March 29, 2022 9:51 a.m. to 10:01 a.m.	5-minute Leq's: 73, 70	Traffic on East Grand Avenue up to 86 dB, Constant traffic on HWY 101 up to 69 dB.
Site 2: East corner of the site, on a tree, approximately 50 feet south of East Grand Avenue.	March 24, 12:00 a.m. Through March 26, 11:59 p.m., 2022 Thursday - Saturday 72-hour measurement.	Hourly Leq's ranged from: 56-70 CNELs: 70, 69, 69	Unattended noise measurements do not specifically identify noise sources.
Site 2: East corner of the site, on a tree, approximately 50 feet south of East Grand Avenue.	Wednesday March 23, 2022 12:40 p.m. to 12:50 p.m.	5-minute Leq's: 65, 64	Traffic on East Grand Avenue up to 75 dB.
Site 3: Northwest corner of the site.	Wednesday March 23, 2022 12:53 p.m. to 1:03 p.m.	5-minute Leq's: 74, 70	Train horn 92 dB, Traffic on HWY 101 up to 80 dB.
Site 4: Southern boundary of project site.	Tuesday March 29, 2022 10:31 a.m. to 10:41 a.m.	5-minute Leq's: 66, 65	Traffic on East Grand Avenue up to 70 dB.

SOURCE: RCH GROUP, 2022

SIGNIFICANCE THRESHOLDS

Appendix G of the *CEQA Guidelines* states that a Project would result in a significant impact to Noise if it would:

- Generate a substantial temporary or permanent increase in ambient noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
    - Temporary construction noise impacts would be significant if construction occurred outside of the adopted construction hours contained in the South San Francisco Noise Ordinance. The Noise Ordinance exempts noise from construction activities that take place on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m. and 8:00 p.m., and on Sundays and holidays between the hours of 10:00 a.m. and 6:00 p.m.
    - Per Mitigation Measure 4.6-2 of the South San Francisco Downtown Station Area Specific Plan EIR, outdoor noise levels of up to 75 dB, CNEL can be considered conditionally acceptable for non-residential areas. This analysis shall consider an exterior threshold of up to 75 dB, CNEL as a conditionally acceptable outdoor noise level. Outdoor noise levels exceeding 75 dB, CNEL would be potentially significant.
- Generate excessive groundborne vibration or groundborne noise levels; or
    - Per Mitigation Measure 4.6-5 of the South San Francisco Downtown Station Area Specific Plan EIR, vibration exceeding 75 VdB for Category 3 uses (institutional land uses) would be significant.
- For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, expose persons residing or working in the project area to excessive noise levels.

DISCUSSION

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Construction Related Noise Impacts

Construction would result in a temporary increase in ambient noise levels in the vicinity of the Project. The construction noise levels of primary concern are often associated with the site preparation phase (USEPA, 1973). Construction activities for the Project would include site grading, clearing and excavation work, as well as building construction, paving, and coating. Construction activities would require the use of numerous pieces of noise-generating equipment, such as excavating machinery (e.g., loaders, etc.) and other construction equipment (e.g., scrapers, dozers, compactors, trucks, etc.). The noise levels generated by construction equipment would vary greatly depending upon factors such as the type and specific model of the equipment, the operation being performed, the condition of the equipment and the prevailing wind direction.

The maximum noise levels for various types of construction equipment that could be used during Project construction are provided in **Table 3** below. Maximum noise levels generated by construction equipment used for the proposed project would range from 77 to 90 dB, Lmax at 50 feet. **Table 4** provides average typical construction activity noise levels at 50 feet.

TABLE 3 TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT (LMAX)

Construction Equipment	Noise Level (dB, Lmax at 50 feet)
Backhoe	78
Dozer	82
Forklift	77
Auger Drill Rig	84
Concrete Saw	90
Crane	81
Excavator	81
Paver	77
Grader	85
Compressor (Air)	78
Generator	81
Roller	80
Vibratory Concrete Mixer	80
Concrete Mixer Truck	79
Front End Loader	79

NOTES:
L_{max} = maximum sound level

SOURCE: Federal Highway Administration (FHWA) Roadway Construction Noise Model User's Guide, 2006.

TABLE 4 TYPICAL CONSTRUCTION ACTIVITIES NOISE LEVEL

Construction Equipment	Noise Level (dB, Leq at 50 feet)
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

NOTES:
Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.
Leq= equivalent sound level

SOURCE: U.S. Environmental Protection Agency, Legal Compilation, 1973.

As discussed above, the nearest noise-sensitive receptor is an apartment building approximately 690 feet west of the Project site on Airport Boulevard. Project construction noise at these apartments would be masked by rail line and traffic noise from Highway 101, Grand Avenue, and Airport Boulevard. Construction activities would occur during the adopted construction hours contained in the South San Francisco Noise Ordinance. The Noise Ordinance exempts noise from construction activities that take place on weekdays between the hours of 8:00 a.m. and 8:00 p.m., on Saturdays between the hours of 9:00 a.m. and 8:00 p.m., and on Sundays and holidays between the hours of 10:00 a.m. and 6:00 p.m. Therefore, Project construction would result in a **less-than-significant impact.**

Operational Noise Impacts

Land Use Noise Compatibility Impacts on the Project

As shown in **Table 2**, existing 24-hour noise levels at Site 1 are 73-74 dB, CNEL and 69-70 dB, CNEL at Site 2. Therefore, the site is less than 75 dB, CNEL threshold which is considered a Conditionally Acceptable outdoor noise level for non-residential uses (per South San Francisco Downtown Station Area Specific Plan EIR, Mitigation Measure 4.6-2). In summary, the site is noise appropriate for the proposed use. Therefore, the effect of existing noise on the Project would be a **less-than-significant impact.**

Stationary Noise Impacts from the Project

Operation of the Project would not produce substantial levels of off-site noise. Mechanical equipment would be required to comply with the City's Noise Ordinance § 8.32.030 (Per South San Francisco Downtown Station Area Specific Plan EIR, Mitigation Measure 4.6-1). The Project applicant would be required to submit a design plan for the Project demonstrating that the noise level from operation of mechanical equipment will not exceed the exterior noise level limits for adjacent receiving land use categories as specified in Noise Ordinance § 8.32.030. Therefore, noise impacts from Project stationary equipment during operations would result in a **less-than-significant impact.**

Traffic Noise Impacts from the Project

A doubling of sound energy results in a 3 dB increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level. The Project is located directly east of Highway 101 and nearby major roadways (Airport Boulevard and Grand Avenue). The City of South San Francisco Downtown Station Area Specific Plan EIR indicates a significant and unavoidable impact related to a substantial permanent increase in ambient noise levels due to traffic noise. However, the Project would not result in a doubling of traffic on nearby roadways and any increase in traffic noise would be negligible compared to the existing noise generated by Highway 101 and other nearby major roadways. Therefore, noise impacts from Project-related motor vehicles during operations would result in a **less-than-significant impact.**

---

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction Vibration Impacts

As discussed, construction activities have the potential to result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Per Specific Plan EIR Mitigation Measure 4.6-4: Construction Vibration, all construction activities in the Specific Plan area are required to implement the following vibration control measures:

a. The construction contractor shall provide, at least three weeks prior to the start of construction activities, written notification to all residential units and nonresidential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.

b. Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.

c. Trucks shall be prohibited from idling along streets serving the construction site.

In most cases, vibration induced by typical construction equipment does not result in adverse effects on people or structures (Caltrans, 2013). Vibrational effects from typical construction activities are only a concern within 25 feet of existing structures (Caltrans, 2002). There are no structures within 25 feet of the Project site. Therefore, construction vibration would result in a **less-than-significant impact.**

Caltrain Vibration Impacts on Project

According to a study conducted on Caltrain rails, ground vibration from Caltrain passbys measured up to 89 VdB at 25 feet (Peninsula Corridor Electrification Project DEIR, 2014). Based on the Project site plan, the western building façade would be located approximately 140-150 feet

east of the outermost track of the Caltrain rail line. At this distance, the VdB from passing commuter rails along the Caltrain rail line would attenuate to approximately 67 VdB. These levels of vibration would be below the 75 VdB threshold established by Mitigation Measure 4.6-5 of the South San Francisco Downtown Station Area Specific Plan EIR for rail line vibration. Furthermore, per Mitigation Measure 4.6-5 of the South San Francisco Downtown Station Area Specific Plan EIR, a site-specific groundborne vibration analysis conducted by a qualified groundborne vibration specialist in accordance with the current FTA and FRA guidelines would be required prior to obtaining a building permit. Therefore, vibration from the adjacent Caltrain rail line would result in a **less-than-significant impact.**

---

c) For a project located within the vicinity of a private airstrip or an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The Project site is approximately 1.8 miles north of the San Francisco International Airport. The Project site is not within an aircraft insulation area as shown on Figure 9-1 Aircraft Noise and Noise Insulation Project (page 279, South San Francisco General Plan). The contours indicate the Project site is located outside the 65 dB, CNEL aircraft noise contour. Therefore, aircraft noise would result in a **less-than-significant impact.**

REFERENCES

California Department of Transportation (Caltrans). 2013. *Technical Noise Supplement*.

California Department of Transportation (Caltrans). 1998a. *Technical Noise Supplement*.

California Department of Transportation (Caltrans). 1998b. *Traffic Noise Analysis Protocol for New Highway Construction and Reconstruction Projects.*

California Department of Transportation (Caltrans). 2020 *Transportation and Construction Vibration Guidance Manual. (CT-HWANP-RT-20-365.01.01).*

California Department of Transportation (Caltrans). 2002. *Transportation Related Earthborne Vibrations*.

Federal Highway Administration (FHWA). 2006. *Roadway Construction Noise Model User's Guide.*

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment*.

Federal Transit Administration (FTA). 2006. *Transit Noise and Vibration Impact Assessment. (FTA-VA-90-1003-06).*

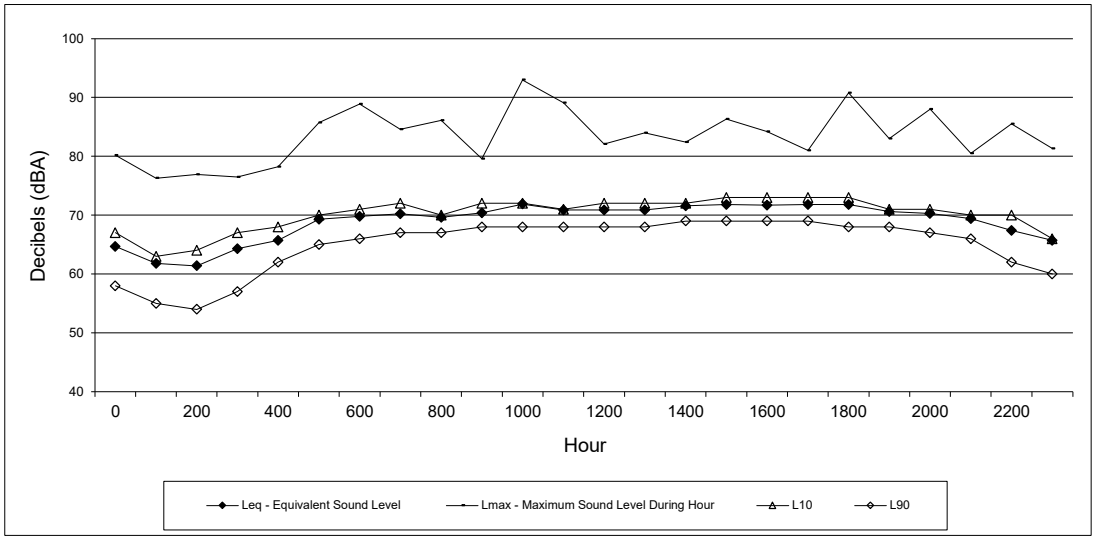
Peninsula Corridor Electrification Project. 2014. *Draft Environmental Report, SCH #2013012079.* Available at: https://www.caltrain.com/projects/caltrain-modernization/calmod-document-library/pcep-deir-2014

The United States Environmental Protection Agency (USEPA). 1973. *Legal Compilation: Statutes and Legislative History, Executive Orders, Regulations*, *Guidelines and Reports.*

Noise Appendix

Long Term Noise Measurement Graphs for Sites 1 & 2

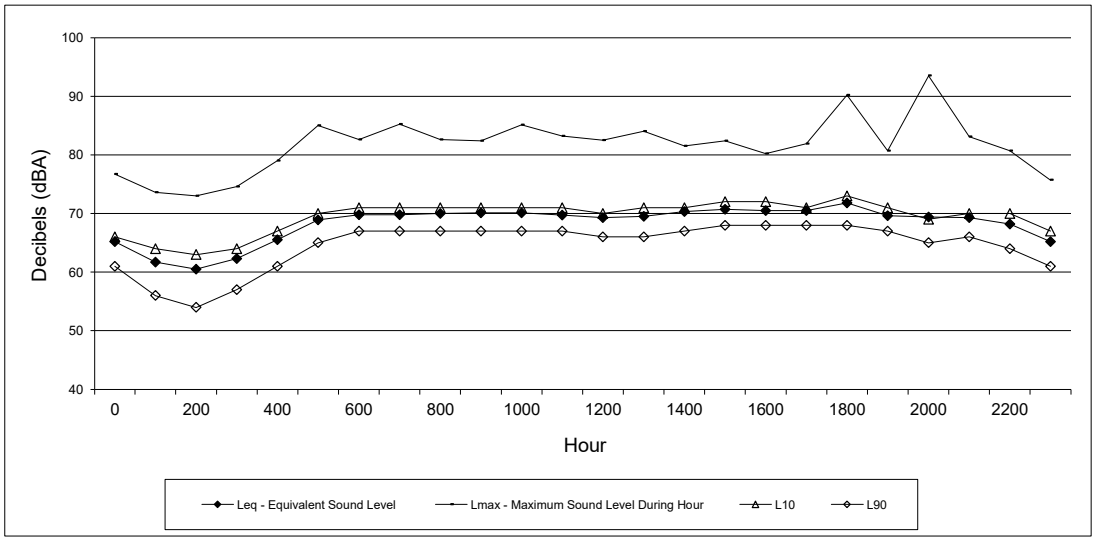
RCH GROUP
planning & environmental consulting



Site 1: Southwest corner of the site, on a tree, approximately 25 feet north of East Grand Avenue
Thursday March 24, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	65	80	67	58
100	62	76	63	55
200	61	77	64	54
300	64	77	67	57
400	66	78	68	62
500	69	86	70	65
600	70	89	71	66
700	70	85	72	67
800	70	86	70	67
900	70	80	72	68
1000	72	93	72	68
1100	71	89	71	68
1200	71	82	72	68
1300	71	84	72	68
1400	72	82	72	69
1500	72	86	73	69
1600	72	84	73	69
1700	72	81	73	69
1800	72	91	73	68
1900	71	83	71	68
2000	70	88	71	67
2100	69	81	70	66
2200	67	86	70	62
2300	66	81	66	60

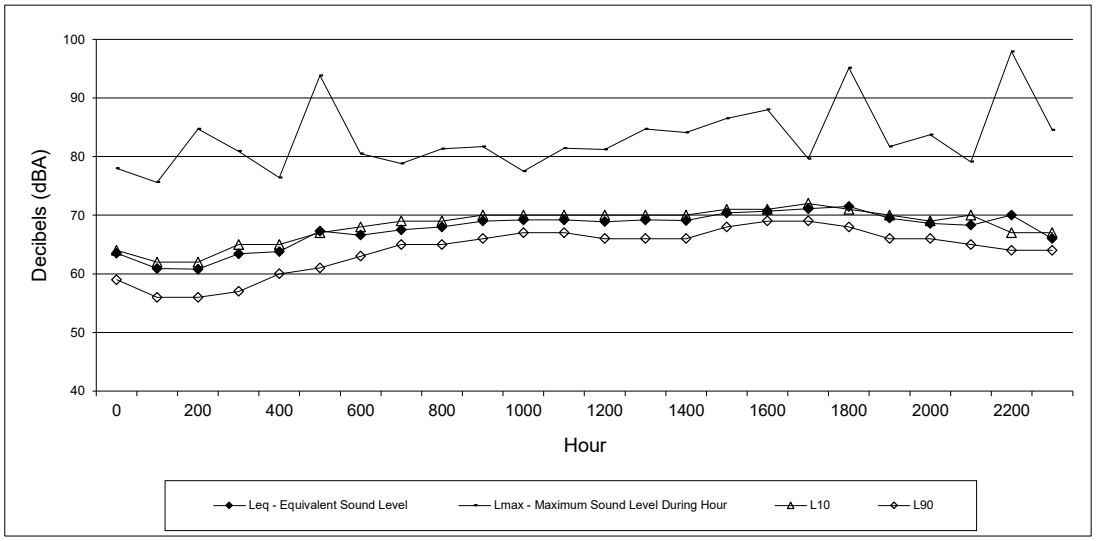
CNEL 74



Site 1: Southwest corner of the site, on a tree, approximately 25 feet north of East Grand Avenue
Friday March 25, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	65	77	66	61
100	62	74	64	56
200	61	73	63	54
300	62	75	64	57
400	66	79	67	61
500	69	85	70	65
600	70	83	71	67
700	70	85	71	67
800	70	83	71	67
900	70	82	71	67
1000	70	85	71	67
1100	70	83	71	67
1200	69	83	70	66
1300	70	84	71	66
1400	70	82	71	67
1500	71	82	72	68
1600	71	80	72	68
1700	71	82	71	68
1800	72	90	73	68
1900	70	81	71	67
2000	69	94	69	65
2100	69	83	70	66
2200	68	81	70	64
2300	65	76	67	61

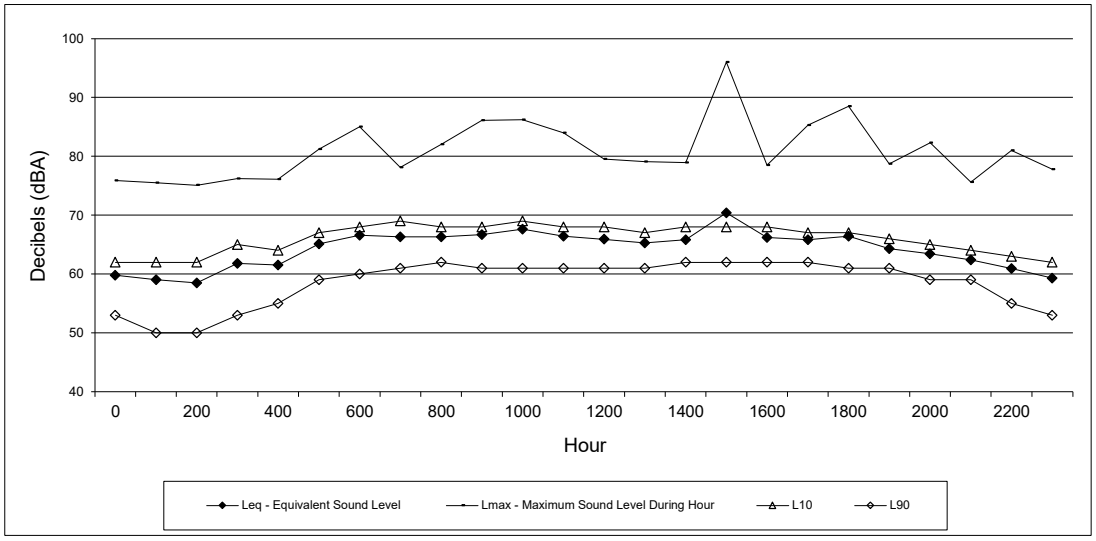
CNEL: 74



Site 1: Southwest corner of the site, on a tree, approximately 25 feet north of East Grand Avenue
Saturday March 26, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	64	78	64	59
100	61	76	62	56
200	61	85	62	56
300	63	81	65	57
400	64	76	65	60
500	67	94	67	61
600	67	81	68	63
700	68	79	69	65
800	68	81	69	65
900	69	82	70	66
1000	69	78	70	67
1100	69	81	70	67
1200	69	81	70	66
1300	69	85	70	66
1400	69	84	70	66
1500	70	87	71	68
1600	71	88	71	69
1700	71	80	72	69
1800	72	95	71	68
1900	70	82	70	66
2000	69	84	69	66
2100	68	79	70	65
2200	70	98	67	64
2300	66	85	67	64

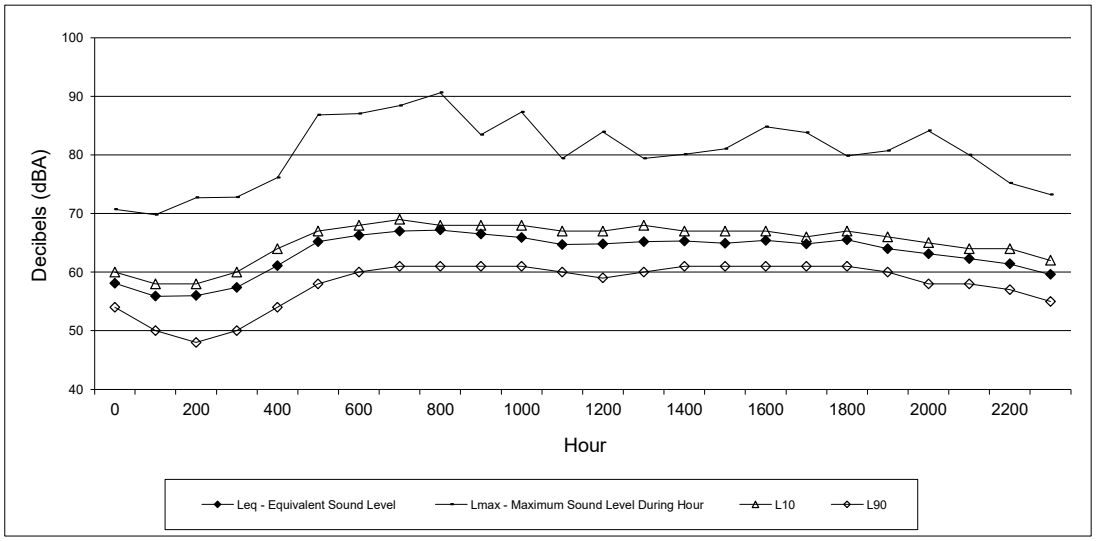
CNEL: 73



Site 2: East corner of the site, on a tree, approximately 50 feet south of East Grand Avenue
Thursday March 24, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	60	76	62	53
100	59	76	62	50
200	59	75	62	50
300	62	76	65	53
400	62	76	64	55
500	65	81	67	59
600	67	85	68	60
700	66	78	69	61
800	66	82	68	62
900	67	86	68	61
1000	68	86	69	61
1100	66	84	68	61
1200	66	80	68	61
1300	65	79	67	61
1400	66	79	68	62
1500	70	96	68	62
1600	66	79	68	62
1700	66	85	67	62
1800	66	89	67	61
1900	64	79	66	61
2000	63	82	65	59
2100	62	76	64	59
2200	61	81	63	55
2300	59	78	62	53

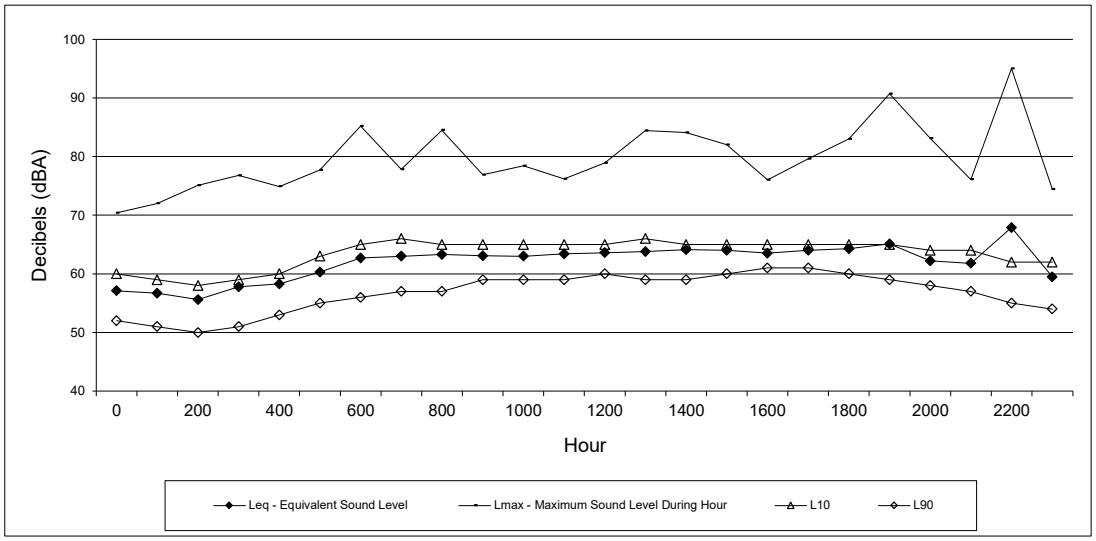
CNEL 70



Site 2: East corner of the site, on a tree, approximately 50 feet south of East Grand Avenue
Friday March 25, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	58	71	60	54
100	56	70	58	50
200	56	73	58	48
300	57	73	60	50
400	61	76	64	54
500	65	87	67	58
600	66	87	68	60
700	67	88	69	61
800	67	91	68	61
900	67	83	68	61
1000	66	87	68	61
1100	65	79	67	60
1200	65	84	67	59
1300	65	79	68	60
1400	65	80	67	61
1500	65	81	67	61
1600	65	85	67	61
1700	65	84	66	61
1800	66	80	67	61
1900	64	81	66	60
2000	63	84	65	58
2100	62	80	64	58
2200	61	75	64	57
2300	60	73	62	55

CNEL: 69



Site 2: East corner of the site, on a tree, approximately 50 feet south of East Grand Avenue
Saturday March 26, 2022

Hour	Leq - Equivalent Sound Level	Lmax - Maximum Sound Level During Hour	L10	L90
0	57	70	60	52
100	57	72	59	51
200	56	75	58	50
300	58	77	59	51
400	58	75	60	53
500	60	78	63	55
600	63	85	65	56
700	63	78	66	57
800	63	85	65	57
900	63	77	65	59
1000	63	78	65	59
1100	63	76	65	59
1200	64	79	65	60
1300	64	84	66	59
1400	64	84	65	59
1500	64	82	65	60
1600	64	76	65	61
1700	64	80	65	61
1800	64	83	65	60
1900	65	91	65	59
2000	62	83	64	58
2100	62	76	64	57
2200	68	95	62	55
2300	60	74	62	54

CNEL: 69









121 E. GRAND

Preliminary Transportation Demand Management Plan

(Transportation Action Plan)

TDM SPECIALISTS, INC.
A Transportation Demand Management Company

June 2, 2022

121 E. Grand Ave

South San Francisco

Final Transportation Demand Management Plan
(Trip Reduction Plan)



CALGreen

Prepared for:

Phase 3 Real Estate Partners

Prepared by:

TDM SPECIALISTS, INC.
A Transportation Demand Management Company

(408) 420-2411

June 2, 2022

Preli

TABLE OF CONTENTS

TDM EXECUTIVE SUMMARY i

INTRODUCTION 1

TDM Planning Process 1

1.0 REGULATORY AND SUSTAINABLE ENVIRONMENTS 2

City of South San Francisco 2

San Francisco Bay Area Commuter Benefits Program 4

San Francisco Bay Area Commuter Benefits Program Proposed Strategy EN-7 4

State Regulatory Setting 4

2.0 PROJECT DESCRIPTION 5

Project Location Map 7

3.0 EXISTING TRANSPORTATION FACILITIES 7

Nearby Transit Services Matrix 8

Walking Distance to Local Transit Map 9

Genesis One Tower Place BART Shuttle 9

Genesis One Tower Place BART Shuttle Route Map 9

Utah-Grand Shuttles 10

Utah-Grand Caltrain Shuttle Route Map 10

Utah-Grand BART Shuttle Route Map 10

SamTrans 11

SamTrans Route 292 Map 11

Genentech Millbrae Station Connector Shuttle 13

Genentech Glen Park Connector Shuttle 14

Transit Trip Planning Resources 15

Bicycle Connections 16

San Mateo County Bicycle Map 18

San Francisco Bay Trail Map 19

Bicycle Commuter Resources 20

Walk Score 20

SECTION I – TDM INFRASTRUCTURE AND PHYSICAL MEASURES 20

Infill Development 21

Transit-Oriented Design 21

Building Design 21

Transit/Shuttle Center 21

4.0 BICYCLE FACILITIES 22

Long-Term Bike Parking 22

Short-Term Bike Parking 22

Enhanced Bike Parking Facilities 23

Bicycle Path Development 23

Fix-it Bicycle Repair Station 24

Wayfinding Signage 24

Preliminary

Showers and Changing Facilities 24
5.0 PEDESTRIAN FACILITIES 24
6.0 PARKING FACILITIES 25
Parking Reduction 25
Carpool/Vanpool Parking 25
Clean Air, Clean-Fuel Vehicle Parking 25
Electric/Plug-in Charging Facilities 26
Carshare Vehicle Parking - Conceptual 26
Motorcycle and Scooter Parking Placement 26
7.0 TRANSPORTATION AND COMMUTE INFORMATION KIOSK 27
8.0 EMPLOYEE COMMUTER RESOURCES 28
Commute Resource Flier 28
On-Site Amenities 30
Nearby Amenities 30
9.0 TDM SITE PLAN 30
SECTION II – PROGRAMMATIC TDM MEASURES 32
10.0 APPLICANT COMMUTER PROGRAM MANAGEMENT 32
Commuter Concierge Amenity 32
Commute.org Shuttle Consortium 32
Commuter Incentives and Rewards 32
Coordination of Trip Reduction Programs with Nearby Developments 33
Unbundled Commuter Parking 33
Parking Management Technology Solution 34
Scheduled Mobile Bicycle Maintenance Service 34
Best "Site" for Commuters National Recognition 34
11.0 TENANT COMMUTER EMPLOYEE BENEFITS 34
Transit Subsidies 34
Vanpool Subsidies 35
Carpool Commuter Allowance 35
Bicycle Commuter Allowance 35
Pre-tax Transit Payroll Deduction Option 35
Pre-tax Parking Payroll Deduction Option 36
Parking Cash-Out 36
Telework/Remote Work Option 36
Alternative Work Schedule Option – Flextime, Compressed Workweek 36
12.0 TENANT COMMUTER SERVICE & RESOURCES 37
Designated Employer Contact/Employee Transportation Coordinator 37
Commute Information Web Portal/Intranet 38
Mock Employee Transportation Information Portal 39
Guaranteed Ride Home Program 40
Regional Bikeshare Participation - Conceptual 41
Annual Bike Safety Seminar 41
Carpool and Vanpool Ride-matching Services 41

Preliminary

Carpool Incentive Programs 43
Vanpool Incentive Program 43
Bicycle Incentive Programs 44
13.0 TENANT COMMUTER MARKETING & OUTREACH 45
New Employee Onboarding 45
Employee Transportation Fairs 45
Newsletter Articles and Emails 45
Transportation Management Association Engagement 45
Best Workplaces for Commuters Designation 46
SECTION III – TDM MONITORING AND REPORTING 47
14.0 MONITORING AND REPORTING 47
Tenant Performance and Lease Language – TDM Requirements 47
Annual Employee Commute Survey 48
Annual Commute Survey Report 48
Annual Commuter Satisfaction Survey 49
Triennial Driveway Report 49
Penalty for Noncompliance 50
No Expiration of TDM Plan or Programs 52
ITE Trip Generation Estimate 52
C/CAG Trip Reduction Measures Checklist – Using Proposed C/CAG Updates 52
15.0 CONCLUSION 55

ATTACHMENTS
Nearby Amenities
Numerical Citations in CCAG Background TDM Checklist Worksheets

TDM SPECIALISTS, INC. QUALIFICATIONS

Preliminary

TDM EXECUTIVE SUMMARY

This Transportation Demand Management TDM Plan (herein known as the TDM Plan) for the site at 121 E. Grand Avenue (Project) provides a viable and dynamic program to support a 45 percent alternative transportation mode-use rate. The TDM Plan meets the requirements put forward to the City of South San Francisco (City). This TDM Plan is consistent with the City of South San Francisco's TDM Ordinance and trip reduction guidelines provided by the City/County Association of Governments (C/CAG) of San Mateo County. The C/CAG guidelines "…identify strategies to respond to future transportation needs, develop procedures to alleviate and control congestion, and promote countywide solutions." The project understands that the efficacy of this TDM Plan is paramount, and the mechanisms in the TDM Plan will bind both the project and future tenants. Three (3) factors set the proposed TDM Plan apart from typical TDM Plans:

- **Employee Transit Subsidies/Amenities**: The TDM Plan will include the infrastructure, programs, and monitoring system to meet the City's requirements. In addition to the conventional TDM measures, the TDM Plan will consist of transit subsidies, guaranteed ride home, preferential carpool parking, bike parking, telework options, and annual online surveys. Highlights of the TDM Plan also include:
    - Last-mile shuttle program (operated by Commute.org)
    - Direct access to South San Francisco Caltrain Station
    - On-site amenities include a public restaurant, gym, etc.
    - A real-time transportation information kiosk/screen

- **Enforcement Mechanisms:**
    - Obligate Tenants to Perform: Language codified into the tenant leases will obligate future tenant(s) to achieve trip reduction goals and offer employee commuter benefits, such as transit subsidies and participate in annual surveys.
    - Surveys: Online employee surveys will identify transportation mode use and track trip reduction goals.
    - Triennial driveway hose counts: The project will undertake a study to identify the number of peak-hour and daily trips taken during a typical week every three years.
    - City Penalty Structure: The City may assess penalties at their discretion. Financial penalties would be the direct responsibility of the project. The conditions of approval for the project may provide a financial penalty structure in the event of failure to perform or deliver annual reporting.

- **Ongoing Role for TDM Consultant**: The TDM Consultant who prepared the TDM Plan will coordinate with the project's Property Management team. Ongoing Commuter Concierge responsibilities will include:

Preliminary

- Pre-occupancy engagement with tenants to transition drive-alone commuters to alternative transportation options before tenants move to the site
- New employee (all personnel) orientation to alternative transportation options
- Quarterly on-site promotions and events for all employees that highlight public transit, pedestrian and biking, and carpooling transit options and rewards
- Support tenants with their Employee Wellness/Health/Commuter Transportation Fair/Earth Day/Bike to Work Day/Spare the Air events and promotions
- Support tenants with coordination and formation of vanpools
- Robust surveys of tenants and their staff to ensure compliance
- Report TDM performance to the City.

The Project TDM Plan's measures below achieve a 45 percent alternative transportation mode-use rate. These measures are consistent with other very well-performing TDM Plans and trip-reduction programs in South San Francisco, Foster City, Mountain View, Palo Alto, and other San Francisco Bay Area locations

The following outline provides a summary of the applicant's TDM Plan for the project:

TDM INFRASTRUCTURE, PHYSICAL MEASURES, AND MONITORING

Installation and Built Environment (obligates the applicant to provide)

- Infill development
- Transit-oriented design
- Building design
- Shuttle loading zone
- Long-term bike parking (Class I)
- Short-term bike parking (Class II)
- Enhanced bike parking facilities
- Bicycle path development
- Fix-it bicycle repair station
- Wayfinding signage
- Showers and changing facilities
- Parking reduction
- Carpool/vanpool parking
- Clean air, clean-fuel vehicle parking
- Electric-vehicle (EV) parking
- Carshare Vehicle Parking - Conceptual
- Motorcycle and scooter parking placement
- Commuter/transportation kiosk (TransitScreen)
- Employee commuter resource flier
- On-site amenities and nearby amenities
- TDM site plan

Preliminary

TDM PROGRAMMATIC MEASURES

Commuter Program Management (obligates the applicant)

- Commuter Concierge amenity service
- Commute.org shuttle consortium participation
- Commuter incentives and rewards
- Coordination of trip reduction programs with nearby developments
- Parking management strategies
    - Preferential vanpool parking
    - Preferential carpool parking
    - Carpool parking policy
    - Unbundled commuter parking
    - Valet, tandem, and stacker parking
    - Parking management technology solution
- Best "Site" for Commuters national award

Employee Commuter Benefits (obligates the tenant)

- Transit subsidies
    - Caltrain GoPass
    - SamTrans Way2Go pass
- Vanpool subsidies
- Carpool subsidies
- Pre-tax transit deduction payroll option
- Pre-tax parking deduction payroll option
- Telework option
- Alternative work schedule option (flextime, compressed workweek)

Employee Commuter Service & Resources (obligates the tenant)

- Employee Transportation Coordinator
- Commute information web portal/intranet
- Guaranteed Ride Home program
- Regional bikeshare participation - conceptual
- Annual bike safety seminar
- Carpool and vanpool ride matching services
- Carpool allowance incentives
- Bicycle allowance incentive

Employee Commuter Marketing & Outreach *(obligates the tenant)*

- New employee onboarding
- Employee transportation fairs
- Company newsletter articles and emails
- Transportation management association (TMA) engagement
- Best Workplaces for Commuters designation

Preliminary

TDM PERFORMANCE MONITORING & SURVEYING *(obligates applicant and tenants)*

- Tenant performance and lease language – TDM requirements
- A yearly employee commute survey
- A yearly commute survey report
- Mid-year commuter satisfaction survey
- Triennial driveway report
- Penalty for non-compliance
- No expiration of the TDM Plan
- ITE trip generation estimate
- C/CAG trip reduction measures checklist

Preliminary

INTRODUCTION

This 121 E. Grand Avenue Transportation Demand Management (TDM) Plan meets the project's specific needs, considering the site's logistical resources, opportunities, and constraints. The TDM Plan measures provide specific elements and actions that commit the applicant and future tenant to implementation. Executing the TDM Plan measures will increase pedestrian, bicycle, carpool, and transit uses and achieve the required alternative transportation mode-use rate.

The TDM Plan is performance-based and directs the applicant and future employers (tenants) to implement employee benefits and create a formal commute program. Commute program marketing, ongoing promotions, a guaranteed emergency ride home program, and an active Commuter Concierge will provide the synergism needed to create a successful program for future project employees. This TDM Plan contains appropriate measures and elements consistent with other well-performing Silicon Valley, San Francisco Bay Area region, and national commute programs. Annual monitoring via surveys will provide the documentation to demonstrate the TDM programs' effectiveness to meet a 45 percent alternative transportation mode-use rate.

This TDM Plan details the applicant's commitment to the City of South San Francisco (City) and its designated responsibility for implementation.

This Project design encourages alternative modes of transportation, including walking, bicycling, carpooling, vanpooling, and public transit. By balancing air quality with economic growth, 121 E. Grand Avenue will help the City thrive as a community and meet its 2035 greenhouse gas (GHG) emission reduction goals.

TDM Planning Process

The following comprehensive TDM Plan will mitigate employee commute trips associated with a life science project. The project will include trip reduction elements and goals outlined in Chapter 20.400 Transportation Demand Management ordinance. The TDM Plan contains appropriate measures and features consistent with other Peninsula and regional commute programs.

This TDM Plan encompasses an array of alternative transportation mode-use strategies categorized in the following three sections:

I. TDM Infrastructure and Physical Measures
II. Programmatic TDM Measures
III. TDM Monitoring and Reporting

Preliminary

1.0 REGULATORY AND SUSTAINABLE ENVIRONMENTS

The TDM Plan combines services, incentives, facilities, and actions that reduce single-occupant vehicle (SOV) trips to help relieve traffic congestion, parking demand, and air pollution problems. The following are goals that addressed through the effective utilization of a TDM Plan with the use of TDM measures:

- *Reduce parking demand by converting SOV trips to an alternate mode of transportation (e.g., transit, carpool or vanpool, bicycling, or walking).*
- *Shift travel to less congested routes by providing traveler information systems that warn motorists about delays or alternative routes.*
- *Support other technological solutions (e.g., compressed natural gas, electric/hybrid vehicles, or other zero-emission vehicles).*
- *Eliminate or shift trips from peak periods (e.g., flexible schedules, compressed workweeks, or telecommuting).*

Successes achieved from TDM Planning will also significantly impact GHG emission reductions while providing sustainable mobility solutions. The sustainable solution combines innovative strategies with proven trip reduction methods, mobility-enhancing approaches, and energy consumption-reducing programs at a City-wide level. The results include mitigating GHG emissions and other pollutants, improved traffic flow and connectivity, reduced parking demand, and lower energy bills.

A summary of City, county, and State policy goals related to sustainability, congestion management, and GHG reduction follows below.

City of South San Francisco

South San Francisco General Plan[1]

- Land Use Policies: 2-G-8 Provide incentives to maximize community orientation of new development and promote alternative transportation modes.
- Implementation Policies: 2-I-4 Require all new developments that seek a FAR bonus to achieve a progressively higher alternative mode usage.
- Alternative Transportation Systems Policies: 4.3-G-1 Develop a comprehensive and integrated bikeways system that promotes bicycle riding for transportation and recreation.
- Alternative Transportation Systems Policies: 4.3-G-2 Provide safe and direct pedestrian routes and bikeways between and through residential neighborhoods and to transit routes
- Alternative Transportation Systems Policies: 4.3-G-3 In partnership with employers, continue efforts to expand shuttle operations.

[1] http://www.ssf.net/home/showdocument?id=15526

Preliminary

- Alternative Transportation Systems Policies: 4.3-G-4 In partnership with the local business community, develop a transportation systems management plan with identified trip reduction goals while maintaining a positive and supportive business environment.
- Alternative Transportation Systems Policies: 4.3-I-4 Require secure covered bicycle parking at all existing and future multifamily residential, commercial, industrial, and office/institutional uses.
- Alternative Transportation Systems Policies: 4.3-I-8, 9, 10,
- Alternative Transportation Systems Policies: 4.3-I-11 Establish parking standards to support trip reductions by:
  - Allowing parking reductions for projects that have agreed to implement trip reduction methods, such as paid parking.
- Air Quality Policies: 7.3-G-2 Encourage land use and transportation strategies that promote alternatives to the automobile for transportation, including bicycling, bus transit, and carpooling.
- Bicycle Master Plan Policies:[2] 1.2 Reduce reliance on travel by single-occupant passenger vehicles.
- Bicycle Master Plan Policies: 3.2 Bicycle parking facilities should be provided at schools, parks, and transit stops and shall be required to be provided at private developments, including places of work, commercial shopping establishments, parks, community facilities, and other bicyclist destinations.

South San Francisco Climate Action Plan[3]

The City's Climate Action Plan was adopted in 2014 to reduce energy usage and GHGs community-wide. The City also focuses on transit-oriented development proximate to Caltrain, BART, and the ferry terminal. South San Francisco is investing heavily in alternative modes of transportation to reduce reliance on single-occupancy vehicles, including the newly renovated Caltrain Station and pedestrian plaza, which will help improve transit options for employees, residents, and visitors. The City has partnered to offer carpool programs, the free South City Shuttle, and transportation demand management strategies for commercial and residential development.

South San Francisco TDM Zoning Ordinance 2010

- Chapter 20.400 Transportation Demand Management

20.400.001 – The specific purposes of this chapter are the following: …promote the more efficient utilization of existing transportation facilities and ensure that new developments are designed in ways to maximize the potential for alternative transportation usage.

Chapter 20.330 – Parking Standards (Bicycle Parking)

- Short and long-term bicycle parking shall be provided according to the provisions identified in section 20.330.008 of the SSFMC.

[2] Approved General Plan Amendment Adopting the South San Francisco Bicycle Master Plan, February 9, 2011.
[3] http://www.ssf.net/departments/city-manager/sustainability

San Mateo County Congestion Management Plan[4]

- All land-use changes or new developments that require a negative declaration or an Environmental Impact Report (EIR) and that are projected to generate a net (subtracting existing uses that are currently active) 100 or more trips per hour at any time during the a.m. or p.m. peak hour period must be reported to C/CAG within ten days of completion of the initial study prepared under the California Environmental Quality Act (CEQA).
- In 2021, C/CAG updated its policy for San Mateo County jurisdictions. This update includes a new requirement that local jurisdictions notify C/CAG of any new development project estimated to generate at least 100 Average Daily Trips under their purview. Previously, the threshold for local jurisdictions to report C/CAG of development projects was 100 net peak hour trips or those proposed as part of a General Plan Amendment.

San Francisco Bay Area Commuter Benefits Program

The Bay Area Air Quality Management District Regulation 14, Rule 1, also known as the Bay Area Commuter Benefits Program, requires employers with 50 or more full-time employees to register and offer commuter benefits to their employees. This rule aims to improve air quality, reduce emissions of greenhouse gases and other air pollutants, and decrease traffic congestion in the San Francisco Bay Area by encouraging employees to commute to work by transit and different alternative commute modes, including telework.

San Francisco Bay Area Commuter Benefits Program Proposed Strategy EN-7

A proposed enhanced Strategy EN7 - Expand Commuter Trip Reduction Programs at Major Employers, will expand the Bay Area Commuter Benefits program. In November 2020, the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG) met to discuss employer and business community concerns regarding substantially increasing future levels of telecommuting. A viable alternative strategy, called enhanced Strategy EN-7, included expanding employer measures beyond telecommuting to include transit, walking, and bicycling modes, providing more flexibility for businesses. It also limits on-site office occupancy to 40 percent per average workday. While the proposed change is not in place yet, employers can find more information here.

State Regulatory Setting

The State of California has given many organizations and agencies the responsibility of creating guidelines, policies, and thresholds that meet legislation. Agencies include the Office of Planning and Research, California Air Resources Board (CARB), California Air Pollution Control Officers' Association, Council of Governments, and the Attorney General's office.

- **Senate Bill 375 –** establishes improved land use and transportation policy supporting AB32 by providing a means for achieving the AB 32 goals for cars and light trucks through land-use changes. This legislation created potentially revolutionary changes in California's regional planning processes for housing and transportation by mandating sustainable regional growth

[4] www.ccag.ca.gov

plans. These plans expect to double the GHG emission reduction targets that local governments must meet through land-use planning.

- **Parking Cash-Out Program** – State law requires employers of 50 or more employees who provide subsidized parking for their employees to offer a cash allowance instead of a parking space. The parking cash-out program encourages employees to use public transit, carpooling, vanpooling, bicycling, or walking in place of driving to the office. This law allows employers to receive business tax deductions to offer commuters this benefit.

- **Senate Bill 743** – was signed in 2013 to "more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

  When implemented, "traffic congestion shall not be considered a significant impact on the environment" within California Environmental Quality Act (CEQA) transportation analysis.

  SB 743 requires the Governor's Office of Planning and Research to identify new metrics for identifying and mitigating transportation impacts within CEQA. OPR determined Vehicle Miles Traveled (VMT) per capita, VMT per employee, and net VMT as new metrics for transportation analysis for land use projects. For transportation projects, lead agencies for roadway capacity projects have discretion, consistent with CEQA and planning requirements, to choose which metric to evaluate transportation impacts. Statewide implementation occurred on July 1, 2020.

2.0 PROJECT DESCRIPTION

The project includes demolishing a Comfort Inn hotel building and constructing a singular structure encompassing two 17-story research and development wings. The project will incorporate 27,000 square feet of amenity and retail space.
The wings connect through a glass atrium on top of a two-story podium. The building sits by East Grand Avenue, Grand Avenue, and Poletti Way. The building will be approximately 940,993 gross square feet with a floor area ratio (FAR) of roughly 7.4.

The project is near a robust transit network and will integrate these resources into their commuting connections through shuttle staging areas and bicycle lanes. Accessible parking is provided in an enclosed, on-grade garage, while tenant and visitor parking is accommodated in two basement levels served through valet assistance. The project offers a total of 1,394 parking spaces.

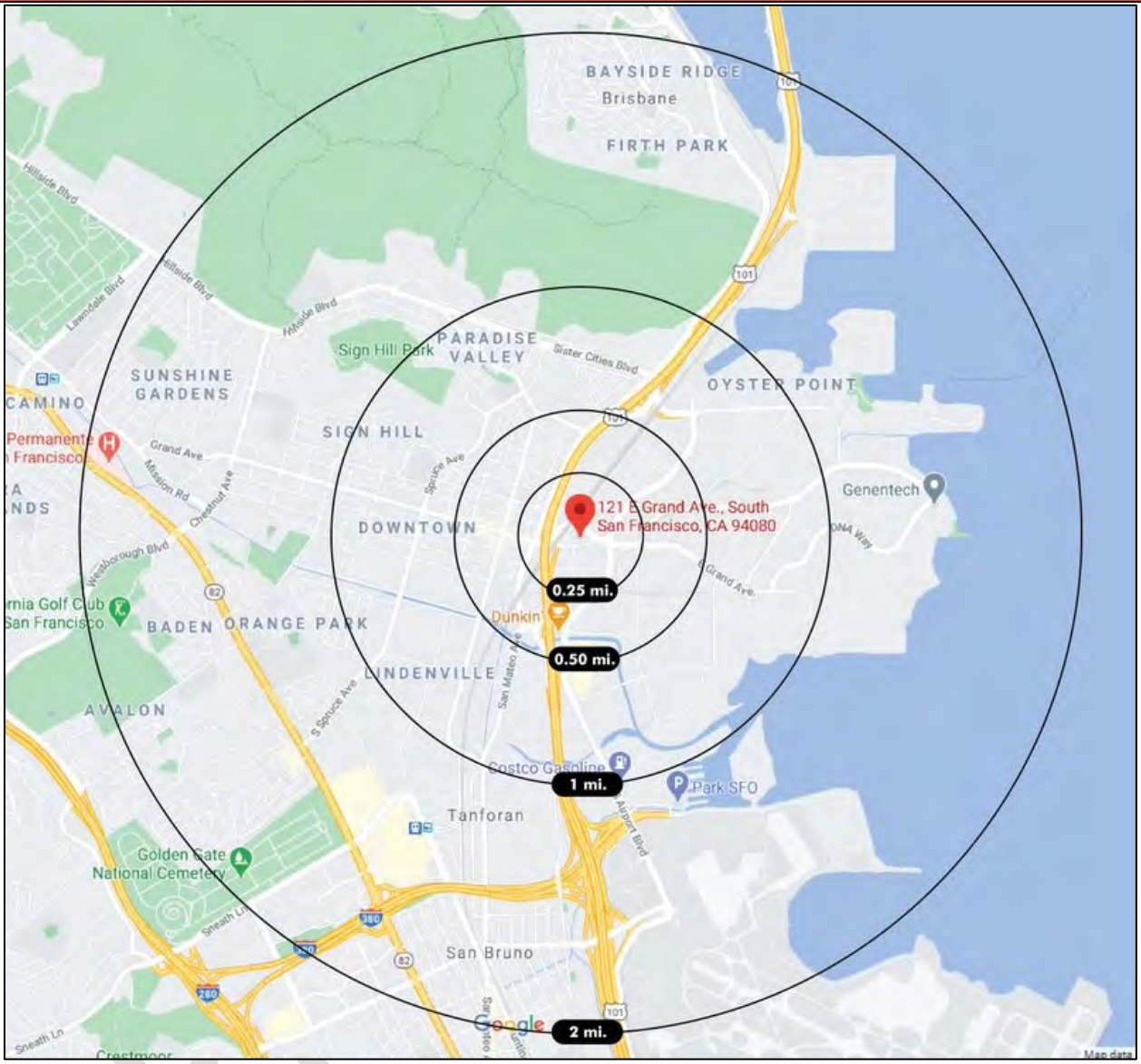
121 East Grand plans to build several amenities and community benefits, including a Grand Public Plaza with nearly 30,000 square feet of outdoor community space. Shown below is a Project Location Map.

Preliminary



Prelim

Project Location Map



3.0 EXISTING TRANSPORTATION FACILITIES

The project sits east of Highway 101. It has multiple shuttle routes connecting to the South San Francisco Ferry Terminal, South San Francisco Caltrain Station, and the South San Francisco BART station. Additional shuttle resources provide connectivity to the Millbrae BART/Caltrain Center and the Glen Park BART Station through the Genentech shuttles.

Commute.org shuttles offer 40 total trips per weekday. The ferry shuttle, suspended as of May 2020, is expected to reopen in fall 2021. Two nearby SamTrans routes expand transit resources

from Downtown San Francisco to San Mateo and Palo Alto and provide 97 transit trips per weekday. The transit matrix below offers 226 transit resources within walking distance of the project.

Nearby Transit Services Matrix

Route	Span of Service	Weekday Trips	Communities Served
292 SamTrans	7 Days/Week 4:00 a.m. - 2:41 a.m.	90	Hillsdale Mall, Saratoga/Park Place, Delaware/2nd, California/Howard, SF Airport Courtyard A, Airport/Baden, **Airport/Linden**, Bayshore/Old County, Drumm/Clay, Mission/1st, Mission/7th, Potrero/24th, Delaware/3rd, Saratoga/Yates
397 SamTrans	7 Days/Week 12:46 a.m. - 6:32 a.m.	7	Palo Alto Transit Center, Bay/University, Middlefield/5th, Redwood City Transit Center, El Camino/Hillsdale, El Camino/Burlingame, Millbrae Transit Center, SF Airport Courtyard A, Airport/Baden, **Airport/Linden**, Bayshore/ Old County, Drumm/Clay
Caltrain	7 Days/Week 5:08 a.m. - 12:20 a.m.	40	San Francisco, 22nd Street, Bayshore, **South San Francisco**, San Bruno, Millbrae Transit Center, Burlingame, San Mateo, Hillsdale, Belmont, San Carlos, Redwood City, Menlo Park, Palo Alto, California Ave., San Antonio, Mountain View, Sunnyvale, Lawrence, Santa Clara, San Jose Diridon, Tamien, Capitol, Morgan Hill, San Martin, Gilroy
Genentech BART Glen Park Shuttle	5 Days/Week 6:03 a.m. - 7:07 p.m.	36	Glen Park BART Station, 690 Gateway, B83, **300 Gateway**, B5, B31
Genentech Millbrae Caltrain Shuttle	5 Days/Week 6:17 a.m. - 6:13 p.m.	13	Millbrae Transit Center, The Cove, 690 Gateway, **230 E. Grand Ave.**, B43, B05, B35
Utah-Grand BART Shuttle	5 Days/Week 6:38 a.m. - 5:58 p.m.	8	SSF BART Station, 169 Harbor Way, 230 E. Grand Ave., Kimball & E. Grand Ave., 390 Swift Ave., 400/450 E. Jamie Ct., 475 E. Grand Ave., Cabot/Allerton Ave., 349 Littlefiled Ave., **SSF Conference Center**
Utah-Grand Caltrain Shuttle	5 Days/Week 6:32 a.m. - 6:08 p.m.	13	**SSF Caltrain Station**, 169 Harbor Way, 230 E. Grand Ave., Kimball & E. Grand Ave., 390 Swift Ave., 400/450 E. Jamie Ct., 475 E. Grand Ave., Cabot/Allerton Ave., 349 Littlefiled Ave., **SSF Conference Center**
Utah-Grand Ferry Shuttle	5 Days/Week	7	South San Francisco Ferry, **South San Francisco Caltrain Station**, E. Grand Avenue (temporarily suspended)
Oyster Point Ferry Shuttle	5 Days/Week	6	South San Francisco Ferry, **South San Francisco Caltrain**, Oyster Point Boulevard, Genesis Towers, Dubuque Innovation Center (temporarily suspended)
Genesis One Tower Place BART Shuttle	5 Days/Week 6:32 a.m. - 6:23 p.m.	6	SSF BART Station, One Tower Place, Dubuque Innovative Center, **SSF Caltrain Station**
Total Bus Trips/Weekday		**226**	

* All buses and trains are lift equipped for handicapped, elderly, or those in need.

Below is a Walking Distance to Local Transit Map, highlighting the local shuttle and transit resources within a .20-mile walking distance of the project.

Preliminary

Walking Distance to Local Transit Map

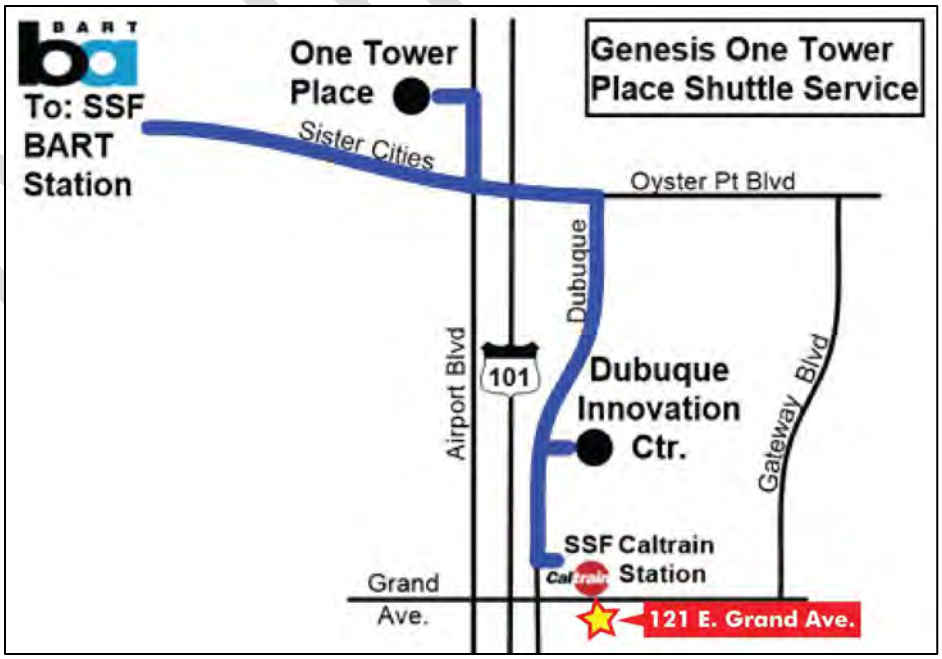


The following pages contain route maps for the several transit and shuttle resources available to this site.

Genesis One Tower Place BART Shuttle

The Commute.org Genesis One Tower Place Shuttle operates between the South San Francisco BART Station and the South San Francisco Caltrain Station. Shown below is the Genesis One Tower Place BART shuttle route map.

Genesis One Tower Place BART Shuttle Route Map



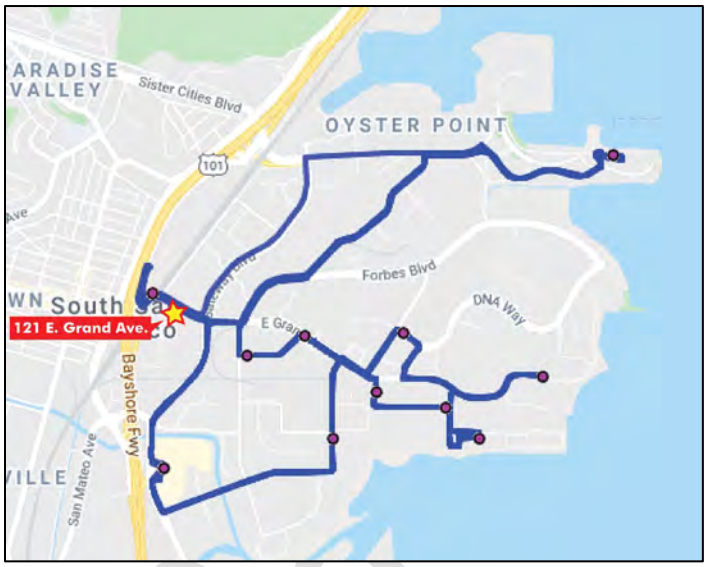
Utah-Grand Shuttles

Within walking distance from the project are three Utah-Grand shuttle routes.

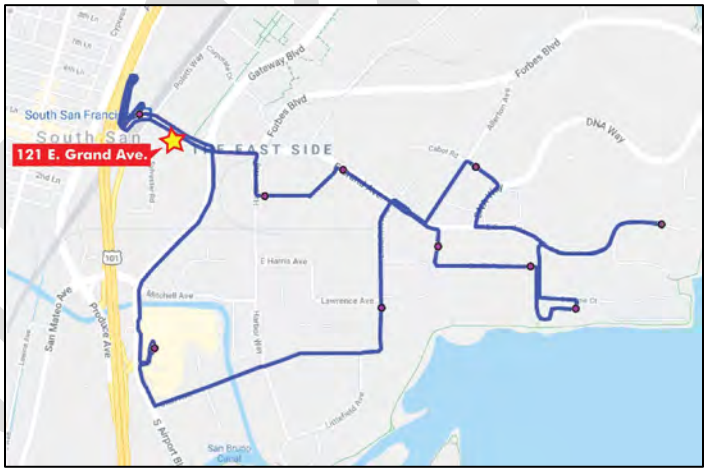
The Utah-Grand shuttles serve the South San Francisco BART, Caltrain Stations, and Ferry Terminal. The project will participate in the Commute.org Consortium program as a member. Displayed on the right and below are these shuttle routes.

The Oyster Point Ferry Shuttle is another option for employees to connect with the Ferry Terminal. However, the Oyster Point Ferry Shuttle picks up at Caltrain Station.

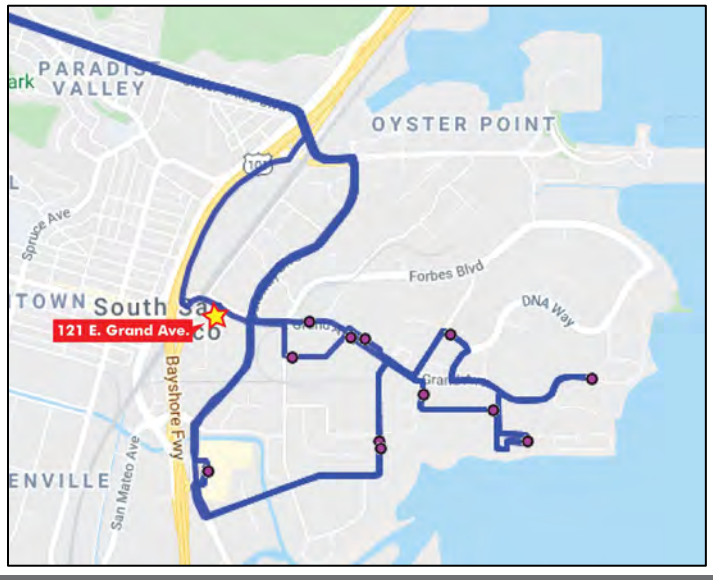
Utah-Grand Ferry Shuttle Route Map



Utah-Grand Caltrain Shuttle Route Map



Utah-Grand BART Shuttle Route Map



Preliminary

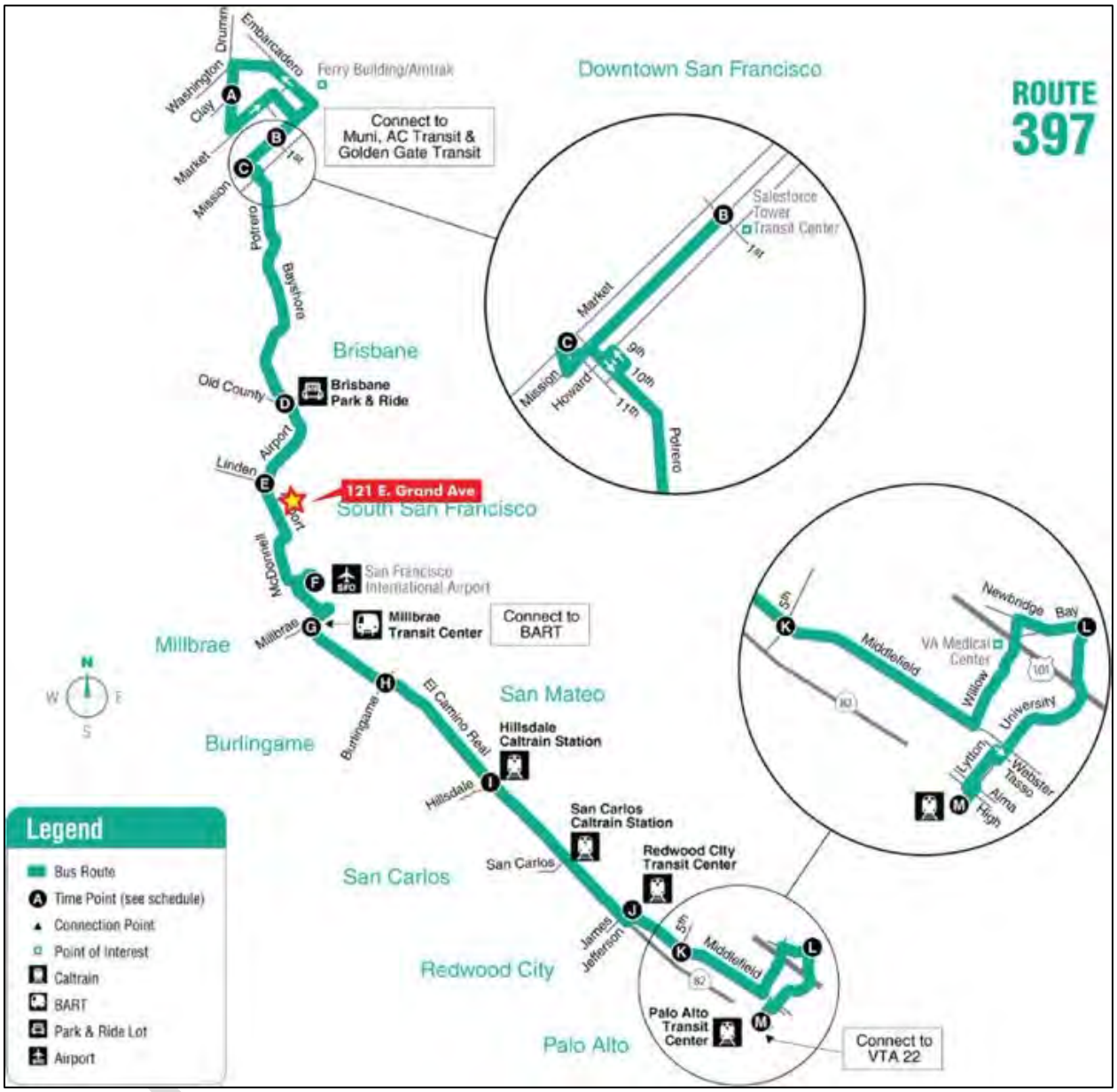
SamTrans

Two SamTrans routes provide service to the project location. Below and on page 11 are SamTrans maps for routes 292 and 397.

SamTrans Route 292 Map



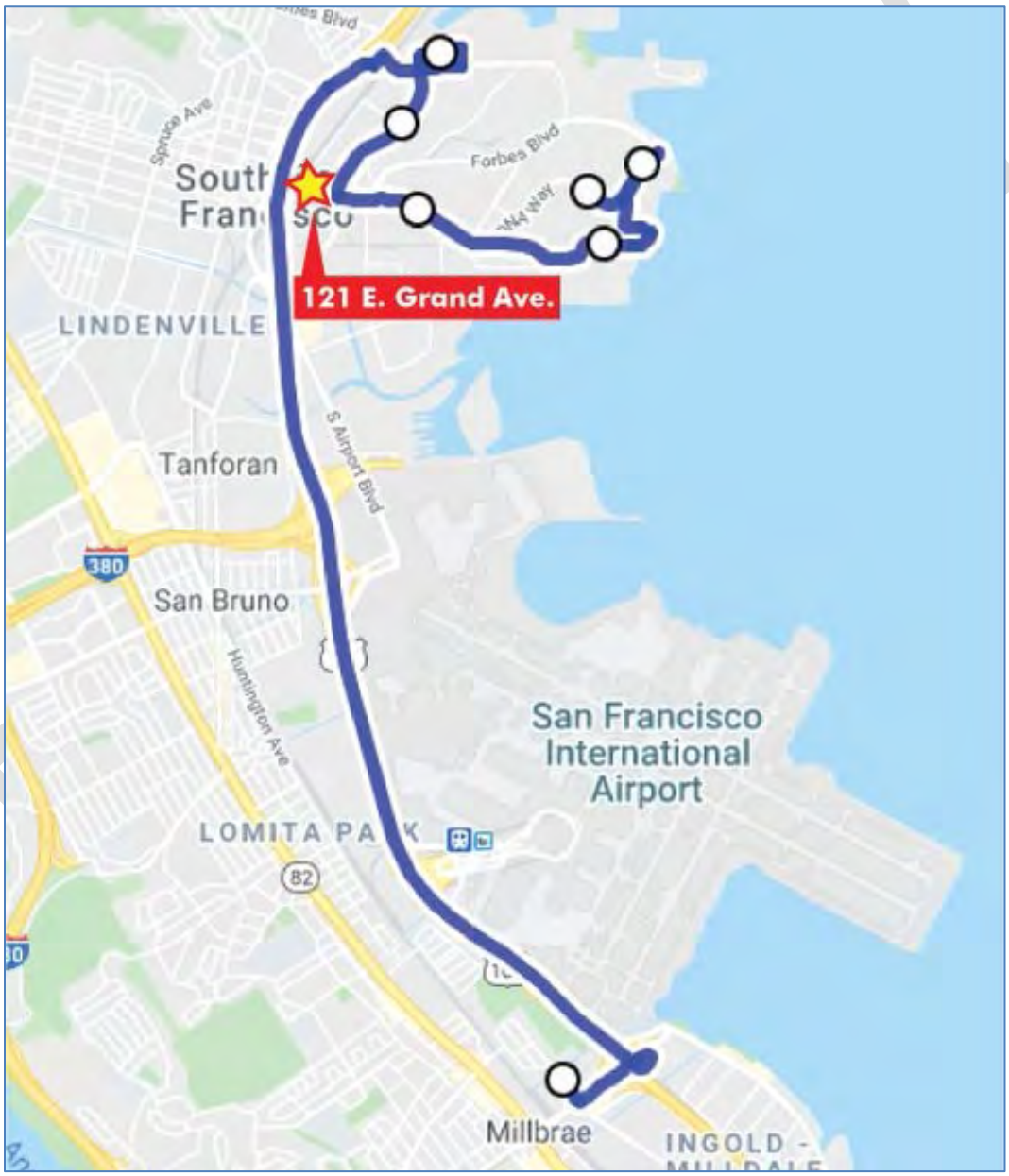
SamTrans Route 397 Map



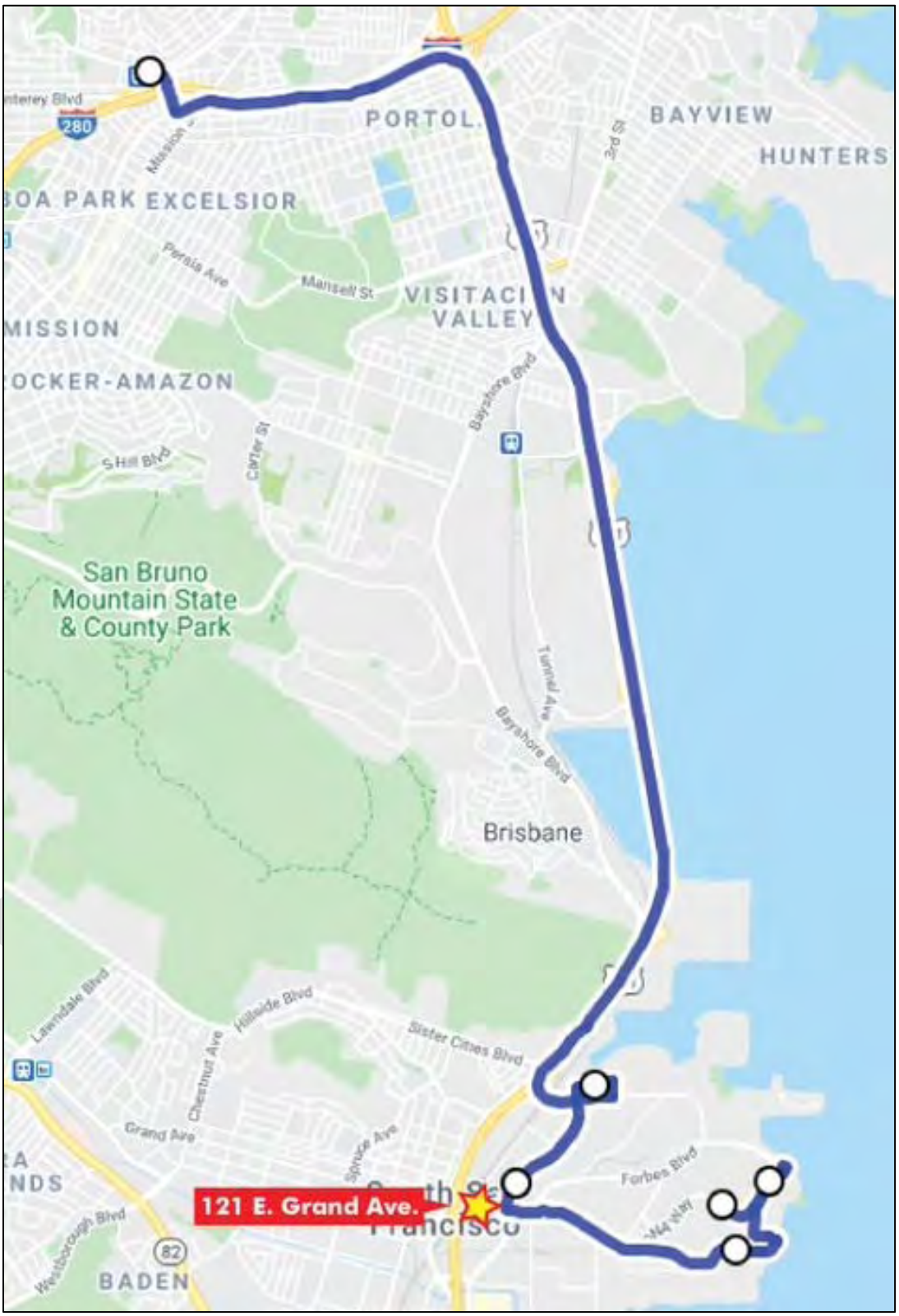
In September 2018, Genentech opened their Millbrae Transit Station shuttle and Glen Park BART Station shuttle. Future project commuters can ride the Genentech connector shuttles at no cost, but they must walk to the nearest pickup location, and Genentech routes may not drop off and pick up at the project site.

The Genentech connector schedules and routes are found at https://oysterpointmobility.com/. Below are the Genentech Millbrae Station shuttle and Glen Park BART shuttle routes.

Genentech Millbrae Station Connector Shuttle



Genentech Glen Park Connector Shuttle

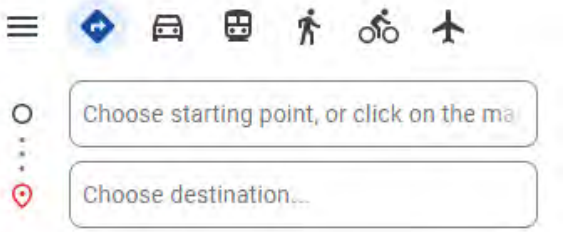


Transit Trip Planning Resources

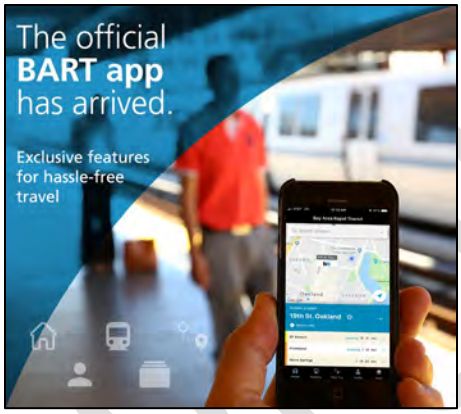
Online trip planning services are valuable for planning bicycles, carpools, and public transit trips.



Google has also collaborated with select regional transit agencies to provide a public transit planner for riders of VTA, Caltrain, BART, and other San Francisco Bay Area systems.



The SamTrans mobile app is valuable for commuters planning to ride on the bus system. Commuters can use this app to pay bus fares, buy and activate tickets, and see SamTrans departures, timetables, and routes.

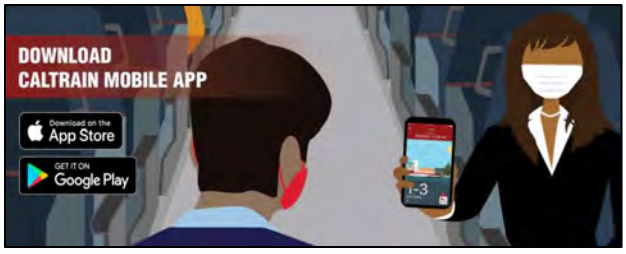


The official BART app offers commuters end-to-end trip planning, real-time departures with data straight from BART, service advisories, customized in-app notifications, the ability to save favorite trips and stations, and contactless parking payment.



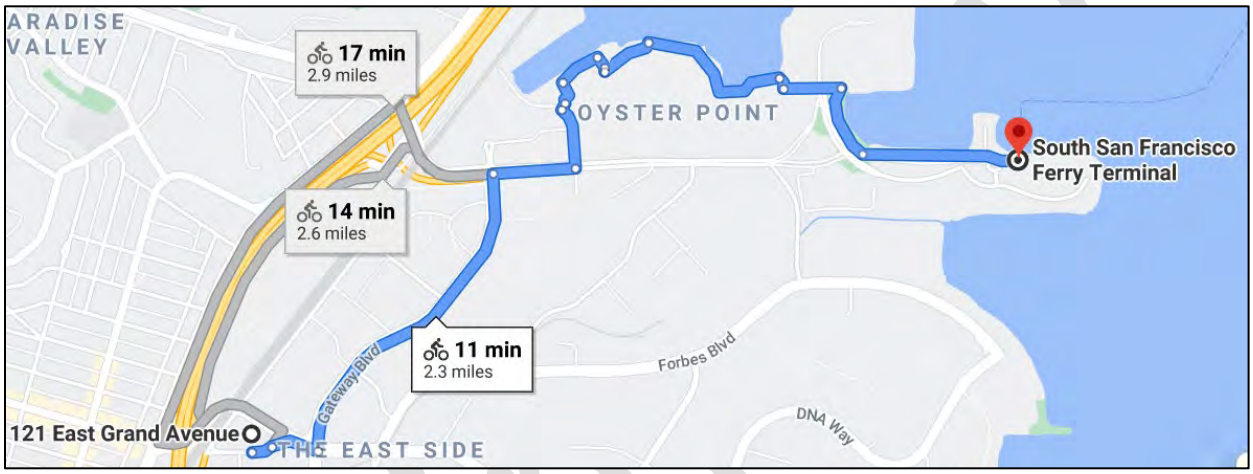
The Caltrain Mobile app offers commuters the ability to purchase and use fares instantly on their mobile phones.

For easy access to Caltrain's schedules and rider alerts, employees can download the CaltrainMe app.

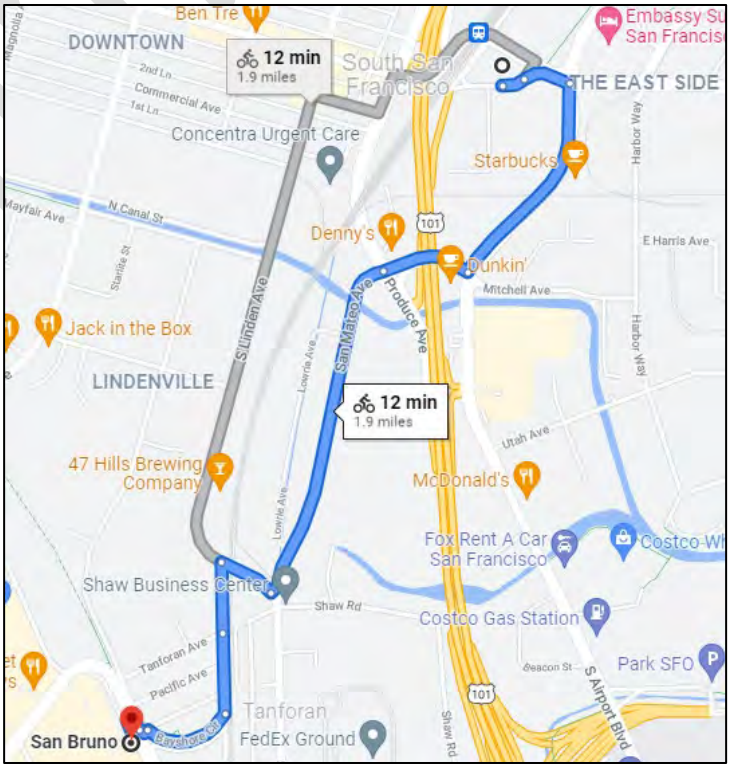


Bicycle Connections

Bicycle connections surrounding the project have a favorable BikeScore of 70 out of 100, indicating that biking is convenient for most trips. A suggested bike route along Grand Avenue, a Class III bike route, provides access to the project, connecting to a path along Gateway Boulevard and a Class II bike lane along Airport Boulevard. Bicycle travel to and from the Ferry Terminal is 2.3 miles taking approximately 11 minutes. Shown below is a project to the Ferry Terminal bike route screenshot.



Bicycle travel to and from the San Bruno BART Station is 1.9 miles and takes approximately 12 minutes to ride. The bike route from the project to the San Bruno BART Station is shown right.



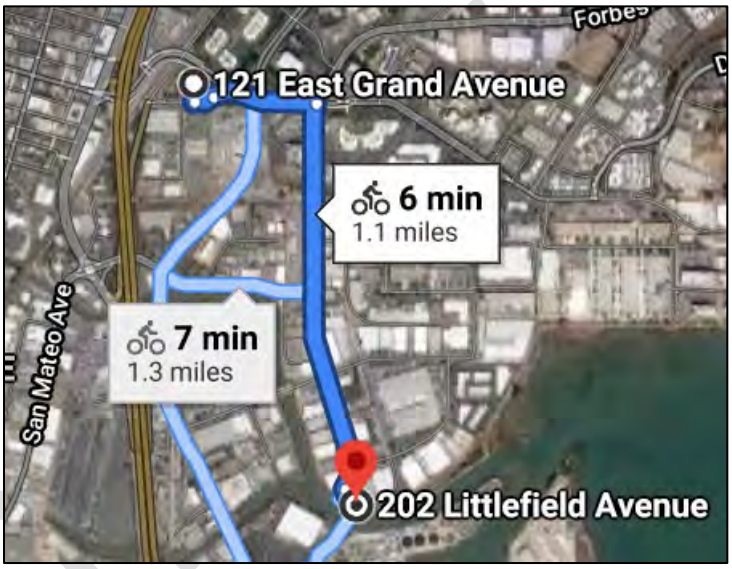
Bicycle travel to and from the South San Francisco BART Station is 3.1 miles and takes approximately 18 minutes to ride.

Preliminary

The San Mateo County Bike Map, shown on page 18, identifies various bicycle facilities for commuters.

The San Francisco Bay Trail surrounds the entire area east of Highway 101 and rates as a regional trail and a Class I bicycle path. The Bay Trail is a 500-mile multi-use, paved pathway circling San Francisco and San Pablo Bay, connecting 47 cities. The trail provides commuters an exceptional opportunity to bicycle or walk to work in South San Francisco.

Bicyclists can access the trail with a six-minute ride to 202 Littlefield Avenue (trail access), as shown to the right.



Shown on page 19 is the San Francisco Bay Trail Map.

Preliminary

San Mateo County Bicycle Map



San Francisco Bay Trail Map



Bicycle Commuter Resources

Commute.org, in partnership with a nationally certified League Cycling Instructor (LCI), offers free bicycle safety workshops for employers. Employers can schedule workshops during lunchtime, late workday, or even after work.



Bicycle commuters looking to find a riding partner can find matching information at https://511.org/biking. The 511 system also provides significant resources for bicycle commuters, including:

- Bicycle maps
- Location of bike lockers
- How to take your bike on public transit
- How to take your bicycle across Bay Area toll bridges
- How to ride safely in traffic
- Tips for bike selection
- Links to bicycle organizations
- Bike to Work Day
- Bike Commute Calculator
- Tips on bike commuting





Walk Score

The project has a favorable WalkScore of 71 out of 100, indicating that pedestrians can accomplish most errands on foot.



SECTION I – TDM INFRASTRUCTURE AND PHYSICAL MEASURES

Preliminary

The following physical infrastructure measures support commuters who use alternative transportation. The project will install these TDM Plan components during the project's construction.

Infill Development

The proposed project would develop under-used parcels within the existing urban area. The area surrounding this project is mainly improved. Under these conditions, the project would be considered infill development, contributing to trip reduction outcomes. According to the City/County Association of Governments of San Mateo County, infill development can reduce peak-hour vehicle trips by two percent.[5]

Transit-Oriented Design

Due to its infill location, the project will become a transit-oriented, pedestrian, and bicycle-friendly project that embraces the City's goals and policies. Some pedestrian and transit-oriented design features include orienting the building toward transit stops and tying it into adjacent bicycle and pedestrian circulation facilities.

Building Design

The project design will enhance pedestrian continuity by:

- Recessing door and window features of the building to further the walkable area of the sidewalks.
- Incorporating landscaped areas to serve visitors and passersby at the entry to the building.
- Installing planters on the property adjacent to the public right-of-way.
- Providing a direct walkway from the street to the building's main entrance and parking garage that extends to the amenity area and bike trail.

Transit/Shuttle Center

The applicant proposes to construct a transit staging and waiting area. The transit shelter placement and construction will orient Poletti Way and become a loading area for rideshare and Commute.org vehicles. The transit passenger shelter will provide a structure that affords protection from the weather for persons waiting to board public or franchised transit vehicles. An attractive bus shelter area encourages transit ridership.



[5] City/County Association of Governments (CCAG) of San Mateo County's Congestion Management Program.

Preliminary

4.0 BICYCLE FACILITIES



Provided will be 250 bicycle parking facilities, and the project exceeds the City's Bicycle Parking code.

This increase in bicycle facilities also meets the LEED bicycle parking requirements. Wayfinding signage will indicate directions to long-term bicycle parking facilities and shower facilities.

Long-Term Bike Parking

The project will provide at least 108 secure Class I bicycle parking facilities (nearly double the required number). A Class I bike parking room will be on the project's ground floor, and the bike room area can expand to accommodate more bike parking for future needs.



Short-Term Bike Parking

The project will provide at least 142 short-term parking bike racks (Class II).

The racks will have the ability to secure the frame and both wheels of the bike. Bike racks will be near building entrances within a constant visual range.



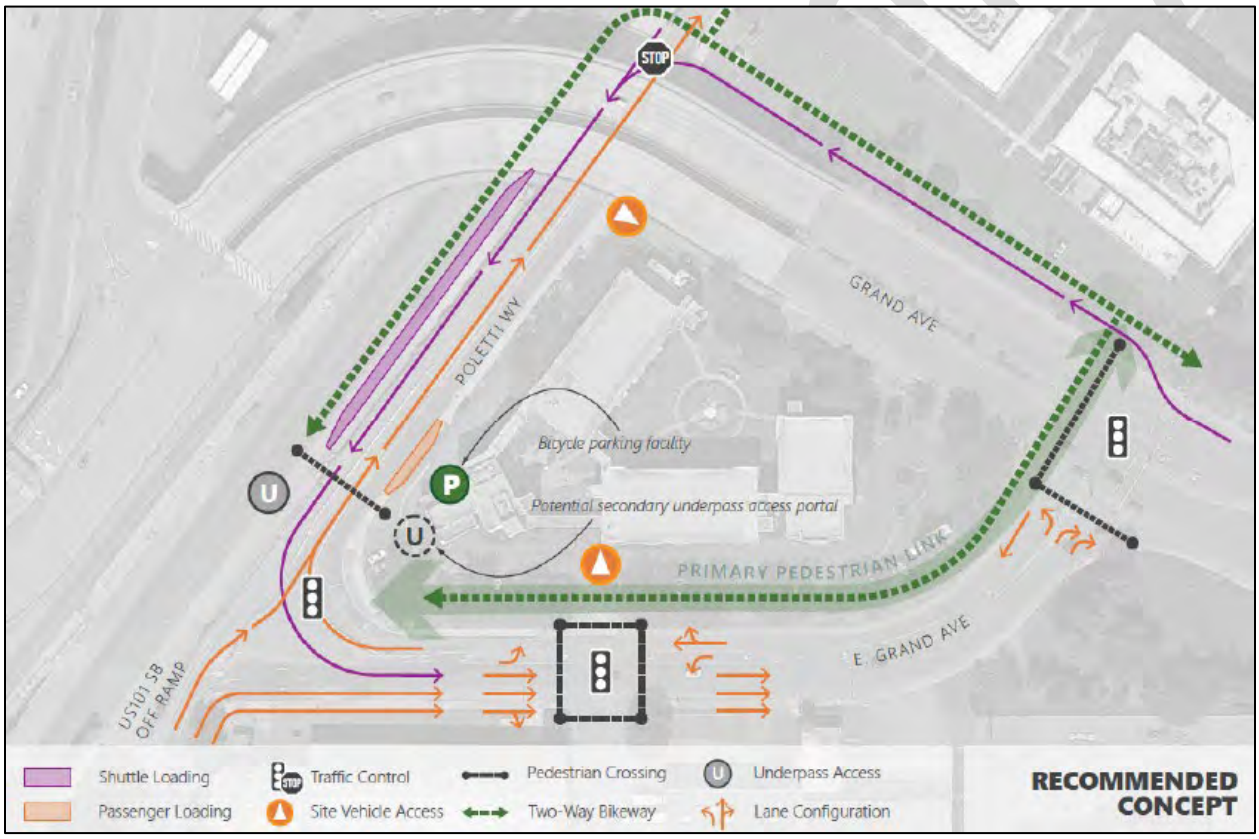
Enhanced Bike Parking Facilities

The project will consider increasing the number of bicycle parking facilities should the demand for bike parking increase. Enhanced bicycle facilities will encourage building occupants to use cycling as a commuter option and provide capacity for more cyclists.

Bicycle Path Development

The City will construct a protected bike pathway along East Grand Avenue to connect to and from Grand Avenue. The bike path will serve as a valuable facility in the local bicycle network and improve the project's bikeability.

Not only will project occupants benefit from this added infrastructure, but it will add much-needed connectivity to bicyclists traveling between the Caltrain station and areas east of Highway 101, such as the Oyster Point area. Shown below in green is the proposed bicycle path.



Source: South San Francisco Caltrain Station Eastern Access Study, Fehr & Peers, October 2021.

Fix-it Bicycle Repair Station

The project will install a bicycle Fix-it repair station to allow cyclists to conduct minor maintenance on their bikes. The Fix-it includes all the tools necessary to perform basic repairs and maintenance, from changing a flat to adjusting brakes and derailleurs. The tools and air pump are securely attached to the stand with stainless steel cables and tamper-proof fasteners. Hanging the bike from the hanger arms allows the pedals and wheels to spin while adjusting.





Wayfinding Signage

The project will facilitate wayfinding for bicyclists by providing signage to help commuters navigate bicycle lockers, changing facilities and showers, and the surrounding area's bicycle infrastructure network. Clear signage and wayfinding systems encourage bicycling by highlighting the presence of infrastructure designed to support bicyclists.



Showers and Changing Facilities

Showers and clothes lockers will be installed for employees who walk, jog, or bicycle to work or wish to change clothes after commuting via an alternate mode of transportation. A total of six showers will be installed, providing showers for both genders, and shower and changing facilities will be provided free of charge for all employees.

5.0 PEDESTRIAN FACILITIES

Creating a pedestrian-oriented environment ensures access between public areas while strengthening pedestrian and bicycle connections. Safe, convenient pedestrian connections will exist from the project to surrounding surface streets and trails. Lighting, landscaping, and building orientation will enhance pedestrian safety. Pedestrian spaces provide options for recreation, eating, or other outdoor activities.

The project will install pedestrian street crossings and walk-signal request buttons. These features help prioritize pedestrians and enable the project to become more accessible and safer for pedestrians.

Preliminary

6.0 PARKING FACILITIES

The project will be responsible for striping parking space pavement and providing appropriate signage for guests, preferential carpool parking spaces, vanpools, electric and fuel-efficient parking throughout the site.

Parking Reduction

The project plans to reduce the number of parking spaces provided below the South San Francisco Municipal Code minimum. The parking ratio is estimated a 1.5 per 1,000. Reduced parking helps limit parking available to commuters, which discourages driving and encourages alternative mode-use by making it less convenient for drive-alone commuters to find parking spaces. The project will significantly reduce parking levels to 47.5 percent below code.

Carpool/Vanpool Parking

The project anticipates dedicating eight percent of total parking spaces for carpool and vanpool parking designated for carpool and vanpool vehicles and the exclusive uses of ridesharing employees. The carpool/vanpool spaces will be in parking areas closest to a building's entrance or a prime location. The project will incorporate carpool and vanpool parking spaces with clean-air vehicle parking.



The project will reserve, stripe, and sign a limited number of parking spaces for commuter carpools and vanpools. Commuter vanpool parking spaces will only be made available to employees from the building who carpool or vanpool as their commute option.

The carpool vanpool parking spaces may require policy development, employee registration, and permitting.

A registration process will provide carpoolers with a special carpool parking permit. Carpools must contain two or more participants who work at the building.

Registered vanpools may receive a reserved parking space.

Clean Air, Clean-Fuel Vehicle Parking

The project will also include clean-air parking spaces. The project will be responsible for construction, striping, and signage for the specialty parking space. A description of the designated parking space includes:

Preliminary

- The clean-air vehicle parking space will also accommodate carpool and vanpool striping and signage.
- Space will be in the parking areas closest to the building's employee entrances or prime locations in the garage.



The project will allocate eight percent of all parking to clean air and carpool/vanpool parking. The designed parking spaces satisfy CalGreen standards and the City's zoning code.

Electric/Plug-in Charging Facilities

The project will provide six percent of parking as designated electric capable parking. The applicant will pay for installing an EV-ready electrical circuit and capacity and help coordinate the installation of EV charging stations.

It should be noted that electric vehicles are not a TDM measure and do not reduce vehicle trips, and electric cars tend to generate drive-alone commuter trips.

Carshare Vehicle Parking - Conceptual

The project may identify parking spaces in a prominent location to designate a reserved carshare parking space. Vendors such as Zipcar may host an on-site vehicle here, allowing tenants access to a carshare vehicle.



Motorcycle and Scooter Parking Placement

The project may designate motorcycle and electric scooter parking in a covered location.

Smaller designated motorcycle parking will efficiently utilize areas not available to vehicles. Electric scooters will be encouraged for employee consideration for their clean-fuel benefits and contribution to reducing vehicle congestion and parking.

Preliminary

7.0 TRANSPORTATION AND COMMUTE INFORMATION KIOSK



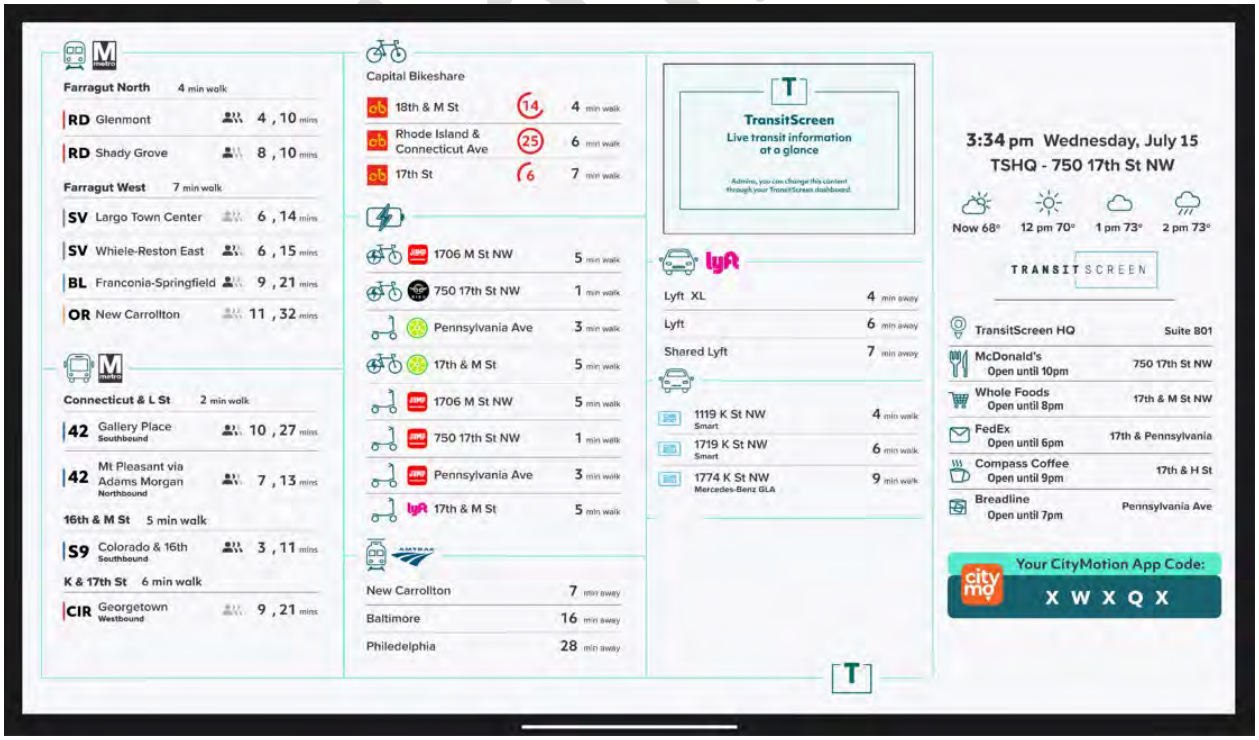
The project will provide a transportation information kiosk in the building lobby. Easily accessible transportation information will be an essential component of commuter outreach and education for employees.

A transportation kiosk can be electronic, mobile, or a physical unit containing bike maps, transit schedules, and carpool fliers. A physical unit can be wall-mounted or a floor-standing model. The image below is an electronic option.

Shown on page 28 is the mobile app version of an electronic TransitScreen. The corresponding TransitScreen app may better assist employees with their commuter planning needs.

Below is an electronic TransitScreen (now called Actionfigure) model. Actionfigure curates data feeds to provide accurate, real-time transportation information about all types of transportation.

Actionfigure tracks schedules, next-bus or shuttle time, and available services, including public and (approved) private shuttles, vanpool programs, shared transportation (scooters, bikeshare, mopeds, and carsharing), and ride-hailing services (Uber, Lyft, taxis).



An image of the mobile app version of an electronic Actionfigure tool is on the right. The mobile app (Citymotion) can help employees track transit options while not in the lobby, valuable for off-site meetings or planning connections. The app provides custom trip planning, real-time transit, shuttle data, alerts, and communication notice from property management.



8.0 EMPLOYEE COMMUTER RESOURCES

Commute Resource Flier

The project will provide all tenants with a reproducible and editable employee commuter flyer. This flier will include (but is not limited to) information about carpool parking, transit opportunities, shuttles, bicycle routes, and on-site amenities and resources. The flier will promote commuter assistance, incentives, rewards, and links to helpful resources. Fliers will integrate with tenant/employer information. Provided below is a sample flyer.

Preliminary

121 E. Grand Commuter Resources

TRANSIT & SHUTTLES

SamTrans Route 292
SamTrans Route 397
Caltrain
BART
SF Bay Ferry
Transit Planner Tool
Free Trial Transit Pass
Utah-Grand BART Shuttle
Utah-Grand Ferry Shuttle
Genesis One Tower BART Shuttle
Oyster Point Ferry Shuttle
Genentech Glen Park BART Shuttle
Genentech Millbrae Caltrain Shuttle

CARPOOL & VANPOOL

Carpool Savings Calculator
Scoop Carpool matching app
Waze Carpool matching app
511 Merge – online carpool matching
$25 Carpool reward (every 10 trips)
$100 Carpool Incentive
$350 monthly vanpool group subsidies
$100 Vanpool incentive

BICYCLE

Bicycle Resources
Bike to Work Information
$100 Bike to Work Incentive
Bikes on Transit
Silicon Valley Bicycle Coalition
San Mateo County Bike Map
San Francisco Bay Trail Map

SERVICES & INCENTIVES

Guaranteed Ride Home Program – *requires pre-registration*
Additional Commuter Rewards
Bay Area Spare the Air Alert Notices

Email:commute@the-confluence.com
Commuter Concierge

BEST Sites for Commuters 2021
Caltrain
Commute.org
San Francisco Bay Trail
BART
spare the air
San Francisco Bay Ferry
A SERVICE OF WETA

On-Site Amenities

Many on-site amenities will provide commuters with convenience features to help them avoid using personal vehicles throughout the day. On-site amenities will include a street-level coffee shop that will offer the opportunity to buy food and refreshments. An on-site gym may be open to the public (limited) for a membership fee.

A public restaurant and an outdoor plaza on the plaza level will create a green, pedestrian-friendly space for employees to enjoy recreation, eating, gathering, entertainment, and other outdoor activities without leaving the site premises.



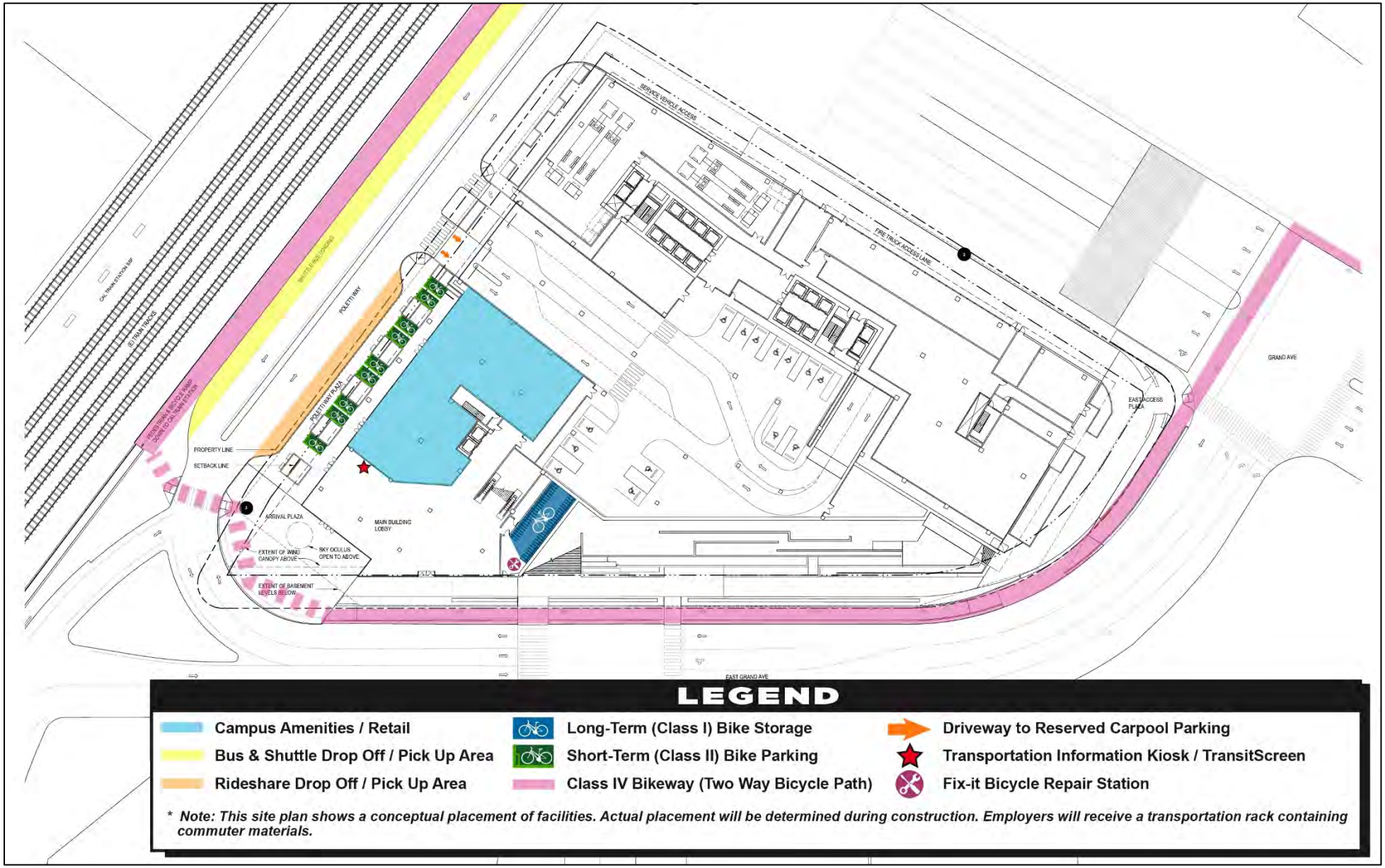
Nearby Amenities

Several nearby amenities are available within walking distance for commuters. Nearby amenities enable commuters to complete errands throughout the day without using a personal vehicle. An attachment at the end of the document includes a list of these nearby amenities.

9.0 TDM SITE PLAN

The following TDM site plan shows the trip reduction design elements for the project, including a Class IV bikeway, long and short-term bicycle parking, rideshare passenger loading zone, shuttle loading area, transportation kiosk, and a bicycle repair station.

121 E. Grand Avenue TDM Site Plan



SECTION II – PROGRAMMATIC TDM MEASURES

The following programmatic measures enhance the success of the TDM Plan. They become the "121 E. Grand Avenue Commute Program upon implementation." Representing various promotions and outreach activities of the Commute Program, these measures are TDM components required of tenants and employers as part of their occupancy agreements. Implementation efforts represent the backbone of a successful commuter program.

10.0 APPLICANT COMMUTER PROGRAM MANAGEMENT

Commuter Concierge Amenity

The project will provide a Commuter Concierge/TDM professional to support the project tenants. As a building amenity, the Commuter Concierge will help organize TDM Plan programs and communications for the tenant before they occupy the site. Pre-move engagement will assist employees with customized trip TDM Planning, registration for transit subsidies and commuter allowances, and program policies. The Commuter Concierge will become a constant resource for tenants and their employees and remain a project feature to meet the 45 percent alternative transportation mode-use rate.

The Commuter Concierge will provide employer training and commute program start-up assistance, TDM Planning assistance, and annual monitoring and survey reporting instructions. The overarching goals of this support function are to reduce commute trips for employees, formalize tenant commute programs, and assist with employee marketing and outreach. The Commuter Concierge will help property management prepare tenant materials for new employee orientation, production of kick-off events, coordination of carpool parties, commute e-news articles, employee assistance, and coordination of the annual transportation fair.

Commute.org Shuttle Consortium

The project will participate in the Commute.org shuttle consortium program. With several Commute.org shuttles serving the area, direct site access to these shuttles will be a critical resource for tenants and their employees. The applicant will contribute funding as necessary to participate in the shuttle consortium.

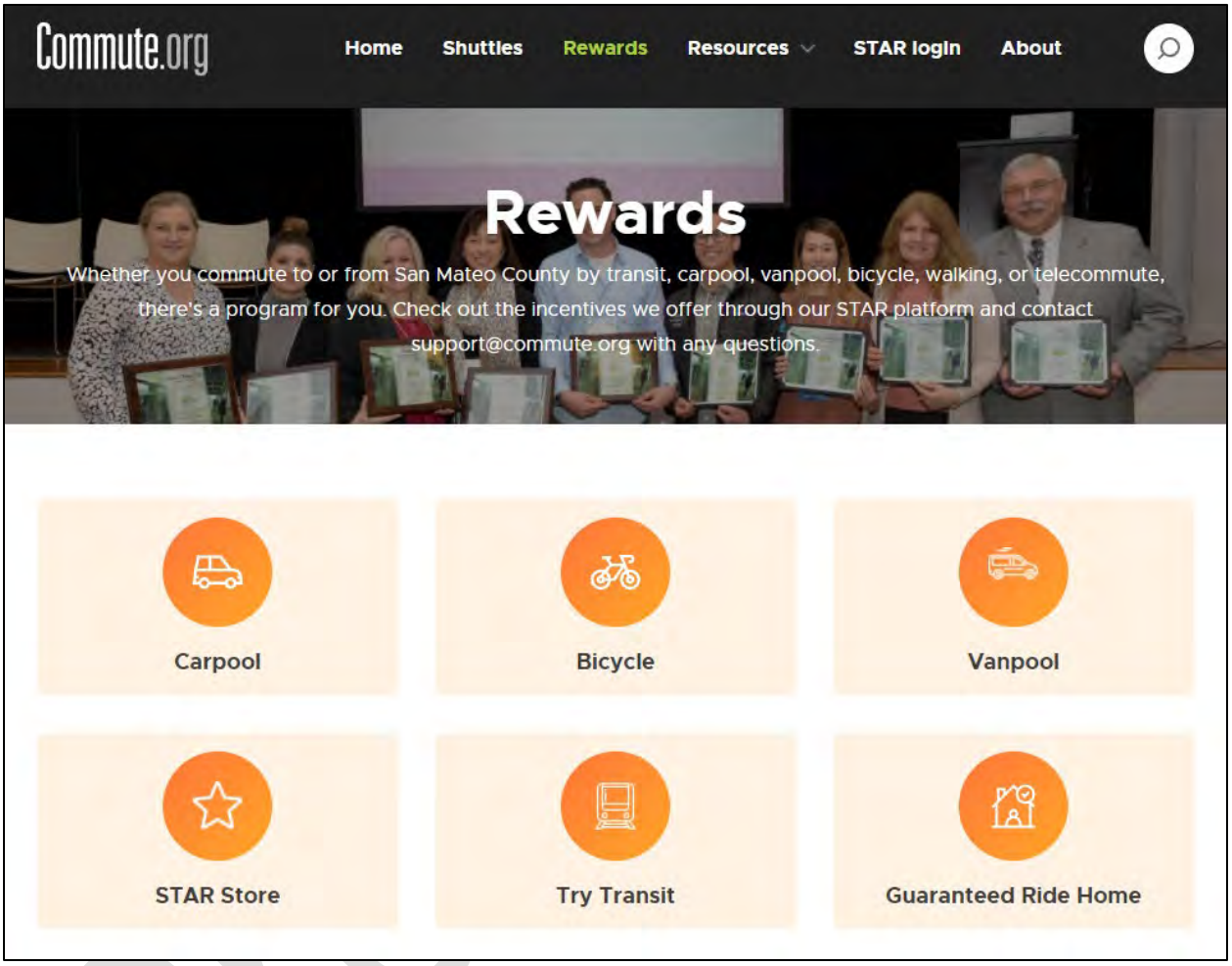


Commuter Incentives and Rewards

The Commuter Concierge will promote various commuter incentives and rewards during the year.

Preliminary

Commute.org and the San Francisco Bay Area 511.org program offer many incentives. Commute.org provides a $100 e-gift card carpool, vanpool, or bicycle reward and free trial transit tickets for new riders. Shown below is an image of the Commute.org incentives.



Coordination of Trip Reduction Programs with Nearby Developments

The Commuter Concierge will coordinate with nearby developments and employers to identify opportunities to leverage or co-op commuter resources. For example, employees or nearby building developments may have similar schedules as employees of the project. The Commuter Concierge will investigate carpool-matching options between the tenants and nearby employment sites to facilitate carpool candidate introductions.

Unbundled Commuter Parking

The project applicant will unbundle the cost of parking from the rent to the tenant(s). Unbundled parking allows the tenant to choose whether to charge employees for parking and introduces the possibility of commuters paying for their parking.

Parking Management Technology Solution

The project may track and invest in a parking management technology such as Luum or OneCommute to administer parking programs involving reservations, incentives, and performance tracking.

Scheduled Mobile Bicycle Maintenance Service

The Commuter Concierge will coordinate periodic mobile repair services for its bike commuters. Mobile repair and services companies (e.g., Velofix, Summit Bikes) will travel to the site and provide on-site repair and maintenance services for cyclists.





Best "Sites" for Commuters National Recognition

The project will seek a Best "SITES" for Commuters (BWC) certification. The Best Workplaces for Commuters program provides qualified sites with national recognition and an elite title for offering outstanding commuter benefits. Residential locations, employers, and developments that meet the National Standard of Excellence in commuter benefits can get on the Best Workplaces for Commuters list. The 121 East Grand Avenue project will be eligible for a national Best "SITE" for Commuters designation as a development site.

11.0 TENANT COMMUTER EMPLOYEE BENEFITS - MANDATORY

Transit Subsidies

Tenant(s) will offer all employees a transit subsidy or a transit pass for commuting to the project site. A transit subsidy program may include participation in the Caltrain GoPass or SamTrans Way2Go program or a comparable transit subsidy or commute allowance program.

To be successful, the future tenant(s) will need the flexibility to choose the type and amount of transit subsidy and incorporate benefit programs that best suit their employees' needs. Transit subsidies may be equivalent to the cost of a two-zone Caltrain monthly pass, and the tenant may provide these subsidies in tandem with the pre-tax payroll deduction program.

Preliminary

Caltrain GoPass:
The Caltrain Go Pass program allows companies to purchase annual unlimited-ride passes for all eligible employees. A Go Pass sticker affixes to an approved identification badge, and the user presents it on the train as proof of payment. The Go Pass is good for travel on Caltrain between all zones, seven days a week, for one low annual cost per user.[6]

SamTrans Way2Go:
The SamTrans Way2Go program allows companies to purchase annual unlimited-ride passes for all eligible employees. Customers swipe their Way2Go Pass through the farebox when boarding SamTrans. The Way2Go Pass is valid on all SamTrans fixed-route services. The Way2Go Pass is valid for a calendar year and expires on December 31 each year.[7]

Vanpool Subsidies
Tenants will offer vanpool subsidies equivalent to the amount provided to transit riders. Employees can form vanpools through a vendor such as *Commute with Enterprise* and utilize an allowance to cover gas, parking, and more. Employees may use a vanpool subsidy with pre-tax payroll deductions and incentives from Commute.org and 511.org.

Carpool Commuter Allowance
The tenant(s) will provide employees with carpool allowances. Carpool allowances can be used for an employee to employee, informal carpools, or rides made through Scoop and Waze Carpool apps. Ridesharers may leverage this taxable allowance with existing incentives from Commute.org and 511.org.



Bicycle Commuter Allowance
The tenant(s) will provide employees with bicycle allowances. Bicycle allowances can be used for bike trips logged through the Strava app. Ridesharers may leverage this taxable allowance in conjunction with existing incentives from Commute.org.

Pre-tax Transit Payroll Deduction Option
The tenant(s) will offer a transit and vanpool pre-tax payroll deduction option for employers to provide transit and vanpool expenses on a tax-free basis. The monthly cap for the transit and vanpool benefits is now $280/month as of 2022. The transit and vanpool pre-tax benefits are a valuable and easy tool for employers to provide options to their employees.

Employees elect to withhold funding from their paycheck to purchase fare media for transit or vanpools. The employee's monies withheld are untaxed, and the employer does not pay

[6] http://www.caltrain.com/Fares/tickettypes/GO_Pass.html
[7] http://www.samtrans.com/fares/faretypes/Way2Go_Program.html

employment taxes on those funds. The transit and vanpool pre-tax benefits help reduce congestion, increase transit ridership, and improve air quality.

Pre-tax Parking Payroll Deduction Option

The tenant(s) will offer a parking pre-tax payroll deduction option for employers to provide parking expenses tax-free. The monthly cap for the parking benefits is now at $280/month as of 2022.

Employees elect to withhold funding from their paycheck to purchase payment media for parking expenses incurred at transit stations. The employee monies withheld are untaxed, and the employer does not pay employment taxes on those funds.

Parking Cash-Out

If the tenant pays for parking (as opposed to the employee paying), they will offer a parking Cash-Out program. Parking Cash-Out programs allow commuters to receive an alternative incentive to not drive to work. The employer will provide this incentive in payroll tax-deductible cash allowances equal to their pay for each parking space.

Telework/Remote Work Option

The tenant(s) will allow their employees to work remotely when viable. Telework infrastructure will ensure that teleworkers enjoy fast, smooth data transmission between their workplace and telework space. Telework options reduce or eliminate the need for commute travel to work.

Alternative Work Schedule Option – Flextime, Compressed Workweek

The tenant(s) will offer their employees the option to use an alternative work schedule. An alternative work schedule may include a compressed workweek (e.g., a four-day week) option or flextime (e.g., adjusting work hours to fit arrival and departure times).

A compressed workweek lets employees work longer hours but shorter weeks. The shortened workweek and shifted hours may help employees avoid rush-hour traffic and reduce commute days. Employees also have an additional day for leisure activities, personal business, and family time.

Typical compressed work options include a 9/8/80 workweek and a 4/10 schedule. A 9/8/80 work schedule is eight, nine-hour workdays (72 hours) plus one eight-hour day, totaling 80 hours over two weeks. This program allows employees to have one day off every two weeks. A 4/10 schedule enables the employee to work four 10-hour days per week. Employees typically are divided into two groups: one group works Monday through Thursday; the other group works Tuesday through Friday.

Flextime provides versatility, enables employees to use rideshare options conveniently, and avoids traffic congestion and transit crowding. It is also an attractive employee recruitment tool that

Preliminary

allows employees to work around childcare or school schedules. The Project tenant(s) will offer alternative work schedules to employees who use an alternative transportation mode to maximize alternative mode use.

12.0 TENANT COMMUTER SERVICE & RESOURCES

Building tenants will partner with the project and property management to develop employee commute programs and services. As written in the lease agreement, the tenant must provide a designated employee transportation coordinator, participate in the emergency guaranteed ride home program (GRH), and offer a transit subsidy or transit passes to all employees.

Designated Employer Contact/Employee Transportation Coordinator

The tenant will identify a designated contact to implement the TDM programs described in this plan. The specified employer contact will maintain commuter information, marketing, and outreach and work with the Commuter Concierge to conduct annual employee commuter surveys. The selected liaison may be the employee transportation coordinator (ETC), whose role will manage and monitor the alternative commute program. The ETC's primary responsibility will be to implement employer-specific commuter benefits and community-wide programs. The ETC will be responsible for providing ongoing commute assistance to employees, producing on-site transportation fairs and promotional events, collaborating with Commute.org and 511 to maximize rideshare resources, and working closely with the Commuter Concierge.

The ETC will provide the following services:

- Promote trip reduction and air quality strategies to employees at the site.
- Promote the emergency ride home program to employees.
- Be the main point of contact for employees who wish to commute using an alternative transportation mode.
- Work with local agencies such as Caltrain, BART, SamTrans, Ferry, Commute.org, 511 Rideshare, Silicon Valley Bicycle Coalition, Genentech shuttles, and the Bay Area Air Quality Management District (BAAQMD).
- Post informational materials on the company commuter website, a transportation kiosk, and disperse alternative program information to employees via designated employer contacts, posters, flyers, banners, e-newsletters, new employee orientation, etcetera.
- Participate in the BAAQMD Spare the Air program to encourage employees not to drive to work alone.
- Register yearly with the Bay Area Commuter Benefits Program.

Preliminary

- Coordinate various aspects of the program that require periodic updating or monitoring, such as car and vanpool registration and bike locker assignments; and,
- Develop and manage the company transportation and commute information portal. The portal will contain transportation information, resources, links, promotions, incentives, prizes, awards, spare the air notices, transit links, 511 ride-matching, and other related information.

Alternative transportation programs will be presented to commuters comprehensively and proactively, just like any other employee program.

An employee commute program is a big-picture process that explains the area's air quality problems and describes how fighting air pollution is part of being a good corporate citizen. The ETC will work to build employee participation in the commute programs.

Commute Information Web Portal/Intranet

The tenant(s) or their ETC will establish comprehensive transportation and commute information website for employees. The project will contain transportation information, resources, and links, including promotions, incentives, Bay Area Spare the Air notices, guaranteed ride home information, transit schedules, 511 ride-matching, and other related information. Shown below is a mock image of an employee transportation information portal.

Preliminary

Mock Employee Transportation Information Portal



Guaranteed Ride Home Program

The My.Commute.org STAR program offers employees access to the free guaranteed ride home (GRH) program.

Employees who enroll in the program (who do not drive alone to work) will receive a reimbursement for the cost of an Uber or Lyft ride home. The GRH trip reimbursement provides up to $60 per ride (four trips per eligible commuter per year).

The GRH program is incorporated in the Commute.org STAR Platform and requires users to be registered in advance to participate in the program.



WHO IS ELIGIBLE FOR A GRH REIMBURSEMENT?

- Must be 18 years or older
- Must work or go to a participating college in San Mateo County
- Used an alternative to driving alone to get to work or college on day GRH is needed
- Must have a STAR account and log trip to work or college on my.commute.org

WHAT TYPES OF EMERGENCIES ARE ELIGIBLE FOR A QUALIFIED GRH TRIP?

- Personal or family illness or emergency
- Home emergency
- Eldercare or daycare emergency
- Bicycle theft or breakdown
- Unforeseen change of work schedule
- Inclement weather (for walkers/bicyclists)
- Carpool partner emergency resulted in loss of ride home

WHAT TYPES OF TRIPS OR REASONS ARE NOT COVERED?

- Transit delays
- Natural disasters
- Personal errands or appointments
- Ride to work
- Using a ride-hailing app (e.g. Uber or Lyft) to work or college is not a qualifying alternative commute mode
- Carpool app provider cannot find a match to get the commuter home
- Non-emergency side trips
- Business related travel
- Transportation to a doctor or hospital resulting from an on-the-job injury (GRH cannot be used to replace an employer's legal responsibility under workers' compensation regulations.)

HOW WILL I GET HOME?

GRH program participants decide how to get home (e.g. taxi, ride-hailing app, transit, or combination).

GUARANTEED RIDE HOME
COMMUTE.ORG

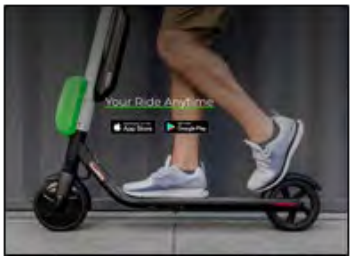
HOW DO I REQUEST A REIMBURSEMENT?

STAR users can redeem a GRH reimbursement request via the incentives area in their STAR account. Participants must complete questionnaire provided in reimbursement request and provide GRH trip receipt(s) to receive reimbursement.

Reimbursement requests must be submitted within 30 days of GRH trip.

Visit Commute.org and click on the Guaranteed Ride Home button for program rules and limitations.

Regional Bikeshare Participation - Conceptual



If the City establishes a public bikeshare program, the project will promote and offer employees discounted bicycles and scooters. Bikeshare and scooter programs encourage people to use bikes and scooters as options for first- and last-mile trips while minimizing traffic and parking congestion.

Annual Bike Safety Seminar

The tenant(s) will coordinate with Commute.org to host an annual bicycle safety presentation. Commute.org, in partnership with a nationally certified League Cycling Instructor (LCI), offers free bicycle safety workshops. The workshop covers practical and safety information, including:

- Planning your route, including connections to rail and water transit stations
- Equipping yourself and your bike
- Ways to communicate with other road users safely and confidently
- Using Google Maps to explore route options
- Other resources include the San Mateo County's bikeways and safe cycling booklet



Carpool and Vanpool Ride-matching Services

Tenants will promote free ride-matching services, and the ETC will actively match potential vanpool partners using employee zip code data. Additionally, San Francisco Bay Area 511.org works with private ride-matching companies to provide commuters with alternative ridematching resources. A sample of ridematching services includes the following:

Regional Rideshare Program

Commute.org and 511.org's Merge offers online tools to assist commuters in finding matches for carpooling. The project will present these online tools to residents and encourage carpooling as a commuter option.



Merge

The best way to find a long-term carpool partner is with Merge. You will be matched with someone along your route, agree on days to carpool, and keep that same partner as long as you like. There are no built-in charges to use the service or carpool. Register here.

Scoop and Waze Apps

Residents will receive free ride-matching service information. San Francisco Bay Area 511.org is working with private ride-matching companies to provide commuters with alternative resources. The private ride-matching companies can give the commuters carpool matches via Scoop, Waze, and Waze Carpool.



Waze Carpool Rider

Users coordinate their own carpools by selecting from available drivers. Download Waze Carpool today to get started.



Waze Carpool Driver

The popular navigation app allows drivers to offer carpools to riders. Click "Carpool" in the bottom right of your screen to access and fill out a driver carpool profile and you're on your way to driving a carpool.



Scoop

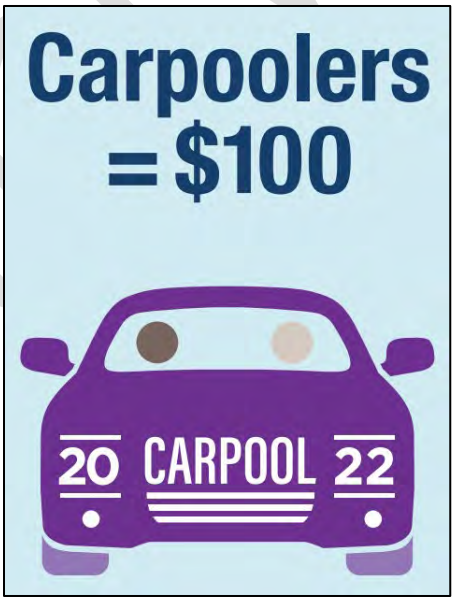
Automated matching ideal for morning and evening work commutes. Download Scoop and set up your carpool preferences today.

Carpool Incentive Programs

- Merge 511 Rewards – Carpoolers can log their trips on the https://merge.511.org/#/ website to earn rewards. Commuters receive a $25 e-gift card for every 25 carpool trips completed.

- Carpool (HOV) Lanes – Carpool lanes, also known as high-occupancy vehicle (HOV) lanes, can reduce commute times. Commuters must be in a carpool, vanpool, public transit vehicle, or riding a motorcycle to use the carpool lanes during commute hours. Carpool lanes vary in their hours of operation and the minimum number of people per car. HOV hours of operation and number of passengers can be found at https://511.org/carpool-vanpool/carpool/lanes.

- Park and Ride Lots – Located conveniently throughout the Bay Area are 150 free park-and-ride lots where carpool partners or vanpools can meet in a central location. Many lots also feature easy access to transit connections and bike lockers.



- San Mateo County Carpool Commuters $100 Reward – Employees who live in or commute through San Mateo County can participate in the Commute.org $100 carpool incentive program. Employees who have ten days of carpooling activities and log or track their carpool trips in the STAR program may receive a $25 e-gift card, up to $100.

Vanpool Incentive Program

- San Mateo County $100 Vanpool Reward – Commuters who live or drive through San Mateo County can participate in the vanpool incentive program. Commute.org will reward vanpool commuters with up $100 when they log their vanpool trips on the commute.org STAR portal as an incentive for vanpooling. The tenant ETC will promote this subsidy to employees.

- Access to MTC $350 Vanpool Subsidy – The tenant(s) will inform their employees about the $350 monthly vanpool subsidy available from 511.org and the Metropolitan Transportation Commission (MTC). The Bay Area 511 Vanpool Program partnered with Commute with Enterprise to provide an all-inclusive option to make vanpooling easy. A Commute with Enterprise vanpool comes with a newer model, low-mileage van, or SUV, including roadside assistance and maintenance.

Preliminary



Bicycle Incentive Programs

The ETC will promote access to the Commute.org $100 bicycle reward incentive. Commuters that log their bicycle trips on the Commute.org website will be eligible to receive up to $100 in e-gift cards per year. For ten bicycle commuter trips, employees earn a $25 e-gift card.



Bicycle commutes must start or end in San Mateo County and be tracked using the Strava app. Strava bicycle commutes must be automatically reported to STAR via the connected app option to count toward the reward. The STAR platform will only count Strava trips that start or end at the same work address that a commuter has saved in their STAR profile.

STRAVA

Preliminary

13.0 TENANT COMMUTER MARKETING & OUTREACH

Active and involved tenant-employers will generate positive impacts on the success of the TDM Plan. The tenant shall participate in the following commute alternative programs to increase transit use and reduce the need for employees to drive alone to work.

New Employee Onboarding

The project will establish a new employee commuter onboarding process to welcome and retain new employees. Onboarding may include pre-hire TDM Planning and support to coordinate employees' transportation needs.

Hired candidates will receive a written summary of commuter benefits and programs for their consideration. Once hired, the onboarding process will include an overview of commuter benefits, systems, services, and resources. Registration forms will engage employees in the transit and vanpool subsidies, emergency ride home program, and bicycle resources. Personalized support during welcome events and one-on-one sessions will educate new employees as they start employment.

Employee Transportation Fairs

Project tenants may host periodic transportation events or tablings, and company wellness or benefits fairs will also feature transportation events. The tenant's ETC will add tabling space for the employer's commute program to join these employee events.



Newsletter Articles and Emails

The ETC will write periodic rideshare articles or emails for internal newsletters (if desired), with ongoing highlights of alternative commuters and their successes. Internal company notices and incentive promotions should attract the attention of commuters, generate excitement about the use of commute alternatives, and reward those who rideshare.

The ETC will register with the BAAQMD to receive regional air quality forecast bulletins about unhealthy air quality days for the Spare the Air program. Employees will receive, from the ETC, direct email updates encouraging them to use alternative transit modes during peak advisory periods.

Transportation Management Association Engagement

Transportation Management Associations (TMAs) are typically private, and nonprofit organizations run by a voluntary Board of Directors and a small staff. They help businesses, developers, building owners, local government representatives, and others collectively establish policies, programs, and services to address transportation problems. The key to a successful TMA

Preliminary

lies in the synergism of multiple groups banding together to address and accomplish more than any single employer, building operator, or developer could do alone.

Commute.org (formerly the Peninsula Traffic Congestion Relief Alliance) operates as a TMA organization in the City of South San Francisco. Commute.org provides:

- Shuttle programs
- Carpool and vanpool matching
- Parking management programs
- Trial transit passes
- Emergency ride home programs
- Enhanced bicycle facilities
- Car and vanpool incentives
- Transit advocacy
- Information on local issues
- Teleworking
- Training
- Marketing programs
- Promotional assistance
- Newsletter

Tenants and their ETCs will actively participate in Commute.org programs. Commute.org is a clearinghouse for alternative commute programs, incentives, and transportation projects affecting San Mateo County businesses.

Best Workplaces for Commuters Designation

The tenant(s) may seek certification for the Best Workplaces for Commuters (BWC). The Best Workplaces for Commuters provides qualified employers with national recognition and an elite designation for offering outstanding commuter benefits. Residential communities, employers, and developments that meet the National Standard of Excellence in commuter benefits can get on the Best Workplaces for Commuters national list.

As an employer, the future tenant(s) is eligible for a Best Workplaces for Commuters designation.

Preliminary

SECTION III – TDM MONITORING AND REPORTING

A comprehensive program of TDM measures and incentives can reduce parking demand, traffic, and air pollution, creating a more sustainable employment environment while freeing up valuable land for higher and better uses.

Adequate parking, traffic congestion, and air pollution are critical concerns in maintaining a healthy economy for the City. Traffic congestion results in time lost to residents and commuters and increased demand for City fiscal resources for roadway construction and maintenance. According to the U.S. Environmental Protection Agency, "mobile sources account for more than half of air pollution in the United States. The primary mobile source of air pollution is the automobile." "…today's motor vehicles are still responsible for up to half of all the emissions released into the air." "In the Bay Area, the transportation sector accounts for more than 50 percent of air pollution and more than 40 percent of greenhouse gas emissions."[8]

14.0 MONITORING AND REPORTING

The TDM Plan intends to reduce SOV trips and lessen parking demand, traffic congestion, and mobile source-related air pollution. This TDM Plan achieves at least a 45 percent alternative transportation mode-use rate. It is crucial to ensure TDM measures are implemented and effective to evaluate the performance and success of the Project's TDM Plan.

Tenant Performance and Lease Language – TDM Requirements

The project will include lease language for the future tenant that requires identifying a designated employer contact responsible for implementing the TDM Plan (including annual survey, reporting, and registration in the emergency guaranteed ride home program). Sample lease language follows:

> ***Transportation Management.*** *The tenant shall fully comply with all existing or future programs mandated by the City of South San Francisco to manage parking, transportation, or traffic in and around the Project and/or the Building. In connection therewith, the tenant shall take responsible action for the transportation TDM Planning and management of all employees located at the Premises by working directly with the Commuter Concierge, Landlord, any governmental transportation management organization, or any other transportation-related committees or entities. Such programs will include, without limitation: (i) restrictions on the number of average daily vehicle trips generated by tenants; (ii) increased vehicle occupancy; (iii) implementation of an in-house ridesharing program, transit subsidies, commuter allowances, and designation of an employee transportation coordinator; (iv) working with employees and any Project, Building or area-wide ridesharing program manager to conduct annual commuter surveys; (v) instituting employer-sponsored incentives (financial or in-kind) to encourage employees to rideshare;*

[8] Bay Area Air Quality Management District, Aaron Richardson, Public Information Officer

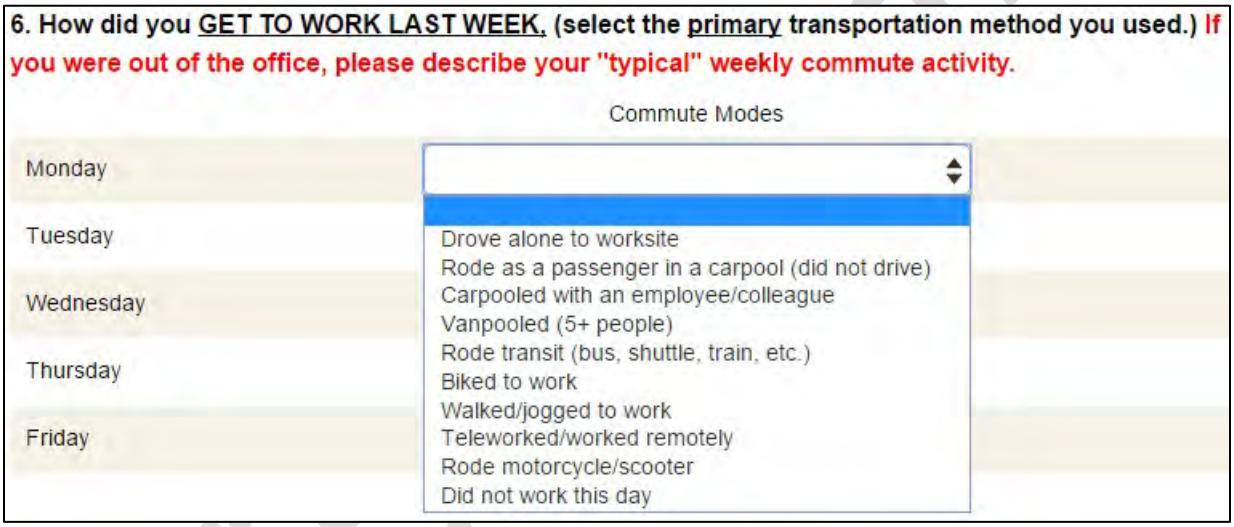
Preliminary

participate in the Commute.org programs such as the guaranteed ride home program, and (vi) utilizing telework and flexible work shifts for employees, and be responsible for any financial penalties for non-attainment of vehicle trip reduction requirements.

Annual Employee Commute Survey

Because the TDM Plan is performance-based, the tenant will perform an annual commute program evaluation (a five-day, weekday commute survey), which will allow the Commuter Concierge, tenant, and the City to assess the effectiveness of the unique program designed for this project. Survey data can focus on marketing and outreach efforts to employees based on their specific commuter interests.

The commute survey will be a critical part of the monitoring process to evaluate and ensure the success of the TDM Plan's measures. Employees who do not participate in the commute survey will receive s drive-alone or SOV assignment by default. Therefore, the results will be appropriately conservative. Shown below is a sample commute survey question.



Annual Commute Survey Report

Each year, the Commuter Concierge, in cooperation with the tenant and their ETC, will prepare an annual TDM summary report to be submitted to the City's Chief Planner, documenting the effectiveness of the TDM Plan and progress toward meeting the 45 percent employee alternative transportation mode-use rate.

The annual TDM summary report will include a determination of week-long employee commute methods obtained from the survey of employees. The summarized results from the employee survey will provide both quantitative data (e.g., mode split) and qualitative data (e.g., employee perception of the alternative transportation programs).

If the 45 percent alternative transportation mode-use rate is not achieved, the report will explain how and why the goal was not reached and specify additional measures and activities implemented in the coming year to improve the mode-use rate. Survey data may then be used to re-focus TDM marketing and the Commuter Concierge and employer(s) ETC efforts to maintain the project's 45 percent alternative commute mode-use rate and commitment at the site.

The first baseline survey will be conducted one year after occupancy, with subsequent employee surveys (and following annual surveys) held in the fourth quarter of each year. The table at the right shows a *sample* summary matrix of estimated alternative transportation user survey.

Commuter Modes	Percent Users
Transit /ferry	20.9%
Telework	11.9%
Carpool	11.2%
Bicycle/scooter	3.0%
Vanpool	3.0%
Walk	0.7%
Commuters	**51%**

Annual Commuter Satisfaction Survey

The project will utilize mid-year commuter satisfaction surveys to gather employee feedback and evaluate various aspects of the commuter program. This survey will help inform successes and opportunities within the program as it strives to meet performance goals.

Triennial Driveway Report

All projects that receive a FAR bonus require a triennial report. The purpose of the triennial report is to document the effectiveness of the final trip reduction plan in achieving the needed alternative mode-use and mitigation of net new peak-hour vehicle trips.

The project may compile the report via surveying commuters or conducting a driveway hose count study. In the latter case, driveway hoses will be placed for one week to track all trips and peak-hour trips, and the five-day peak-hour average will be calculated.

The peak period includes 6:00 a.m. to 10:00 a.m. and 3:00 p.m. to 7:00 p.m. Peak hour is when the heaviest daily traffic volume occurs and generally occurs during morning and afternoon commute times. Traffic counts will be obtained during AM and PM peak periods, and the volume from the heaviest hour of AM or PM traffic will be used to define peak hours for those periods. The highest number of net trips resulting from AM or PM peak hours will be used.

Net trips will be calculated by subtracting trips for existing uses from those generated by the new project. The triennial report, prepared by an independent consultant and paid for by the project, will work with the Commuter Concierge and the designated employer contact or the ETC.

Preliminary

Submittal. The triennial report shall be submitted every three years on the anniversary date of the granting of the certificate of occupancy for a building or facility.

4. ***Response Rate.*** The information for the triennial report shall be based on a survey response rate of 51 percent of employees working in the buildings. If the response rate is less than 51 percent, additional responses need to reach a 51 percent response rate will be counted as a drive alone trip.

5. ***Required Alternative Mode Use.*** The triennial report shall state whether the nonresidential development has or has not achieved its required percent alternative mode use. If the development has not achieved the required alternative mode use, the applicant shall provide an explanation of how and why the goal has not been reached and a detailed description of additional measures that will be adopted in the coming year to attain the required alternative mode use. Any and all additional measures must include an implementation schedule by month.

6. ***Historical Comparison.*** The triennial report shall include a comparison to historical responses on the survey and if a mode share has changed significantly, a detailed description as to why the mode share has changed.

7. ***City Review.*** The Chief Planner shall review all triennial reports. If at any time the reports indicate failure to achieve the stated policy goals, those reports will be submitted to the City Council.

8. ***Penalty for Noncompliance.*** If after the initial triennial report, the subsequent triennial report indicates that, in spite of the changes in the final trip reduction plan, the required alternative mode use is still not being achieved, or if an applicant fails to submit a triennial report at the times described above, the City may assess applicant a penalty. The penalty shall be established by City Council resolution on the basis of project size and actual percentage alternative mode use as compared to the percent alternative mode use established in the trip reduction plan.

Source: Chapter 20.400 Transportation Demand Management, 20.400.008 Monitoring and Enforcement

Penalty for Noncompliance

Annual reports and triennial reports will be submitted to the City to monitor and document the effectiveness of the TDM plan in achieving the goal of 45 percent alternative mode usage.

1) TDM Reports: The initial TDM report on the property will be submitted two (2) years after granting a certificate of occupancy for the building. This requirement will apply to all buildings on the property except the parking facilities. The building's second and later reports shall be included in an annual comprehensive TDM report submitted to the City.

2) Report Requirements: The goal of the TDM program is to encourage alternative mode usage, as defined in Chapter 20.400 of the South San Francisco Municipal Code. The initial TDM report shall either:

(1) state that the applicable property has achieved the Targeted Alternative Mode Usage, based on the number of employees in the redeveloped buildings at the time, providing supporting statistics and analysis to establish attainment of the goal; or

(2) state that the applicable property has not achieved the Targeted Alternative Mode Usage, explaining how and why the goal was not met, and a description of additional measures adopted in the coming year to attain the Targeted Alternative Mode Usage.

3) Penalty for Non-Compliance: If after the initial triennial report, the subsequent triennial report indicates that, despite the changes in the TDM plan, the Targeted Alternative Mode Usage is still not being achieved, or if the Owner fails to submit such a triennial report at times described above, the City may assess Owner a penalty per year for each percentage point below the Targeted Alternative Mode Usage goal.

   i. In determining whether a financial penalty is appropriate, the City may consider whether the Owner has made a good faith effort to meet the TDM goals.

   ii. If the City determines that the Owner has made a good faith effort to meet the TDM goals, but a penalty is still imposed, such penalty sums, in the City's sole discretion, may be used by the Owner toward the implementation of the TDM plan instead of being paid to the City. If the penalty is used to implement the TDM Plan, the City shall review and approve an Implementation Plan before expending any penalty funds.

   iii. Notwithstanding the preceding, the amount of any penalty shall bear the same relationship to the maximum penalty as the completed construction to which the penalty applies bears to the total amount of square feet of Office, Commercial, or Hotel use permitted to be constructed on the property. For example, if there are 100,000 square feet of completed construction on the property included within the TDM report for which the penalty is imposed, the penalty would be determined by multiplying the penalty amount times a fraction, the numerator of which is 100,000 square feet and the denominator of which is the maximum amount of square feet of building construction, excluding parking facilities, permitted on the property; this amount would then be multiplied by the number of percentage points below the Targeted Alternative Mode Usage goal.

As a condition of approval, applicants shall be required to reimburse the City for costs incurred in maintaining and enforcing the trip reduction program for the approved project. (Ord. 1432 § 2, 2010).

Preliminary

No Expiration of TDM Plan or Programs

All measures in this TDM Plan will continue to be implemented by the applicant on an ongoing basis. There is no expiration of the TDM Plan as it runs in perpetuity, and the City of South San Francisco may conduct periodic on-site auditing to implement this plan.

ITE Trip Generation Estimate

The Institute of Transportation Engineers maintains trip generation estimates for different land uses. The size and location anticipate generating 974 net new peak-hour vehicle trips for this project. The project will reduce peak-hour trips by 45 percent following the alternative mode-use requirement. The resulting allowable peak hour trips should not exceed 797 trips.

						AM Peak Hour				PM Peak Hour			
				Daily	Daily	Pk-Hr	Trips			Pk-Hr	Trips		
Land Use	ITE Code	Size	Unit	Trip Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Use													
Research & Development Building	760	941	ksf	11.08	10,426	1.03	795	174	969	0.98	148	775	922
Less: Existing Business Hotel	312	169	rooms	4.02	-679	0.39	-32	-34	-66	0.32	-24	-30	-54
Estimated net new project trips generated					9,747		762	141	903		123	745	868
Peak-hour trip reduction percent required					45%		45%	45%	45%		45%	45%	45%
Net new vehicle trips reduction required					-4,386		-343	-63	-406		-55	-335	-391
Net new peak-hour trips (not to exceed)					5,361		419	77	497		68	410	477

Notes:

All rates are from: Institute of Transportation Engineers, *Trip Generation, 11th Edition*

1. Land Use Code 760: Research & Deveopment Building (average rates, expressed in trips per 1,000 s.f.)
2. Calculations not verified by a traffic engineer.

C/CAG Trip Reduction Measures Checklist

The City/County Association of Governments of San Mateo County develops bi-yearly Congestion Management Programs (CMP). These CMPs include a Land Use Guide that helps developments enact measures to mitigate vehicle trips associated with their projects. C/CAG has updated its Land-Use Guide, and calculations of vehicle trip mitigations using the latest proposed accounting system are estimated below. The points related to each trip reduction measure represent the relative impact of the individual measure. The C/CAG vehicle trip reduction impact using the project planned trip reduction measures is 80.5 percent. The table below summarizes the C/CAG-applicable measures implemented by this project. It fulfills the City of South San Francisco's alternative mode usage requirement to provide a completed checklist of trip reduction measures (Section 20.400.005, item A).

Preliminary

C/CAG TDM Checklist

ccagtdm.org

Non-Residential (Office, Industrial, Institutional) Land Use: Large Project

500+ ADT; ~50,000+ sq ft

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. Read more at ccagtdm.org

Questions?
support@ccagtdm.org

A Applicant Information

Project Address: 121 E. Grand Ave., So. San Francisco	Contact First and Last Name: Elizabeth Hughes
Parcel Number:	Application Date: D D M M Y Y Y Y
	Contact Phone Address: 408-420-2411
Project Jurisdiction: South San Francisco	Contact Email Address: elizabeth.hughes@tdmspecialists.com

B Trip Reduction Target

Select one option based on your project's distance to high quality transit

Read more about high quality transit at ccagtdm.org/high-quality-transit

Identify your project type

- ◉ **TOD** — Less than 1/2-mile from high quality transit service — **25% Trip Reduction Required**
- ☐ **Transit Proximate** — 1/2 to 3 miles from high quality transit service — **35% Trip Reduction Required**
- ☐ **Non-Transit Proximate** — More than 3 miles from high quality transit service — **35% Trip Reduction Required**

C Required Measures

You must select all measures that apply for your project type

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
1	**M1 - Free/Preferential Parking for Carpools** Provide free or preferential parking, including reserved spaces or spaces near an entrance or other desirable location, to incentivize ridesharing.	ALL	1%	☐
2	**M3 - TDM Coordinator/Contact Person** Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	ALL	0.5%	☑
3	**M4 - Actively Participate in Commute.org or Transportation Management Association (TMA) Equivalent** Obtain certification of registration from Commute.org or equivalent TMA incorporation documents. Select only one based on Project Type	TOD & Non-transit Proximate Transit Proximate	6.5% 16.5%	☑ ☐
4	**M5 - Carpool or Vanpool Program** Establish carpool/vanpool program for tenants and register program with Commute.org.	ALL	2%	☑
5	**M6 - Transit or Ridesharing Passes/Subsidies** Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value or $50 - whichever is lower.	ALL	10%	☑
6	**M7 - Pre-Tax Transportation Benefits** Offer option for tenants to participate in a pre-tax transit program to encourage the use of sustainable transportation modes and leverage pre-tax income to pay for commute trip costs.	ALL	1%	☑
7	**M8 - Secure Bicycle Storage** Comply with CalGREEN minimum bicycle parking requirements.	ALL	1%	☑
8	**M9 - Design Streets to Encourage Bike/Ped Access** Design adjacent streets or roadways to facilitate multimodal travel.	ALL	1%	☑
9	**M25 - Showers, Lockers, and Changing Rooms for Cyclists** These amenities serve as end of trip facilities for employees arriving by bike or other active transportation forms.	ALL	2%	☑
10	**Total from Required Measures** Sum percentages from each selected measure from rows 1-9		24%	

Form Continues on Page 2 →

D Additional Recommended

Select enough to meet the trip reduction target from section B

Click on each measure's title for more information

	Measure	Project Types	Percentage	Yes
11	**M12 - Flex Time, Compressed Work Week, Telecommute** Flex time allows employees some flexibility in their daily work schedules. Compressed work week allows employees to work fewer but longer days. Telecommuting functions similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.	ALL	5%	☑
12	**M14 - Paid Parking at Market Rate** Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	ALL	25%	☑
13	**M15 - Reduced Parking** Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	ALL	10%	☑
14	**M16 - Short-Term Daily Parking** Offer daily or hourly parking rates that are proportional to the monthly rate or approximately the cost of a transit fare.	ALL	2%	☐
15	**M17 - Developer TDM Fee/TDM Fund** Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	ALL	4%	☐
16	**M18 - Car Share On-Site** Provide on-site car share or vehicle fleets.	ALL	1%	☑
17	**M19 - Land Dedication or Capital Improvements for Transit** Contribute space on, or adjacent to, the project site for transit improvements. Select one or more Bus Pullout Space 1% ☑ Bus Shelter 1% ☐ Visual/Electrical Improvements (i.e., Lighting, Signage) 1% ☑ Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% ☑	ALL → 3% Total percentages selected		☐
18	**M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service** Establish a shuttle service to regional transit hubs or commercial centers. Shuttle service should be provided free of charge to employees and guests.	Non-transit Proximate	10%	☐
19	**M21 - Bike/Scooter Share On-Site** Allocate space for bike/scooter share parking.	All	1%	☐
20	**M22 - Active Transportation Subsidies** Offer biking/walking incentives to tenants, such as gift card/product raffles.	All	2%	☑
21	**M23 - Gap Closure** Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	All	7%	☑
22	**M24 - Bike Repair Station** Offer on-site bike repair space/tools in visible, secure area.	All	0.5%	☑
23	**M26 - Pedestrian Oriented Uses & Amenities on Ground Floor** Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	All	3%	☑
24	**Total from Additional Measures** Sum percentages from each selected measure from rows 11 - 23		56.5%	

E Project Totals

Percentage from Required Measures (Section C Row 10): 24%

\+ Percentage from Additional Measures (Section D Row 24): 56.5%

Total Percentage from all Selected Measures (Sum of required and additional measures): 80.5%

Trip Reduction Target (Copy from Section B): 25%

Total Percentage from all selected measures must be greater than or equal to Trip Reduction Target

F Submit Checklist

See ccagtdm.org/submission for how to submit this form.

Questions?

Email Us
support@ccagtdm.org

Visit Our Website
ccagtdm.org

15.0 CONCLUSION

The proactive 121 East Grand Avenue TDM Plan meets alternative mode-use rates and tenant transportation needs for the project. This TDM Plan identifies specific elements, measures, and actions that guide the project to promote existing resources and programs, enhance future benefits, and create a resident-focused program. Significant on-site amenities, employee outreach, ongoing marketing and promotions, a free guaranteed emergency ride home program, transit, vanpool subsidies, and a Commuter Concierge will provide the needed support for an effective and successful program at the 121 East Grand Avenue project.

This TDM Plan describes TDM measures integrated at the site to support tenant commuting and innovative efforts identified for implementation. It outlines the steps necessary (infrastructure, programming) for the property owner and property management to use when marketing to tenants. Periodic program assessments will provide the information needed to demonstrate effectiveness and goal attainment.

The TDM Plan details this commitment by emphasizing TDM infrastructure, amenities, and outreach activities to reduce average daily trips. Ridesharing strategies maximize existing transportation resources, support the City's General Plan's goals and objectives, and ultimately expand the transit system's reach for commuters.

The City of South San Francisco promotes environmental stewardship in maintaining a safe, healthy, and sustainable city, and it recognizes maintaining a stable climate system for current and future residents. The 121 East Grand Avenue Project will help South San Francisco thrive by balancing these needs with economic growth.

Preliminary

Attachments
Nearby Amenities

Preliminary

Nearby Amenities

121 E. Grand Avenue, South San Francisco, CA

Restaurants, Cafes/Delis, Coffee, and Bakeries	Phone #	Distance Away
• **Max's Bakery & Kitchen** 120 E Grand Ave, South San Francisco, CA	650-219-8573	223 ft.
• **Taste Restaurant (temporarily closed)** 250 Gateway Blvd, South San Francisco, CA	650-589-3400	0.20 mi.
• **Wendy's** 176 Gateway Blvd, South San Francisco, CA	650-866-4460	0.30 mi.
• **Starbucks** 176 Gateway Blvd, South San Francisco, CA	650-866-3904	0.30 mi.
• **H.L. Peninsula Restaurant** 608 Dubuque Ave, South San Francisco, CA	650-616-8168	0.40 mi.
• **Dumpling Empire** 216 Cypress Ave, South San Francisco, CA	650-742-0838	0.40 mi.
• **Pronto Pizza & Pasta** 113 Grand Ave, South San Francisco, CA	650-873-8200	0.40 mi.
• **Los Compadres Taqueria** 116 Grand Ave, South San Francisco, CA	415-466-5893	0.40 mi.
• **Subway** 110 Grand Ave, South San Francisco, CA	650-588-6755	0.40 mi.
• **Peet's Coffee** 102 Grand Ave, South San Francisco, CA	650-636-8600	0.40 mi.
• **Di Napoli Pizzeria & Ristorante** 202 Grand Ave, South San Francisco, CA	650-873-5252	0.40 mi.
• **Taco Bell** 199 Airport Blvd, South San Francisco, CA	650-589-5472	0.50 mi.
• **Cuneo Bakery** 210 Baden Ave, South San Francisco, CA	650-871-9090	0.50 mi.
• **Bertolucci's (temporarily closed)** 421 Cypress Ave, South San Francisco, CA	650-588-1625	0.50 mi.
Retail	**Phone #**	**Distance Away**
• **The Local Flea** 160 Sylvester Rd, South San Francisco, CA	650-727-5864	0.10 mi.
• **Whip-It! Brand** 170 Associated Rd Suite A, South San Francisco, CA	800-500-0583	0.20 mi.
• **7-Eleven** 128 Harbor Way, South San Francisco, CA	650-871-8132	0.30 mi.
• **Circle K** 221 Airport Blvd, South San Francisco, CA	650-588-6058	0.40 mi.

Preliminary

• **J&J Market** 115 Grand Ave, South San Francisco, CA	650-588-5695	0.40 mi.
• **Furniture & Mattress Liquidators** 305 Airport Blvd, South San Francisco, CA	650-876-1936	0.40 mi.
• **House of Color** 501 Airport Blvd, South San Francisco, CA	650-588-7412	0.50 mi.
Health, Beauty & Fitness	**Phone #**	**Distance Away**
• **Luminous Day Spa** 204 Grand Ave, South San Francisco, CA	650-871-0759	0.40 mi.
Services	**Phone #**	**Distance Away**
• **J&J Check Cashing** 244 Cypress Ave, South San Francisco, CA	650-873-8200	0.40 mi.
• **Western Union** 220 Cypress Ave, South San Francisco, CA	650-589-6381	0.40 mi.
Transportation, Gas, Shipping & Storage	**Phone #**	**Distance Away**
• **SemaConnect Charging Station** 201 Gateway Blvd, South San Francisco, CA	800-663-5633	0.20 mi.
• **Tesla Supercharger** 250 Gateway Blvd, South San Francisco, CA		0.20 mi.
• **Flyers Energy CFN** 190 E Grand Ave, South San Francisco, CA	650-873-8200	0.20 mi.
• **ChargePoint Charging Station** 1 Corporate Dr, South San Francisco, CA	888-758-4389	0.30 mi.
• **ChargePoint Charging Station** 225 Gateway Blvd, South San Francisco, CA	888-758-4389	0.30 mi.
• **SemaConnect Charging Station** 225 Gateway Blvd, South San Francisco, CA	800-663-5633	0.30 mi.
• **Speedway** 176 Gateway Blvd, South San Francisco, CA	650-737-9800	0.30 mi.
• **76** Gas Station 221 Airport Blvd, South San Francisco, CA	650-588-0538	0.40 mi.
• **Bay Area Tire & Auto Service** 204 Biden Ave, South San Francisco, CA	650-583-1134	0.50 mi.
Banks & ATMs	**Phone #**	**Distance Away**
• **ATM Flyers Gas Station** 176 Gateway Blvd, South San Francisco, CA	888-758-4389	0.30 mi.
• **ATM J & J Market** 115 Grand Ave, South San Francisco, CA		0.40 mi.
Daycare	**Phone #**	**Distance Away**
• **BC Family Day Care** 270 Hillside Blvd, South San Francisco, CA	650-952-5911	1.10 mi.
• **The Learning Tree Daycare** 318 Magnolia Ave, South San Francisco, CA	650-201-8971	1.10 mi.

Preliminary

TDM SPECIALISTS, INC. QUALIFICATIONS

Preliminary

TDM SPECIALISTS, INC.

A Transportation Demand Management Company







We are planners and technical experts focused on development projects and improving employee mobility options.

Our Transportation Demand Management (TDM) planning solutions reduce vehicle traffic, parking demand, greenhouse gases, and air pollution impacts. We work successfully with developers, employers, and government agencies to get TDM Plans approved and projects entitled. We also implement and manage on-site commuter programs and achieve required TDM goals.

"We have finished the review of the Draft TDM. First let me say, that was the best TDM I have ever seen! The best by a large margin...a fantastic TDM Plan. Thank you so much."

Steve Lynch, AICP, Senior Planner, City of Santa Clara, California

Our TDM practitioners provide full-service commute and traffic mitigation, sustainable LEED planning, and air quality conformity. Serving as an extension of client staff, we provide a broad range of services to get the job done efficiently while meeting the unique needs of the client and specific jurisdiction.

Transportation Demand Management

TDM Specialists develop Transportation Demand Management plans, traffic mitigation plans, and sustainable programs that address green commuting, mobility, and constrained parking issues. The purpose of TDM is to promote more efficient utilization of existing transportation facilities, reduce traffic congestion and mobile source emissions, and ensure that projects are designed in ways to maximize the potential for alternative transportation use.

Commute Program Implementation

We have a proven track record of getting employees out of their cars. As projects are built and occupied, TDM Specialists can develop the structure, outreach and promotions necessary to implement and manage employee Commute Programs. The initial start-up, implementation, and ongoing management of the Commute Program are designed to meet TDM or trip reduction objectives and requirements. The overarching goal of a Commute Program is to enhance the quality of life and reduce commute trips for project employees.

Quality of life improvements can enhance employee recruitment, morale and retention, and increase productivity that create positive benefits for businesses.

Sustainable Air Quality and Greenhouse Gas (GHG) Solutions

TDM Specialists successfully implements trip reduction programs tailored to fit the project, and can typically reduce employee trips to the site by 30 percent. This results in reduced drive-alone trips and complies with requirements to reduce project GHG impacts. We coordinate the mechanisms to calculate and report these results to appropriate agencies.

Contact:
Elizabeth L. Hughes
Senior Transportation Manager

TDM Specialists, Inc.
5150 Fair Oaks Blvd, Suite 101-264
Carmichael, CA 95608

(408) 420-2411
elizabeth.hughes@tdmspecialists.com



TDM SPECIALISTS, INC.

A Transportation Demand Management Company

Areas of Expertise

Traffic Mitigation

- TDM/TSM Mitigation Plans
- TDM Employer Training
- Commute Program Development
- Commute Program Management
- Commute Program Audits
- Commuter Surveys
- Transportation Fairs and Events
- Car Management Strategies
- Shuttle Programs
- TMA Management

Parking Mitigation

- Parking Demand Reduction
- Parking Management Strategies
- Parking Constraints Solutions

Entitlement

- Project Support
- Strategic Counsel
- Critical Response Support
- Environmental (EIR) Mitigation (Air Quality and Transportation)

Sustainability

- Greenhouse Gas Emission Reductions
- Supporting LEED Components
- Air Quality Mitigation Plans

TDM Applications

- Office or R&D buildings
- Corporate Headquarters/Campus
- Master Plan projects
- Specific Plans
- Business Parks
- Hospitals/Medical Offices
- Retail/Shopping Centers
- Residential (multi family, single family, hi-rise, etc.)
- Special Events
- Recreation
- Universities and Colleges
- Warehouse and Manufacturing
- Airports and Transit Stations

Development, Property Management and Employer Projects

- Facebook
- Genentech
- NVIDIA
- SAP Labs
- Intel Folsom
- Intel Santa Clara
- Nokia
- Yahoo! Inc.
- NetApp
- VMware
- McClellan Business Park
- Juniper Networks
- Sunnyvale City Center
- Marvell
- Access/Palm Source
- Alexandria Real Estate Equities
- Oyster Point Business Park
- Metro Air Park
- Raley Field
- Moffett Park Business and Transportation Association
- Intuitive Surgical
- The Allen Group
- Spieker Properties
- HCP, Inc.
- Granite Regional Park
- Hyatt Place Hotel – So. San Francisco
- So. San Francisco Business Center
- Masonic Homes of California
- Fairview River Landing
- Donahue Schriber
- BioMed Realty Trust
- Panattoni Development
- Taylor Properties Development Co.
- SKS Investments, LLC
- Shorenstein
- LBA Realty
- Jones Lang LaSalle
- California Farm Bureau
- California Highway Patrol
- Separovich • Domich
- Newell Real Estate Advisors
- Linkedin
- Menlo Equities, LLC
- TMG Partners
- The Minkoff Group
- Arnell Enterprises, Inc.
- The Pollock Financial Group
- Wolff Enterprises

Municipal & Agency Locations

- Sacramento Area Council of Governments
- California Highway Patrol
- County of Sacramento, Dept. of Human Services
- City of South San Francisco
- City of Mountain View
- City of Santa Clara
- City of Sunnyvale
- State of California, Dept. of General Services
- San Mateo City/County Association of Governments
- City of Union City
- Cal PERS
- Cal STRS
- Ogden City, UT
- City of Brisbane
- Grand Rapids Interurban Transit, MI
- City of Citrus Heights
- University of California San Diego West Campus
- Sacramento County International Airport

Biotech, Pharmaceutical and Hospital Projects

- Genentech
- Amgen
- Rigel
- Takeda
- Onyx Pharmaceutical
- University of California San Diego, East Campus Medical Center
- Sutter Medical Center, Sacramento
- Mercy General Hospital
- Mercy San Juan Medical Center
- Enloe Medical Center
- Intuitive Surgical
- Blood Source
- Eclipsys, MA
- Counsyl, Inc.
- Theravance, Inc.

MEMORANDUM

Date: April 25, 2022 BKF Job Number: 20201781

To: Michael Gerrity, Phase 3 Real Estate Partners

From: Lokelani Yee, BKF
Project Manager

Subject: 121 East Grand Avenue, South San Francisco – Water Demand Memorandum

PURPOSE

The purpose of this memorandum is to provide a summary of proposed potable water demands associated with the development for 121 East Grand Avenue project in South San Francisco, California (Project).

BACKGROUND

The Project encompasses approximately 2.9 acres at 121 East Grand Avenue, South San Francisco. The site is bounded by East Grand Avenue to the south, Poletti Avenue and Caltrans Highway 101 to the north and Grand Avenue to the east.

The Project consists of a singular structure encompassing two 17 story building over a two-story parking podium totaling 943,965 square feet of office, and research and development space. The project also includes approximately 11,684 square feet of landscape area.

PROPOSED POTABLE WATER DEMAND

Proposed water demands are presented in Table 1. These unit demand factors were developed using Redwood City water demand assumptions. Based on input from the design team we have assumed that building uses will be split 50 percent office and 50 percent research and development use. Amenities planned are retail, gym, restaurant, café, and auditorium use. We then applied the following demands:

- Office water use demand of 0.13 gpd/sf
- Research and development lab use at 0.21 gpd/sf
- Amenity use demand ranges from 0.10 to 0.80 gpd/sf

Construction of the project is not expected to be phased.

CONCLUSION

Proposed development would create a water demand of 170,791 gpd (191 Acre-Feet per Year).

ATTACHMENT

- Table 1 – 121 East Grand Avenue Potable Water Demand

Table 1: 121 East Grand Avenue Potable Water Demand

Building Area 944,915 sf

Employees[3] 2,339

Use	Quantity	Unit	Unit Demand		Demand
Office Space[1]	418,433	sf	0.13	gpd/sf	54,396 gpd
Research & Development[2]	418,432	sf	0.21	gpd/sf	87,871 gpd
Amenity Uses					
Coffee Shop[6]	2,342	sf	0.80	gpd/sf	1,874 gpd
Restaurant	9,371	sf	0.47	gpd/sf	4,404 gpd
Fitness/Gym	17,691	sf	0.75	gpd/sf	13,268 gpd
Auditorium/other	68,789	sf	0.10	gpd/sf	6,879 gpd
Retail	9,857	sf	0.13	gpd/sf	1,281 gpd
Subtotal					169,974 gpd
Irrigation[4]	11,684	sf	0.07	gpd/sf	818 gpd
Total					170,791 gpd

Total Annual Demand = 191 AFY[5]

Notes

[1]Demand factors based on Redwood City values for Water Demand per SF: Office = 0.13 GPD / SF

[2]Demand factors based on Redwood City values for Water Demand per SF: R&D = 0.21 GPD / SF

[3]Assumes employee density of 3.33/1,000 sf for office space and 2.00/1,000 sf for R&D space

[4]Demand factor based on Redwood City values for irrigation Demand= 3.5 CF / SF / Year (0.07 GPD/SF)

[5]Annual water demand (Acre-Feet per Year) based on 365 days of use per year.

[6]Demand factor based on Redwood City for Food (non-restaurant type)

Amenity Building:	Area (SF)	Occupant / Seats
Restaurant	-	258
Cafeteria	2,342	2
Fitness Center	17,691	354
Conference Center	14,301	715.05
Storage	37,169	123.90
lobby/prefunction	17,319	865.95
retail	9,857	2
Total:	98,679	

Restaurant	0.47 gpd/sf
Cafeteria	0.80 gpd/sf

THIS TABLE SHOWS RESTAURANT AND CAFETERIA

Day

Occupant Loads	Factor (GPD)				
Per Seat (15SF)	30	7,730		3865	(Dining Area, SF)
Per Frontage (25')	900	1,872	(food - non-restaurant type)	52	(Frontage, LF)
PP/50 SF/Shift	25	13,268	(health club)		
Per Seat (20sf)	2	1,430	(assembly hall)		
PP/300 SF	1	124	(storage facilities)		
er Seat (20sf)	2	1,732	(assembly hall)		
Frontage (25')	450	1,080	(food - non-restaurant type)	60	(Frontage, LF)
		19,506	GPD		

WATER USE

s per Year: 365

Gal	CF
1	7.48
AC	SF
1	43560

landscape area per stormwater treatment					
32814	sf	3.5	cf/sf/yr	114849	cf/yr
114849	cf/yr	7.48	gal/cf	0.00274	2353.618

Water Supply Assessment for 121 East Grand Ave Project

South San Francisco District
California Water Service

DRAFT

May 2022
EKI C20057.00

EKI ENVIRONMENT & WATER, INC.
www.ekiconsult.com
2001 Junipero Serra Blvd, Suite 300 • Daly City, CA 94014

Water Supply Assessment

121 East Grand Ave Project
South San Francisco District, California Water Service

TABLE OF CONTENTS

1 INTRODUCTION 4

2 GENERAL REQUIREMENTS FOR THE PREPARATION OF A WATER SUPPLY ASSESSMENT 8
2.1 Applicability of Senate Bill 610 to the Project 8
2.2 Responsibility for Preparation of the Water Supply Assessment 9
2.3 Components of a Water Supply Assessment 9

3 PROJECT DESCRIPTION 11

4 PROJECT WATER DEMAND 12
4.1 Cal Water Water Neutral Development Policy 12
4.2 Indoor Water Use 13
4.3 Outdoor Water Use 13
4.4 Distribution System Losses 17
4.5 Existing Current Water Demand on the Proposed Project Site 17
4.6 Total Project Water Demand 17

5 CAL WATER SSF DISTRICT WATER DEMAND 18
5.1 Current and Historical Water Demand Within the Cal Water SSF District Service Area 19
5.2 SSF District Water Demand Projections 19
5.3 Planned Development Projects within the South San Francisco District 19
5.4 Total Projected SSF District Water Demand (Inclusive of the Proposed Project) 20

6 CAL WATER SSF DISTRICT WATER SUPPLY 23
6.1 Identification of Water Supply Rights 23
6.1.1 SFPUC Regional Water System 23
6.1.2 Surface Water Supply 30
6.1.3 Groundwater Supply 32
6.1.4 Cal Water Bay Area Water Supply Reliability Study 37
6.2 Total Potable Supply in Normal, Single Dry, and Multiple Dry Years 37

7 COMPARISON OF SUPPLY AND DEMAND 49

8 CONCLUSIONS 52

9 REFERENCES 53

Water Supply Assessment

121 East Grand Ave Project

South San Francisco District, California Water Service

FIGURES

Figure 1 Project Location
Figure 2 Cal Water's Three Peninsula Districts
Figure 3 Regional Setting and Groundwater Basin

TABLES

Table 1 Summary of Estimated Incremental Annual Project Water Demand
Table 2 Historical Water Demand for South San Francisco District
Table 3 Projected Future Water Demand for the South San Francisco District
Table 4 Historical Water Supply for the South San Francisco District
Table 5 Historical and Projected Groundwater Pumping from the Westside Basin
Table 6 Historical and Projected Supplies by Source
Table 7 Projected Normal Year Water Supply and Demand
Table 8 Single Dry Year Water Supply and Demand
Table 9 Multiple Dry Year Water Supply and Demand

APPENDICES

Appendix A 121 East Grand Avenue, South San Francisco – Water Demand Memorandum
Appendix B Documentation of Water Supply Agreements (excluding attachments)
Appendix C SFPUC Memorandum Re: Regional Water System Supply Reliability and UWMP 2020

1 INTRODUCTION

Included herein is a Senate Bill 610-compliant water supply assessment (WSA) in support of the proposed 121 East Grand Ave Project ("Project"; **Figure 1**). The proposed Project site is comprised of approximately 2.9 acres located at the intersection of Poletti Way and East Grand Avenue in the City of South San Francisco, California (Phase 3 Real Estate Partners, Inc., 2022). The proposed Project includes demolition of the existing buildings and development of two 17-story office and research and development (R&D) buildings with public amenities totaling approximately 945,000 square feet (SF), and associated irrigated landscaping (Phase 3 Real Estate Partners, Inc., 2022). The proposed Project is located within the California Water Service (Cal Water) South San Francisco District (SSF District) service area and Cal Water will be the water service provider for the proposed Project.

The information provided in this WSA is consistent with California Water Code (CWC or Water Code) §10910-10912 requirements and the California Department of Water Resources' (DWR's) *Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001: To Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning*, dated 8 October 2003. The text of specific sub-sections of the Water Code is included in greyed boxes and italicized font at the beginning of specific sections of this WSA. The information presented in those respective sections, and the associated tables and figures, respond directly to applicable Water Code requirements.

The purpose of a WSA is to evaluate whether a water provider has sufficient water supply to meet the current and planned water demands within its service area, including the demands associated with the proposed Project, during normal and dry hydrologic years over a 20-year time horizon.[1] Given that the SSF District shares its contractual allocation for its primary supply source (i.e., the City and County of San Francisco's Regional Water System [RWS]) with Cal Water's Bear Gulch and Mid-Peninsula Districts (referred to as the "three Peninsula Districts", **Figure 2**), the collective projected supplies and demands for all three Peninsula Districts are considered in this WSA. More specifically, this WSA includes:

- A summary of the WSA requirements articulated in Water Code §10910-10912 and a description of how they apply to the proposed Project;
- A description and analysis of the current and projected future water demands of the proposed Project through the year 2045;
- A description and analysis of the historical and current water demands for the SSF District, and projected future water demands for the three Peninsula Districts' service areas through the year 2045;
- A description and analysis of the current and projected future water supplies for the three Peninsula Districts' service areas through the year 2045; and

[1] The Water Code specifies that a WSA must look at supplies and demand on a 20-year horizon (i.e., to 2040), but given the available data, this WSA looks beyond that to 2045.

- A comparison of the water supplies and demands for the three Peninsula Districts' service areas, including the projected water demands associated with the proposed Project.

The information contained in this WSA is based primarily on Cal Water's SSF, Bear Gulch, and Mid-Peninsula Districts 2020 Urban Water Management Plans (UWMPs), except where updated with relevant water demand and supply reliability and other information provided by Cal Water, DWR, the San Francisco Public Utilities Commission (SFPUC), and the Bay Area Water Supply and Conservation Agency (BAWSCA). The findings of this WSA are contingent upon the successful development of supplemental water supplies and/or the implementation of conservation/demand management measures to offset any net new demands from qualifying projects in specified Cal Water's districts under Cal Water's Water Neutral Development Policy. This policy is discussed further in Section 4.1.

This WSA concludes that, through the (1) development of supplemental water supplies and/or (2) implementation of conservation or demand management measures equal to the Project's estimated net new demands consistent with the Cal Water's Water Neutral Development Policy, the proposed Project will not affect water supply reliability within the South San Francisco District. Based on currently available information and conservative estimates of projected demand, Cal Water expects to be able to meet all future demands within its existing South San Francisco District service area (as well as the Mid-Peninsula and Bear Gulch Districts), inclusive of the proposed Project in normal hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the South San Francisco District Water Shortage Contingency Plan (WSCP). In addition, as described herein and in Cal Water's 2020 UWMP, BAWSCA, Cal Water, and SFPUC are pursuing the development of additional water supplies to improve the RWS and South San Francisco District supply reliability.



Legend

Project Boundary

N

0 250 500

Feet

DRAFT

Project Location

Notes

1. All locations are approximate.

Sources

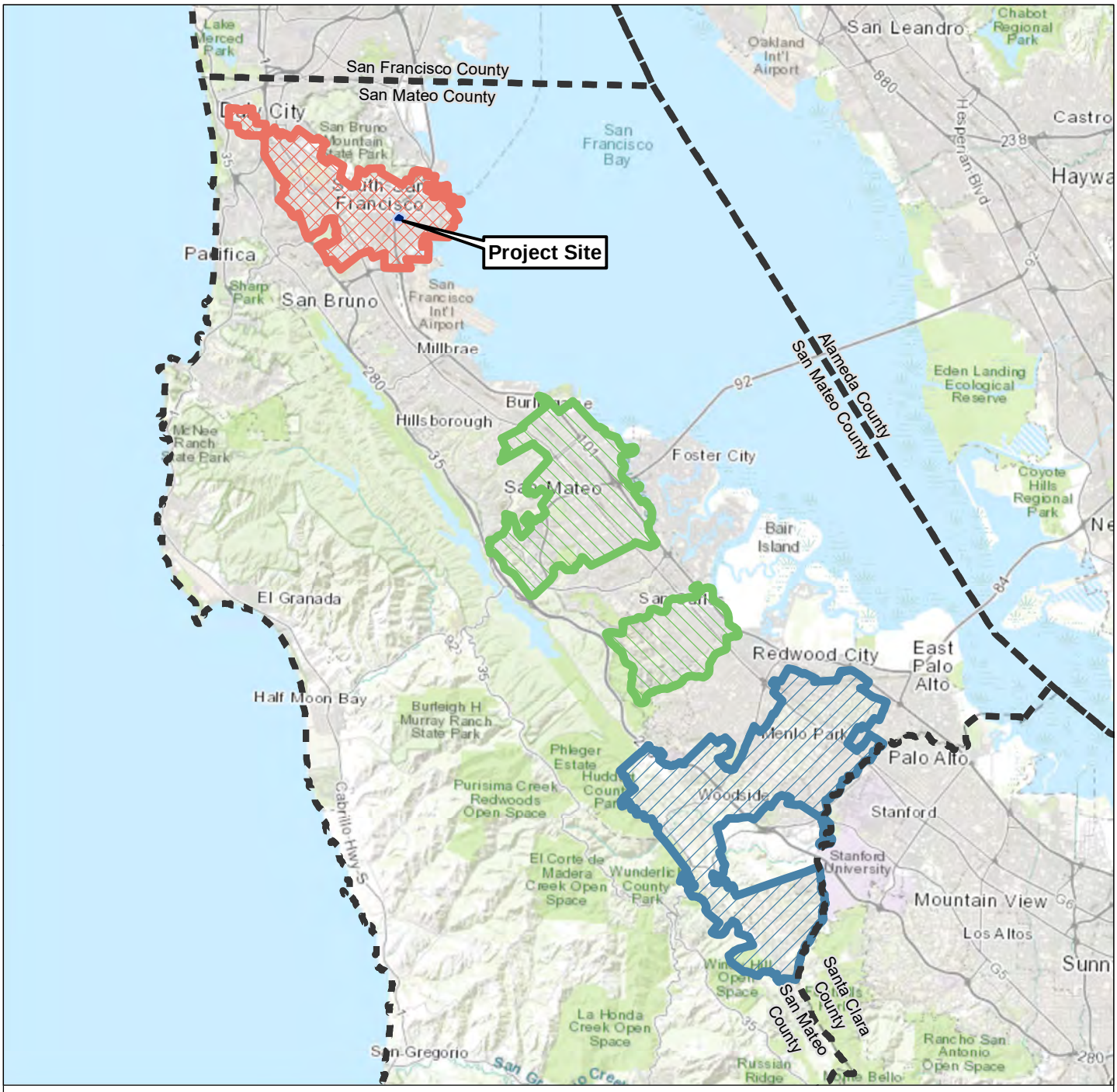
1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 18 May 2022.

121 East Grand Ave Project
South San Francisco, CA
May 2022
EKI C20057.00

Figure 1

eki environment & water

Path: X:\C20057_00\Maps\2022\05\Fig1_SPLocation_v2.mxd



Legend

- Project Boundary
- County Boundary
- Bear Gulch District
- Mid-Peninsula District
- South San Francisco District

N

0 4 8

(Scale in Miles)

Abbreviations

Cal Water = California Water Service

Notes

1. All locations are approximate.

Sources

1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 18 May 2022.
2. Boundary data for Cal Water districts' service areas received from Cal Water on 16 October 2017.

DRAFT

Cal Water's Three Peninsula Districts

121 East Grand Ave Project
South San Francisco, CA
May 2022
EKI C20057.00

Figure 2

eki environment & water

Path: X:\C20057\...00\Maps\2022\05\Fig2_3Districts.mxd

2 GENERAL REQUIREMENTS FOR THE PREPARATION OF A WATER SUPPLY ASSESSMENT

The purpose of this section is to outline the types of projects that require the preparation of a WSA, who is responsible for preparation, and the necessary components of a WSA.

2.1 Applicability of Senate Bill 610 to the Project

☑ ***CWC § 10910 (a)***

Any city or county that determines that a project, as defined in Section 10912, is subject to the California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) under Section 21080 of the Public Resources Code shall comply with this part.

☑ ***CWC § 10912***

For the purposes of this part, the following terms have the following meanings:

(a) "Project" means any of the following:

(1) A proposed residential development of more than 500 dwelling units.

(2) A proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.

(3) A proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space.

(4) A proposed hotel or motel, or both, having more than 500 rooms.

(5) A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(6) A mixed-use project that includes one or more of the projects specified in this subdivision.

(7) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

(b) If a public water system has fewer than 5,000 service connections, then "project" means any proposed residential, business, commercial, hotel or motel, or industrial development that would account for an increase of 10 percent or more in the number of the public water system's existing service connections, or a mixed-use project that would demand an amount of water equivalent to, or greater than, the amount of water required by residential development that would represent an increase of 10 percent or more in the number of the public water system's existing service connections.

The approximately 2.9-acre proposed Project Site is located at the intersection of Poletti Way and East Grand Avenue in an area known as East of 101 in the City of South San Francisco (**Figure 1**), which is located within San Mateo County (Phase 3 Real Estate Partners, Inc., 2022). The proposed Project includes the development of two 17-story office and R&D buildings with public amenities totaling approximately 945,000 square feet (SF), and associated irrigated landscaping (Phase 3 Real Estate Partners, Inc., 2022). The proposed Project meets the definition of a "project" requiring a WSA pursuant to SB 610 (Water Code §10910(a) and 10912(a)(3)).

2.2 Responsibility for Preparation of the Water Supply Assessment

☑ ***CWC § 10910 (b)***

The city or county, at the time that it determines whether an environmental impact report, a negative declaration, or a mitigated negative declaration is required for any project subject to the California Environmental Quality Act pursuant to Section 21080.1 of the Public Resources Code, shall identify any water system that is, or may become as a result of supplying water to the project identified pursuant to this subdivision, a public water system, as defined in Section 10912, that may supply water for the project. If the city or county is not able to identify any public water system that may supply water for the project, the city or county shall prepare the water assessment required by this part after consulting with any entity serving domestic water supplies whose service area includes the project site, the local agency formation commission, and any public water system adjacent to the project site.

The proposed Project is located within the Cal Water SSF District service area and the water for the proposed Project will be supplied by Cal Water. Therefore, in accordance with Water Code §10910(b), Cal Water is the entity responsible for preparation and adoption of a WSA for the proposed Project.

2.3 Components of a Water Supply Assessment

☑ ***CWC § 10910 (c) (4)***

If the city or county is required to comply with this part pursuant to subdivision (b), the water supply assessment for the project shall include a discussion with regard to whether the total projected water supplies, determined to be available by the city or county for the project during normal, single dry, and multiple dry water years during a 20-year projection, will meet the projected water demand associated with the proposed project, in addition to existing and planned future uses, including agricultural and manufacturing uses.

☑ ***CWC § 10911***

(b) The city or county shall include the water supply assessment provided pursuant to Section 10910, and any information provided pursuant to subdivision (a), in any environmental document prepared for the project pursuant to Division 13 (commencing with Section 21000) of the Public Resources Code.

(c) The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

As listed above in Water Code §10910(c)(4), the primary purpose of a WSA is to evaluate whether sufficient water supply is available to meet all future demands within the water supplier's service area, including those associated with the proposed Project, during normal and dry hydrologic years for a 20-year planning horizon.[2] Given that the SSF District shares its contractual allocation for its primary supply source (i.e., the City and County of San Francisco's RWS) with Cal Water's

[2] The Water Code specifies that a WSA must look at supplies and demand on a 20-year horizon (i.e., to 2040), but given the available data, this WSA looks beyond that to 2045.

three Peninsula Districts (**Figure 2**), the collective projected supplies and demands for all three Peninsula Districts are considered in this WSA. More specifically, this WSA includes:

- A summary of the WSA requirements articulated in Water Code §10910-10912 and a description of how they apply to the proposed Project;
- A description and analysis of the current and projected future water demands of the proposed Project through the year 2045;
- A description and analysis of the historical and current water demands for the SSF District, and projected future water demands for the three Peninsula Districts' service areas through the year 2045;
- A description and analysis of the current and projected future water supplies for the three Peninsula Districts' service areas through the year 2045; and
- A comparison of the water supplies and demands for the three Peninsula Districts' service areas, including the projected water demands associated with the proposed Project.

3 PROJECT DESCRIPTION

The proposed Project is comprised of approximately 2.9 acres located at the intersection of Poletti Way and East Grand Avenue in the City of South San Francisco, California (Phase 3 Real Estate Partners, Inc., 2022; **Figure 1**). The proposed Project would allow for development of two 17-story buildings totaling approximately 945,000 SF. Based on the provided project description, the buildings are anticipated to be primarily office and R&D space, with the first two floors of each building as public amenities (e.g., retail, restaurant, and fitness center spaces). The development will also include below-grade parking, and landscaped public plazas. Buildout of the North/South Wing Building is anticipated to be completed by December 2027, and buildout of the East/West Wing Building is anticipated to be completed by October 2028 (Phase 3 Real Estate Partners, Inc., 2022).

The proposed Project site is currently developed as a three-story motel and asphalted surface parking, which would be demolished to allow for development of the proposed Project (Phase 3 Real Estate Partners, Inc., 2022). Historical water use at the site ranged between 14 to 21-acre feet per year (AFY) between 2019 and 2021, and averaged 17 AFY (Cal Water, 2022a). The proposed Project is located within the Cal Water SSF District service area and potable water service will be provided by Cal Water (**Figure 2**).

4 PROJECT WATER DEMAND

The City of South San Francisco has adopted green building standards and water efficient landscaping ordinances consistent with previous versions of the CalGreen building standards and the California Model Water Efficient Landscape Ordinance (MWELO). As part of state requirements, all new developments must comply with these efficiency standards. As such, the proposed Project development is expected to include a number of water-efficient features, including, but not limited to:

- Use of low-flow lavatory faucets, kitchen faucets, toilets, and urinals in accordance with CalGreen Code; and
- Inclusion of low-water use landscaping and high-efficiency irrigation systems to minimize outdoor water use in accordance with MWELO.

As described below, average annual water demand for the proposed Project was provided by the Project Proponent (BKF Engineers, 2022; see **Appendix A**). These estimates were evaluated relative to current water use by similar uses in the Cal Water SSF District in the sections below. Similar uses within the Cal Water SSF District are based on the Cal Water WSA Water Factor Tool, which was developed based on 2016-2018 water use data for the SSF District (Cal Water, 2019). **Table 1** includes a summary of the water demand projections associated with the proposed land uses at Project completion. For the purposes of this WSA, it is assumed that full Project buildout is achieved by 2030.

4.1 Cal Water Water Neutral Development Policy

In July 2021, Cal Water began development of a Water Neutral Development Policy (or Policy) for its three Peninsula Districts, which share the same SFPUC supply allocation. The purpose of the Policy is to ensure that there is enough water at all times to meet the basic needs of the community and increase drought resiliency, among other things. As noted above, the findings of this WSA are contingent upon the successful development of supplemental water supplies and/or the implementation of conservation/demand management measures to offset any net new demands from qualifying projects in specified Cal Water's districts under the Policy.

As currently drafted, the Policy will require any new residential, commercial, or industrial development within the SSF District that is expected to exceed a specified amount of new demand to offset its net increase in water demand. The net increase in water demand associated with any new development is calculated as the expected total water use due to the proposed development and/or expansion, minus the amount of existing water use, onsite credits (if available), and/or alternative sources of water supply. Alternative sources may include, but are not limited to: (1) reused graywater, (2) reused blackwater, (3) reused mixed gray/blackwater, (4) captured rainwater / stormwater, and (5) air conditioning condensate.

The offset amount is determined using a detailed projection of total annual water demand resulting from the proposed development, excluding temporary demands such as those required for landscape establishment. The applicant may choose to comply with the defined offset amount by: (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy. The

offset amount for the Project is identified in Section 4.6. Cal Water will verify compliance with this Water Neutral Development Policy (i.e., ensure that all payments for offsets and/or conservation offset measures are completed) prior to establishing a water service connection.

4.2 Indoor Water Use

Table 1 provides a summary of the land uses, unit demand factors, and respective water demand associated with each land use. All unit demand factors for the proposed Project were provided by the Project Proponent (BKF Engineers, 2022). The unit demand factors for each land use type of the Project are as follows: 0.13 gallons per day/square foot (GPD/SF) for office space, 0.21 GPD/SF for R&D, and between 0.10 GPD/SF and 0.80 GPD/SF for the amenities building depending on use type (e.g., coffee shop, restaurant, fitness, auditorium, or retail uses). Based on information provided by the Project Proponent, all unit demand factors were sourced from published Redwood City water demand assumptions[3], as recommended by the City of South San Francisco. Based on demand estimates provided by the Project Proponent, it is estimated that the total indoor water use for the proposed Project will be 169,974 GPD, or approximately 190 AFY (BKF Engineers, 2022).

BKF Engineers (2022) estimated the number of employees based on assumed employee densities to be 2,339. Based on this, the estimated Project demands are 73 GPD/employee, which is substantially higher than the 20-35 GPD/employee estimate for commercial and industrial settings, per the EPA Lean & Water Toolkit (USEPA, 2021). Based on Cal Water's WSA Water Demand Factor Tool, non-residential uses within the SSF District (based on 2016-2018 data), are 0.063 GPD/SF. If this demand factor were applied to the Project, demands would be estimated as 67 AFY. Based on our review of these data, the water demand estimates provided by the Project Proponent are expected to be conservative, and reflect a higher intensity of water use than typical office and commercial uses.

4.3 Outdoor Water Use

The Project Proponent provided estimated irrigated landscape water use based on a unit demand factor of 0.07 GPD/SF (BKF Engineers, 2022; see **Appendix A**). The proposed Project would include approximately 11,700 SF of irrigated landscape area, for a total outdoor water demand of 818 GPD or approximately 0.92 AFY, as shown on **Table 1**.

The Project will be required to comply with South San Francisco's water efficient landscaping ordinance, which is consistent with the Model Water Efficient Landscaping Ordinance (MWELO; DWR, 2015). Based on MWELO, the Maximum Applied Water Allowance (MAWA; DWR, 2015) is 0.43 AFY,[4] less than half of that estimated by BKF Engineers, 2022. Given that the outdoor irrigation demand estimates provided by the Project Proponent are higher and thus more

[3] 2019 Engineering Standards for the City of Redwood City Attachment Q: Water Demand Projection Worksheet.

[4] MAWA demands were calculated by multiplying the Reference Evapotranspiration rate of 42.8 inches per year for Redwood City, an Evapotranspiration Adjustment Factor of .45 for non-residential areas, a conversion factor of .62, and the total project square footage, for a total of .92 AFY, per DWR, 2015.

conservative, and the exact landscape designs are not currently known, an estimate of 0.92 AFY is used, per **Table 1**.

Table 1

Summary of Estimated Incremental Annual Project Water Demand

121 East Grand Ave Project, South San Francisco, California

Water Use (a)	Area (SF)	Demand Factor (GPD/SF)	Total Water Demand (AFY)				
			2025 (f)	2030	2035	2040	2045
Office Space	418,433	0.13	0	61	61	61	61
Research & Development	418,432	0.21	0	98	98	98	98
Amenity Building							
Coffee Shop	2,342	0.80	0	2.1	2.1	2.1	2.1
Restaurant	9,371	0.47	0	4.9	4.9	4.9	4.9
Fitness/Gym	17,691	0.75	0	15	15	15	15
Auditorium/Other	68,789	0.10	0	7.7	7.7	7.7	7.7
Retail	9,857	0.13	0	1.4	1.4	1.4	1.4
Irrigation (b)	11,684	0.07	0	0.92	0.92	0.92	0.92
Distribution System Losses (c)	--	--	0	6.5	6.5	6.5	6.5
Existing Site Demand (d)	--	--	--	-17	-17	-17	-17
Net Annual Water Demand (e)			**0**	**181**	**181**	**181**	**181**

Abbreviations:

"AFY" = acre-feet per year
"DWR" = California Department of Water Resources
"GPD/SF" = gallons per day per square foot
"MWELO" = Model Water Efficient Landscaping Ordinance
"SF" = square feet

Notes:

(a) Estimated demands for the proposed project per Reference 1.

(b) Based on MWELO, the Maximum Applied Water Allowance (MAWA; DWR, 2015) is 0.43 AFY, less than half of that estimated per Reference 1. Given that the outdoor irrigation demand estimates provided by the Project Proponent are higher and thus more conservative, and the exact landscape designs are not currently known, an estimate of 0.92 AFY is used herein.

(c) Estimated distribution system water loss is calculated using the 2020 DWR Water Audit Report non-revenue water loss as a percent of volume of water supplied (i.e., 3.3% of project demands), per Reference 2, inclusive of real and apparent losses.

(d) Existing site demands per Reference 3. Existing demands are subtracted from total projected water demands to show the incremental increase in demands associated with the Project (i.e., the net increase in water demand). Existing demands are estimated as the average of the last three years of water use at the project site based on available metered data (2019-2021).

(e) Total may not sum due to rounding.

(f) Full buildout of the Project is expected to be completed by 2030, per Reference 1.

Table 1

Summary of Estimated Incremental Annual Project Water Demand

121 East Grand Ave Project, South San Francisco, California

References:

1. BKF Engineers, 2022. 121 East Grand Avenue, South San Francisco - Water Demand Memorandum, dated 25 April 2022, prepared by BKF Engineers.
2. Cal Water, 2022. California Water Service Company South San Francisco 2020 Water Audit Data Report, accessed via the WUEdata - Water Audit Report Data website on 11 May 2022, (https://wuedata.water.ca.gov/awwa_plans).
3. Data provided by Cal Water via email, 21 April 2022.

4.4 Distribution System Losses

Water distribution systems experience a degree of water loss over the course of transmission from the source to the customer. Although distribution system losses from the newly constructed portion of the system's infrastructure associated with the proposed Project would initially be expected to be minimal, it is conservatively assumed that distribution system losses associated with delivering water for the proposed Project will ultimately be consistent with the proportion of non-revenue water loss per the 2020 validated water loss audit submitted to DWR for the SSF District (i.e., 3.3%; Cal Water, 2022c). It should be noted that while these real losses represent a demand on the system, water lost through the distribution system returns to the groundwater basin and thus is not a true demand on the groundwater supply. However, for purposes of this WSA, all water loss is conservatively considered a demand. **Table 1** shows the distribution system losses for the proposed Project, estimated at a total of 6.5 AFY.

4.5 Existing Current Water Demand on the Proposed Project Site

The Project is currently developed as a three-story wood framed motel and asphalted surface parking (Phase 3 Real Estate Partners, Inc., 2022). Historical water use for the current land use at the proposed Project site over the last three years (i.e., 2019 – 2021) ranged between 14 AFY and 21 AFY, and averaged 17 AFY (Cal Water, 2022a). Water demand by the new development is considered incremental to this existing demand, and thus, as shown in **Table 1**, the average of the last three years of existing site demand is subtracted from the estimated demands associated with the proposed Project.

4.6 Total Project Water Demand

Based on the above methodologies and assumptions, and adjusting for the existing water use at the site, the incremental increase in water demand associated with the proposed Project at full buildout and occupancy is estimated to be 181 AFY, as shown in **Table 1**. However, as discussed in Section 4.1, in accordance with the SSF District's Water Neutral Development Policy, the offset amount for the Project is equal to the associated incremental increase in water demand. Thus, the proposed Project will be required to offset a total of 181 AFY and is therefore not expected to result in a net increase in water demands to Cal Water's SSF District.

5 CAL WATER SSF DISTRICT WATER DEMAND

☑ ***CWC § 10910 (c)***

(1) The city or county, at the time it makes the determination required under Section 21080.1 of the Public Resources Code, shall request each public water system identified pursuant to subdivision (b) to determine whether the projected water demand associated with a proposed project was included as part of the most recently adopted urban water management plan adopted pursuant to Part 2.6 (commencing with Section 10610).

(2) If the projected water demand associated with the proposed project was accounted for in the most recently adopted urban water management plan, the public water system may incorporate the requested information from the urban water management plan in preparing the elements of the assessment required to comply with subdivisions (d), (e), (f), and (g).

(3) If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

Consistent with the UWMP Act (Water Code §10610-10656), the 2020 UWMPs for the three Peninsula Districts present estimates of projected future water demand for each respective District service area in five year increments, between the years 2025 and 2045 (Cal Water, 2021a, 2021b, 2021c).

The projections include all existing demands within the SSF District, as well as for other large projects for which Cal Water has prepared WSAs in the last five years (i.e., 201 Haskins Way, South SFPUC Site, South San Francisco Downtown Station, Oyster Point Development, the 2017 Genentech Master Plan Update, and the Southline Specific Plan).

While the 2020 UWMP water demand projections account for growth within the current SSF District, the proposed Project is not explicitly included in these projections, and the projected demand associated with the proposed Project is higher than the projected demand growth anticipated by the 2020 UWMP. Therefore, for the purposes of this WSA, it is conservatively assumed that no portion of the water demand associated with the proposed Project is included in the projected SSF District water demands. Notwithstanding, through implementation of the Water Neutral Development Policy, the proposed Project will not result in an increase in demands for the SSF District relative to those projected in the 2020 UWMP.[5] All other new developments that are expected to exceed a specified amount of demand within the three Peninsula Districts will also be required to comply with the Water Neutral Development Policy and thus will result in no incremental increase in demand on the system.

[5] Demand estimates for the District's service area through 2045 were developed using Cal Water's demand forecast model, which estimates future demands based on current water use for the District, anticipated growth based on projections by the Association of Bay Area Governments (ABAG), projected water conservation efforts, and anticipated passive conservation savings.

5.1 Current and Historical Water Demand Within the Cal Water SSF District Service Area

Historical water demand within the Cal Water SSF District service area from 2000 through 2021 is summarized in **Table 2**. The largest proportion of water demand within the SSF District service area is from the commercial sector, which represented 45% of the demand in the 2016-2021 period. The remainder of the demand was split between single-family residential (SFR; 37% of overall demand), industrial (8.8% of overall demand), multi-family residential (MFR; 5.1% of the overall demand), and institutional/government (4% of the overall demand; Cal Water, 2022b).

Water use from 2000 to 2008 within the SSF District remained fairly consistent, at an average of 9,356 AFY. A slight decrease in water use occurred from 2008 to 2012, which generally corresponds with the 2007 to 2009 drought and the economic downturn. Then, a significant drop in water demand occurred in 2014 and 2015, corresponding with the recent historic drought and mandatory state-wide water use restrictions and water conservation targets. Based on the data summarized in **Table 2**, total water demand for the District averaged 6,722 AFY from 2016 through 2021.

5.2 SSF District Water Demand Projections

Projected water demands for the SSF District are documented in the SSF District 2020 UWMP (2020 UWMP) and presented in **Table 3** in 5-year increments. Taking into account historical water use, expected population increase and other growth, climatic variability, and other assumptions, water demand within the SSF District is projected to increase to 8,423 AFY by 2045, an increase of 25% over the 2016-2021 average.

5.3 Planned Development Projects within the South San Francisco District

The SSF District 2020 UWMP water demand projections account for growth within the SSF District service area through 2045. The 2020 UWMP projections are based on population, housing, and employment projections developed by the Association of Bay Area Governments (ABAG) and included planned developments for which WSAs were recently completed, including the 201 Haskins Way, South SFPUC Site, South San Francisco Downtown Station, Oyster Point Development, 2017 Genentech Master Plan Update, and Southline Specific Plan WSAs. Thus, the projected water demands for these development projects were included in the growth projections for the SSF District.

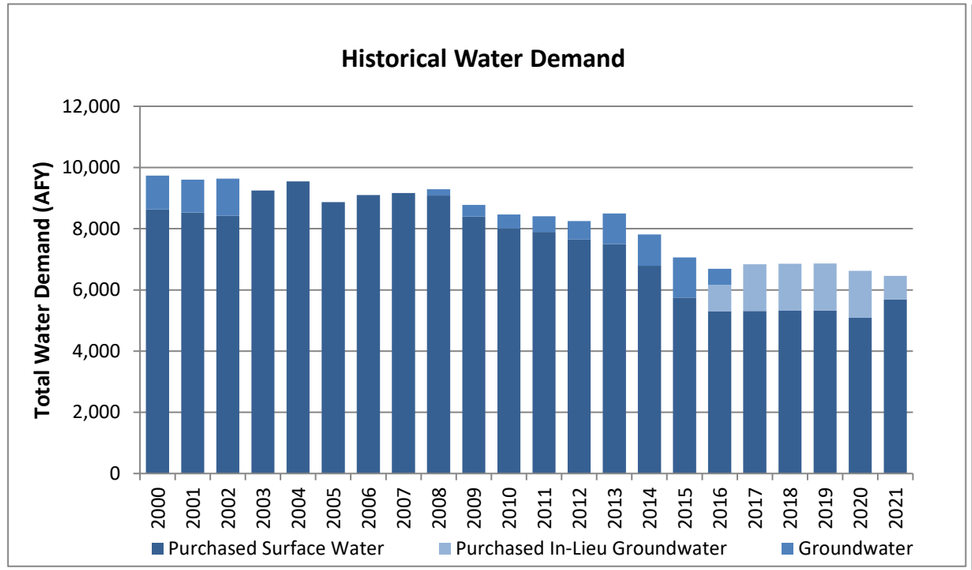
As discussed in Section 5 above, while the updated water demand projections account for growth within the current SSF District, the proposed Project is not explicitly included in these projections. In addition to the 121 East Grand Project, Cal Water has received a request to prepare a WSA for the 800 Dubuque Avenue Development Project, which would consist of approximately 900,000 SF of office and R&D uses over a 5.9-acre project area and is also located within the SSF District. Through implementation of Cal Water's Water Neutral Development Policy (See Section 4.1), neither the proposed Project nor the 800 Dubuque Avenue Development Project would result in a net increase in water demand for the SSF District relative to those projected in the 2020 UWMP.

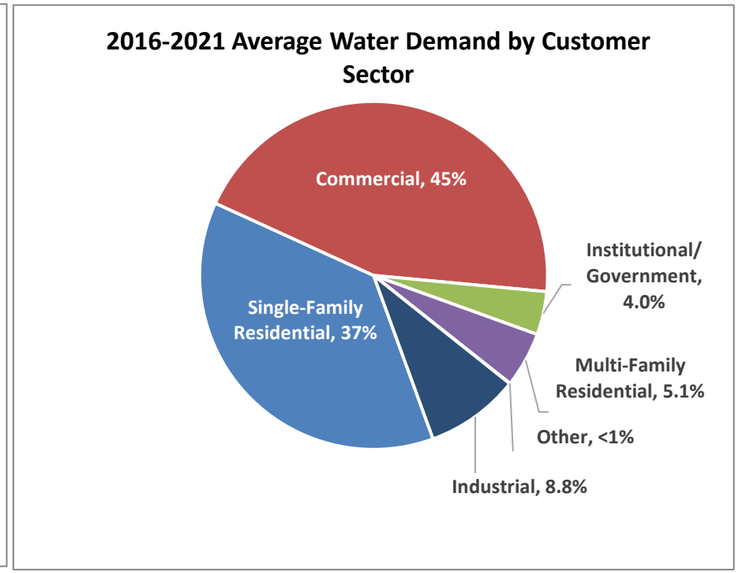
5.4 Total Projected SSF District Water Demand (Inclusive of the Proposed Project)

Table 3 shows the projected water demands for the SSF District inclusive of the estimated proposed Project water demands. As shown, with the implementation of the District's Water Neutral Development Policy, the Project will not increase the SSF District's demand.

Table 2
Historical Water Demand for South San Francisco District
121 East Grand Ave Project, South San Francisco, California

Category	Cal Water Historical Annual Water Demand (AFY) (a)(b)																					
	2000	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**
Purchased Surface Water	8,632	8,531	8,426	9,245	9,549	8,869	9,101	9,169	9,086	8,397	8,013	7,892	7,644	7,500	6,787	5,751	5,296	5,308	5,322	5,332	5,089	5,694
Purchased In-Lieu Groundwater	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	863	1,535	1,535	1,535	1,539	761
Groundwater	1,106	1,076	1,207	0	0	0	0	0	206	380	452	515	606	995	1,028	1,312	527	0	0	0	0	0
Total Water Demand	**9,738**	**9,606**	**9,633**	**9,245**	**9,549**	**8,869**	**9,101**	**9,169**	**9,292**	**8,777**	**8,465**	**8,408**	**8,250**	**8,495**	**7,816**	**7,064**	**6,687**	**6,842**	**6,856**	**6,866**	**6,627**	**6,455**





Abbreviations:

"AFY" = acre feet per year

Notes:

(a) Historical water demands for per Reference 1. 2016-2021 water use by customer sector per Reference 1 and Reference 2.

(b) Since 2016, the SSF District has derived 100 percent of its designated quantity of supply from the Westside Basin as in-lieu water provided through the Regional Groundwater Storage and Recovery (RGSR). As such, the volume of groundwater pumped in Table 4 does not represent actual extractions from the Basin, but rather the combined volume of in-lieu surface water deliveries and extractions from the Basin per Reference 3.

References:

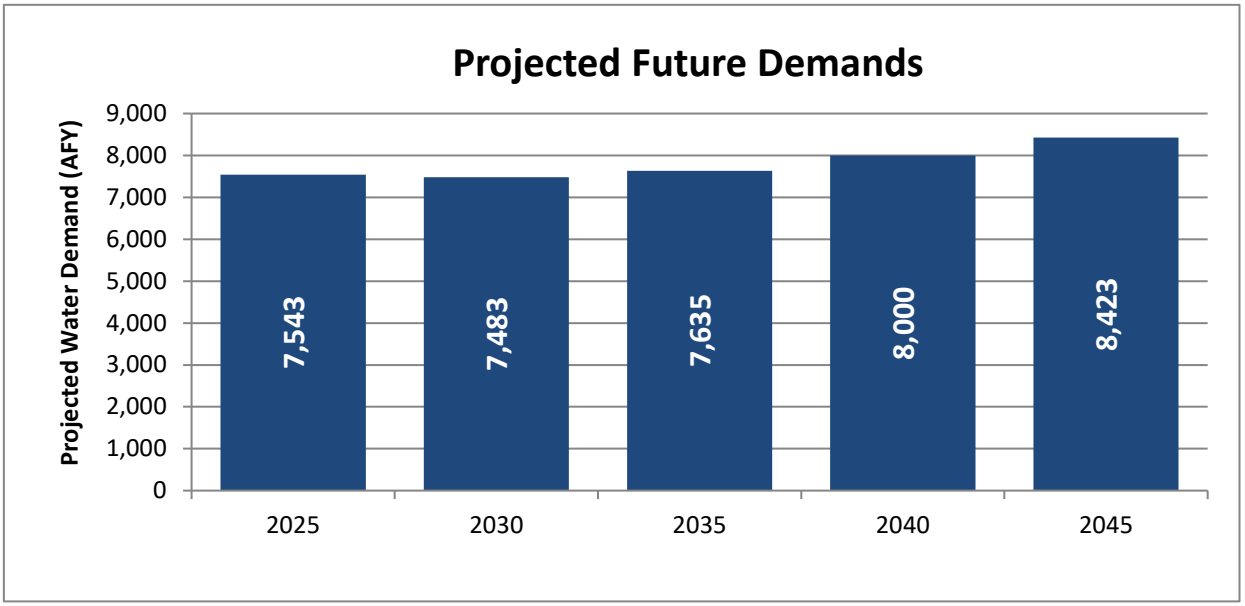
1. Historical Demand and Production Data Provided by Cal Water, 2022.
2. 2021-2025 Conservation Master Plan, South San Francisco District, prepared by California Water Service, dated April 2021.
3. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.

Table 3

Projected Future Water Demand for the South San Francisco District

121 East Grand Ave Project, South San Francisco, California

Water Demand	Projected Annual Water Demand (AFY)				
	2025	2030	2035	2040	2045
SSF District 2020 UWMP (a)	7,543	7,483	7,635	8,000	8,423
121 East Grand Ave Project (b)	0	0	0	0	0
Total Water Demand (c)	7,543	7,483	7,635	8,000	8,423



Abbreviations:

"AFY" = acre feet per year

"SSF" = South San Francisco

"UWMP" = Urban Water Management Plan

Notes:

(a) Water demand projections for the SSF District were updated in 2021, and are presented per Reference 1.

(b) In accordance with and through implementation of Cal Water's Water Neutral Development Policy, the proposed Project will not result in a net increase in demands for the SSF District. Therefore, demands for the proposed Project are shown as zero through 2045.

(c) The total water demand is the sum of total water use and distribution system losses.

References:

1. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.

6 CAL WATER SSF DISTRICT WATER SUPPLY

This section identifies Cal Water SSF District's water supplies and discusses the vulnerability of the various supplies to drought and other factors affecting water supply reliability. The Cal Water SSF District utilizes both groundwater supply from the Westside Basin and imported surface water supply purchased from the SFPUC. Both sources are expected to constitute the water supply for the proposed Project.

6.1 Identification of Water Supply Rights

☑ ***CWC § 10910 (d)(1)***

The assessment required by this section shall include an identification of any existing water supply entitlements, water rights, or water service contracts relevant to the identified water supply for the proposed project, and a description of the quantities of water received in prior years by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), under the existing water supply entitlements, water rights, or water service contracts.

Pursuant to Water Code §10910(d)(1), a WSA is required to include identification of all water supply entitlements, water rights, and water service contracts relevant to the identified water supply for the proposed Project. In accordance with these requirements, this WSA includes a summary of Cal Water's water supply sources in the SSF District service area and the agreements between Cal Water and its wholesale supplier, the SFPUC, and other parties.

As discussed further below, three Cal Water Districts share one contractual allocation of supply from the City and County of San Francisco's RWS, and thus manage the supplies for all three Peninsula Districts collectively. Therefore, the consideration of supply availability below for the SSF District considers the collective supply available to all three Peninsula Districts (i.e., the SSF, Bear Gulch, and Mid-Peninsula Districts).

6.1.1 SFPUC Regional Water System

6.1.1.1 RWS Supply Sources and Allocation

The majority of the water supply to the Cal Water SSF District (i.e., approximately 89% from 2005-2021) is treated water purchased from the City and County of San Francisco's RWS, which is operated by the SFPUC. Within the SSF District, Cal Water takes delivery from eleven active and two standby metered turnouts from RWS transmission lines.

The RWS supply originates predominantly from the Sierra Nevada but also includes treated water produced by the SFPUC from its local watersheds and facilities in Alameda and San Mateo Counties. Approximately 85% of the RWS supply is from the Tuolumne River via the Hetch-Hetchy Reservoir and aqueducts. The Cal Water RWS supply is sourced from the remaining 15%, which is derived from local watersheds and the San Antonio, Calaveras, Crystal Springs, Pilarcitos, and San Andreas Reservoirs.

The business relationship between the City and County of San Francisco and its Wholesale Customers (including Cal Water) is largely defined by the Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County, and Santa Clara County (Agreement) entered into in July 2009. The Agreement, which has a 25-year term, addresses water supply availability for the RWS as well as the methodology used by the SFPUC in setting wholesale water rates. This Agreement supersedes an earlier 25-year agreement signed in 1984 and was amended in 2019. The amendments included extending the deadline for SFPUC to decide whether to make San Jose and Santa Clara permanent customers, a revision to the drought allocation formula, and a deadline extension for completion of its Water Supply Improvement Plan, among other things. A copy of this Agreement (without signatures) is included in **Appendix B**.

The Agreement provides a 184 million gallons per day (MGD) Supply Assurance to the SFPUC's Wholesale Customers collectively (Cal Water, 2021a). This allocation was reached through negotiation in the early 1990s between the SFPUC and the Bay Area Water Users Association (BAWUA), the predecessor organization to BAWSCA. The Agreement was first signed by Cal Water, along with 29 other Bay Area water suppliers, as part of the 1984 Settlement Agreement and Master Water Sales Contract with San Francisco, supplemented by individual Water Supply Contracts (Cal Water, 2016). The Supply Assurance is subject to reduction during periods of water shortage due to drought, emergencies, or other scenarios resulting in a water shortage. Each Wholesale Customer's share of the 184 MGD is referred to as their Individual Supply Guarantee (ISG). Although the Agreement expires in 2034, the Supply Assurance and ISG continue in perpetuity as both are subject to separate binding water allocation agreements described above and would continue beyond the term of the Agreement. At expiration of the Agreement, it is likely that a new agreement will be entered into as was done at the termination of the prior 1984 agreement.

Cal Water's contractual allocation of SFPUC supply is shared among its Bear Gulch, Mid-Peninsula, and SSF Districts. Cal Water's ISG for the three Peninsula Districts was originally 35.39 MGD (39,642 AFY). However, the acquisition of the Los Trancos County Water District in July 2005 resulted in the transfer of 0.11 MGD of ISG to Cal Water, and in 2009 Cal Water acquired the Skyline County Water District, which also transferred its 0.181 MGD ISG to Cal Water. These acquisitions increased Cal Water's total ISG to 35.68 MGD (39,993 AFY) (Cal Water, 2016).

Information regarding the Agreement and subsequent amendments was provided by BAWSCA in coordination with SFPUC in support of 2020 UWMP development and is provided verbatim below.

> *In the 2009 Water Supply Agreement, the SFPUC committed to make three decisions before 2018 that affect water supply development:*
>
> - *Whether or not to make the cities of San Jose and Santa Clara permanent customers,*
> - *Whether or not to supply the additional unmet supply needs of the Wholesale Customers beyond 2018, and*

- *Whether or not to increase the wholesale customer Supply Assurance above 184 mgd.*

Events since 2009 made it difficult for the SFPUC to conduct the necessary water supply planning and CEQA analysis required to make these three decisions before 2018. Therefore, in the 2018 Amended and Restated Water Supply Agreement, the decisions were deferred for 10 years to 2028.

Additionally, there have been recent changes to instream flow requirements and customer demand projections that have affected water supply planning beyond 2018. As a result, the SFPUC has established an Alternative Water Supply Planning program to evaluate several regional and local water supply options. Through this program, the SFPUC will conduct feasibility studies and develop an Alternative Water Supply Plan by July 2023 to support the continued development of water supplies to meet future needs.

Cal Water's collective current and projected purchase quantities are approximately equal to an average of 29.38 MGD in 2020 and 30.35 MGD in 2045,[6] respectively (Cal Water, 2021a). Both current and projected quantities are less than Cal Water's ISG of 35.68 MGD.

6.1.1.2 RWS Supply Reliability

The RWS has historically met demand in its service area in all year types. Factors that will affect future reliability of the RWS are discussed below. Detailed information regarding factors that impact the SFPUC RWS supply reliability are provided in the 2020 UWMP.

The water available to SFPUC's Retail and Wholesale Customers from the RWS is constrained by hydrology, physical facilities, and the institutional parameters that allocate the water supply of the Tuolumne River (Cal Water, 2021a). In addition, statewide regulations and other factors can impact the system reliability. For example, the adoption of the Water Quality Control Plan for the San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) is anticipated to impact the reliability of the RWS supplies in the future.

Based on an analysis by BAWSCA, if the current Bay-Delta Plan Amendment (July 2018) is implemented, the proposed unimpaired flow volumes would significantly reduce water supply available through the RWS during future drought conditions, and BAWSCA member agencies (including the Cal Water SSF District) would be required to reduce their water use by as much as 50% during drought years (BAWSCA, 2018).

In support of 2020 UWMP development, SFPUC provided a detailed discussion of the factors contributing to the significant uncertainties surrounding the Bay-Delta Plan Amendment. This discussion is excerpted below:

[6] Projected RWS purchase volumes are based on having full local supply (i.e., 840 AFY in the Bear Gulch Reservoir and 1,534 AFY from the South San Francisco wells).

In December 2018, the State Water Resources Control Board (SWRCB) adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan Amendment) to establish water quality objectives to maintain the health of the Bay-Delta ecosystem. The SWRCB is required by law to regularly review this plan. The adopted Bay-Delta Plan Amendment was developed with the stated goal of increasing salmonid populations in three San Joaquin River tributaries (the Stanislaus, Merced, and Tuolumne Rivers) and the Bay-Delta. The Bay-Delta Plan Amendment requires the release of 30-50% of the "unimpaired flow"[7] on the three tributaries from February through June in every year type. In SFPUC modeling of the new flow standard, it is assumed that the required release is 40% of unimpaired flow.

If the Bay-Delta Plan Amendment is implemented, the SFPUC will be able to meet the projected water demands presented in this Urban Water Management Plan (UWMP) in normal years but would experience supply shortages in single dry years or multiple dry years. Implementation of the Bay-Delta Plan Amendment will require rationing in all single dry years and multiple dry years. The SFPUC has initiated an Alternative Water Supply Planning Program (AWSP) to ensure that San Francisco can meet its Retail and Wholesale Customer water needs, address projected dry years shortages, and limit rationing to a maximum 20 percent system-wide in accordance with adopted SFPUC policies. This program is in early planning stages and is intended to meet future water supply challenges and vulnerabilities such as environmental flow needs and other regulatory changes; earthquakes, disasters, and emergencies; increases in population and employment; and climate change. As the region faces future challenges – both known and unknown – the SFPUC is considering this suite of diverse non-traditional supplies and leveraging regional partnerships to meet Retail and Wholesale Customer needs through 2045.

The SWRCB has stated that it intends to implement the Bay-Delta Plan Amendment on the Tuolumne River by the year 2022, assuming all required approvals are obtained by that time. But implementation of the Plan Amendment is uncertain for multiple reasons.

First, since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in both state and federal courts, challenging the SWRCB's adoption of the Bay-Delta Plan Amendment, including a legal challenge filed by the federal government, at the request of the U.S. Department of Interior, Bureau of Reclamation. This litigation is in the early stages and there have been no dispositive court rulings as of this date.

Second, the Bay-Delta Plan Amendment is not self-implementing and does not automatically allocate responsibility for meeting its new flow requirements to the SFPUC or any other water rights holders.

…

[7] "Unimpaired flow represents the natural water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds." (Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Dec. 12, 2018) p.17, fn. 14, available at: https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf.)

> *Third, in recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the SWRCB Resolution No. 2018-0059 adopting the Bay-Delta Plan Amendment directed staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the SWRCB "as early as possible after December 1, 2019." In accordance with the SWRCB's instruction, on March 1, 2019, SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary substitute agreement with the SWRCB ("March 1st Proposed Voluntary Agreement"). On March 26, 2019, the Commission adopted Resolution No. 19-0057 to support the SFPUC's participation in the Voluntary Agreement negotiation process. To date, those negotiations are ongoing under the California Natural Resources Agency and the leadership of the Newsom administration.*[8,9]

The 2020 UWMP further summarized the current sources of uncertainty regarding RWS dry year water supply projections. This discussion is excerpted (with minor refinements) below:

- *Benefits of the AWSP are not accounted for in current supply projections.* As discussed above, SFPUC is exploring options to increase its supplies through the AWSP. Implementation of feasible projects developed under the AWSP is not yet reflected in the supply reliability scenarios presented herein and is anticipated to reduce the projected RWS supply shortfalls.
- *Methodology for Tier One and Tier Two Wholesale drought allocations have not been established for wholesale shortages greater than 20%.* As discussed further in Section 6.1.1.4, the current Tier One and Tier Two Plans are not designed for RWS supply shortages of greater than 20%. For UWMP planning purposes per BAWSCA guidance, the Tier One Wholesale share for a 16% to 20% supply reduction (62.5%) has been applied for reductions greater than 20% and an equal percent reduction has been applied across all Wholesale Customers. BAWSCA member agencies have not formally agreed to adopt this shortage allocation methodology and are in discussions about jointly developing an alternative allocation method that would consider additional equity factors if SFPUC is unable to deliver its contractual supply volume and cutbacks to the RWS supply exceed 20%.
- *RWS demands are subject to change.* The RWS supply availability is dependent upon the system demands. The supply scenarios are based on the total projected Wholesale Customer purchases provided by BAWSCA to SFPUC in January 2021. Many BAWSCA agencies have refined their projected demands during the UWMP process after these

[8] California Natural Resources Agency, "Voluntary Agreements to Improve Habitat and Flow in the Delta and its Watersheds," available at https://files.resources.ca.gov/voluntary-agreements/.

[9] As of 29 October 2021, state regulators announced that the Voluntary Agreement negotiations process has ceased, with no agreement reached. San Francisco Chronicle, "California Drought: Key Talks Over Water Use Break Down, SF May Face Tighter Regulation," available at https://www.sfchronicle.com/sf/article/California-drought-Key-talks-over-water-use-16576132.php

estimates were provided to SFPUC. Furthermore, the RWS demand projections are subject to change in the future based upon future housing needs, increased conservation, and development of additional local supplies.

- *Frequency and duration of cutbacks are also uncertain.* While the projected shortfalls presented in the UWMP appear severe, the actual frequency and duration of such shortfalls are uncertain. Based on the Hetch Hetchy and Local Simulation Model (HHLSM) simulations provided by BAWSCA for the Bay-Delta Plan Amendment scenario, rationing is anticipated to be required 20% of years for base year 2025 through 2035, 23% of all years for base year 2040, and 25% of years for base year 2045. In addition to the supply volumes, the above listed uncertainties would also impact the projected frequency and duration of shortfalls. As such, in addition to evaluating local options to increase supply reliability, Cal Water has placed high priority on working with BAWSCA and SFPUC in the upcoming years to better refine the estimates of RWS supply reliability and may amend the 2020 UWMP when new information becomes available.

The 2020 UWMP also discusses that the implementation of the Bay-Delta Plan Amendment was under negotiation, through Voluntary Settlement Agreement negotiations between SFPUC and SWRCB. In October 2021, state regulators announced that these negotiations ceased.[9] In March 2022, state regulators entered into a Memorandum of Understanding with twelve entities, advancing the process of reaching voluntary settlement agreements.[10] It is noted that SFPUC was not among the signatories of this Memorandum of Understanding and has not reached an agreement with state regulators.

Further, implementation of the Bay-Delta Plan Amendment is still pending. The SWRCB has yet to approve an implementation policy for water supply cutbacks associated with the Bay-Delta Plan Amendment, particularly during droughts. Further, there are currently over a dozen active lawsuits challenging the SWRCB's adoption of the Bay-Delta Plan Amendment. This litigation is in the early stages and there have been no dispositive court rulings as of this date. This is a dynamic situation and the projected drought cutback allocations may need to be revised before the next (i.e., 2025) UWMP depending on court decisions and/or an adopted implementation policy.

Evidently, numerous uncertainties remain surrounding the implementation of the Bay-Delta Plan Amendment. The water supply projections presented in the 2020 UWMP likely represent a worst-case scenario in which the Bay-Delta Plan Amendment is implemented as written, and do not account for implementation of SFPUC's AWSP. Additional information regarding drought allocations can be found in Chapter 7 of the SSF District's 2020 UWMP.

[10] Memorandum of Understanding Advancing a Term Sheet for the Voluntary Agreements to Update and Implement the Bay-Delta Water Quality Control Plan, and Other Related Actions, dated 29 March 2022: https://resources.ca.gov/-/media/CNRA-Website/Files/NewsRoom/Voluntary-Agreement-Package-March-29-2022.pdf. It is noted that SFPUC is not a party to this Memorandum of Understanding.

6.1.1.3 Efforts to Increase RWS Supply Reliability

On 2 June 2021, the SFPUC released a memorandum which outlines numerous options the SFPUC is pursuing to improve the supply reliability projected in its 2020 UWMP and meet its Level of Service (LOS) Goals. This memorandum is included as **Appendix C**. Furthermore, the SFPUC's Water Supply Improvement Program (WSIP) and its Water Management Action Plan (Water MAP) articulate the SFPUC's goals and objectives to improve the delivery reliability of the RWS, including water supply reliability.

The WSIP program goal is to improve the SFPUC's ability to reliably meet its Retail and Wholesale Customers water needs in non-drought and drought periods. In 2008, the SFPUC adopted LOS Goals and Objectives in conjunction with the adoption of the WSIP. The SFPUC's LOS Goals and Objectives include: (a) meeting average annual water demand of 265 MGD from the SFPUC watersheds for Retail and Wholesale Customers during non-drought years for system demands through 2028; (b) meeting dry-year delivery needs through 2028 while limiting rationing to a maximum 20% system-wide reduction in water service during extended droughts; (c) diversifying water supply options during non-drought and drought periods; and (d) improving use of new water sources and drought management, including groundwater, recycled water, conservation, and transfers (SFPUC, 2018). The anticipated completion date of the overall WSIP is May 2023. As of 31 December 2021, WSIP local projects are 100% complete and regional projects are 98.9% complete (SFPUC, 2022b).

The SFPUC also developed a Water MAP in 2016 to provide the information necessary to begin developing a water supply program for the 2019 to 2040 planning horizon. The SFPUC intends that the Water MAP will guide its efforts to continue to meet its commitments and responsibilities to its customers, including the BAWSCA member agencies (BAWSCA, 2017). The Water MAP was developed with consideration of the 2018 SFPUC's supply decisions (now postponed to 2028; as discussed above), as well as recent changes to instream flow requirements and customer demand projections. The Water MAP has identified water supply needs on the RWS by 2040 and prioritized those needs in the following order:

1. Meeting existing obligations to existing permanent customers (3.5 MGD).
2. New supply in order to make the City of San Jose a permanent customer of the SFPUC (Up to 9.5 MGD).
3. New supply in order to make the City of Santa Clara a permanent customer of the SFPUC (Up to 5.0 MGD).
4. New supply to meet the City of East Palo Alto's projected needs above its ISG (Up to 1.5 MGD).

Through implementation of its Long-Term Water Supply Reliability Strategy (LTWSRS), BAWCSA is also actively evaluating opportunities to increase the supply reliability of the RWS (BAWSCA, 2015). The strategy includes short- and long-term implementation plans including water supply management projects that could be implemented to meet identified needs. Potential projects

include recycled water projects, desalination projects, water transfer projects, and local capture and reuse projects.

6.1.1.4 RWS Water Shortage Allocations

The Agreement includes a Water Shortage Allocation Plan (WSAP) that allocates water from the RWS to Retail and Wholesale Customers during system-wide shortages of 20% or less. As described in detail in the 2020 UWMP, the WSAP has two components:

1. The Tier One Plan, which allocates water between San Francisco and the Wholesale Customers collectively; and
2. The Tier Two Plan, which allocates the collective Wholesale Customer share among the Wholesale Customers.

We note that the dry year supply reliability projections provided herein (Section 6.1.4) are obtained from the 2020 UWMP based on application of BAWSCA-provided revised methodology to allocate RWS supplies during projected future single dry and multiple dry years in the instance where the supply shortfalls are greater than 20%.[11] However, BAWSCA member agencies are in discussions about jointly developing an allocation method that would consider additional equity factors in the event that SFPUC is not able to deliver its contractual supply volume, and its cutbacks to the RWS supply exceed 20%. While Cal Water is working independently and with the other BAWSCA agencies to identify regional mitigation measures to improve reliability for regional and local water supplies and meet its customers' water needs, Cal Water expects that SFPUC's LOS Goals and Objectives will be met and is comfortable assuming its contract with SFPUC will be honored as written.

6.1.2 Surface Water Supply

Surface water supplies a small portion of the three Peninsula Districts' water demands. From 2016 to 2020, it supplied an average of 537 AFY, or less than 2% of total supplies (Cal Water, 2021b). Surface water is collected from the Bear Gulch Creek by two diversion facilities and is stored in Bear Gulch Reservoir prior to use.

The Bear Gulch District diverts water from two points of diversion (PODs) along the creek – the Upper POD (with an upstream area of 2.5 square miles) and the Lower POD (with an upstream area of 9.4 square miles). Diversions from the Upper and Lower PODs are each governed by separate SWRCB-administered water rights (i.e., pre-1914 claimed water rights and post-1914 SWRCB-issues diversion permits/licenses) that specify the volumes, rates, and timing of allowed diversions at each POD. In addition to these SWRCB-administered water rights, diversions are further constrained by certain diversion limitations and minimum instream flow requirements imposed by the California Department of Fish and Wildlife (CDFW) at the Upper POD and by the

[11] The projected SFPUC RWS supplies presented in this WSA are based on dry year allocation projections included in the SSF, Bear Gulch, and Mid-Peninsula District 2020 UWMPs based on the methodology, assumptions and information utilized and provided by SFPUC and BAWSCA; however, actual future supply allocations may vary based on actual shortage levels and the then-applicable allocation methodology being applied by BAWSCA and SFPUC.

National Oceanic and Atmospheric Administration (NOAA) at the Lower POD. There also exists a 1936 agreement with Stanford University that prohibits Cal Water from diverting more than 50% of the flows that pass by (i.e., are not diverted at) the Upper POD.

Water diverted from the Upper POD flows through a gravity conveyance pipeline to a junction point where it is joined by water diverted from the Lower POD, at which point the water is pumped into the Bear Gulch District-owned Bear Gulch Reservoir, a man-made storage facility impounded by an earthen dam. The Bear Gulch Reservoir is operated to have a minimum "dead pool" storage of 50 million gallons (MG), or approximately 153 AF. The maximum storage capacity of the reservoir has been reduced from 149 MG (547 AF) to 142.7 MG (438 AF), a limit imposed by the California Division of Safety of Dams (DSOD), based on a maximum storage elevation of 230 feet above mean sea level. Cal Water is undertaking capital improvements to Bear Gulch Reservoir to address DSOD's seismic safety concerns and may also consider increasing the maximum storage capacity. Outflows from Bear Gulch Reservoir are currently limited by the DSOD to the rate that causes a water surface elevation decline of 0.3 feet per day.

Water stored in Bear Gulch Reservoir is released and sent through the Bear Gulch District-owned Bear Gulch Water Treatment Plant (BGWTP) prior to addition to the distribution system. The BGWTP, which was placed into operation in 1977, has a rated capacity of 6.0 MGD. There the water is clarified, filtered, and chloraminated in compliance with the Surface Water Treatment Rule and the Safe Drinking Water Act. Based on data from Water Years 1981 through 2019, annual production from the reservoir has ranged from a high of 2,809 AF (915 MG) in 1983 to a low of 0 AF (0 MG) in 2014.

Recent analysis by the Bear Gulch District has shown that the projected long-term average annual diversion amount by the Bear Gulch District from the Bear Gulch local surface water system is approximately 840 AFY. This estimate considers the hydrology of the watershed, the various regulatory constraints that govern diversions (i.e., water rights and instream flow requirements), and current infrastructure limitations (i.e., pump, pipeline and treatment plant capacity). The storage capacity of Bear Gulch Reservoir is relatively small compared to average annual diversion/production, and therefore there is typically no carryover storage from one year to the next. Furthermore, given the various constraints on diversions at the Bear District's two PODs under the SWRCB-administered water rights and the CDFW/NOAA-governed minimum instream flow requirements, the allowable diversions by the Bear Gulch District are significantly lower during dry years even though the creek itself maintains flow. Although local surface water diversions (and subsequent treatment and use of local surface water) have occurred historically during dry years, and the Bear District's analysis indicates that some diversions are likely to occur in future dry years[12], for the purposes of its 2020 UWMP the Bear Gulch District conservatively assumed that local surface water supplies will be zero during single dry and multiple dry years over the planning horizon.

[12] Diversions from the Bear Gulch Creek system are estimated at 291 AF with a 90% exceedance probability.

6.1.3 Groundwater Supply

☑ ***CWC § 10910 (f)***

If a water supply for a proposed project includes groundwater, the following additional information shall be included in the water supply assessment:

(1) A review of any information contained in the urban water management plan relevant to the identified water supply for the proposed project.

(2)(A) A description of any groundwater basin or basins from which the proposed project will be supplied.

(B) For those basins for which a court or the board has adjudicated the rights to pump groundwater, a copy of the order or decree adopted by the court or the board and a description of the amount of groundwater the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), has the legal right to pump under the order or decree.

(C) For a basin that has not been adjudicated that is a basin designated as high- or medium-priority pursuant to Section 10722.4, information regarding the following:

(i) Whether the department has identified the basin as being subject to critical conditions of overdraft pursuant to Section 12924.

(ii) If a groundwater sustainability agency has adopted a groundwater sustainability plan or has an approved alternative, a copy of that alternative or plan.

(D) For a basin that has not been adjudicated that is a basin designated as low- or very low priority pursuant to Section 10722.4, information as to whether the department has identified the basin or basins as overdrafted or has projected that the basin will become overdrafted if present management conditions continue, in the most current bulletin of the department that characterizes the condition of the groundwater basin, and a detailed description by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), of the efforts being undertaken in the basin or basins to eliminate the long-term overdraft condition.

(3) A detailed description and analysis of the amount and location of groundwater pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), for the past five years from any groundwater basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(4) A detailed description and analysis of the amount and location of groundwater that is projected to be pumped by the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), from any basin from which the proposed project will be supplied. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

(5) An analysis of the sufficiency of the groundwater from the basin or basins from which the proposed project will be supplied to meet the projected water demand associated with the proposed project. A water supply assessment shall not be required to include the information required by this paragraph if the public water system determines, as part of the review required by paragraph (1), that the sufficiency of groundwater necessary to meet the initial and projected water demand associated with the project was addressed in the description and analysis required by paragraph (4) of subdivision (b) of Section 10631.

Groundwater pumped from the Westside Basin constitutes a portion of supply to the Cal Water SSF District. Additional detail regarding basin description, groundwater management, and historical groundwater use is included below.

6.1.3.1 Basin Description

The Westside Basin (California Department of Water Resources [DWR] Basin No. 2-35) underlies the proposed Project and the Cal Water SSF District service area, as shown on **Figure 3**.[13] The Westside Basin (Basin) covers an area of approximately 25,400 acres and is separated from the Lobos Basin to the north by a northwest trending bedrock ridge through the northeastern part of Golden Gate Park. The San Bruno Mountains bound the Basin on the east. The San Andreas Fault and Pacific Ocean form its western boundary and its southern limit is defined by bedrock high that separates it from the San Mateo Plain Subbasin. The Basin is connected to the Pacific Ocean on the northwest and San Francisco Bay on the southeast (Cal Water, 2021a). The Basin is not adjudicated and, in its recent evaluation of California groundwater basins, DWR determined that the Basin was not in a condition of critical overdraft and designated the Basin as low priority (DWR, 2019).

Geologically, the Basin is comprised of two groups, consisting of bedrock and unconsolidated materials. The impermeable bedrock is composed of consolidated sediment of the Franciscan Complex and the Great Valley Sequence of late Jurassic and Cretaceous age. Unconsolidated materials overlying the bedrock comprise the water bearing formations. These consist of dune sands, the Colma Formation of Pleistocene age and the Merced Formation of Pleistocene/ Pliocene age (Phillips and others, 1993; DWR, 2006).

Groundwater used for water supply within the Basin is generally pumped from in the Merced and Colma Formations. The Merced Formation is composed of sand and thin interbedded silt and clay layers of shallow marine depositional origin. The Colma Formation overlies the Merced Formation and consists of fine-grained sand, silty sand, and inter-fingered clay layers (DWR, 2006; 2016). Water is produced from the coarse-grained layers within these complex, layered formations (WRIME, 2012).

The Basin is subdivided for management purposes into northern and southern portions by the county line separating San Francisco and San Mateo counties. The county-line boundary between the "North Westside Basin" and the "South Westside Basin" does not have hydrogeological significance other than influencing the jurisdictional distribution of groundwater pumping. No geologic features restrict groundwater flow between the northern and southern parts of the Basin (SFPUC, 2016). Groundwater pumping has historically provided up to 50% of local water supply in the South Westside Basin for the communities of San Bruno, Daly City, and South San Francisco (WRIME, 2012), although current usage is significantly less as a proportion.

The Basin is not adjudicated and, in its recent evaluation of California groundwater basins, DWR determined that the Basin was not in a condition of critical overdraft and was a low priority basin (DWR, 2019). Recent evaluations by others have also found that current pumping is estimated to be within the Basin's safe yield (WRIME, 2012).

[13] A very small portion (approximately 8%) of the SSF District service area overlies the Visitacion Valley Basin (DWR Basin No. 2-32). However, no groundwater is used from this basin and so the basin is not discussed further herein.



Legend

- Project Boundary
- SSF District Service Area
- County Boundary
- Groundwater Basin

Abbreviations

Cal Water = California Water Service
DWR = California Department of Water Resources
SSF = South San Francisco

Notes

1. All locations are approximate.

Sources

1. Basemap is ESRI's ArcGIS Online world aerial map, obtained 18 May 2022.
2. DWR groundwater basins are based on the boundaries defined in California's Groundwater, Bulletin 118-2016 Update.
3. Boundary data for Cal Water districts' service areas received from Cal Water on 16 October 2017.

N

0 2.5 5

(Scale in Miles)

DRAFT

Regional Setting and Groundwater Basin

121 East Grand Ave Project
South San Francisco, CA
May 2022
EKI C20057.00

Figure 3

eki environment & water

Path: X:\C20057\...00\Maps\2022\05\Fig3_DWRGWBasinLocation.mxd

6.1.3.2 Groundwater Management

As described below, several groundwater management programs are actively implemented within the Basin that have relevance to the Cal Water SSF District.

South Westside Basin Groundwater Management Plan

The South Westside Basin Groundwater Management Plan (GWMP) was completed in July 2012 as a joint effort between Cal Water, the SFPUC, and the Cities of Daly City and San Bruno that superseded prior groundwater management and planning efforts (WRIME, 2012). The GWMP was prepared pursuant to Assembly Bill 3030 (AB 3030; codified in CWC §10750 et seq.).[14]

The goal of the GWMP is to ensure a sustainable, high quality, reliable water supply at a fair price for beneficial uses achieved through local groundwater management (WRIME, 2012). The GWMP development was supported by a companion effort by the City of Daly City to develop a numerical groundwater model for the Basin. The GWMP includes the following elements:

- Groundwater Storage and Quality Monitoring
- Control of Saltwater Intrusion
- Conjunctive Use
- Recycled Water
- Source Water Protection

Among other things, the GWMP provides steps for monitoring water quality and quantity in the South Westside Basin. Each groundwater well identified in the GWMP has defined triggers for overdraft, seawater intrusion, and various water quality measures. The GWMP also identifies two levels of trigger thresholds for each groundwater well based on historical water levels and actions to address the trigger that is met.

Regional Groundwater Storage and Recovery Project

In a joint effort between SFPUC, Cal Water, Daly City, and San Bruno, the Regional Groundwater Storage and Recovery Project (RGSR Project) was developed to support groundwater and surface water management in the South Westside Basin and improve the reliability of the RWS (Cal Water, 2021a). The RGSR Project agreement was signed in December 2014 following two phases of successful pilot programs. As part of the RGSR project agreement, the municipal pumpers within the South Westside Basin agreed to self-limit pumping within the South Westside basin to no more than 6.9 MGD, of which Cal Water's designated quantity is an annual average rate of 1.37 MGD or 1,534 AFY.

[14] AB 3030 provided a systematic procedure to develop a groundwater management plan by local agencies overlying DWR Bulletin 118 groundwater basins. Upon adoption of such plan, these agencies could possess the same authority as a water replenishment district to "fix and collect fees and assessments for groundwater management" (CWC §10754) (WRIME, 2012).

Under the RGSR project, the SFPUC will provide supplemental RWS water to Cal Water and the other "Partner Agencies" (i.e. Cal Water, Daly City, and San Bruno) during normal and wet years and in turn the Partner Agencies will reduce their groundwater pumping in their own wells to allow the Basin to recharge.[15] During dry years, the Partner Agencies may pump from RGSR project wells in addition to resuming use of their own wells up to designated quantities. The in-lieu recharge (i.e. "put") and additional groundwater pumping from RGSR wells (i.e. "take") under the RGSR project are tracked under the Westside Basin Storage Account. Production wells in the Basin are considered to be either a RGSR Well Facility or a Partner Agency Facility, where only production from RGSR Well facilities is tracked under the RGSR project.

The RGSR Project is one of the SFPUC's WSIP projects and provides additional dry-year water supply to help achieve the WSIP goals to increate RWS supply reliability. The RGSR Project consists of the construction of up to 16 new recovery wells and associated facilities, such as pumping systems, pipelines, and chemical treatment equipment. Construction for this project began in April 2015 and is anticipated to be completed in winter 2022 (SFPUC, 2022a).

Sustainable Groundwater Management Act

In 2014, the California State Legislature enacted the Sustainable Groundwater Management Act (SGMA), with subsequent amendments in 2015. The SGMA requires the formation of Groundwater Sustainability Agencies (GSAs) and the development and implementation of Groundwater Sustainability Plans (GSPs) for groundwater basins that are designated by DWR as medium or high priority.

The Basin is currently categorized by DWR as a very low priority basin (DWR, 2019). As such, the Basin is not subject to the requirements of SGMA. However, as discussed above, the Basin has been actively managed for years, including the establishment of pumping limitations.

6.1.3.3 Groundwater Use

Cal Water operates five groundwater production wells within its SSF District service area (Cal Water, 2021a). The Basin is not adjudicated and, in its recent evaluation of California groundwater basins, DWR determined that the Basin was not in a condition of critical overdraft and designated the Basin as low priority (DWR, 2019). As shown in **Table 4**, from 2005 to 2021, the Cal Water SSF District met up to 19% of its water demand from groundwater, excluding purchased in-lieu groundwater credits, and up to 22% including in-lieu groundwater credits purchased from SFPUC. Groundwater use was reduced in 2016 and later due to in-lieu recharge as part of the RGSR Project discussed above in Section 6.1.3.2.

Historical groundwater pumping from 2010 through 2020 and projected groundwater pumping through 2045 for the four municipal groundwater users in the Basin are shown in **Table 5**. From 2010 through 2020, the average total groundwater production by these entities was approximately 5,090 AFY, of which 505 AFY was by Cal Water (SFPUC, 2021b). The total projected

[15] Supplemental deliveries do not count towards the Member Agencies' ISGs.

groundwater pumping by the RGSR Partner Agencies is conservatively assumed to be equal to each agency's agreed-upon pumping limitation from 2020 through 2045, of which Cal Water is projecting to pump up to 1,534 AFY (Cal Water, 2021a). The projected groundwater pumping by the City of San Francisco is based on projected pumping values included in Table 6-5 of SFPUC's 2020 UWMP (SFPUC, 2021a).

6.1.4 Cal Water Bay Area Water Supply Reliability Study

Cal Water is currently in the process of developing the Bay Area Regional Water Supply Reliability Study (WSRS), which employs integrated resource planning practices to create a long-term supply reliability strategy through 2050 for the three Peninsula Districts. The study will create long-term strategies to address a wide range of water supply challenges including climate change, new regulatory requirements (e.g., the Bay-Delta Plan Amendment), and potential growth in demands due to new development. The Bay Area WSRS is anticipated to be complete by 2024.

6.1.4.1 Potential Recycled Water Development

The Bay Area WSRS will explore potential recycled water developments to augment supply in the three Peninsula Districts. Recycled water is not currently provided in the SSF District service area and Cal Water has not projected recycled water use in its 2020 UWMP (Cal Water, 2021a). However, there is currently a coordinated effort between Cal Water and other partners to potentially develop recycled water for various uses.

Cal Water is participating in the development of the Crystal Springs Purified Water (PREP) Project, a purified water project that could provide 6 to 12 MGD of water supply through reservoir water augmentation at Crystal Springs Reservoir, which is a facility of the RWS. Treated wastewater from Silicon Valley Clean Water (SVCW) and/or the City of San Mateo would go through an advanced water treatment plant to produce purified water that meets state and federal drinking water quality standards. The purified water would then be transmitted 10 to 20 miles (depending on the alignment) to Crystal Springs Reservoir, blended with regional surface water supplies and treated again at Harry Tracy Water Treatment Plant. Project partners include Cal Water, the SFPUC, BAWSCA, SVCW, Redwood City, Foster City, and the City of San Mateo. Partner agencies are contributing financial and staff resources towards the work effort. Potential scenarios include a direct connection to the Bear Gulch District or the Mid-Peninsula District. The SSF District will benefit indirectly through increased supply availability to the three Peninsula Districts collectively. This WSA does not rely on an assumption of recycled water as a supply source.

6.2 Total Potable Supply in Normal, Single Dry, and Multiple Dry Years

The projected potable water supply sources, as described above, are surface water purchased from the RWS, local surface water from the Bear Gulch Reservoir, and groundwater. Historical supplies from 2017 through 2021 and projected normal year supplies through 2045 for each source are shown in **Table 6**.[16] This table also shows the historical and projected demand for each

[16] Projected groundwater and Bear Gulch Reservoir supply is shown based on the 2020 UWMP. Projected purchased SFPUC supply in normal years is based on Cal Water's contract allocation of 35.68 MGD (39,993 AFY).

of the three Peninsula Districts, based on updated demand projections included in their respective 2020 UWMPs. **Table 7** shows the projected demand by the three Peninsula Districts, with the inclusion of the proposed Project, and the total available supply through 2045. The current and planned future water supply within the three Peninsula Districts for normal hydrologic years is expected to meet all projected demands, which are estimated to be 36,396 AFY by 2045.

The anticipated dry-year supply estimates presented below are based on the delivery estimates provided by Cal Water as part of the 2020 UWMP (Cal Water, 2021a).[17] As discussed above, BAWSCA provided a revised methodology to allocate RWS supplies during projected future single dry and multiple dry years in the instance where the supply shortfalls are greater than 20% in support of 2020 UWMP development. However, BAWSCA member agencies are in discussions about jointly developing an allocation method that would consider additional equity factors in the event that SFPUC is not able to deliver its contractual supply volume, and its cutbacks to the RWS supply exceed 20%.

During single dry years, the annual supply within the three Peninsula Districts' service areas will be reduced to 21,039 AFY by 2045. Supply shortfalls relative to total demands during single dry years are estimated to range between 34% in 2025 and 44% in 2045 (see **Table 8**).

During multiple dry years, the 2020 UWMP estimates that annual supply within the three Peninsula Districts' service areas will be reduced to 23,615 AFY in 2025 during the first year of a drought, and 20,492 AFY in 2025 in the second, third, fourth, and fifth years of drought. The 2020 UWMP further estimates that in 2045, annual supply will be reduced to 20,954 AFY during the first three years of a drought, and 18,061 AFY in fourth and fifth years of drought. Supply shortfalls relative to total demands are estimated to range between 36% during the first year of a drought in 2025 to 53% during the fifth year of a drought in 2045 (see **Table 9**).

If the "worst-case" supply scenario described under Section 6.1.1.2 in which the Bay-Delta Plan Amendment is implemented as written, and not accounting for the implementation of actions identified as part of SFPUC's AWSP, BAWSCA's LTWSRS, or Cal Water's WSRS, shortfalls of up to 53% are projected during drought years. To address this issue, under Rule 14.1, Cal Water plans to enact its Water Shortage Contingency Plan (WSCP), which includes Mandatory Staged Restrictions of Water Use. The WSCP systematically identifies ways in which the SSF, Bear Gulch, and Mid-Peninsula Districts can reduce water demands during dry years. The overall reduction goals in the WSCP are established for six drought stages and address water demand reductions over 50%. The WSCPs for all three Peninsula Districts were revised as part of the 2020 UWMP update process and include detailed information about how drought risks are evaluated by Cal Water on an annual basis to determine the potential need for reductions.

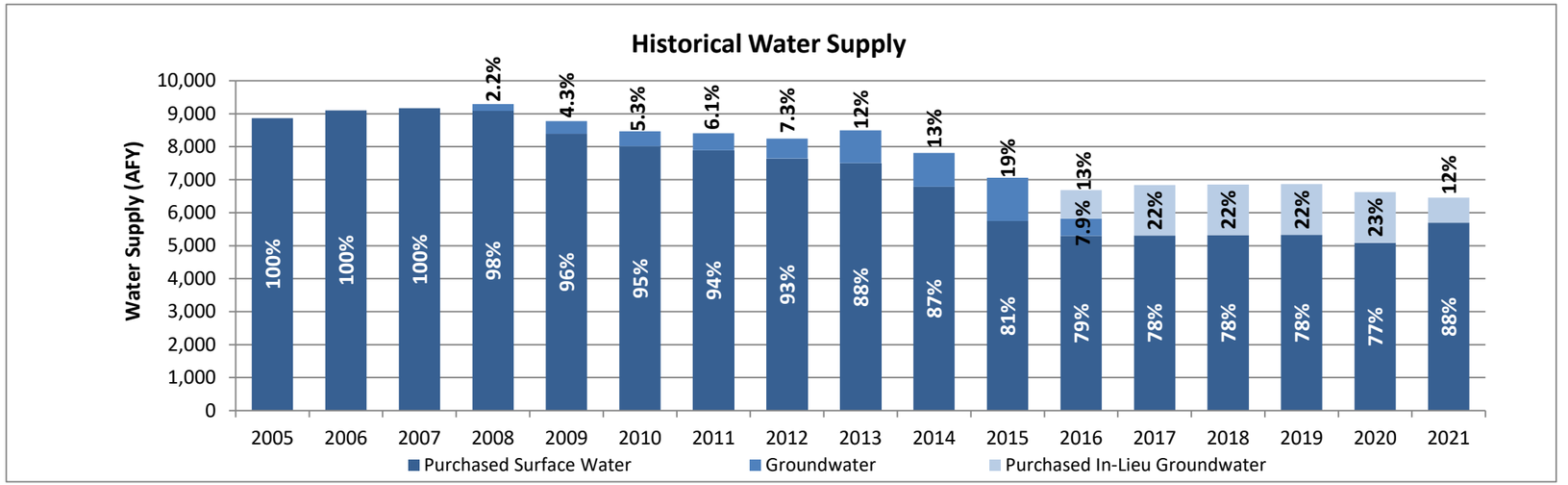
[17] The projected SFPUC RWS supplies presented in this WSA are based on dry year allocation projections included in the SSF, Bear Gulch, and Mid-Peninsula District 2020 UWMPs based on the methodology, assumptions and information utilized and provided by SFPUC and BAWSCA; however, actual future supply allocations may vary based on actual shortage levels and the then-applicable allocation methodology being applied by BAWSCA and SFPUC.

Table 4

Historical Water Supply for the South San Francisco District

121 East Grand Ave Project, South San Francisco, California

Water Supply Source	Historical Water Supply (AFY) (a)(b)																
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Purchased Surface Water	8,869	9,101	9,169	9,086	8,397	8,013	7,892	7,644	7,500	6,787	5,751	5,296	5,308	5,322	5,332	5,089	5,694
Purchased In-Lieu Groundwater	0	0	0	0	0	0	0	0	0	0	0	863	1,535	1,535	1,535	1,539	761
Groundwater	0	0	0	206	380	452	515	606	995	1,028	1,312	527	0	0	0	0	0
Total Water Supply	**8,869**	**9,101**	**9,169**	**9,292**	**8,777**	**8,465**	**8,408**	**8,250**	**8,495**	**7,816**	**7,064**	**6,687**	**6,842**	**6,856**	**6,866**	**6,627**	**6,455**



Abbreviations:

"AFY" = acre feet per year "SSF" = South San Francisco

Notes:

(a) Historical water supply for per Reference 1.

(b) Since 2016, the SSF District has derived 100 percent of its designated quantity of supply from the Westside Basin as in-lieu water provided through the Regional Groundwater Storage and Recovery (RGSR). As such the volume of groundwater pumped in Table 4 does not represent actual extractions from the Basin, but rather the combined volume of in-lieu surface water deliveries and extractions from the Basin per Reference 2.

References:

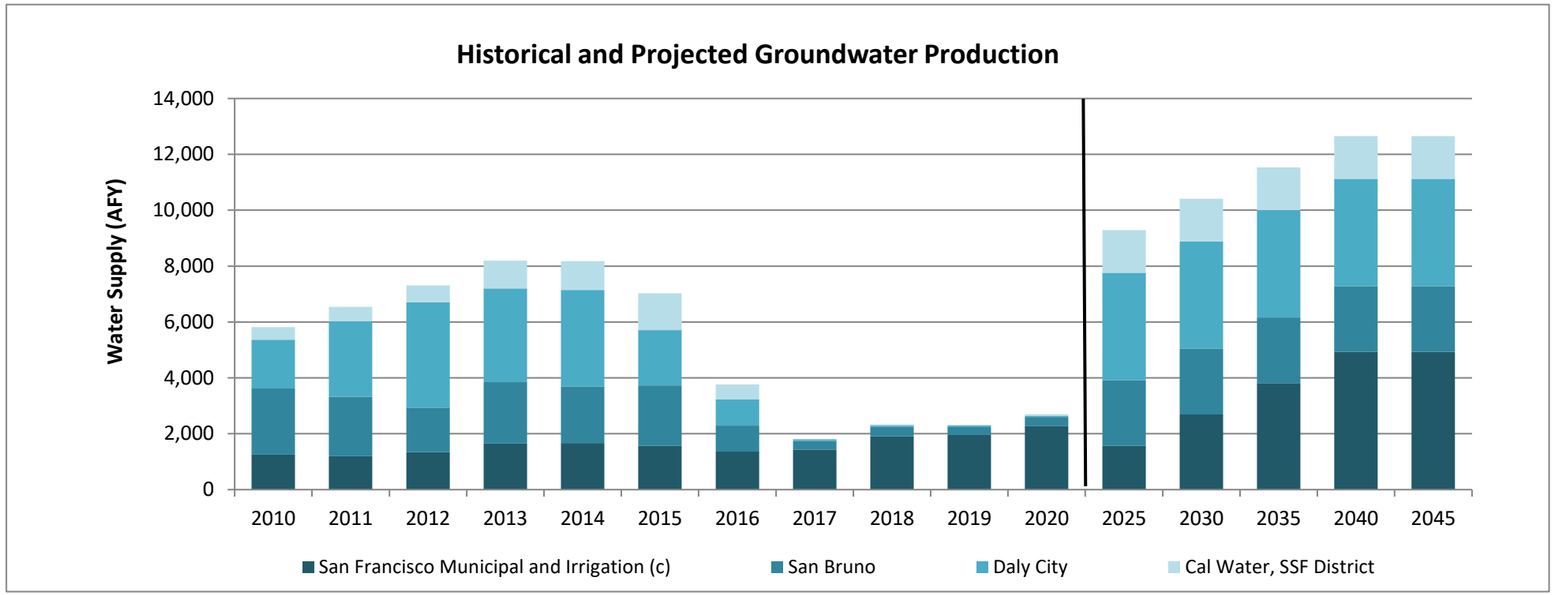
1. Historical Demand and Production Data Provided by Cal Water, 2022.
2. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.

Table 5

Historical and Projected Groundwater Pumping from the Westside Basin

121 East Grand Ave Project, South San Francisco, California

	Historical Groundwater Production (AFY) (a)											Projected Groundwater Production (AFY) (b)				
Water Supplier	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Cal Water, SSF District	453	515	606	995	1,028	1,312	528	0.4	35	31	52	1,534	1,534	1,534	1,534	1,534
Daly City	1,743	2,699	3,772	3,351	3,452	1,980	941	62	59	56	51	3,840	3,840	3,840	3,840	3,840
San Bruno	2,364	2,129	1,596	2,198	2,025	2,164	937	303	333	277	311	2,350	2,350	2,350	2,350	2,350
San Francisco Municipal and Irrigation (c)	1,256	1,197	1,339	1,651	1,672	1,570	1,359	1,435	1,911	1,960	2,286	1,569	2,690	3,811	4,932	4,932
Total Groundwater Supply	5,816	6,540	7,313	8,195	8,177	7,026	3,765	1,800	2,338	2,324	2,700	9,293	10,414	11,535	12,656	12,656



Abbreviations:

"AFY" = acre feet per year

"SSF" = South San Francisco

Notes:

(a) Historical groundwater pumping as reported on Table 1 of Reference 1.

(b) Projected groundwater pumping by the SSF District, City of Daly City, and City of San Bruno is conservatively estimated as the maximum apportionment for each partner agency as dictated by the Regional Groundwater Storage and Recovery Project, per Reference 2.

(c) Projected groundwater pumping by San Francisco Municipal and Irrigation provided per Reference 3.

References:

1. 2020 Annual Groundwater Monitoring Report, Westside Basin, San Francisco and San Mateo Counties, California prepared by the San Francisco Public Utilities Commission, dated April 2021.
2. Draft Environmental Impact Report for the San Francisco Public Utilities Commission's Regional Groundwater Storage and Recovery Project, dated April 2013.
3. 2020 Urban Water Management Plan for the City and County of San Francisco, prepared by the San Francisco Public Utilities Commission, dated June 2021.

Table 6
Historical and Projected Supplies by Source
121 East Grand Ave Project, South San Francisco, California

Water Supplier	Historical Supply and Demand (AFY)					Projected Supply and Demand (AFY)				
	2017	**2018**	**2019**	**2020**	**2021**	**2025**	**2030**	**2035**	**2040**	**2045**
Historical and Projected Demand (a)										
SSF District	6,842	6,856	6,866	6,627	6,455	7,543	7,483	7,635	8,000	8,423
121 East Grand Ave Project (b)	0	0	0	0	0	0	0	0	0	0
Mid-Peninsula District	13,601	13,924	14,046	14,584	13,990	14,418	14,530	14,786	14,977	15,279
Bear Gulch District	11,395	11,936	11,869	13,097	12,248	12,796	12,699	12,730	12,675	12,694
Total Demand	**31,838**	**32,716**	**32,782**	**34,308**	**32,693**	**34,757**	**34,712**	**35,151**	**35,652**	**36,396**
Historical and Projected Supply (All Districts) (a) (c)										
Purchased (SFPUC)	29,204	31,012	30,408	32,770	31,932	32,383	32,338	32,777	33,278	34,022
Bear Gulch Reservoir	1,100	170	839	0	0	840	840	840	840	840
Groundwater	1,535	1,535	1,535	1,539	761	1,534	1,534	1,534	1,534	1,534
Total Supply	**31,838**	**32,716**	**32,782**	**34,308**	**32,693**	**34,757**	**34,712**	**35,151**	**35,652**	**36,396**
Supply Minus Demand	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***

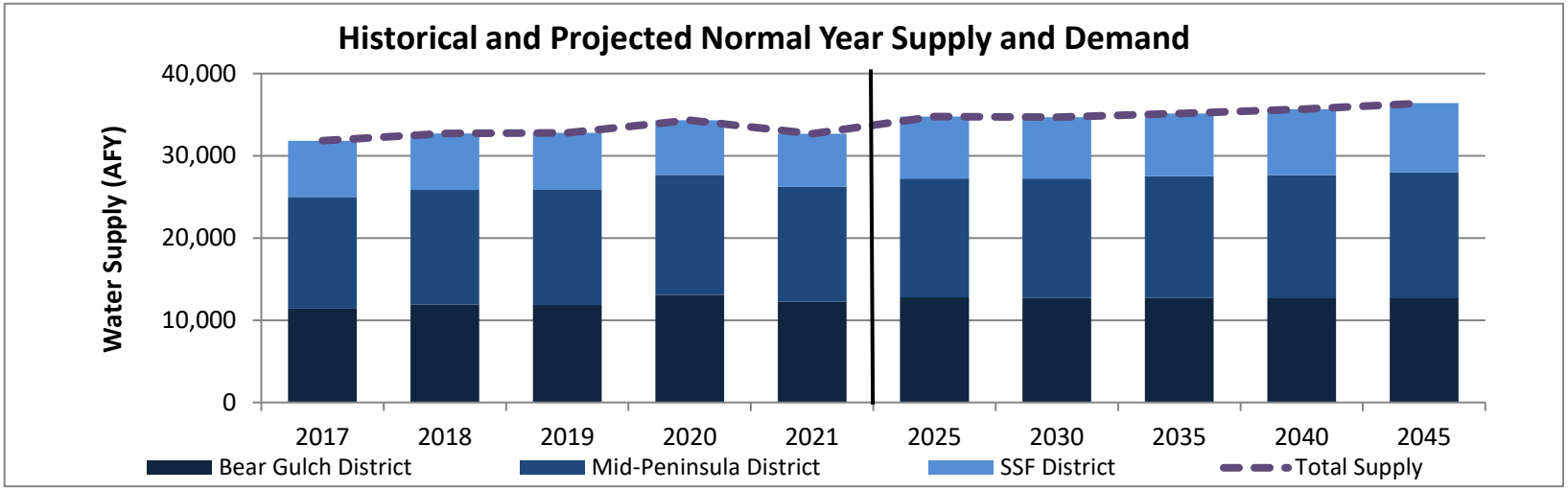


Table 6

Historical and Projected Supplies by Source

121 East Grand Ave Project, South San Francisco, California

Abbreviations:

"AFY" = acre feet per year
"MGD" = millions gallons per day
"SFPUC" = San Francisco Public Utilities Commission
"SSF" = South San Francisco
"UWMP" = Urban Water Management Plan

Notes:

(a) Historical water demand and supply for the SSF, Bear Gulch, and Mid-Peninsula Districts per Reference 1. Projected water demands were updated by Cal Water in 2021, per References 2 through 4.

(b) In accordance with and through implementation of Cal Water's Water Neutral Development Policy, the proposed Project will not result in a net increase in demands for the SSF District. Therefore, demands for the proposed Project are shown as zero through 2045.

(c) Projected supply is inclusive of supplies available for all three districts that share the same contractual allocation of water from SFPUC, per References 2 through 4. The projected purchase volumes are based on having full local supply (i.e., 840 AFY in the Bear Gulch Reservoir and 1,534 AFY from the South San Francisco wells), per Reference 2. Projected SFPUC supply is based on total demand minus local supplies and does not exceed Cal Water's contractual allocation of 35.68 MGD, or 39,993 AFY.

References:

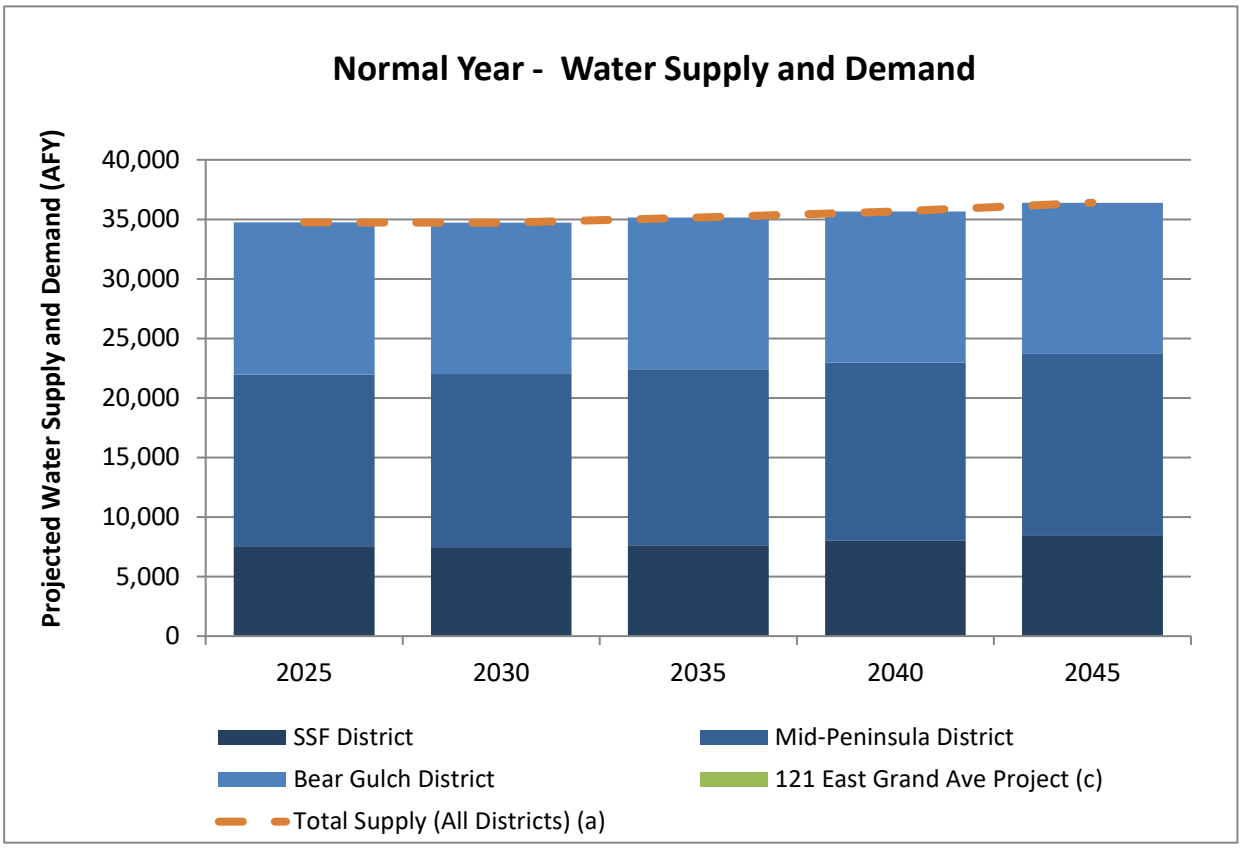
1. Historical Demand and Production Data Provided by Cal Water, 2022.
2. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.
3. 2020 Urban Water Management Plan, Bear Gulch District, prepared by California Water Service, dated June 2021.
4. 2020 Urban Water Management Plan, Mid-Peninsula District, prepared by California Water Service, dated June 2021.

Table 7

Projected Normal Year Water Supply and Demand

121 East Grand Ave Project, South San Francisco, California

Water Supply Source	Projected Normal Year Supply and Demand (AFY)				
	2025	**2030**	**2035**	**2040**	**2045**
Total Supply (All Districts) (a)	34,757	34,712	35,151	35,652	36,396
Demand (b)					
SSF District	7,543	7,483	7,635	8,000	8,423
Mid-Peninsula District	14,418	14,530	14,786	14,977	15,279
Bear Gulch District	12,796	12,699	12,730	12,675	12,694
121 East Grand Ave Project (c)	0	0	0	0	0
Total Potable Water Demand Inclusive of Project	**34,757**	**34,712**	**35,151**	**35,652**	**36,396**
Supply Shortfall (% demand)	***0.0%***	***0.0%***	***0.0%***	***0.0%***	***0.0%***



Abbreviations:

"AFY" = acre feet per year
"MGD" = millions gallons per day
"RWS" = Regional Water System
"SFPUC" = San Francisco Public Utilities Commission
"SSF" = South San Francisco
"UWMP" = Urban Water Management Plan

Table 7

Projected Normal Year Water Supply and Demand

121 East Grand Ave Project, South San Francisco, California

Notes:

(a) Projected supply is inclusive of supplies available for all three districts that share the same contractual allocation of water from SFPUC, per References 1 through 3. The projected purchase volumes are based on having full local supply (i.e., 840 AFY in the Bear Gulch Reservoir and 1,534 AFY from the South San Francisco wells), per References 1 through 3. Projected SFPUC supply is based on total demand minus local supplies and does not exceed Cal Water's contractual allocation of 35.68 MGD, or 39,993 AFY.

(b) Projected water demands were updated by Cal Water in 2021, per Reference 2.

(c) In accordance with and through implementation of Cal Water's Water Neutral Development Policy, the proposed Project will not result in a net increase in demands for the SSF District. Therefore, demands for the proposed Projected are shown as zero through 2045.

References:

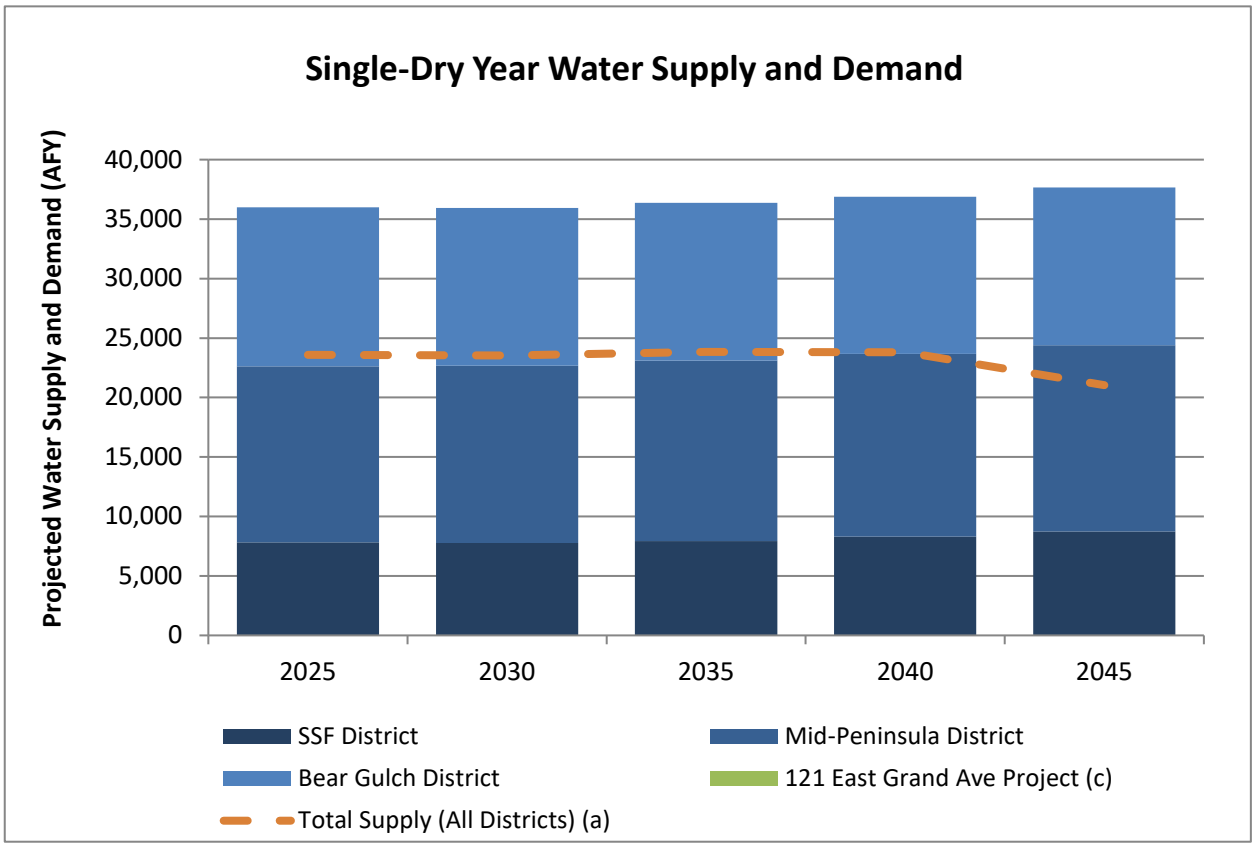
1. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.
2. 2020 Urban Water Management Plan, Bear Gulch District, prepared by California Water Service, dated June 2021.
3. 2020 Urban Water Management Plan, Mid-Peninsula District, prepared by California Water Service, dated June 2021.

Table 8

Single Dry Year Water Supply and Demand

121 East Grand Ave Project, South San Francisco, California

Water Supply Source	Projected Dry Year Supply and Demand (AFY)				
	2025	**2030**	**2035**	**2040**	**2045**
Total Supply (All Districts) (a)	23,580	23,546	23,835	23,809	21,039
Demand (b)					
SSF District	7,831	7,767	7,925	8,304	8,743
Mid-Peninsula District	14,797	14,908	15,168	15,359	15,662
Bear Gulch District	13,354	13,253	13,285	13,228	13,248
121 East Grand Ave Project (c)	0	0	0	0	0
Total Potable Water Demand Inclusive of Project	**35,982**	**35,928**	**36,378**	**36,891**	**37,653**
Supply Shortfall (% demand)	***34%***	***34%***	***34%***	***35%***	***44%***



Abbreviations:

"AFY" = acre feet per year
"MGD" = millions gallons per day
"SFPUC" = San Francisco Public Utilities Commission
"SSF" = South San Francisco
"UWMP" = Urban Water Management Plan

Table 8

Single Dry Year Water Supply and Demand

121 East Grand Ave Project, South San Francisco, California

Notes:

(a) Projected supply is inclusive of supplies available for all three districts that share the same contractual allocation of water from SFPUC, per References 1 through 3. The projected purchase volumes are based on having full local supply (i.e., 1,534 AFY) from the South San Francisco wells. Although local surface water diversions in the Bear Gulch District (and subsequent treatment and use of local surface water) have occurred historically during dry years, the Bear Gulch District conservatively assumes that local surface water supplies will be zero during single dry and multiple dry years over the planning horizon, per Reference 2. Projected SFPUC supply is based on dry year allocation projections included in the SSF, Bear Gulch, and Mid-Peninsula District 2020 UWMPs based on the methodology, assumptions and information utilized and provided by SFPUC and BAWSCA; however, actual future supply allocations may vary based on actual shortage levels and the then-applicable allocation methodology being applied by BAWSCA and SFPUC.

(b) Projected water demands per References 1 through 3.

(c) In accordance with and through implementation of Cal Water's Water Neutral Development Policy, the proposed Project will not result in a net increase in demands for the SSF District. Therefore, demands for the proposed Projected are shown as zero through 2045.

References:

1. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.
2. 2020 Urban Water Management Plan, Bear Gulch District, prepared by California Water Service, dated June 2021.
3. 2020 Urban Water Management Plan, Mid-Peninsula District, prepared by California Water Service, dated June 2021.

Table 9
Multiple Dry Year Water Supply and Demand
121 East Grand Avenue Project, South San Francisco, California

	Projected Water Supply and Demand During Multiple Dry Years (AFY) (a)																								
	2025					2030					2035					2040					2045				
Supply Source	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
Total Supply (All Districts) (b)	23,615	20,492	20,492	20,492	20,492	23,483	20,383	20,383	20,383	20,383	23,647	20,313	20,313	20,313	18,849	23,762	20,594	20,594	18,424	18,424	20,954	20,954	20,954	18,061	18,061
Demand (c)																									
SSF District	8,009	8,009	8,009	8,009	8,009	7,943	7,943	7,943	7,943	7,943	8,104	8,104	8,104	8,104	8,104	8,492	8,492	8,492	8,492	8,492	8,940	8,940	8,940	8,940	8,940
Mid-Peninsula District	15,031	15,031	15,031	15,031	15,031	15,143	15,143	15,143	15,143	15,143	15,405	15,405	15,405	15,405	15,405	15,595	15,595	15,595	15,595	15,595	15,900	15,900	15,900	15,900	15,900
Bear Gulch District	13,699	13,699	13,699	13,699	13,699	13,595	13,595	13,595	13,595	13,595	13,629	13,629	13,629	13,629	13,629	13,570	13,570	13,570	13,570	13,570	13,591	13,591	13,591	13,591	13,591
121 East Grand Ave Project (d)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Potable Water Demand Inclusive of Project	**36,739**	**36,739**	**36,739**	**36,739**	**36,739**	**36,681**	**36,681**	**36,681**	**36,681**	**36,681**	**37,138**	**37,138**	**37,138**	**37,138**	**37,138**	**37,657**	**37,657**	**37,657**	**37,657**	**37,657**	**38,431**	**38,431**	**38,431**	**38,431**	**38,431**
Supply Shortfall (% demand)	***36%***	***44%***	***44%***	***44%***	***44%***	***36%***	***44%***	***44%***	***44%***	***44%***	***36%***	***45%***	***45%***	***45%***	***49%***	***37%***	***45%***	***45%***	***51%***	***51%***	***45%***	***45%***	***45%***	***53%***	***53%***

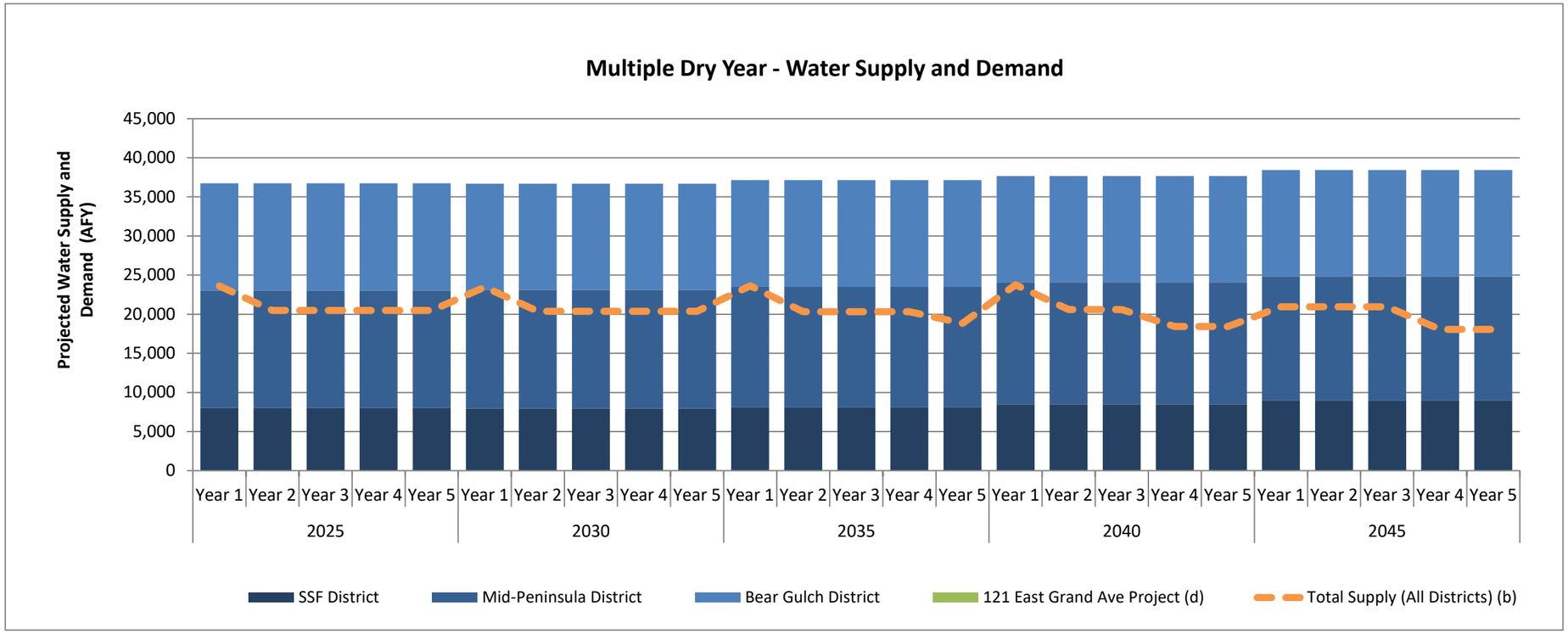


Table 9

Multiple Dry Year Water Supply and Demand

121 East Grand Avenue Project, South San Francisco, California

Abbreviations:

"AFY" = acre feet per year
"MGD" = millions gallons per day
"SFPUC" = San Francisco Public Utilities Commission
"SSF" = South San Francisco
"UWMP" = Urban Water Management Plan
"WSA" = Water Supply Assessment

Notes:

(a) While WSA regulations only require an analysis of a three-year drought scenario, UWMP regulations were updated in 2018 to include a five-year drought scenario (California Water Code §10635). Therefore, a five-year drought scenario is presented here.

(b) Projected supply is inclusive of supplies available for all three districts that share the same contractual allocation of water from SFPUC, per References 1 through 3. The projected purchase volumes are based on having full local supply (i.e., 1,534 AFY) from the South San Francisco wells. Although local surface water diversions in the Bear Gulch District (and subsequent treatment and use of local surface water) have occurred historically during dry years, the Bear Gulch District conservatively assumes that local surface water supplies will be zero during single dry and multiple dry years over the planning horizon, per Reference 2. Projected SFPUC supply is based on dry year allocation projections included in the SSF, Bear Gulch, and Mid-Peninsula District 2020 UWMPs based on the methodology, assumptions and information utilized and provided by SFPUC and BAWSCA; however, actual future supply allocations may vary based on actual shortage levels and the then-applicable allocation methodology being applied by BAWSCA and SFPUC.

(c) Projected water demands per References 1 through 3.

(d) In accordance with and through implementation of Cal Water's Water Neutral Development Policy, the proposed Project will not result in a net increase in demands for the SSF District. Therefore, demands for the proposed Projected are shown as zero through 2045.

References:

1. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.
2. 2020 Urban Water Management Plan, Bear Gulch District, prepared by California Water Service, dated June 2021.
3. 2020 Urban Water Management Plan, Mid-Peninsula District, prepared by California Water Service, dated June 2021.

7 COMPARISON OF SUPPLY AND DEMAND

☑ ***CWC § 10910 (c)(3)***

If the projected water demand associated with the proposed project was not accounted for in the most recently adopted urban water management plan, or the public water system has no urban water management plan, the water supply assessment for the project shall include a discussion with regard to whether the public water system's total projected water supplies available during normal, single dry, and multiple dry water years during a 20-year projection will meet the projected water demand associated with the proposed project, in addition to the public water system's existing and planned future uses, including agricultural and manufacturing uses.

☑ ***CWC § 10911 (a)***

If, as a result of its assessment, the public water system concludes that its water supplies are, or will be, insufficient, the public water system shall provide to the city or county its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. If the city or county, if either is required to comply with this part pursuant to subdivision (b), concludes as a result of its assessment, that water supplies are, or will be, insufficient, the city or county shall include in its water supply assessment its plans for acquiring additional water supplies, setting forth the measures that are being undertaken to acquire and develop those water supplies. Those plans may include, but are not limited to, information concerning all of the following:

(1) The estimated total costs, and the proposed method of financing the costs, associated with acquiring the additional water supplies.

(2) All federal, state, and local permits, approvals, or entitlements that are anticipated to be required in order to acquire and develop the additional water supplies.

(3) Based on the considerations set forth in paragraphs (1) and (2), the estimated timeframes within which the public water system, or the city or county if either is required to comply with this part pursuant to subdivision (b), expects to be able to acquire additional water supplies.

☑ ***CWC § 10911 (c)***

The city or county may include in any environmental document an evaluation of any information included in that environmental document provided pursuant to subdivision (b). The city or county shall determine, based on the entire record, whether projected water supplies will be sufficient to satisfy the demands of the project, in addition to existing and planned future uses. If the city or county determines that water supplies will not be sufficient, the city or county shall include that determination in its findings for the project.

Pursuant to CWC §10910c(3), this WSA must include an estimate of the projected water supplies available to the SSF District under normal, single dry, and multiple dry years, and a discussion of whether those supplies will meet the projected demand associated with the proposed Project, in addition to the water system's existing and planned future uses. This assessment is parallel to the multiple dry year supply reliability analysis required for UWMPs under CWC §10635. In 2018, CWC §10635 was revised to require UWMPs to extend this analysis to consider "a drought lasting five consecutive water years." Although CWC §10910c(3) has not yet been updated to require this for WSAs, a five-year drought scenario is also evaluated herein. However, as discussed in Section 5, with the implementation of the District's Water Neutral Development Policy, the proposed Project is expected to result in no net increase in water demands to Cal Water's SSF District.

Tables 7 through **9** provide a comparison of the demands and supplies in normal year, single-dry year, and multiple dry year hydrologic scenarios for the SSF, Bear Gulch, and Mid-Peninsula Districts. It is projected that available water supplies will be sufficient to meet the demands under normal year hydrologic conditions through 2045, inclusive of the proposed Project. However, in drought periods, shortfalls of up to 53% are possible if, as discussed above, the "worst-case" supply scenario is realized in which the Bay-Delta Plan Amendment is implemented as written, and not accounting for the implementation of actions identified as part of SFPUC's AWSP, BAWSCA's LTWSRS, or Cal Water's WSRS. As discussed in Section 6.1.1.4, Cal Water is working independently and with the other BAWSCA agencies to identify regional mitigation measures to improve reliability for regional and local water supplies and meet its customers' water needs. As a result, Cal Water expects that SFPUC's LOS Goals and Objectives will be met and is comfortable assuming its contract with SFPUC will be honored as written. Thus, any dry year shortfalls would be expected to be lower than those shown in **Tables 8** and **9**.

As described in Section 6, in response to anticipated future dry-year shortfalls, Cal Water has developed a WSCP that systematically identifies ways in which the SSF District can reduce water demands during dry years. The overall reduction goals in the WSCP are established for six drought stages ranging from 10% to greater than 50% shortfalls.

On 12 July 2021, the SFPUC called for voluntary 15% rationing for all wholesale and retail customers in alignment with Governor Newsom's Executive Order N-10-21. The RWS has historically met demand in its service area in all year types, and prior to 2021, only called for voluntary 10% rationing during 2007 to 2009 and 2014 to 2015. Although the SSF District has not experienced any shortage of RWS deliveries, during the recent drought, it was subject to the SWRCB's mandatory water reduction target at 8% between June 2015 and May 2016.[18] During this period, the SSF District surpassed its reduction targets in each month and achieved an average water demand reduction of 20% compared to its water use in 2013 (SWRCB, 2016). The Mid-Peninsula and Bear Gulch Districts were required to reduce water use by 16% and 36%, respectively, and through May 2016 exceeded their targets with cumulative reductions of 24.1% and 36.7%, respectively (SWRCB, 2016).

While RWS reliability is constrained by hydrology, physical facilities, institutional parameters including state and federal regulations, the SFPUC is implementing both capital improvement and planning processes to enhance RWS reliability and meet its contractual commitment to Wholesale Customers through 2045 (see SFPUC memorandum included as **Appendix C**). Within

[18] On 5 May 2015, the SWRCB adopted Resolution 2015-0032 that mandates minimum actions by water suppliers and their customers to conserve water supplies into 2016 and assigned a mandatory water conservation goal to each water supplier based on their R-GPCD. The Resolution was adopted pursuant to Executive Order B-29-15 that directed SWRCB to impose mandatory restrictions on urban water suppliers to achieve a statewide 25% reduction in potable urban water usage to address California's severe drought conditions. Based on its R-GPCD, SSF District was required to reduce water use by 8% relative to its 2013 water use. The Mid-Peninsula and Bear Gulch Districts were required to reduce water use by 16% and 36%, respectively. All three Peninsula Districts exceeded their mandatory savings targets by May 2016.

and outside the RWS, BAWSCA is also leading multiple efforts to develop additional water supply for its member agencies through implementation of its LTWSRS.

Cal Water is also striving to increase the water supply portfolio for the SSF, Mid-Peninsula, and Bear Gulch Districts through: (1) investment in water conservation, (2) participation in the RGSR Project and the regional water recycling project (i.e., PREP), and (3) development of a regional WSRS using integrated resource planning practices to create a long-term supply reliability strategy through 2050 for Cal Water districts in the Bay Area, among other things as described in the 2020 UWMPs for each District. As described above, the three Peninsula Districts share access to Cal Water's SFPUC supply and, as such, any supply added to one of these Districts will benefit the others.

8 CONCLUSIONS

As listed in Water Code §10910(c)(4), the primary purpose of this WSA is to evaluate whether sufficient water supply is available to meet all future water demands within the water supplier's service area, including those associated with the proposed Project, during normal and dry hydrologic years for a 20-year time horizon.

As described in Section 4, the water demand of the proposed Project (i.e., 181 AFY at buildout) has been conservatively estimated, and as discussed in Section 4.1, due to implementation of the District's Water Neutral Development Policy, the proposed Project is not expected to result in a net increase in water demands to Cal Water's SSF District. The findings of this WSA are contingent on the proposed Project's compliance with the requirements included in the SSF District's Water Neutral Development Policy.

It should be noted that if the "worst-case" supply scenario described under Section 6.1.1.2 in which the Bay-Delta Plan Amendment is implemented as written and not accounting for the implementation of actions identified as part of SFPUC's AWSP, BAWSCA's LTWSRS, or Cal Water's WSRS, shortfalls of up to 53% are projected during drought years. However, as described in Section 6.1.1, Cal Water expects that SFPUC's LOS Goals will be met and is comfortable assuming its contract with SFPUC will be honored as written. If drought conditions should arise, Cal Water will meet its demands through the implementation of its WSCP, as described in Section 7. In addition, Cal Water, through local and regional efforts, is striving to increase its water supply portfolio for the SSF District and the other two Peninsula Districts.

Therefore, this WSA concludes that, through the (1) development of supplemental water supplies and/or (2) implementation of conservation or demand management measures equal to the Project's estimated net new demands consistent with the Cal Water's Water Neutral Development Policy, the proposed Project will not affect water supply reliability within the South San Francisco District. Based on currently available information and conservative estimates of projected demand, Cal Water expects to be able to meet all future demands within its existing South San Francisco District service area (as well as the Mid-Peninsula and Bear Gulch Districts), inclusive of the proposed Project in normal hydrologic years. The shortfalls that are currently projected during dry years will be addressed through planned implementation of the South San Francisco District Water Shortage Contingency Plan (WSCP). In addition, as described herein and in Cal Water's 2020 UWMP, BAWSCA, Cal Water, and SFPUC are pursuing the development of additional water supplies to improve the RWS and South San Francisco District supply reliability.

9 REFERENCES

Bay Area Water Supply & Conservation Agency (BAWSCA), 2015. Long-Term Reliable Water Supply Strategy, Phase II Final Report, dated February 2015.

BAWSCA, 2017. Water Recycling and Potable Reuse, White Paper, prepared by BAWSCA, dated July 2017.

BAWSCA, 2018. Statement from Tom Francis, Acting Chief Executive Officer, Before the State Water Resources Control Board (State Board) in Regards to their "Draft Final Bay-Delta Plan Update," Which Could Severely Reduce the Water Supply for Residents and Businesses in Alameda, San Mateo, and Santa Clara Counties, dated August 2018.
http://bawsca.org/uploads/userfiles/files/08-21-18_BAWSCA's%20SWRCB%20Statement%20-%20TBF%20Final.pdf

BKF Engineers, 2022. 121 East Grand Avenue, South San Francisco – Water Demand Memorandum, dated 25 April 2022.

Cal Water, 2016. 2015 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2016.

Cal Water, 2019. Cal Water WSA Water Factor Tool, developed by M.Cubed, dated 22 October 2019.

Cal Water, 2021a. 2020 Urban Water Management Plan, South San Francisco District, prepared by California Water Service, dated June 2021.

Cal Water, 2021b. 2020 Urban Water Management Plan, Bear Gulch District, prepared by California Water Service, dated June 2021.

Cal Water, 2021c. 2020 Urban Water Management Plan, Mid-Peninsula District, prepared by California Water Service, dated June 2021.

Cal Water, 2022a. Data provided by Cal Water via email, 21 April 2022.

Cal Water, 2022b. Historical Demand and Production Data Provided by Cal Water, 2022.

Cal Water, 2022c. California Water Service Company South San Francisco 2020 Water Audit Data Report, accessed via the WUEdata - Water Audit Report Data website on 11 May 2022, (https://wuedata.water.ca.gov/awwa_plans).

City of South San Francisco, 2020. Notice of Preparation of an EIR and Scoping Meeting for the Proposed Southline Specific Plan and Related Offsite Improvements, dated 22 May 2020.

Department of Water Resources (DWR), 2003. Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001: To Assist Water Suppliers, Cities, and Counties in Integrating Water and Land Use Planning, dated 8 October 2003.

DWR, 2006. California's Groundwater Bulletin 118, Westside Groundwater Basin, dated January 2006.

DWR, 2015. California Code of Regulations, Title 23, Division 2, Chapter 2.7, Model Water Efficient Landscape Ordinance, effective 1 December 2015.

DWR, 2016. California's Groundwater Bulletin 118, Interim Update 2016, dated 22 December 2016.

DWR, 2019. Sustainable Groundwater Management Act 2018 Basin Prioritization, State of California, dated January 2019.

DWR, 2022. WUEdata - Water Audit Report Data website, accessed 11 May 2022, (https://wuedata.water.ca.gov/awwa_plans).

Phase 3 Real Estate Partners, Inc., 121 East Grand project information provided via email, 22 April 2022.

Phillips, Steven P., Scott N. Hamlin, Eugene B. Yates. Geohydrology, Water Quality, and Estimation of Ground-Water Recharge in San Francisco, California 1987-92. US Geological Survey Water-Resources Investigations Report 93-4019, 1993.

San Francisco Public Utilities Commission (SFPUC), 2016. 2015 Urban Water Management Plan, City and County of San Francisco District, prepared by the San Francisco Public Utilities Commission, dated June 2016.

SFPUC, 2018. Amended and Restated Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo and Santa Clara County, prepared by SFPUC, dated November 2018.

SFPUC, 2021a. 2020 Urban Water Management Plan for the City and County of San Francisco, prepared by the San Francisco Public Utilities Commission, dated June 2021.

SFPUC, 2021b. 2020 Annual Groundwater Monitoring Report Westside Basin San Francisco and San Mateo Counties, California, Prepared by the San Francisco Public Utilities Commission, dated April 2021.

SFPUC, 2022a. Regional Groundwater Storage & Recovery, https://sfwater.org/index.aspx?page=982, accessed 16 May 2022.

SFPUC, 2022b. WSIP Quarterly Reports https://sfwater.org/index.aspx?page=307, accessed 2 July 2021.

SWRCB, 2016. May 2016 Supplier Conservation Compliance, State Water Resources Control Board, Water Conservation Portal https://www.waterboards.ca.gov/water_issues/programs/conservation_portal/conservation_reporting.html.

USEPA, 2021. United States Environmental Protection Agency Lean & Water Toolkit: Appendix C, accessed February 15, 2022.

WRIME, 2012. South Westside Basin Groundwater Management Plan, City and County of San Francisco, prepared by the San Francisco Public Utilities Commission, City of San Bruno, Daly City, and Cal Water South San Francisco District, dated July 2012.

Appendix A

121 East Grand Avenue, South San Francisco – Water Demand Memorandum

MEMORANDUM

Date: April 25, 2022 BKF Job Number: 20201781

To: Michael Gerrity, Phase 3 Real Estate Partners

From: Lokelani Yee, BKF
Project Manager

Subject: 121 East Grand Avenue, South San Francisco – Water Demand Memorandum

PURPOSE

The purpose of this memorandum is to provide a summary of proposed potable water demands associated with the development for 121 East Grand Avenue project in South San Francisco, California (Project).

BACKGROUND

The Project encompasses approximately 2.9 acres at 121 East Grand Avenue, South San Francisco. The site is bounded by East Grand Avenue to the south, Poletti Avenue and Caltrans Highway 101 to the north and Grand Avenue to the east.

The Project consists of a singular structure encompassing two 17 story building over a two-story parking podium totaling 943,965 square feet of office, and research and development space. The project also includes approximately 11,684 square feet of landscape area.

PROPOSED POTABLE WATER DEMAND

Proposed water demands are presented in Table 1. These unit demand factors were developed using Redwood City water demand assumptions. Based on input from the design team we have assumed that building uses will be split 50 percent office and 50 percent research and development use. Amenities planned are retail, gym, restaurant, café, and auditorium use. We then applied the following demands:

- Office water use demand of 0.13 gpd/sf
- Research and development lab use at 0.21 gpd/sf
- Amenity use demand ranges from 0.10 to 0.80 gpd/sf

Construction of the project is not expected to be phased.

CONCLUSION

Proposed development would create a water demand of 170,791 gpd (191 Acre-Feet per Year).

ATTACHMENT

- Table 1 – 121 East Grand Avenue Potable Water Demand

Table 1: 121 East Grand Avenue Potable Water Demand

Building Area 944,915 sf

Employees[3] 2,339

Use	Quantity	Unit	Unit Demand		Demand
Office Space[1]	418,433	sf	0.13	gpd/sf	54,396 gpd
Research & Development[2]	418,432	sf	0.21	gpd/sf	87,871 gpd
Amenity Uses					
Coffee Shop[6]	2,342	sf	0.80	gpd/sf	1,874 gpd
Restaurant	9,371	sf	0.47	gpd/sf	4,404 gpd
Fitness/Gym	17,691	sf	0.75	gpd/sf	13,268 gpd
Auditorium/other	68,789	sf	0.10	gpd/sf	6,879 gpd
Retail	9,857	sf	0.13	gpd/sf	1,281 gpd
Subtotal					169,974 gpd
Irrigation[4]	11,684	sf	0.07	gpd/sf	818 gpd
Total					170,791 gpd

Total Annual Demand = 191 AFY[5]

Notes

[1]Demand factors based on Redwood City values for Water Demand per SF: Office = 0.13 GPD / SF

[2]Demand factors based on Redwood City values for Water Demand per SF: R&D = 0.21 GPD / SF

[3]Assumes employee density of 3.33/1,000 sf for office space and 2.00/1,000 sf for R&D space

[4]Demand factor based on Redwood City values for irrigation Demand= 3.5 CF / SF / Year (0.07 GPD/SF)

[5]Annual water demand (Acre-Feet per Year) based on 365 days of use per year.

[6]Demand factor based on Redwood City for Food (non-restaurant type)

Amenity Building:	Area (SF)	Occupant / Seats
Restaurant	-	258
Cafeteria	2,342	2
Fitness Center	17,691	354
Conference Center	14,301	715.05
Storage	37,169	123.90
lobby/prefunction	17,319	865.95
retail	9,857	2
Total:	98,679	

Restaurant	0.47 gpd/sf
Cafeteria	0.80 gpd/sf

THIS TABLE SHOWS RESTAURANT AND CAFETERIA

Day

Occupant Loads	Factor (GPD)				
Per Seat (15SF)	30	7,730		3865	(Dining Area, SF)
Per Frontage (25')	900	1,872	(food - non-restaurant type)	52	(Frontage, LF)
PP/50 SF/Shift	25	13,268	(health club)		
Per Seat (20sf)	2	1,430	(assembly hall)		
PP/300 SF	1	124	(storage facilities)		
er Seat (20sf)	2	1,732	(assembly hall)		
Frontage (25')	450	1,080	(food - non-restaurant type)	60	(Frontage, LF)
		19,506	GPD		

WATER USE

s per Year: 365

Gal	CF
1	7.48
AC	SF
1	43560

landscape area per stormwater treatment						
32814	sf		3.5	cf/sf/yr	114849	cf/yr
114849	cf/yr		7.48	gal/cf	0.00274	2353.618

Appendix B

Documentation of Water Supply Agreements (excluding attachments)

AMENDED AND RESTATED

WATER SUPPLY AGREEMENT

between

THE CITY AND COUNTY OF SAN FRANCISCO

and

WHOLESALE CUSTOMERS

in

ALAMEDA COUNTY, SAN MATEO COUNTY AND

SANTA CLARA COUNTY

NOVEMBER 2018

TABLE OF CONTENTS

Article 1. Parties, Effective Date, And Defined Terms 1
1.01. Definitions 1
1.02. Parties 1
1.03. Effective Date 2
Article 2. Term; Amendments During Term 4
2.01. Term 4
2.02. Extension and Renewal of Term 4
2.03. Amendments 5
Article 3. Water Supply 8
3.01. Supply Assurance 8
3.02. Allocation of Supply Assurance 9
3.03. Wholesale Customer Service Areas 10
3.04. Permanent Transfers of Individual Supply Guarantees 12
3.05. Restrictions on Resale 13
3.06. Conservation; Use of Local Sources; Water Management Charge 13
3.07. Restrictions on Purchases of Water from Others; Minimum Annual Purchases 14
3.08. Water Quality 15
3.09. Completion of WSIP 15
3.10. Regional Water System Repair, Maintenance and Operation 16
3.11. Shortages 16
3.12. Wheeling of Water from Outside SFPUC System 19
3.13. Limits on New Customers 19
3.14. Measurement of Water 21
3.15. New Sources of Water Supply to Maintain Supply Assurance 23
3.16. New Sources of Water Supply to Increase Supply Assurance 24
3.17. Westside Basin Groundwater Storage and Recovery Project 24
3.18. Water Supply Agreement Amendment Required. 29
Article 4. Implementation of Interim Supply Limitation 31
4.01. Interim Supply Limitation Imposed by SFPUC 31
4.02. Retail and Wholesale Customer Allocations Under Interim Supply Limitation 31
4.03. Transfers of Interim Supply Allocations 31
4.04. Environmental Enhancement Surcharge 32
4.05. San Jose/ Santa Clara Interim Supply Allocation and Process for Reduction/ Termination 34
4.06. San Francisco Decisions in 2028 Regarding Future Water Supply 36

4.07. Retained Discretion of SFPUC and Wholesale Customers 36
Article 5. Wholesale Revenue Requirement 38
5.01. Scope of Agreement 38
5.02. General Principles 38
5.03. Capital Cost Recovery - Existing Regional Assets 40
5.04. Capital Cost Contribution - New Regional Assets 42
5.05. Water Enterprise Operation and Maintenance Expenses 44
5.06. Water Enterprise Administrative and General Expenses 46
5.07. Water Enterprise Property Taxes 48
5.08. Hetch Hetchy Enterprise Expenses 48
5.09. Hetch Hetchy Enterprise Capital Costs 50
5.10. Additional Agreements Related to Financial Issues 51
5.11. Classification of Existing System Assets. 54
Article 6. Integration of Wholesale Revenue Requirement with SFPUC Budget Development and Rate Adjustments 57
6.01. General 57
6.02. Budget Development 57
6.03. Rate Adjustments 57
6.04. Rate Structure 59
6.05. Balancing Account 60
6.06. Wholesale Revenue Coverage Reserve 62
6.07. Working Capital Requirement 64
6.08. Wholesale Capital Fund 65
6.09. SFPUC Adoption of Regional Water System 10-Year Capital Improvement Program 67
Article 7. Accounting Procedures; Compliance Audit 72
7.01. SFPUC Accounting Principles, Practices 72
7.02. Calculation of and Report on Wholesale Revenue Requirement 73
7.03. Appointment of Compliance Auditor 74
7.04. Conduct of Compliance Audit 75
7.05. Issuance of Compliance Auditor's Report 77
7.06. Wholesale Customer Review 78
Article 8. Other Agreements of the Parties 79
8.01. Arbitration and Judicial Review 79
8.02. Attorneys' Fees 83
8.03. Annual Meeting and Report 84
8.04. 8.04 Administrative Matters Delegated to BAWSCA 85

8.05. Preservation of Water Rights; Notice of Water Rights Proceedings 86
8.06. SFPUC Rules and Regulations....86
8.07. Reservations of, and Limitations on, Claims 87
8.08. Prohibition of Assignment 89
8.09. Notices 90
8.10. Incorporation of Attachments 91
8.11. Interpretation 91
8.12. Actions and Approvals by San Francisco 91
8.13. Counterparts....91
8.14. Limitations on Damages 92
8.15. Force Majeure 92
8.16. No Third-Party Beneficiaries 93
8.17. Good Faith and Fair Dealing 93
Article 9. Implementation and Special Provisions Affecting Certain Wholesale Customers 94
9.01. 9.01 General; Individual Water Sales Contracts....94
9.02. California Water Service Company 94
9.03. City of Hayward 96
9.04. Estero Municipal Improvement District....97
9.05. Stanford University 97
9.06. City of San Jose and City of Santa Clara 98
9.07. City of Brisbane, Guadalupe Valley Municipal Improvement District, Town of Hillsborough....99

LIST OF ATTACHMENTS

A	Definitions
B	Wholesale Customer Regional Water System Purchases 2007-2008 (Section 1.03)
C	List of Agencies and Individual Supply Guarantees (Section 3.02)
D	Procedure for Pro Rata Reduction of Individual Supply Guarantees if Total Use Exceeds 184 MGD (Section 3.02)
E	Minimum Quantities for Dual Source Agencies (Section 3.07.C)
F	Sample Individual Water Sales Contract (Section 9.01)
G	Water Quality Notification and Communications Plan (Section 3.08.B)
H	Tier 1 Shortage Plan (Section 3.11.C)
I	NOT USED
J	Water Use Measurement and Tabulation (Section 3.14)
K-1	Wholesale Customers' Share of Net Book Value of Existing Assets (Section 5.03)
K-2	Wholesale Customers' Share of the Revenue-Funded Capital Expenditures (Section 5.03)
K-3	Annual Payments for Wholesale Share of 6/30/09 Net Plant & CWIP (Water Assets) (Section 5.03)
K-4	Annual Payments for Wholesale Share of 6/30/09 Net Plant & CWIP (Hetch Hetchy Assets) (Section 5.03)
K-5	10-Year Payoff Schedules for Existing Rate Base (Section 5.03)
L-1	Identification of WSIP Projects as Regional/Retail (Section 5.04)
L-2	Certificate of Use of Proceeds (Section 5.04.A)
L-3	Annual Report on Expenditures of and Earnings on Proceeds (Section 5.04.A)
M-1	Revenue-Funded Capital Additions (Section 5.04.B)
M-2	Revenue-Funded Capital Annual Reporting Requirements (Section 5.04.B)
M-3	Wholesale Capital Fund and Balancing Account Adjustment (Section 6.08)
N-1	Balancing Account/Rate Setting Calculation Table (Section 6.03.A.3.a)
N-2	Wholesale Revenue Requirement Schedules (Section 6.03.A.3.b)

N-3 Schedule of Projected Water Sales, Wholesale Revenue Requirement and Wholesale Rates (Section 6.03.A.3.c)

O Statement of Wholesale Revenue Requirement/Changes in Balancing Account (Section 7.02.B.1)

P Management Representation Letter (Section 7.02.B.5)

Q-1 San Jose Service Area (Section 9.06)

Q-2 Santa Clara Service Area (Section 9.06)

R Classification of Existing System Assets (Section 5.11)

AMENDED AND RESTATED
WHOLESALE WATER SUPPLY AGREEMENT

Introductory Statement

Both San Francisco, as the Regional Water System owner and operator, and its Wholesale Customers share a commitment to the Regional Water System providing a reliable supply of high quality water at a fair price, and achieving these goals in an environmentally sustainable manner.

Article 1. Parties, Effective Date, And Defined Terms

1.01. Definitions

The capitalized terms used in this Agreement shall have the meanings set forth in Attachment A.

1.02. Parties

The parties to this Agreement are the City and County of San Francisco and such of the following entities (all of which purchase water from San Francisco) as have executed this Agreement:

Alameda County Water District
California Water Service Company
City of Brisbane
City of Burlingame
City of Daly City
City of East Palo Alto
City of Hayward
City of Menlo Park
City of Millbrae
City of Milpitas
City of Mountain View
City of Palo Alto

City of Redwood City
City of San Bruno
City of San José
City of Santa Clara
City of Sunnyvale
Coastside County Water District
Estero Municipal Improvement District
Guadalupe Valley Municipal Improvement District
Mid-Peninsula Water District
North Coast County Water District
Purissima Hills Water District
Stanford University
Town of Hillsborough
Westborough Water District

The entities listed above which have executed this Agreement shall be collectively referred to as the "Wholesale Customers."

1.03. Effective Date

A. Except as provided in subsection C, this Agreement shall become effective only when it has been approved by San Francisco and by each of the entities listed in Section 1.02 and when San Francisco and each of those entities (except for the City of Hayward) have entered into an Individual Water Sales Contract as provided in Section 9.01.

B. If San Francisco and all of the entities listed in Section 1.02 approve this Agreement and (except for the City of Hayward) an Individual Water Sales Contract on or before July 1, 2009, the effective date shall be July 1, 2009. If San Francisco and all of the entities listed in Section 1.02 approve this Agreement and (except for the City of Hayward) an Individual Water Sales Contract after July 1, 2009 but on or before September 1, 2009, the effective date shall be the date on which the last entity listed in Section 1.02 approves this Agreement and, if required, an Individual Water Sales Contract.

C. If by September 1, 2009 this Agreement has been approved by fewer than all of the entities listed in Section 1.02 or fewer than all of such entities (other than the City of Hayward) have entered into an Individual Water Sales Contract, but it has been approved by entities representing at least 75% in number and 75% of the water purchased from SFPUC by

all listed agencies during FY 2007-08 (i.e., 173.39 MGD), then San Francisco shall have the option to waive the requirement in subsection A that all listed agencies have approved this Agreement and an Individual Water Sales Contract as a condition precedent to this Agreement and any Individual Water Sales Contract becoming effective. San Francisco shall have 60 days from September 1, 2009 (i.e., until October 31, 2009) within which to decide whether or not to waive the condition. If San Francisco decides to waive the condition, those listed agencies that have approved this Agreement and Individual Water Sales Contract before October 31, 2009 will be bound thereby and this Agreement and Individual Water Sales Contracts will become effective as to them, as of the date of San Francisco's waiver. For purposes of determining whether listed agencies that have approved this Agreement represent at least 75% of the water purchased during FY 2007-08, the quantity of water attributable to each listed entity shall be as set forth on Attachment B.

D. he provisions of Article 9 that apply to fewer than all Wholesale Customers (i.e., Sections 9.02 - 9.07) shall not become effective unless San Francisco and the entity to which the section applies have each approved (1) this Agreement, and (2) the underlying Individual Water Sales Contract, unless otherwise provided in Article 9. This provision does not affect the continued enforceability of provisions in those sections that derive from independently enforceable judgments, orders or agreements.

Article 2. Term; Amendments During Term

2.01. Term

The term ("Term") of this Agreement shall be twenty five (25) years. The Term shall begin on July 1, 2009, regardless of whether the Effective Date is before or after that date, and shall end on June 30, 2034. Except as provided in Article 9, the term of all Individual Water Sales Contracts shall also begin on July 1, 2009 and end on June 30, 2034.

2.02. Extension and Renewal of Term

A. In December 2031, the SFPUC may provide written notice to the Wholesale Customers that it is willing to extend the Term of this Agreement. Between January 1, 2032 and June 30, 2032, any Wholesale Customer may accept the SFPUC's offer to extend the Term by providing a written notice of extension to the SFPUC. If such notices of extension are received from Wholesale Customers representing at least two-thirds in number as of June 30, 2032 and seventy five percent (75%) of the quantity of water delivered by the SFPUC to all Wholesale Customers during fiscal year 2030-31, the Term shall be extended for another five (5) years ("First Extension Term"), through June 30, 2039. No party to this Agreement which does not wish to remain a party during the Extension Term shall be compelled to do so by the actions of other parties under this section.

B. In December 2036, the SFPUC may provide written notice to the Wholesale Customers that it is willing to extend the Term of this Agreement. Between January 1, 2037 and June 30, 2037, any Wholesale Customer may accept the SFPUC's offer to extend the Term by providing a written notice of extension to the SFPUC. If such notices of extension are received from Wholesale Customers representing at least two-thirds in number as of June 30, 2037 and seventy five percent (75%) of the quantity of water delivered by the SFPUC to all Wholesale Customers during fiscal year 2035-36, the Term shall be extended for another five (5) years ("Second Extension Term"), through June 30, 2044. No party to this Agreement which does not wish to remain a party during the Extension Term shall be compelled to do so by the actions of other parties under this section.

C. After the expiration of the Term, and, if applicable, the Extension Terms, this Agreement may be renewed by mutual consent of the parties, subject to any modifications thereof which may be determined at that time. If fewer than all of the parties desire to renew this Agreement beyond its Term, with or without modifications, the SFPUC and the Wholesale

Customers who wish to extend the Agreement shall be free to do so, provided that no party to this Agreement which does not wish to become a party to such a renewed Agreement shall be compelled to do so by the actions of other parties under this section.

2.03. Amendments

A. **Amendments to Agreement; General**

1. This Agreement may be amended with the written consent of all parties.

2. This Agreement may also be amended with the written consent of San Francisco and of Wholesale Customers representing at least two-thirds in number (i.e., 18 as of July 1, 2009) and seventy five percent (75%) of the quantity of water delivered by San Francisco to all Wholesale Customers during the fiscal year immediately preceding the amendment.

3. No amendment which adversely affects a Fundamental Right of a Wholesale Customer may be made without the written consent of that customer. Amendments to Article 5 which merely affect the allocation of costs between City Retail customers on the one hand and Wholesale Customers collectively on the other, and amendments to Articles 6 and 7 which merely alter budgetary, accounting and auditing procedures do not affect Fundamental Rights and may be made with the consent of parties meeting the requirements of Section 2.03.A.2.

4. When an amendment has been approved by San Francisco and the number of Wholesale Customers required in Section 2.03.A.2, San Francisco shall notify each of the Wholesale Customers in writing of the amendment's adoption. Notwithstanding any provision of law or this Agreement, any Wholesale Customer that claims that the amendment violates its Fundamental Rights under Section 2.03.A.3, shall have 30 days from the date San Francisco delivers the notice of its adoption in which to challenge the amendment's validity through a judicial action. If no such action is filed within 30 days, the amendment shall be finally and conclusively deemed to have been adopted in compliance with this section.

B. **Amendments to Article 9**

1. Notwithstanding the provisions of Sections 2.03.A.2 and 2.03.A.3, any provision of Article 9 which applies only to an individual Wholesale Customer may be amended with the written concurrence of San Francisco and the Wholesale Customer to which it applies;

provided that the amendment will not, directly or indirectly, adversely affect the Fundamental Rights of the other Wholesale Customers.

2. Before making any such amendment effective, San Francisco shall give notice, with a copy of the text of the proposed amendment, to all other Wholesale Customers. The Wholesale Customers shall have 30 days in which to object to the amendment on the ground that it is not permissible under this subsection. If no such objection is received by San Francisco, the proposed amendment shall become effective. If one or more Wholesale Customers object to the amendment, San Francisco, the individual Wholesale Customer with which San Francisco intends to effect the amendment, and the Wholesale Customer(s) which lodged the objection shall meet to discuss the matter.

3. If the dispute cannot be resolved and San Francisco and the Wholesale Customer involved elect to proceed with the amendment, either San Francisco or the Wholesale Customer shall give written notice of such election to each Wholesale Customer that has objected. Any Wholesale Customer that has objected to such amendment shall have 30 days from receipt of this notice within which to commence an action challenging the validity of such amendment, and such amendment shall be deemed effective as of the end of this 30-day period unless restrained by order of court.

C. **Amendments to Attachments**. The following attachments may be amended with the written concurrence of San Francisco and BAWSCA on behalf of the Wholesale Customers:

Attachment	Name
G	January 2006 Water Quality Notification and Communications Plan
J	Water Use Measurement and Tabulation
L-1	Identification of WSIP Projects as Regional/Retail
N-1	Balancing Account/Rate Setting Calculation Table
N-2	Wholesale Revenue Requirement Schedules
N-3	Schedule of Projected Water Sales, Wholesale Revenue Requirement and Wholesale Rates
P	Management Representation Letter

R	Classification of Existing System Assets (subject to Section 5.11)

Amendments to these attachments shall be approved on behalf of San Francisco by the Commission and on behalf of BAWSCA by its Board of Directors, unless the Commission by resolution delegates such authority to the General Manager of the SFPUC or the Board of Directors by resolution delegates such authority to the General Manager/CEO of BAWSCA.

D. **Amendments to Individual Water Sales Contracts**. Individual Water Sales Contracts described in Section 9.01 may be amended with the written concurrence of San Francisco and the Wholesale Customer which is a party to that Individual Water Sales Contract; provided that the amendment is not inconsistent with this Agreement or in derogation of the Fundamental Rights of other Wholesale Customers under this Agreement.

Article 3. Water Supply

3.01. Supply Assurance

A. San Francisco agrees to deliver water to the Wholesale Customers up to the amount of the Supply Assurance. The Supply Assurance is for the benefit of the entities listed in Section 1.02, irrespective of whether or not they have executed this Agreement. Water delivered by San Francisco to Retail Customers shall not be included in the Supply Assurance. Until December 31, 2018, the foregoing commitment is subject to Article 4.

B. Both the Supply Assurance and the Individual Supply Guarantees identified in Section 3.02 are expressed in terms of daily deliveries on an annual average basis and do not themselves constitute a guarantee by San Francisco to meet peak daily or hourly demands of the Wholesale Customers, irrespective of what those peak demands may be. The parties acknowledge, however, that the Regional Water System has been designed and constructed to meet peak daily and hourly demands and that its capacity to do so has not yet been reached. San Francisco agrees to operate the Regional Water System to meet peak requirements of the Wholesale Customers to the extent possible without adversely affecting its ability to meet peak demands of Retail Customers. This Agreement shall not preclude San Francisco from undertaking to meet specific peak demand requirements of individual Wholesale Customers in their Individual Water Sales Contracts.

C. The Supply Assurance is perpetual and shall survive the expiration or earlier termination of this Agreement. Similarly, the Individual Supply Guarantees identified in Section 3.02 and/or the Individual Water Sales Contracts are perpetual and shall survive the expiration or earlier termination of this Agreement or the Individual Water Sales Contracts.

D. Notwithstanding the Supply Assurance established by this section, the Individual Supply Guarantees identified in Section 3.02 and the Individual Water Sales Contracts, the amount of water made available by San Francisco to the Wholesale Customers is subject to reduction, to the extent and for the period made necessary by reason of water shortage, Drought, Emergencies, or by malfunctioning or rehabilitation of facilities in the Regional Water System. Any such reduction will be implemented in accordance with Section 3.11. The amount of water made available to the Wholesale Customers may not be reduced, however, merely because the water recycling and groundwater projects which the WSIP envisions to be constructed within San Francisco, or the conservation programs intended to reduce water use

by Retail Customers that are included in the WSIP, do not generate the yield or savings (10 MGD combined) anticipated by San Francisco.

3.02. Allocation of Supply Assurance

A. Pursuant to Section 7.02 of the 1984 Agreement, a portion of the Supply Assurance has been allocated among 24 of the 26 Wholesale Customers. These Individual Supply Guarantees are also expressed in terms of annual average metered deliveries of millions of gallons per day and are listed in Attachment C.

B. Three Wholesale Customers do not have Individual Supply Guarantees. The cities of San Jose and Santa Clara do not have an Individual Supply Guarantees because San Francisco has provided water to them on a temporary and interruptible basis as described in Sections 4.05 and 9.06. The City of Hayward does not have an Individual Supply Guarantee because of the terms of the 1962 contract between it and San Francisco, as further described in Section 9.03.

C. If the total amount of water delivered by San Francisco to Hayward and to the Wholesale Customers that are listed on Attachment C exceeds 184 MGD over a period of three consecutive fiscal years (i.e., July 1 through June 30), then the Individual Supply Guarantees of those Wholesale Customers listed on Attachment C shall be reduced pro rata so that their combined entitlement and the sustained use by Hayward does not exceed 184 MGD. The procedure for calculating the pro rata reduction in Individual Supply Guarantees is set out in Attachment D.

1. The provisions of this subsection C are not in derogation of the reservation of claims to water in excess of the Supply Assurance which are contained in Section 8.07. Nor do they constitute an acknowledgement by Wholesale Customers other than Hayward that San Francisco is obligated or entitled to reduce their Individual Supply Guarantees in the circumstances described herein. The provisions of this subsection C shall, however, be operative unless and until a court determines that its provisions violate rights of the Wholesale Customers derived independently of this Agreement.

2. The foregoing paragraph is not intended to and shall not constitute a contractual commitment on the part of San Francisco to furnish more water than the Supply Assurance to the Wholesale Customers or a concession by San Francisco that the provisions of this subsection violate any rights of the Wholesale Customers.

D. Notwithstanding the reservation of claims contained in Sections 3.02.C and 8.07, it shall be the responsibility of each Wholesale Customer to limit its purchases of water from San Francisco so as to remain within its Individual Supply Guarantee. San Francisco shall not be liable to any Wholesale Customer or be obligated to supply more water to any Wholesale Customer individually or to the Wholesale Customers collectively than the amount to which it or they are otherwise entitled under this Agreement due to the use by any Wholesale Customer of more water than the amount to which it is entitled under this Agreement.

E. San Francisco shall install such new connections between the Regional Water System and the distribution system of any Wholesale Customer that are necessary to deliver the quantities of water to which the Wholesale Customer is entitled under this Agreement. San Francisco shall have the right to determine the location of such connections, in light of the need to maintain the structural integrity of the Regional Water System and, where applicable, the need to limit peaking directly off of Regional Water System pipelines by a Wholesale Customer's individual retail customers, the need to ensure that a Wholesale Customer's individual retail customers have access to alternative sources of water in the event of a reduction in San Francisco's ability to provide them with water, and other factors which may affect the desirability or undesirability of a particular location. San Francisco's decisions regarding the location of new connections and the location, size and type of any new meters shall not be reviewable by a court except for an abuse of discretion or failure to provide a Wholesale Customer with connections and meters adequate to deliver the quantity of water to which it is entitled under this Agreement.

3.03. Wholesale Customer Service Areas

A. Each of the Individual Water Sales Contracts described in Section 9.01 will contain, as an exhibit, a map of the Wholesale Customer’s service area. A Wholesale Customer may not deliver water furnished to it by San Francisco outside the boundary of its service area without the prior written consent of San Francisco, except for deliveries to another Wholesale Customer on an emergency and temporary basis pursuant to Section 3.07.B.

B. If a Wholesale Customer wishes to expand its service area, it shall request San Francisco's consent to the expansion and provide information reasonably requested by San Francisco about the amount of water projected to be purchased from San Francisco to meet demand within the area proposed to be added to the service area.

C. San Francisco may refuse a Wholesale Customer's request to expand its service area on any reasonable basis. If San Francisco denies a request by a Wholesale Customer to expand its service area, or fails to act on the request for six months after it has been submitted, the Wholesale Customer may challenge San Francisco's denial or delay in court. Such a challenge may be based on the Wholesale Customers' claim, reserved in Section 8.07, that San Francisco is obligated under federal or state law to furnish water, included within its Individual Supply Guarantee, to it for delivery outside its then-existing service area and that it is entitled to enlarge its service area to supply water to such customers. San Francisco reserves the right to contest any such claim on any applicable ground. This subsection does not apply to San Jose and Santa Clara, whose maximum service areas are fixed pursuant to Section 9.06.

D. This section will not prevent San Francisco and any Wholesale Customer, other than San Jose and Santa Clara, from agreeing in an Individual Water Sales Contract or an amendment thereto that:

- the Wholesale Customer may expand its service area without subsequent San Francisco approval to a definitive size but no larger, or
- the Wholesale Customer will not expand its service area beyond its present limits without San Francisco approval

and waiving the provisions of this section with respect to any additional expansion.

E. If two or more Wholesale Customers agree to adjust the boundaries of their respective service areas so that one assumes an obligation to serve customers in an area that was previously within the service area of another Wholesale Customer, they may also correspondingly adjust their respective Individual Supply Guarantees. Such adjustments are not subject to the requirements of Section 3.04 and shall require only the consent of San Francisco and the Wholesale Customers involved, so long as the Supply Assurance and the Individual Supply Guarantees of other Wholesale Customers are not affected. Service area boundary adjustments that would result in the expansion of any California Water Service Company service areas are subject to the requirements of Section 9.02.D. Any adjustment of service area boundaries that would result in the supply of water in violation of this Agreement or the Act shall be void.

F. San Francisco acknowledges that it has heretofore consented in writing to deliveries of water by individual Wholesale Customers outside their service area boundaries and

agrees that nothing in this Agreement is intended to affect such prior authorizations, which remain in full force and effect according to their terms. Such authorizations shall be identified in the Individual Water Sales Contracts.

3.04. Permanent Transfers of Individual Supply Guarantees

A. A Wholesale Customer that has an Individual Supply Guarantee may transfer a portion of it to one or more other Wholesale Customers, as provided in this section.

B. Transfers of a portion of an Individual Supply Guarantee must be permanent. The minimum quantity that may be transferred is 1/10th of a MGD.

C. Transfers of portions of Individual Supply Guarantees are subject to approval by the SFPUC. SFPUC review is limited to determining (1) whether a proposed transfer complies with the Act, and (2) whether the affected facilities in the Regional Water System have sufficient capacity to accommodate delivery of the increased amount of water to the proposed transferee.

D. The participants in a proposed transfer shall provide notice to the SFPUC specifying the amount of the Individual Supply Guarantee proposed to be transferred, the proposed effective date of the transfer, which shall not be less than 60 days after the notice is submitted to the SFPUC, and the Individual Supply Guarantees of both participants resulting from the transfer. The SFPUC may require additional information reasonably necessary to evaluate the operational impacts of the transfer. The SFPUC will not unreasonably withhold or delay its approval; if the SFPUC does not act on the notice within 60 days, the transfer will be deemed to have been approved.

E. Within 30 days after the transfer has become effective, both the transferor and the transferee will provide notice to the SFPUC and BAWSCA. By September 30 of each year during the Term, the SFPUC and BAWSCA will prepare an updated Attachment C to reflect transfers occurring during the immediately preceding fiscal year.

F. Amounts transferred will remain subject to pro rata reduction under the circumstances described in Section 3.02.C and according to the formula set forth in Attachment D.

3.05. Restrictions on Resale

Each Wholesale Customer agrees that it will not sell any water purchased from San Francisco to a private party for resale by such private party to others in violation of the Act.

Each Wholesale Customer also agrees that it will not sell water purchased from San Francisco to another Wholesale Customer without prior written approval of the SFPUC, except on a temporary and emergency basis as permitted in Section 3.07.B.2. The SFPUC agrees that it will not unreasonably withhold its consent to a request by a Wholesale Customer to deliver water to another Wholesale Customer for resale.

3.06. Conservation; Use of Local Sources; Water Management Charge

A. In order to support the continuation and expansion of water conservation programs, water recycling, and development of alternative supplies within the Wholesale Customers' service areas, the SFPUC will, if requested by BAWSCA, include the Water Management Charge in water bills sent to Wholesale Customers. The SFPUC will deliver all Water Management Charge revenue to BAWSCA monthly and shall deliver an annual accounting of Water Management Charge revenue to BAWSCA within 90 days after the end of each fiscal year. The SFPUC's obligations to collect and deliver Water Management Charge revenue to BAWSCA under this subsection are conditioned on BAWSCA's delivery to the SFPUC of an annual report describing the projects and programs on which Water Management Charge funds received from the SFPUC during the previous fiscal year were expended and an estimate of the amount of water savings attributable to conservation programs and of the yield of alternative supplies developed. This report will be due within 180 days after the end of each fiscal year during which Water Management Charge funds were received.

B. The SFPUC will work together with BAWSCA to explore ways to support water conservation programs, recycling projects, and conjunctive use alternatives outside the Wholesale Service Area, in particular projects and programs that have the potential to increase both flows in the lower Tuolumne River (downstream of New Don Pedro Reservoir) and water deliveries to the Regional Water System.

C. Each Wholesale Customer shall take all actions within its legal authority related to water conservation that are necessary to insure that the SFPUC (a) remains eligible for (i) state and federal grants and (ii) access to the Drought Water Bank operated by the California Department of Water Resources, as well as other Drought-related water purchase or transfer

programs, and (b) complies with future legal requirements imposed on the Regional Water System by the federal government, the State, or any other third party as conditions for receiving funding or water supply.

D. San Francisco and each Wholesale Customer agree that they will diligently apply their best efforts to use both surface water and groundwater sources located within their respective service areas and available recycled water to the maximum feasible extent, taking into account the environmental impacts, the public health effects and the effects on supply reliability of such use, as well as the cost of developing such sources.

3.07. Restrictions on Purchases of Water from Others; Minimum Annual Purchases

A. Each Wholesale Customer (except for Alameda County Water District and the cities of Milpitas, Mountain View and Sunnyvale) agrees that it will not contract for, purchase or receive, with or without compensation, directly or indirectly, from any person, corporation, governmental agency or other entity, any water for delivery or use within its service area without the prior written consent of San Francisco.

B. The prohibition in subsection A does not apply to:

1. recycled water;

2. water necessary on an emergency and temporary basis, provided that the Wholesale Customer promptly gives San Francisco notice of the nature of the emergency, the amount of water that has been or is to be purchased, and the expected duration of the emergency; or

3. water in excess of a Wholesale Customer's Individual Supply Guarantee.

C. Alameda County Water District and the cities of Milpitas, Mountain View and Sunnyvale may purchase water from sources other than San Francisco, provided that San Francisco shall require that each purchase a minimum annual quantity of water from San Francisco. These minimum quantities are set out in Attachment E and shall also be included in the Individual Water Sales Contracts between San Francisco and each of these four Wholesale Customers. The minimum purchase requirement in these Individual Water Sales Contracts will be waived during a Drought or other period of water shortage if the water San Francisco makes available to these Wholesale Customers is less than its minimum purchase quantity.

3.08. Water Quality

A. San Francisco shall deliver treated water to Wholesale Customers (except Coastside County Water District, which receives untreated water from Crystal Springs and Pilarcitos Reservoirs) that complies with primary maximum contaminant level and treatment technique standards at the regulatory entry points designated in the San Francisco Regional Water System Domestic Water Supply Permit (currently Permit No. 02-04-04P3810001) issued by the California Department of Public Health (CDPH).

B. San Francisco will provide notice to the Wholesale Customers in accordance with the Water Quality Notification and Communications Plan (current version dated January 2006), attached hereto as Attachment G. San Francisco will regularly update its plan in consultation with the Wholesale Customers and the CDPH. The next update will be completed one year after the Effective Date and include expanded coverage of secondary maximum contaminant level exceedances and water quality communication triggers. The plan will note that the Wholesale Customers will receive the same notification no later than the San Francisco water system (currently Permit No. 02-04-01P3810011) except for distribution-related issues.

C. San Francisco and the Wholesale Customers will establish a Water Quality Committee. The Water Quality Committee will meet at least quarterly to collaboratively address water quality issues, such as Water Quality Notification and Communications Plan updates, regulatory issues, and water quality planning studies/ applied research. San Francisco and each Wholesale Customer will designate a representative to serve on the committee. There will be a Chair and Vice Chair position for the Water Quality Committee. The Chair and Vice Chair positions will be held by San Francisco and the Wholesale Customers and rotate between them on an annual basis.

3.09. Completion of WSIP

San Francisco will complete construction of the physical facilities in the WSIP by December 30, 2021. The SFPUC agrees to provide for full public review and comment by local and state interests of any proposed changes that delay previously adopted project completion dates or that delete projects. The SFPUC shall meet and consult with BAWSCA before proposing to the Commission any changes in the scope of WSIP projects which reduce their capacity or ability to achieve adopted Level of Service Goals and Objectives. The SFPUC

retains discretion to determine whether to approve the physical facilities in the WSIP until after it completes the CEQA process as set forth in Section 4.07.

3.10. Regional Water System Repair, Maintenance and Operation

A. San Francisco will keep the Regional Water System in good working order and repair consistent with prudent utility practice.

B. San Francisco will submit reports to its Retail and Wholesale Customers on the "State of the Regional Water System," including reports on completed and planned maintenance, repair or replacement projects or programs, by September of every even-numbered year, with reports to start in September 2010.

C. San Francisco will cooperate with any audit of the SFPUC's asset management practices that may be initiated and financed by BAWSCA or the Wholesale Customers. BAWSCA may contract with third parties to conduct the audits. San Francisco will consider the findings and recommendations of such audits and will provide a written response indicating agreement with the recommendations, or disagreement with particular recommendations and the reasons why, within 90 calendar days after receipt.

D. San Francisco will continue to operate its reservoirs in a manner that assigns higher priority to the delivery of water to the Bay Area and the environment than to the generation of electric power. The SFPUC, as the Regional Water System operator, is solely responsible for making day-to-day operational decisions.

3.11. Shortages

A. **Localized Water Reductions**. Notwithstanding San Francisco's obligations to deliver the Supply Assurance to the Wholesale Customers collectively and the Individual Supply Guarantees to Wholesale Customers individually, San Francisco may reduce the amount of water available or interrupt water deliveries to specific geographical areas within the Regional Water System service area to the extent that such reductions are necessary due to Emergencies, or in order to install, repair, rehabilitate, replace, investigate or inspect equipment in, or perform other maintenance work on, the Regional Water System. Such reductions or interruptions may be imposed by San Francisco without corresponding reductions or interruptions in the amount of water available to SFPUC water users outside the specific geographical area where reductions or interruptions are necessary, if the system's ability to supply water outside the specific geographical area has not been impaired. In the event of such

a reduction or interruption, San Francisco will restore the supply of water to the specific geographical area as soon as is possible. Except in cases of Emergencies (during which oral notice shall be sufficient), San Francisco will give the affected Wholesale Customer(s) reasonable written notice of such localized reductions or interruptions, the reasons therefor, and the probable duration thereof.

B. **System-Wide Shortages and SFPUC Response to Regional Emergencies**. Following a major system emergency event, the SFPUC will work closely with its Wholesale Customers to monitor customer demand, including the demand source. In the event that any individual Wholesale Service Area or Retail Service Area customer's uncontrolled distribution system leaks could result in major water waste and endanger the supply provided by the Regional Water System as a whole, flow through some customer connections may need to be temporarily reduced or terminated. SFPUC will work closely with customers to assess the nature of the demand (e.g. fire-fighting versus leakage), so that public health and safety protection can be given top priority.

1. All emergencies that require use of non-potable source water will require use of chlorine, or other suitable disinfectant, if feasible.

2. San Francisco will use its best efforts to meet the seismic reliability and delivery reliability Level of Service Goals and Objectives adopted by the Commission in conjunction with the WSIP. San Francisco will distribute water on an equitable basis throughout the Regional Water System service area following a regional Emergency, subject to physical limitations caused by damage to the Regional Water System.

3. San Francisco's response to Emergencies will be guided by the then-current version of the ERRP. The SFPUC shall periodically review, and the Commission may amend, the ERRP to ensure that it remains an up-to-date and effective management tool.

4. The SFPUC will give the Wholesale Customers notice of any proposal to amend the ERRP in a manner that would affect them. The notice will be delivered at least thirty days in advance of the date on which the proposal is to be considered by the Commission and will be accompanied by the text of the proposed amendment.

C. **Shortages Caused by Drought; Acquisition of Dry Year Supplies**. Notwithstanding San Francisco's obligations to deliver the Supply Assurance to the Wholesale Customers collectively and the Individual Supply Guarantees to Wholesale Customers

individually, San Francisco may reduce the amount of water available to the Wholesale Customers in response to Drought.

1. The Tier 1 Shortage Plan (Attachment H) will continue to be used to allocate water from the Regional Water System between Retail and Wholesale Customers during system-wide shortages of 20% or less.

2. San Francisco and the Wholesale Customers may negotiate in good faith revisions to the Tier 1 Shortage Plan to adjust for and accommodate anticipated changes due to demand hardening in the SFPUC's Wholesale and Retail Service Areas. Until agreement is reached, the current Tier 1 Shortage Plan will remain in effect.

3. The SFPUC will honor allocations of water among the Wholesale Customers ("Tier 2 Allocations") provided by BAWSCA or if unanimously agreed to by all Wholesale Customers. If BAWSCA or all Wholesale Customers do not provide the SFPUC with Tier 2 Allocations, then the SFPUC may make a final allocation decision after first meeting and discussing allocations with BAWSCA and the Wholesale Customers. For Regional Water System shortages in excess of 20%, San Francisco shall (a) follow the Tier 1 Shortage Plan allocations up to the 20% reduction, (b) meet and discuss how to implement incremental reductions above 20% with the Wholesale Customers, and (c) make a final determination of allocations above the 20% reduction. After the SFPUC has made the final allocation decision, the Wholesale Customers shall be free to challenge the allocation on any applicable legal or equitable basis.

4. San Francisco will use its best efforts to identify potential sources of dry year water supplies and establish the contractual and other means to access and deliver those supplies in sufficient quantity to meet a goal of not more than 20 percent system-wide shortage in any year of the design drought.

5. San Francisco will cooperate with BAWSCA to improve water supply reliability. As an example of such cooperation, San Francisco may invite a representative of BAWSCA to attend and participate in meetings with third parties for development of dry year water supplies. If San Francisco does not invite a BAWSCA representative to attend a specific scheduled meeting, it will promptly (within 30 days of any such meeting) provide BAWSCA with a written or oral report on the meeting, including any decisions reached at it, as well as information about planned subsequent meetings. Progress in securing dry year water supplies

will be reported to the SFPUC and the BAWSCA board of directors during the first quarter of each calendar year.

3.12. Wheeling of Water from Outside SFPUC System

Subject to the Wheeling Statute, the SFPUC will not deny use of Regional Water System unused capacity for wheeling when such capacity is available for wheeling purposes during periods when the SFPUC has declared a water shortage emergency under Water Code Section 350 if the following conditions are met:

A. The transferor pays reasonable charges incurred by the SFPUC as a result of the wheeling, including capital, operation, maintenance, administrative and replacement costs (as such are defined in the Wheeling Statute).

B. Wheeled water that is stored in the Regional Water System spills first.

C. Wheeled water will not unreasonably: (1) impact fish and wildlife resources in Regional Water System reservoirs; (2) diminish the quality of water delivered for consumptive uses; or (3) increase the risk of exotic species impairing Regional Water System operations. The transferor may at its own expense provide for treatment to mitigate these effects.

D. Priority will be given to wheeling by Wholesale Customers or BAWSCA over arrangements for third-party public entities.

3.13. Limits on New Customers

A. **New Wholesale Customers Prior to December 31, 2028**. Until December 31, 2028, San Francisco will not enter into contracts to supply water to any entity other than a Wholesale Customer (whether permanent or temporary, firm or interruptible) unless:

1. It completes any necessary environmental review under CEQA of the proposed new wholesale water service obligations as provided in Section 4.07;

2. It concurrently completes any necessary environmental review under CEQA as provided in Section 4.07 and commits to make both San Jose and Santa Clara permanent customers with Individual Supply Guarantees equal to at least 9 MGD; and

3. This Agreement is amended to incorporate any commitments to proposed new wholesale customers and to San Jose and Santa Clara, and to address the effects, if any,

of the new customer(s) on water supply reliability, water quality and cost to existing customers of the Regional Water System.

B. **New Wholesale Customers After December 31, 2028**. As of January 1, 2029, San Francisco will not enter into contracts to supply water to any entity other than a Wholesale Customer (whether permanent or temporary, firm or interruptible) unless:

1. It completes any necessary environmental review under CEQA of the proposed new wholesale water service obligations as provided in Section 4.07;

2. It concurrently completes any necessary environmental review under CEQA as provided in Section 4.07 and commits to make both San Jose and Santa Clara permanent customers with Individual Supply Guarantees equal to at least 9 MGD;

3. Doing so increases the reliability of the Regional Water System; and

4. This Agreement is concurrently amended (a) to reflect that increased reliability by means of an increased commitment by San Francisco to deliver water during Droughts and (b) to address the effects, if any, of the new customer(s) on water supply, water quality and cost to existing customers of the Regional Water System.

C. **New Retail Customers**. San Francisco may enter into new retail water service obligations outside of the City and County of San Francisco:

1. Only in Alameda, San Mateo, Santa Clara, San Joaquin and Tuolumne Counties;

2. That are within or immediately adjacent to areas in which it currently serves other Retail Customers; and

3. Until the aggregate additional demand represented by the new retail customers reaches 0.5 MGD.

The limitations on serving new Retail Customers described in this subsection do not apply to historical obligations to supply water that may be contained in prior agreements between the SFPUC or its predecessor the Spring Valley Water Company, and individual users or property owners located adjacent to Regional Water System transmission pipelines.

D. **Water Exchanges and Cost Sharing Agreements with Other Water Suppliers**. Subject to completion of necessary environmental review under CEQA, San

Francisco may at any time enter into water exchanges or cost sharing agreements with other water suppliers to enhance dry year or normal year water deliveries, provided that San Francisco cannot incur new water service obligations to such other water suppliers unless the requirements for taking on new wholesale customers in subsections A and B above are met.

3.14. Measurement of Water

A. The parties recognize that continuous and accurate measurement of water deliveries to and from the Regional Water System and maintenance of complete and accurate records of those measurements is necessary (1) for the costs of the Regional Water System to be allocated in accordance with this Agreement, (2) for implementation of other provisions of this Agreement, and (3) for effective operation and maintenance of a water system serving a large urbanized region.

B. It is the responsibility of the SFPUC to obtain and record these measurements. To do so, the SFPUC shall install, maintain and operate measuring and recording equipment at the following locations: (1) inputs to the Regional Water System from all water sources ("System Input Meters"), (2) internal flow meters to support operation of the Regional Water System ("In-Line Meters"), (3) deliveries to the City at the San Francisco-San Mateo County line ("County-Line Meters") and to three reservoirs in San Francisco ("In-City Terminal Reservoir Meters"), (4) deliveries to SFPUC Retail Customers located outside the boundaries of the City, and (5) deliveries to the Wholesale Customers, as described and illustrated in Attachment J.

C. The SFPUC shall inspect, test, service, and calibrate the measuring and recording equipment installed at the locations described in subsection B and will repair or replace them when necessary, in order to ensure that their accuracy is consistent with specifications provided in Attachment J.

D. The SFPUC shall continue to contract with a qualified independent metering consultant to perform periodic inspection, testing, servicing and calibration of the County-Line Meters, the In-City Terminal Reservoir Meters, and the System Input and In-Line Meters described in Attachment J, as well as the portion of the SFPUC's Supervisory Control and Data Acquisition (SCADA) system that utilizes the flow signals produced by that measuring and recording equipment. The method, schedule and frequency for calibration and maintenance of the County-Line Meters and the In-City Terminal Reservoir Meters are specified in Attachment J. The SFPUC shall provide copies of the metering consultant's reports to BAWSCA.

E. System Input Meters measure water deliveries into the Regional Water System from sources such as Hetch Hetchy and the SFPUC's water treatment plants. System Input Meters also measure deliveries from the Regional Water System to outside sources or from such sources to the Regional Water System through interties with the Santa Clara Valley Water District and the East Bay Municipal Utility District. In-Line Meters measure internal system flows and are located on the Bay Division Pipelines and other main transmission pipelines. These meters are collectively referred to as the "System Input and In-line Meters." Similar to the County-Line Meters, the System Input and In-Line Meters have secondary metering equipment, such as differential pressure transmitters and flow recorders. The System Input and In-Line Meters, and all associated secondary metering equipment, shall be calibrated and maintained according to the method, schedule, and frequency specified in the Procedures Manual described in subsection G, below.

F. The locations of the smaller and more numerous meters described in subsection B (4) and (5) are not illustrated in Attachment J; however, they are also critical in the determination of cost allocations, and accordingly require continued maintenance and calibration. It is the responsibility of the SFPUC to maintain the accuracy of these meters and their secondary metering equipment.

G. The SFPUC will prepare a Procedures Manual which will describe in detail the procedures for periodic inspection, testing, servicing and calibration of the measuring and recording equipment described in subsection B. Once the Procedures Manual is completed, the SFPUC and BAWSCA may agree that it should supersede some or all of the requirements in Attachment J regarding the County-Line and the In-City Terminal Reservoir Meters. Unless and until such an agreement is reached and documented, however, the requirements in Attachment J, Section D will continue in force as minimum standards for meter maintenance and calibration of the County-Line and In-City Terminal Reservoir Meters (subject to modification under the circumstances described in Attachment J, Section A.4).

H. If BAWSCA and the SFPUC are unable to agree on the water use calculations required by Attachment J for a particular year, the Wholesale Customers may file a demand for arbitration challenging the SFPUC's determination of the Wholesale Revenue Requirement for that year on the basis of its reliance on disputed water use calculations. Such a challenge must be brought in the manner and within the time specified in Section 8.01.

3.15. New Sources of Water Supply to Maintain Supply Assurance

A. **Urgent Reductions of Existing Surface Water Supplies**. Sudden and unanticipated events may require San Francisco to act promptly to protect the health, safety and economic well-being of its Retail and Wholesale Customers. Such sudden events include, but are not limited to drought, earthquakes, terrorist acts, catastrophic failures of facilities owned and operated by San Francisco, and other natural or man-made events. If such events diminish San Francisco's ability to maintain the Supply Assurance, San Francisco may increase the Wholesale Revenue Requirement to pay for planning, evaluation and implementation of replacement sources of supply when such needs arise and without the prior approval of the Wholesale Customers. San Francisco will keep the Wholesale Customers informed of actions being taken under this subsection, progress made, and contingency actions the Wholesale Customers may need to consider taking. To the extent appropriate and applicable, San Francisco will act in accordance with Section 3.11 and the ERRP. Nothing in this subsection limits San Francisco's obligations under Section 3.11 to pursue additional sources of supply to augment supplies available during drought.

B. **Non-Urgent Reductions of Existing Surface Water Supplies**. Climate change, regulatory actions and other events may impact San Francisco's ability to maintain the Supply Assurance from its existing surface water supplies, but on timescales long enough to permit San Francisco to collaborate with its Wholesale Customers on how best to address possible impacts to water supply. If such events diminish San Francisco's ability to maintain the Supply Assurance, San Francisco may increase the Wholesale Revenue Requirement to pay for planning, evaluation and implementation of replacement sources of supply when such needs arise and without the prior approval of the Wholesale Customers. San Francisco will keep the Wholesale Customers informed of actions being taken under this subsection, progress made, and contingency actions the Wholesale Customers may need to consider taking. San Francisco will solicit input and recommendations from BAWSCA and the Wholesale Customers, and take those recommendations into consideration. Prior to Commission approval of plans or taking other actions that would impact the Wholesale Revenue Requirement, San Francisco will hold a public hearing to receive written and oral comments. Nothing in this subsection modifies San Francisco's obligation to maintain the ability to provide the Supply Assurance under this Agreement.

3.16. New Sources of Water Supply to Increase Supply Assurance

A. **Surface Water Supplies From Existing Watersheds After 2018**. The Commission action in SFPUC Resolution Number 08-0200, adopted October 30, 2008 requires certain decisions by San Francisco regarding whether to supply more than 265 MGD from its watersheds following 2018. Such decisions are to be made by December 31, 2018, subject to the exercise of San Francisco's retained CEQA discretion in Section 4.07. San Francisco's future decisions may include an offer to increase the Supply Assurance at the request of some or all of its Wholesale Customers. Costs associated with providing additional water from its existing water supplies in San Mateo, Santa Clara, Alameda, Tuolumne, and Stanislaus Counties shall be allocated to Wholesale and Retail Customers as described in Article 5.

B. **New Water Supplies**. If San Francisco seeks to develop additional water supplies from new sources to increase the Supply Assurance available to Wholesale Customers, studies and resulting water supply projects will be conducted jointly with BAWSCA under separate agreement(s) specifying the purpose of the projects, the anticipated regional benefits and how costs of studies and implementation will be allocated and charged. Nothing in this Agreement shall serve as precedent for the allocation of such new supply capital costs between Retail and Wholesale Customers or associated operational expenses, which shall only occur following approval of both parties and amendment of this Agreement, if necessary, under Section 2.03.

3.17. Westside Basin Groundwater Storage and Recovery Project

In August 2014, the SFPUC approved a WSIP project called the Groundwater Storage and Recovery Project (“Project”), which authorized the SFPUC to enter into an agreement governing the operation of the Project with the Participating Pumpers entitled “Agreement for Groundwater Storage and Recovery from the Southern Portion of the Westside Groundwater Basin by and among the San Francisco Public Utilities Commission, the City of Daly City, the City of San Bruno, and California Water Service Company” (“Project Operating Agreement”), which became effective on December 16, 2014. The Project produces Regional benefits for all customers of the Regional Water System by making use of available groundwater storage capacity in the Southern portion of the Westside Basin through the supply of additional surface water (“In Lieu Water”) to the Participating Pumpers from the Regional Water System, in exchange for a corresponding reduction in groundwater pumping at existing wells owned by the Participating Pumpers. The new groundwater supply that accrues to storage as a result of

delivery of In Lieu Water will be recovered from the SFPUC Storage Account during water shortages using new Regional Project Facilities or Shared Facilities operated by the Participating Pumpers and the SFPUC. Project mitigation capital costs and annual Project operations and maintenance expenses and water supplies shall be allocated as follows:

A. All In Lieu Water delivered to the Participating Pumpers shall be (1) temporary and interruptible in nature and (2) at the sole discretion of the SFPUC based on the total volume of water available to the Regional Water System.

B. All In Lieu Water delivered to the Participating Pumpers shall be considered a delivery of water to storage and shall not be construed to affect or increase the Individual Supply Guarantees of these Wholesale Customers or to otherwise entitle them to any claim of water in excess of their Individual Supply Guarantees.

C. In the event that it is necessary to reduce the Participating Pumpers' aggregate designated quantity of groundwater production allocation pursuant to Section 4.7 of the Project Operating Agreement, the SFPUC may supply an annual maximum of up to 500 acre feet of Participating Pumper Replacement Water from the Regional Water System at a price comparable to the Participating Pumpers' then-current groundwater cost, as may be adjusted annually as provided for in Section 4.7 of the Project Operating Agreement. Each of the Participating Pumpers may elect to take delivery of its share of Participating Pumper Replacement Water either as interruptible surface water deliveries from the Regional Water System or as a transfer of storage credits from the SFPUC Storage Account. All revenue received from such water sales or transfers shall be considered revenue related to the sale of water and allocated between Retail Customers and Wholesale Customers on the basis of Proportional Water Use. All volumes of Participating Pumper Replacement Water delivered shall not be construed to affect or increase the Individual Supply Guarantees of these Wholesale Customers or to otherwise entitle them to any claim of water in excess of their Individual Supply Guarantees.

D. Any operation and maintenance expenses incurred by the Participating Pumpers and the SFPUC that are related to the operation of Project Facilities and Shared Facilities for Project purposes shall be included as Regional pumping expenses under Section 5.05.B of this Agreement and included as part of the Wholesale Revenue Requirement. For rate setting purposes, estimated Project operation and maintenance expenses shall be used as set forth in

Section 6.01 of this Agreement. Operation and maintenance expenses associated with the Participating Pumpers' Existing Facilities that do not provide Regional benefits shall not be included in the Wholesale Revenue Requirement. On a case-by-case basis, the SFPUC may include operation and maintenance expenses associated operation of the Participating Pumpers' Existing Facilities in the Wholesale Revenue Requirement provided that such expenses (1) are solely attributable to Project operations for a Regional benefit and (2) are not caused by the Participating Pumper's failure to operate and maintain its existing wells in a reasonable and prudent manner consistent with water utility industry standards. The SFPUC shall provide the Wholesale Customers with copies of Project Operation and Maintenance Expenses documentation provided by the Participating Pumpers under Section 9.2 of the Project Operating Agreement.

E. The Project Mitigation, Monitoring and Reporting Program ("MMRP") adopted by the SFPUC included mitigation measure HY-6 to prevent well interference impacts to the Irrigation Well Owners. In mitigation measure HY-6, the SFPUC agreed to provide standby supplies of Irrigation Well Owner Replacement Water from the Regional Water System, to alter Project operations, and implement other actions (e.g., well replacement) to avoid well interference impacts that require the consent of the Irrigation Well Owners. The SFPUC's Project mitigation and other obligations to the Irrigation Well Owners are memorialized in substantially identical "Groundwater Well Monitoring and Mitigation Agreements" with one or more of the Irrigation Well Owners. For purposes of this Agreement, water supplies, and the capital costs and operations and maintenance expenses associated with providing Irrigation Well Owner Replacement Water and implementing other mitigation actions identified in the Project MMRP, shall be allocated as follows:

1. Irrigation Well Owner Replacement Water shall be limited to a cumulative maximum of 1.76 mgd and shall be delivered only in volumes necessary for mitigating well interference impacts as provided in the Project MMRP. The supply of Irrigation Well Owner Replacement Water by the SFPUC shall not be considered a new water supply commitment to Retail Customers or Wholesale Customers under Section 3.13 of this Agreement. The annual volume of Irrigation Well Owner Replacement Water supplied shall be metered and allocated as water from the Regional Water System during shortages between Retail Customers and Wholesale Customers in proportion to and consistent with the provisions of the Shortage Allocation Plan. All revenue received from Irrigation Well Owners for metered deliveries of Irrigation Well Owner Replacement Water shall be considered revenue related to the sale of

water and allocated between Retail Customers and Wholesale Customers on the basis of Proportional Water Use.

2. All Project capital costs incurred by the SFPUC in complying with the mitigation measures in the Project MMRP shall be considered Regional capital costs under Section 5.04 of this Agreement.

3. Operations and maintenance expenses incurred by the SFPUC in maintaining Project mitigation assets described in the Project MMRP shall be considered Regional transmission and distribution expenses under Section 5.05.D of this Agreement. Well pumping expenses that are required to be paid by the SFPUC in the agreements with the Irrigation Well Owners shall be considered Regional pumping expenses under Section 5.05.B of this Agreement.

4. Any wheeling charges imposed by California Water Service Company for delivery of Irrigation Well Owner Replacement Water shall be considered Regional transmission and distribution expenses under Section 5.05.D of this Agreement.

F. F. The SFPUC will audit (1) operation and maintenance expenses submitted by the Participating Pumpers, and (2) well pumping expenses submitted by the Irrigation Well Owners, for reimbursement to confirm that such costs were incurred, respectively, as a result of (1) operating Project Facilities and Shared Facilities for a Regional benefit and (2) complying with mitigation obligations in the Project MMRP. Costs associated with the use of Project Facilities or Shared Facilities for Direct Retail or Direct Wholesale purposes, or that do not otherwise provide Regional benefits, shall not be included in the Wholesale Revenue Requirement. The SFPUC is responsible for resolving disputes with the Participating Pumpers and Irrigation Well Owners concerning expense allocations. Project expense documentation, including documentation of negotiation and settlement of disputed costs, will be available for review during the Compliance Audit described in Section 7.04 of this Agreement. The Wholesale Customers may dispute the SFPUC's resolution of expense allocations through the arbitration provisions in Section 8.01 of this Agreement.

G. The SFPUC may direct the Participating Pumpers to recover water from the SFPUC Storage Account for any type of shortage referenced in Section 3.11 of this Agreement. Water recovered from the SFPUC Storage Account using Project Facilities and Shared Facilities may be used for (1) the benefit of all Regional Water System customers; (2) Retail Customers; or (3) one or more of the Participating Pumpers. The Wholesale Revenue Requirement shall

only include operation and maintenance expenses incurred due to the operation of Project Facilities and Shared Facilities for Regional benefits, including expenses incurred due to compliance with mitigation measures in the Project MMRP.

H. All water recovered during shortages caused by drought from the SFPUC Storage Account for Regional benefit, by the Participating Pumpers and by the SFPUC for delivery to Retail and Wholesale Customers, shall be used to free up a comparable volume of surface water from the Regional Water System for allocation in accordance with the Tier 1 Shortage Plan.

I. If the Project is terminated for any reason, including breach of the Project Operating Agreement by one or more of the Participating Pumpers or the SFPUC, a force majeure event as specifically defined by the Project Operating Agreement, or due to regulatory action or legal action, then:

1. Any water remaining in the SFPUC Storage Account shall be used for the benefit of all customers of the Regional Water System;

2. Outstanding eligible operation and maintenance expenses, including costs incurred during recovery of remaining stored water, will be allocated as provided in this Section 3.17 of this Agreement; and

3. If Project Facilities are no longer capable of being used for a Regional benefit, the Wholesale Customers will be credited with their share of proceeds from disposition of Project Facilities or reimbursed their share of such capital costs for any Project Facilities which are retained by the SFPUC for Direct Retail benefit and not used for the benefit of the Wholesale Customers, on the basis of (a) original cost less depreciation and outstanding related Indebtedness or (b) original cost less accumulated depreciation for revenue funded Project Facilities.

J. In the event that a Participating Pumper establishes the occurrence of a force majeure event as defined in the Project Operating Agreement, the SFPUC may enter into negotiations with the Participating Pumper to take over the operation of the portion of any Shared Facilities used for Project purposes for continued Regional use. If the SFPUC cannot reach agreement regarding the continued use of Shared Facilities for ongoing Regional benefit, the Participating Pumper shall reimburse the SFPUC and the Wholesale Customers for their respective shares of previously incurred Project capital costs used to upgrade the Shared

Facilities on the basis of (a) original cost less depreciation and outstanding related Indebtedness or (b) original cost less accumulated depreciation for revenue funded Shared Facilities. In the event that the SFPUC seeks to take over the operation of Shared Facilities for Direct Retail use, or one or more Wholesale Customers seeks to negotiate with a Participating Pumper to take over the operation of Shared Facilities for individual use or Direct Wholesale use, the party or parties benefiting from such transfer of Shared Facilities shall reimburse the other parties to this Agreement with their respective shares of previously incurred Project capital costs on the basis described in the previous sentence, or as the parties may otherwise agree.

3.18. Water Supply Agreement Amendment Required.

San Francisco may not change the existing condition of the Hetch Hetchy Reservoir by:

1. Abandoning or decommissioning O'Shaughnessy Dam; or
2. Draining Hetch Hetchy Reservoir, except for purposes of (i) repair, rehabilitation, maintenance, improvement, or reconstruction of O'Shaughnessy Dam or appurtenances, (ii) supplying water to the Bay Area during drought, or (iii) meeting water release requirements under the Raker Act, or federal or state law,

unless the parties enter into an amendment to the Water Supply Agreement, in full force and effect, adopted in accordance with Section 2.03.

The amendment shall state, or restate, as the case may be:

A. The level of service goals for seismic reliability and delivery reliability adopted by the Commission in conjunction with such proposed changes to the Regional Water System, provided such goals are at least as protective of the Wholesale Customers as the Level of Service Goals and Objectives;

B. The level of water quality to be delivered, which is currently provided for in Section 3.08, and

C. The specific cost allocation procedures, written as an amendment to Article 5, which apply to (1) the abandonment or decommissioning of O'Shaughnessy Dam, or (2) the draining of Hetch Hetchy Reservoir, and (3) the development, operation and maintenance of New Regional Assets

that may be required to replace water supplied by Hetch Hetchy Reservoir and delivered to the Bay Area.

In the event that the parties are not able to agree upon and approve an amendment to the Water Supply Agreement as set forth above, San Francisco may not abandon or decommission O'Shaughnessy Dam or drain Hetch Hetchy Reservoir.

Article 4. Implementation of Interim Supply Limitation.

4.01. Interim Supply Limitation Imposed by SFPUC

In adopting the WSIP in Res. No. 08-0200, the Commission included full implementation of all proposed WSIP capital improvement projects to achieve Level of Service Goals and Objectives relating to public health, seismic safety, and delivery reliability, but decided to adopt a water supply element that includes the Interim Supply Limitation. This article describes how the parties will implement the Interim Supply Limitation imposed by the SFPUC between the Effective Date and December 31, 2018, and how the SFPUC will conduct water supply planning after December 31, 2018.

4.02. Retail and Wholesale Customer Allocations Under Interim Supply Limitation

The Interim Supply Limitation is allocated as follows between Retail and Wholesale Customers:

Retail Customers' allocation: 81 MGD

Wholesale Customers' allocation: 184 MGD

The Wholesale Customers' collective allocation of 184 MGD under the Interim Supply Limitation includes the demand of the cities of San Jose and Santa Clara, whose demand is not included in the Supply Assurance, as provided in Section 3.02.B. By December 31st, 2010, the Commission will establish each Wholesale Customer's Interim Supply Allocation at a public meeting.

4.03. Transfers of Interim Supply Allocations

A. Any Wholesale Customer, including Hayward, may transfer a portion of its Interim Supply Allocation to one or more other Wholesale Customers, as provided in this section. All Wholesale Customers are also eligible transferees, including California Water Service Company up to its Individual Supply Guarantee.

B. Transfers of a portion of an Interim Supply Allocation must be prospective. The duration of a transfer cannot be less than the balance of the fiscal year. The minimum quantity that may be transferred is 1/10th of a MGD.

C. Transfers of portions of Interim Supply Allocations are subject to approval by the SFPUC. SFPUC review is limited to determining (1) whether a proposed transfer complies with

the Act, and (2) whether the affected facilities in the Regional Water System have sufficient capacity to accommodate delivery of the increased amount of water to the proposed transferee.

D. The participants in a proposed transfer shall provide notice to the SFPUC specifying the amount of the Interim Supply Allocation proposed to be transferred and the proposed effective date of the transfer, which shall not be less than 60 days after the notice is submitted to the SFPUC. The SFPUC may require additional information reasonably necessary to evaluate the operational impacts of the transfer. The SFPUC will not unreasonably withhold or delay its approval; if the SFPUC does not act on the notice within 60 days, the transfer will be deemed to have been approved.

E. Within 30 days after the transfer has become effective, both the transferor and the transferee will provide written notice to the SFPUC and BAWSCA.

F. Transfers of Interim Supply Allocations shall continue in effect until the earlier of (1) delivery of written notice to the SFPUC by the transfer participants that the transfer has been rescinded or (2) December 31, 2018.

4.04. Environmental Enhancement Surcharge

A. **Establishment of Environmental Enhancement Surcharge**. Beginning with wholesale water rates for fiscal year 2011-2012, and continuing for the duration of the Interim Supply Limitation, the Commission will establish the Environmental Enhancement Surcharge concurrently with the budget-coordinated rate process set forth in Article 6 of this Agreement. The monetary amount of the Environmental Enhancement Surcharge per volume of water, such as dollars per acre-foot, will be equivalent for Retail Customer use in excess of 81 MGD and Wholesale Customer use in excess of 184 MGD. The Environmental Enhancement Surcharge will be simple to calculate so that Wholesale Customers can estimate potential surcharges for budgeting purposes and establish retail rates within their service areas.

B. **Application of Environmental Enhancement Surcharge**. Beginning in fiscal year 2011-12, the Environmental Enhancement Surcharge will be levied only if and when combined Retail Customer and Wholesale Customer purchases exceed the Interim Supply Limitation of 265 MGD and if the fund described in subsection D below has been established by the San Francisco Board of Supervisors. In that event, the Environmental Enhancement Surcharge will apply to Retail Customers for use in excess of 81 MGD and to individual

Wholesale Customers for use in excess of their Interim Supply Allocations established by the Commission pursuant to Section 4.02.

1. Environmental Enhancement Surcharges related to the Retail Customers' use in excess of their 81 MGD Retail Customer Allocation will be paid by the SFPUC, and no portion of such surcharges may be allocated to Wholesale Customers. The method of recovering the Environmental Enhancement Surcharges imposed upon Retail Customers shall be within the sole discretion of the SFPUC.

2. Environmental Enhancement Surcharges related to the individual Wholesale Customers' use in excess of their respective Interim Supply Allocations will be paid to the SFPUC by individual Wholesale Customers.

C. **Collection of Environmental Enhancement Surcharge**. Notwithstanding the budget-coordinated rate setting process contemplated in Article 6 of this Agreement, the Environmental Enhancement Surcharge for any given year will be determined retrospectively based on actual annual usage during the fiscal year in excess of the Interim Supply Allocation and paid in equal monthly installments over the remainder of the immediately following fiscal year.

D. **Establishment of Fund for Environmental Enhancement Surcharge Proceeds**. Environmental Enhancement Surcharges paid by the SFPUC and by Wholesale Customers will be placed into a restricted reserve fund. The SFPUC will request the San Francisco Board of Supervisors to establish this fund by ordinance and, if adopted, the fund will be subject to the following restrictions:

1. Interest earnings will stay in the reserve fund.
2. The reserve fund shall (a) be subject to automatic appropriation; (b) require unexpended and unencumbered fund balances to be carried forward from year to year; and (c) not be transferred to the San Francisco General Fund.
3. The reserve fund may be used only for specific environmental restoration and enhancement measures for the Sierra and local watersheds, such as those included in the Watershed Environmental Improvement Program.
4. Environmental Enhancement Surcharge proceeds shall be expended in an expeditious manner. Any Environmental Enhancement Surcharge

proceeds that remain in the reserve fund as of December 31, 2018 shall be used to complete projects previously approved under subsection E. Upon completion of the identified projects, the balance of any unexpended sums in the reserve fund shall be distributed to BAWSCA and the SFPUC in proportion to the total amount of surcharges assessed to the Wholesale and Retail Customers, respectively.

E. **Use of Environmental Enhancement Surcharge Proceeds**. Specific uses of Environmental Enhancement Surcharges will be decided by the SFPUC and BAWSCA General Managers following input from environmental stakeholders and other interested members of the public. If parties are unable to agree, then they will jointly select a third person to participate in making the decision.

4.05. San Jose/ Santa Clara Interim Supply Allocation and Process for Reduction/ Termination.

San Francisco will supply a combined annual average of 9 MGD to the cities of San Jose and Santa Clara through 2028. Water supplied by San Francisco may only be used in the defined service areas of San Jose and Santa Clara shown on Attachment Q-1 and Q-2, respectively. San Francisco may reduce the quantity of water specified in this section when it establishes the Interim Supply Allocations for Wholesale Customers in Section 4.02. The establishment of Interim Supply Allocations for San Jose and Santa Clara shall not be considered a reduction of supply within the meaning of this section, provided that the Interim Supply Allocations assigned to San Jose and Santa Clara do not effect a reduction greater than the aggregate average reduction in Individual Supply Guarantees for Wholesale Customers that have such guarantees. The application of Interim Supply Allocations to San Jose and Santa Clara, and water supply planning after December 31, 2018, are subject to the following provisions:

A. In December 2010 and in each December thereafter through 2027, the SFPUC shall prepare and the Commission shall consider, at a regularly scheduled public meeting, a Water Supply Development Report detailing progress made toward (1) meeting the Interim Supply Limitation by June 30, 2018 and (2) developing additional water supplies that will allow the Commission to designate San Jose and Santa Clara as permanent Wholesale Customers of the Regional Water System with a combined Individual Supply Guarantee of up to 9 MGD by the end of the Term on June 30, 2034.

B. The annual Water Supply Development Report shall be based on water purchase projections and work plans prepared by the SFPUC for the Retail Customers and by BAWSCA for the Wholesale Customers, respectively, and submitted to the Commission in June of each year beginning in 2010.

C. If the Commission finds that the projections in the Water Supply Development Report show that (1) the Interim Supply Limitation will not be met by June 30, 2018, as a result of Wholesale Customers' projected use exceeding 184 MGD, or (2) the purchases of the Wholesale Customers, including San Jose and Santa Clara, are projected to exceed 184 MGD before June 30, 2028, the Commission may issue a conditional ten year notice of interruption or reduction in supply of water to San Jose and Santa Clara.

D. Upon issuance of the conditional notice of interruption or reduction, the SFPUC will prepare a new analysis of water supply that will be utilized by the San Francisco Planning Department in its preparation of any necessary documentation under CEQA pursuant to Section 4.07 on the impacts of interrupting or reducing service to San Jose and Santa Clara.

E. Such notice of interruption or reduction will be rescinded if the Commission finds, based upon a subsequent annual Water Supply Development Report, that (1) sufficient progress has been made toward meeting the Interim Supply Limitation, or (2) projections show that the projected purchases of the Wholesale Customers, including San Jose and Santa Clara, will not exceed 184 MGD by June 30, 2028.

F. In no case shall any interruption or reduction of service to San Jose or Santa Clara pursuant to this section become effective less than two years from the completion of the CEQA process (not including resolution of any appeals or litigation) or ten years from the notice, whichever is longer. If the ten year notice is issued after 2018, such interruption or reduction would be effective after 2028.

G. If deliveries to San Jose and Santa Clara are interrupted, existing turnout facilities to San Jose and Santa Clara will remain in place for possible use during emergencies.

H. San Francisco and the cities of San Jose and Santa Clara will cooperate with BAWSCA and the Santa Clara Valley Water District in the identification and implementation of additional water sources and conservation measures for the cities' service areas that are

relevant to the water supply and the possible offer of permanent status for the two cities by the SFPUC.

4.06. San Francisco Decisions in 2028 Regarding Future Water Supply

A. By December 31, 2028, San Francisco will have completed any necessary CEQA review pursuant to Section 4.07 that is relevant to making San Jose and Santa Clara permanent customers of the Regional Water System and will decide whether or not to make San Jose and Santa Clara permanent customers of the Regional Water System with a combined Individual Supply Guarantee of 9 MGD allocated equally between the two cities, as well as how much water in excess of 9 MGD it will supply to San Jose and Santa Clara. San Francisco will make San Jose and Santa Clara permanent customers only if, and to the extent that, San Francisco determines that Regional Water System long term water supplies are available. In the event that San Francisco decides to afford permanent status to San Jose and Santa Clara, this Agreement will be amended pursuant to Section 2.03.

B. By December 31, 2028, San Francisco will have completed any necessary CEQA review pursuant to Section 4.07 and will decide how much water, if any, in excess of the Supply Assurance it will supply to Wholesale Customers from the Regional Water System to meet their projected future water demands until the year 2040, and whether to offer a corresponding increase in the Supply Assurance as a result of these determinations.

4.07. Retained Discretion of SFPUC and Wholesale Customers

A. This Agreement contemplates discretionary actions that the SFPUC and the Wholesale Customers may choose to take in the future that could result in physical changes to the environment ("Discretionary Actions"). The Discretionary Actions include decisions to:

1. Develop additional or alternate water resources by the SFPUC or one or more Wholesale Customers;
2. Implement the physical facilities comprising the WSIP by December 30, 2021;
3. Approve wheeling proposals by Wholesale Customers;
4. Approve new wholesale customers and water exchange or cost sharing agreements with other water suppliers;
5. Provide additional water to San Jose and/or Santa Clara;
6. Offer permanent status to San Jose and/or Santa Clara;

7. Reduce or terminate supply to San Jose and/or Santa Clara;
8. Provide additional water to Wholesale Customers in excess of the Supply Assurance to meet their projected future water demands;
9. Offer a corresponding volumetric increase in the Supply Assurance; and
10. Implement the Hetch Hetchy Water and Power projects listed in Attachment R-2.

The Discretionary Actions may require the SFPUC or Wholesale Customers to prepare environmental documents in accordance with CEQA prior to the SFPUC or the Wholesale Customers determining whether to proceed with any of the Discretionary Actions. Accordingly, and notwithstanding any provision of this Agreement to the contrary, nothing in this Agreement commits the SFPUC or the Wholesale Customers to approve or carry out any Discretionary Actions that are subject to CEQA. Furthermore, the SFPUC's or Wholesale Customers' decisions to approve any of these Discretionary Actions are subject to the requirement that San Francisco and each Wholesale Customer, as either a "Lead Agency" (as defined in Section 21067 of CEQA and Section 15367 of the CEQA Guidelines) or a "Responsible Agency" (as defined in Section 21069 of CEQA and Section 15381 of the CEQA Guidelines) shall have completed any CEQA-required environmental review prior to approving a proposed Discretionary Action.

B. In considering any proposed Discretionary Actions, the SFPUC and Wholesale Customers retain absolute discretion to: (1) make such modifications to any of the proposed Discretionary Actions as may be necessary to mitigate significant environmental impacts; (2) select feasible alternatives to the proposed Discretionary Actions that avoid significant adverse impacts; (3) require the implementation of specific measures to mitigate the significant adverse environmental impacts as part of the decision to approve the Discretionary Actions; (4) balance the benefits of the proposed Discretionary Actions against any significant environmental impacts before taking final actions to approve the proposed Discretionary Actions if such significant impacts cannot otherwise be avoided; or (5) determine not to proceed with the proposed Discretionary Actions.

Article 5. Wholesale Revenue Requirement

5.01. Scope of Agreement

This Article shall be applicable only to the water rates charged by San Francisco to the Wholesale Customers. Nothing contained in this Agreement shall limit, constrain, or in any way affect the rates which San Francisco may charge for water sold to Retail Customers or the methodology by which such rates are determined.

5.02. General Principles

This Article sets forth the method by which the Wholesale Customers' collective share of expenses incurred by the SFPUC in delivering water to them will be determined. This collective share is defined as the "Wholesale Revenue Requirement."

A. The SFPUC currently operates several enterprises, including the Water Enterprise, the Wastewater Enterprise, and the Hetch Hetchy Enterprise.

B. The Wastewater Enterprise is responsible for treating sewage within San Francisco and provides no benefit to the Wholesale Customers.

C. The Hetch Hetchy Enterprise is responsible for storing and transmitting water to the Water Enterprise, generating hydroelectric power and transmitting it to San Francisco, generating electric power within San Francisco, and distributing electricity and steam heat within San Francisco. Its water supply operations provide benefits to the Wholesale Customers.

D. The Water Enterprise delivers water to both Retail Customers, which are located both within and outside San Francisco, and to the Wholesale Customers, all of which are located outside San Francisco.

E. This Article implements two general principles as follows: (1) the Wholesale Customers should not pay for expenses of SFPUC operations from which they receive no benefit and (2) the Wholesale Customers should pay their share of expenses incurred by the SFPUC in delivering water to them on the basis of Proportional Annual Use unless otherwise explicitly provided in this Agreement.

F. To implement these general principles, the Wholesale Revenue Requirement will consist of, and be limited to, the Wholesale Customers' shares of the following categories of expense:

1. Capital cost recovery of Water Enterprise Existing Assets, and Hetch Hetchy Enterprise Existing Assets classified as Water-Only and the Water-Related portion of Joint assets (Section 5.03)

2. Contribution to the capital cost of Water Enterprise New Regional Assets (Section 5.04)

3. Water Enterprise operation and maintenance expenses, including power purchased from the Hetch Hetchy Enterprise that is used in the operation of the Water Enterprise (Section 5.05)

4. Water Enterprise administrative and general expenses (Section 5.06)

5. Water Enterprise property taxes (Section 5.07)

6. The Water Enterprise's share of the Hetch Hetchy Enterprise's operation and maintenance, administrative and general, and property tax expenses (Section 5.08)

7. The Water Enterprise's share of the Hetch Hetchy Enterprise's capital cost of New Assets classified as Water-Only and the Water-Related portion of Joint assets (Section 5.09)

In each of these cost categories, Direct Retail Expenses will be allocated entirely to Retail Customers. Direct Wholesale Expenses will be allocated entirely to the Wholesale Customers. Regional Expenses will be allocated between Retail Customers and Wholesale Customers as provided in this Article.

G. For purposes of establishing the rates to be charged Wholesale Customers, expenses will be based on the budget for, and estimates of water purchases in, the following fiscal year, as provided in Article 6. For purposes of accounting, the Wholesale Revenue Requirement will be determined on the basis of actual expenses incurred and actual water use, as provided in Article 7.

H. In addition, rates charged to Wholesale Customers may include the Wholesale Customers' contribution to a Wholesale Revenue Coverage Reserve, as provided in Section 6.06, which is not included in the Wholesale Revenue Requirement itself.

5.03. Capital Cost Recovery - Existing Regional Assets

A. SFPUC has previously advanced funds to acquire or construct Existing Assets used and useful in the delivery of water to both Wholesale Customers and Retail Customers. The parties estimate that the Wholesale Customers' share of the net book value of these assets, as of the expiration of the 1984 Agreement on June 30, 2009, will be approximately $366,734,424, as shown on Attachment K-1.

B. In addition, SFPUC has also previously advanced funds received from Retail Customer revenues to acquire or construct assets included in Construction-Work-In-Progress (CWIP) as of June 30, 2009. The parties estimate that the Wholesale Customers' share of the book value of these revenue funded capital expenditures, as of the expiration of the 1984 Agreement on June 30, 2009, will be approximately $15,594,990, as shown on Attachment K-2. The Wholesale Customers shall pay their share of the cost of Existing Assets and revenue-funded CWIP by amortizing the amounts shown on Attachment K-1 and Attachment K-2 over 25 years at an interest rate of 5.13 percent. The amounts to be included in the Wholesale Revenue Requirement pursuant to this section shall be the sum of the annual principal and interest amounts shown on Attachments K-3 (for Water Enterprise Regional Assets and the one Direct Wholesale Asset) and K-4 (for Hetch Hetchy Enterprise Water-Only Assets and the Water-Related portion [45 percent] of Joint assets) calculated on the basis of monthly amortization of principal as set forth on Attachments K-3 and K-4.

C. In addition, the Commission has previously appropriated funds, advanced through rates charged to Retail Customers, for construction of capital projects. Some of these projects are active, and have unexpended balances of appropriated funds that are not included in CWIP as of June 30, 2009. These projects, and the associated balances, are shown on Attachment K-5. Expenditures of funds from these balances during FY 2009-10, FY 2010-11 and FY 2011-12 will be reviewed in FY 2012-13. The SFPUC will prepare a report showing the amount expended in each year on each project and the total expended during all years on all projects that are categorized as Regional or, in the case of Hetch Hetchy Enterprise, are categorized as either Water-Only or Joint. The wholesale share of that total will be determined using the allocation principles in this Agreement based on Proportional Water Use during those three years. The result, plus accrued interest at the rate specified in Section 6.05.B, will be calculated by the SFPUC and its calculation reviewed by the Compliance Auditor as part of the Compliance Audit for FY 2012-13. The audited total will be paid based on a schedule of level

annual principal and interest amounts over ten years at an interest rate of 4.00%, calculated on a monthly amortization basis. All or any portion of the balance may be prepaid. The first year's payment will be included in the Wholesale Revenue Requirement for FY 2014-15.

D. The parties agree that the Wholesale Customers' share of the net book values of Existing Regional Assets as of June 30, 2008 as shown on Attachment K-1 are accurate. The compliance audit conducted on the calculation of the FY 2008-09 Suburban Revenue Requirement required by the 1984 Agreement will determine the actual amounts of depreciation on, and capital additions to, plant in service during that fiscal year. Those amounts will be compared to the corresponding estimates shown on Attachments K-1 and K-2. The differences will be added to or subtracted from the estimated asset values shown on Attachments K-1 and K-2 and the amortization schedules in Attachments K-3 and K-4 will be recalculated. The wholesale allocation factors shall be fixed at 70.1% for the Water Enterprise Existing Assets and 64.2% for Hetch Hetchy Enterprise Existing Assets for both the preliminary and final payment schedules. The SFPUC will prepare and provide to the Wholesale Customers revised Attachments K-1 through K-4 based on the Wholesale Customers' share of the net book value of the assets placed in service as of June 30, 2009 used to provide water service to the Wholesale Customers and the net book value of revenue-funded CWIP expended as of June 30, 2009. The revised Attachments K-1 through K-4 shall be approved by the General Manager of the SFPUC and the General Manager/CEO of BAWSCA and will be substituted for the original Attachments K-1 through K-4.

E. The original Attachments K-1 through K-4, based on estimates, shall be used for estimating the Wholesale Revenue Requirement for the fiscal year beginning July 1, 2009. The revised Attachments, based on audited actuals, shall be used to determine the actual Wholesale Revenue Requirement for FY 2009-10 and to determine the Wholesale Revenue Requirement(s) in all subsequent years, except as may be provided elsewhere in this Agreement.

F. The Wholesale Customers, acting through BAWSCA, may prepay the remaining unpaid Existing Assets principal balance, in whole or in part, at any time without penalty or early payment premium. Any prepayments will be applied in the month immediately following the month in which the prepayment is made and the revised monthly amount(s) will be used to calculate the Wholesale Revenue Requirement. Any partial prepayments must be in an amount at least equal to $10 million. In the event of a partial prepayment, an updated schedule for the

remaining payments shall be prepared reflecting the unpaid balance after prepayment, amortized through the end of FY 2034, calculated as provided in this section. The updated schedule, approved by the General Manager of the SFPUC and the General Manager/CEO of BAWSCA, will be substituted for Attachment K-3 and/or Attachment K-4.

5.04. Capital Cost Contribution - New Regional Assets

A. **Debt-Funded Capital Additions**. The Wholesale Customers shall pay the wholesale share of Net Annual Debt Service for New Regional Assets. The Regional projects in the WSIP are identified in Attachment L-1.

1. The amount of Net Annual Debt Service for New Regional Assets will be determined for each series of Indebtedness issued. Until the proceeds of a particular series are Substantially Expended, the amount attributable to specific projects will be based on the expected use of proceeds shown in the "Certificate Regarding Use of Proceeds" executed by the SFPUC General Manager on behalf of the Commission in connection with the sale of the Indebtedness, provided such certificate identifies the use of proceeds at a level of detail equivalent to that shown on Attachment L-2, which is a copy of the certificate prepared for the 2006 Revenue Bonds, Series A. If a certificate does not identify the use of proceeds at that level of detail, the SFPUC General Manager shall prepare and execute a separate certificate which does identify the use of proceeds at the level of detail shown on Attachment L-2 and deliver it to BAWSCA within 15 days from the closing of the sale of the Indebtedness.

2. After the proceeds of a series are Substantially Expended, the SFPUC General Manager will prepare and execute a certificate showing the actual expenditure of proceeds at a level of detail equivalent to the initial General Manager certificate. The resulting allocation of Net Debt Service to New Regional Assets for a series of bonds will be used in the fiscal year in which the proceeds have been Substantially Expended and thereafter. Differences between the amount of Net Debt Service paid by Wholesale Customers prior to that year and the amount of Net Debt Service that they should have paid during that time based on the actual expenditure of proceeds will be taken into account in calculation of the balancing account for the fiscal year in which the proceeds were Substantially Expended. The application of the remaining proceeds shall be proportionate to the allocation of the Net Debt Service to New Regional Assets.

3. The Wholesale Customers' share of Net Annual Debt Service for the New Regional Assets that are categorized as Direct Wholesale will be 100 percent. (None of the

projects in the WSIP are categorized as Direct Wholesale.) The Wholesale Customers' share of Net Annual Debt Service for all other New Regional Assets will be determined each year and will be equal to the Wholesale Customers' Proportional Annual Use.

4. If Indebtedness is issued by the SFPUC to refund the 2006 Revenue Bonds, Series A or to refund any other long-term Indebtedness issued after July 1, 2009, the Net Annual Debt Service attributable to proceeds used for refunding will be allocated on the same basis as the Indebtedness being refunded.

5. The SFPUC will prepare an annual report showing for each issue of Indebtedness and through the most recently completed fiscal year: (1) net financing proceeds available to pay project costs, (2) actual earnings on proceeds, (3) actual expenditures by project. The report shall be substantially in the form of Attachment L-3 and shall be delivered to BAWSCA on or before November 30 of each year, commencing November 2009.

6. In addition to Net Debt Service, Wholesale Customers will pay a proportionate share of annual administrative costs associated with Indebtedness, such as bond trustee fees, credit rating agency fees, letter of credit issuer fees, San Francisco Revenue Bond Oversight Committee fees, etc., but only to the extent such fees are neither paid from proceeds of Indebtedness nor included in SFPUC operation and maintenance or administrative and general expenses.

B. **Revenue-Funded Capital Additions**. The Wholesale Customers shall pay the wholesale share of the appropriation contained in the SFPUC annual budget for each year to be used to acquire or construct New Regional Assets. If such appropriations are reimbursed from proceeds of Indebtedness, the Wholesale Customers will be credited for prior payments made under this Section 5.04.B.

The Wholesale Customers' share of the annual appropriation for revenue-funded New Regional Assets that are categorized as Direct Wholesale will be 100 percent. (None of the Repair and Replacement projects in the SFPUC's most recent capital improvement program updated on February 10, 2009, is categorized as Direct Wholesale.) The Wholesale Customers' share of the annual appropriation for all other revenue-funded New Regional Assets will be determined each year and will be equal to the Wholesale Customers' Proportional Annual Use in each fiscal year. The amount appropriated in each fiscal year for the wholesale share of New Regional Assets shall be contributed to the Wholesale Capital Fund described in Section 6.08 and reported on and administered as shown in that section and Attachments M-1 through M-3.

5.05. Water Enterprise Operation and Maintenance Expenses

There are five categories of Water Enterprise Operation and Maintenance Expenses, described below:

A. Source of Supply

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of collecting and impounding reservoirs, dams, wells and other water supply facilities located outside San Francisco; watershed protection; water supply planning; and the purchase of water.

2. Allocation: Direct Retail expenses, including water supply planning for Retail operations (such as City Retail water conservation programs), will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Source of Supply category.)

B. Pumping

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of water pumping plants, ancillary structures and equipment and surrounding grounds; and fuel and power purchased for pumping water.

2. Allocation: Direct Retail expenses will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Pumping category.)

C. Treatment

1. Description: This category consists of the costs of labor, supervision and engineering; materials and supplies and other expenses incurred in the operation and maintenance of water treatment plants and drinking water quality sampling and testing. The cost of water quality testing will not include expenses incurred on behalf of the Wastewater

Enterprise. Any remaining costs, after adjusting for the Wastewater Enterprise, will be reduced by the amount of revenue received for laboratory analyses of any type performed for agencies, businesses and/or individuals other than the Water and Hetch Hetchy Enterprises.

2. Allocation: Direct Retail expenses will be assigned to the Retail Customers. Regional expenses will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date there are no Direct Wholesale expenses in the Treatment category.)

D. **Transmission and Distribution**

1. Description: This category consists of the cost of labor, supervision and engineering; materials and supplies; and other expenses incurred in the operation and maintenance of transmission and distribution pipelines, appurtenances, meters (other than those expenses payable by individual Wholesale Customers pursuant to Section 5.10.C.3), distribution reservoirs storing treated water, craft shops and auto shops servicing vehicles used for operation and maintenance of the Regional Water System rather than for Direct Retail facilities, and miscellaneous facilities related to the transmission and distribution of water.

2. Allocation: Direct Retail Transmission and Distribution expenses will be assigned to the Retail Customers. Regional Transmission and Distribution expenses will be allocated between Retail and Wholesale Customers on the basis of Proportional Annual Use. Expenses incurred for the operation and maintenance of three terminal reservoirs, i.e., Sunset Reservoir (North and South Basins), University Mound Reservoir (North and South Basins), and Merced Manor Reservoir, as well as transmission pipelines delivering water to them, are classified as Regional expenses notwithstanding the location of the reservoirs within San Francisco. Direct Wholesale expenses will be assigned to the Wholesale Customers. (As of the Effective Date the only Direct Wholesale expenses in the Transmission and Distribution category are associated with the Palo Alto pipeline.)

E. **Customer Services**

1. Description: This category consists of labor; materials and supplies; and other expenses incurred for meter reading, customer record keeping, and billing and collection for the Water Enterprise.

2. Allocation: Customer Services expenses will be allocated among the Water Enterprise, the Wastewater Enterprise, and Hetch Hetchy Enterprise in proportion to the time spent by employees in Customer Services for each operating department/enterprise. The Water Enterprise's share of Customer Services expense will be allocated 98 percent to the Retail Customers and two percent to the Wholesale Customers, as illustrated on Attachment N-2, Schedule 1.

5.06. Water Enterprise Administrative and General Expenses

Administrative and General expenses consist of the Water Enterprise's share of the cost of general government distributed through the full-cost Countywide Cost Allocation Plan, the services of SFPUC support bureaus, Water Enterprise administrative and general expenses that cannot be directly assigned to a specific operating and maintenance category, and the cost of the Compliance Audit. These four subcategories, and the method by which costs in each are to be calculated and allocated, are as follows:

A. Countywide Cost Allocation Plan

1. Description: This subcategory consists of the Water Enterprise's share of the costs of San Francisco general government and other City central service departments which are not directly billed to the Water Enterprise or other operating departments. All San Francisco operating departments are assigned a prorated share of these costs through the full-cost Countywide Cost Allocation Plan (COWCAP) prepared annually by the San Francisco Controller.

2. Allocation: The Water Enterprise's assigned share of central government costs as shown in the annual full-cost COWCAP prepared by the San Francisco Controller, will be allocated between Retail Customers and Wholesale Customers on the basis of the composite percentage of the allocated expenses in the five categories of operation and maintenance expense described in Section 5.05. The composite wholesale percentage shown on Attachment N-2, Schedule 1 is 42.07 percent, derived by dividing the wholesale share of Operation and Maintenance expenses ($46,573,883) by total Operation and Maintenance expenses ($110,700,133).

B. Services of SFPUC Bureaus

1. Description: This subcategory consists of the support services provided to the Water Enterprise by the SFPUC Bureaus, which presently consist of the General

Manager's Office, Business Services, External Affairs, and Infrastructure Bureau. Business Services presently includes Financial Services, Information Technology Services, Human Resource Services, Fleet Management, and Customer Services.

2. Allocation: There are three steps involved in determining the Wholesale Customers' share of SFPUC Bureau costs.

a. Step One: Bureau expenses which have either been recovered separately or which provide no benefit to Wholesale Customers will be excluded. Examples of Bureau expenses recovered separately include (1) Customer Services expenses, which are recovered as provided in Section 5.05.E, and (2) Infrastructure expenses, which are assigned to individual projects and capitalized. An example of a Bureau expense that provides no benefit to Wholesale Customers is Information Technology Services expenses for support of the San Francisco Municipal Railway. In addition, the SFPUC will continue its practice of assigning City Attorney Office expenses charged to the General Manager's Office for projects or lawsuits that relate to only one enterprise directly to that enterprise. For example, costs related to a lawsuit involving the Wastewater Enterprise will not be assigned to the Water Enterprise.

b. Step Two: Bureau expenses adjusted as provided in Step One will be allocated among the Water Enterprise, the Wastewater Enterprise and the Hetch Hetchy Enterprise on the basis of the actual salaries of employees in each enterprise or department, as illustrated on Attachment N-2, Schedule 7.

c. Step Three: The amount allocated to the Water Enterprise through Step Two will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use.

C. **Water Enterprise Administrative and General**

1. Description: This category includes expenses incurred by the Water Enterprise that are not readily assignable to specific operating divisions. This category includes the following expenses:

a. Water Administration: This includes the costs of labor and other expenses of the administrative section of the Water Enterprise, supervision and engineering expenses, professional services, travel and training, equipment purchases, and materials and supplies not directly assignable to a specific operating unit.

b. Services Provided by Other City Departments: This includes charges of other San Francisco departments directly billed to the Water Enterprise

administration by other San Francisco departments for services ordered by the Water Enterprise, such as legal services, risk management, telecommunications, employee relations, purchasing, mail services, and workers compensation claims paid.

c. Litigation and Claims Paid: This includes charges incurred for attorney services and claims and judgments paid in litigation arising from the operation of the Water Enterprise.

2. Allocation: In each of these three subcategories, expenses that benefit only Retail Customers will be excluded. For example, the cost of claims and judgments resulting from a break in or leak from pipelines or reservoirs in the Retail Service Area (with the exception of the three terminal reservoirs and pipelines delivering water to them) will be assigned to the Retail Customers. Remaining Water Enterprise Administrative and General expenses will be allocated between Retail Customers and Wholesale Customers on the basis of the composite percentage of allocated operation and maintenance expense categories described in Section 5.05.

D. Compliance Audit. The cost of the Compliance Audit described in Section 7.04 will be assigned 50 percent to the Retail Customers and 50 percent to the Wholesale Customers.

5.07. Water Enterprise Property Taxes

A. Description: This category consists of property taxes levied against property owned by San Francisco located in Alameda, San Mateo and Santa Clara counties and used and managed by the SFPUC.

B. Allocation: All property taxes paid, net of (1) reimbursements received from lessees and permit holders, and (2) refunds from the taxing authority, are Regional expenses. Net property taxes will be allocated between Retail Customers and Wholesale Customers on the basis of Proportional Annual Use.

5.08. Hetch Hetchy Enterprise Expenses

A. **Introduction**. There are two steps involved in determining the amount of the Wholesale Customers' share of Hetch Hetchy Enterprise expenses.

1. The first step is to determine the Water Enterprise's share of Hetch Hetchy Enterprise operation expenses, maintenance expenses, administrative and general expenses, and property taxes.

2. The second step is to determine the Wholesale Customers' share of expenses allocable to the Water Enterprise.

B. **Determination of the Water-Related Portion of Hetch Hetchy Enterprise Expenses**

1. Operation and Maintenance Expenses: This category consists of the cost of labor, materials and supplies, and other expenses incurred in operating and maintaining Hetch Hetchy Enterprise physical facilities.

a. Description: Expenses associated exclusively with the production and distribution of hydroelectric power (e.g., generating plants and power transmission lines and towers, transformers and associated electric equipment, purchased power, wheeling charges, rental of power lines, etc.) are categorized as Power-Only and are allocated to power. Expenses associated exclusively with the operation and maintenance of facilities that serve only the water function (e.g., water transmission pipelines and aqueducts, activities related to compliance with federal and state drinking water quality laws, etc.) are categorized as Water-Only and are allocated entirely to water. Expenses associated with the operation and maintenance of facilities that serve both the water and power functions (e.g., dams, security programs, etc.) are categorized as Joint and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

2. Administrative and General Expenses: There are three subcategories of Hetch Hetchy Enterprise Administrative and General expenses.

a. Full-Cost Countywide Cost Allocation Plan: This subcategory consists of the cost of San Francisco general government and other City central service departments which are not directly billed to operating departments but allocated through the full-cost Countywide Cost Allocation Plan described in Section 5.06.A. Costs in this subcategory are classified as Joint, and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

b. SFPUC Bureau Costs: This subcategory consists of the expenses described in Section 5.06.B. One hundred percent of Customer Services expenses allocated to the Hetch Hetchy Enterprise are categorized as Power-Only. The remaining amount of Bureau

expenses allocated to the Hetch Hetchy Enterprise pursuant to Section 5.06.B will be reallocated between power and water in proportion to the salaries of Hetch Hetchy Enterprise employees assigned to each function as shown on Attachment N-2, Schedule 7.1.

c. Other Administrative and General: This subcategory includes payments to the United States required by the Act, labor, supervision and engineering and other costs not readily assignable to a specific operation or maintenance function or program. Costs related to power administration (such as long range planning and policy analysis for energy development, administration of power contracts, and administration of work orders to City departments for energy services) are Power-Only costs. Costs related to water administration (such as legal and professional services for the protection of the City's water rights) are Water-Only costs and will be assigned to the Water Enterprise. Costs related to both power administration and water administration (such as general administration, office rents, office materials and supplies, and services of other City departments benefitting to both power and water are Joint administrative and general costs and are reallocated as 55 percent Power-Related and 45 percent Water-Related.

3. Property Taxes. This category consists of property taxes levied against property owned by San Francisco in Tuolumne, Stanislaus, San Joaquin, and Alameda counties and operated and managed by the Hetch Hetchy Enterprise.

Allocation: Property taxes are classified as Joint costs. They will be reallocated as 55 percent Power-Related and 45 percent Water-Related.

C. **Calculation of Wholesale Customers' Share of Hetch Hetchy Enterprise Expenses**. The Water Enterprise's share of Hetch Hetchy Enterprise expenses consist of 100 percent of Water-Only expenses and the Water-Related portion (45%) of Joint expenses.

The Wholesale Customers' share of the sum of the Water Enterprise's share of Hetch Hetchy Enterprise expenses determined under subsection B shall be calculated by multiplying that dollar amount by Adjusted Proportional Annual Use.

5.09. Hetch Hetchy Enterprise Capital Costs

A. **Introduction**. Wholesale Customers are also allocated a share of Hetch Hetchy Enterprise capital costs.

B. **Components of Capital Costs**. The components of Hetch Hetchy Enterprise capital costs are as follows:

1. Existing Assets Cost Recovery. The Wholesale Customers' repayment of their share of Hetch Hetchy Existing Assets (Water-Only and the Water-Related portion [45 percent] of Joint assets) is shown on Attachment K-4 accompanying Section 5.03.

2. Debt Service on New Assets. The Water Enterprise will be assigned 100 percent of Net Annual Debt Service attributable to acquisition and construction of New Hetch Hetchy Enterprise assets that are Water-Only and the Water-Related portion (45 percent) of Net Annual Debt Service on New Hetch Hetchy Enterprise Joint assets. The provisions of Section 5.04.A apply to debt service on New Hetch Hetchy Enterprise assets.

3. Revenue-Funded Capital Additions. The Water Enterprise will be assigned 100 percent of capital expenditures from revenues for New Hetch Hetchy Enterprise assets that are Water-Only and the Water-Related portion (45 percent) of such expenditures for new Hetch Hetchy Enterprise Joint assets. The provisions of Section 5.04.B apply to the payment of New revenue-funded Hetch Hetchy Enterprise assets.

C. **Calculation of Wholesale Customers' Share of Hetch Hetchy Enterprise Capital Costs**. The Wholesale Customers' share of the Net Annual Debt Service and revenue funded capital expenditures determined under subsections B.2 and 3 shall be calculated by multiplying that dollar amount by Adjusted Proportional Annual Use.

5.10. Additional Agreements Related to Financial Issues

A. **Wholesale Customers Not Entitled to Certain Revenues**. The Wholesale Customers have no entitlement to any of the following sources of revenue to the SFPUC.

1. Revenues from leases or sales of SFPUC real property.

2. Revenues from the other utility services such as the sale of electric power, natural gas and steam.

3. Revenues from the sale of water to customers and entities other than the Wholesale Customers.

4. Revenues earned from the investment of SFPUC funds other than funds contributed by the Wholesale Customers to the Wholesale Revenue Coverage Reserve described in Section 6.06 or the Wholesale Capital Fund described in Section 6.08. Wholesale Customers are also entitled to the benefit of earnings on proceeds of Indebtedness (through

expenditure on New Regional Assets and /or application to Debt Service) and to interest on the Balancing Account as provided in Section 6.05.B.

5. Revenues not related to the sale of water.

B. **Wholesale Customers Not Charged with Certain Expenses**. The Wholesale Customers will not be charged with any of the following expenses:

1. Capital costs for assets constructed or acquired prior to July 1, 1984 other than Existing Asset costs that are repaid pursuant to Section 5.03.

2. Expenses incurred by the SFPUC for generation and distribution of electric power, including Hetch Hetchy Enterprise Power-Only expenses and the Power-Related share of Hetch Hetchy Enterprise Joint expenses. An exception to this is Regional energy costs incurred by the Water Enterprise, for which Wholesale Customers are charged on the basis of Proportional Annual Use.

3. Expenses incurred by SFPUC in providing water to Retail Customers.

4. Expenses associated with the SFPUC's accruals or allocations for uncollectible Retail Water accounts.

5. Attorneys' fees and costs incurred by the Wholesale Customers that a court of competent jurisdiction orders San Francisco to pay as part of a final, binding judgment against San Francisco as provided in Section 8.03.B.2.

6. Any expenses associated with funding any reserves (other than the required Wholesale Revenue Coverage Reserve described in Section 6.06) accrued and not anticipated to be paid within one year unless such reserve is established by mutual agreement of the SFPUC and BAWSCA.

7. Any expenses accrued in respect to pending or threatened litigation, damage or personal injury claims or other loss contingencies unless projected to be paid within one year. Otherwise, such expenses will be charged to the Wholesale Customers when actually paid.

8. Any expense associated with installing, relocating, enlarging, removing or modifying meters and service connections at the request of an individual Wholesale Customer.

9. The Retail Customers' portion of any Environmental Enhancement Surcharges imposed to enforce the Interim Supply Limitation set forth in Section 4.04.

C. **Revenues Not Credited to Payment of Wholesale Revenue Requirement**. The following payments by Wholesale Customers, individually or collectively, are not credited as Wholesale revenues for purposes of Section 6.05.B:

1. Payments by individual Wholesale Customers of the Environmental Enhancement Surcharge imposed to enforce the Interim Supply Limitation set forth in Section 4.04.
2. Payments of attorneys' fees and costs incurred by San Francisco that a court of competent jurisdiction orders the Wholesale Customers to pay as part of a final, binding judgment against the Wholesale Customers, as provided in Section 8.03.B.3.
3. Payments by individual Wholesale Customers for installation, relocation, enlargement, removal or modification of meters and service connections requested by, and charged to, a Wholesale Customer.
4. Payments applied to the amortization of the ending balance in the balancing account under the 1984 Agreement, pursuant to Section 6.05.A.
5. Payments of the Water Management Charge which are delivered to BAWSCA pursuant to Section 3.06.
6. Payments directed to the Wholesale Revenue Coverage Reserve pursuant to Section 6.06.
7. Prepayments authorized by Sections 5.03.C and 5.03.F.

D. **Other**

1. The Wholesale Customers will receive a proportional benefit from funds received by the SFPUC from (a) governmental grants, rebates, reimbursements or other subventions, (b) private-sector grants for Regional capital or operating purposes of the Water Enterprise and the Water-Only and Water-related portion of Joint Hetch Hetchy Water Enterprise expenses, or (c) a SFPUC use of taxable bonds.

2. The Wholesale Customers will receive a proportionate benefit from recovery of damages, including liquidated damages, by SFPUC from judgments against or settlements with contractors, suppliers, sureties, etc., related to Regional Water System projects and the Water-Only and Water-Related portion of Joint Hetch Hetchy Enterprise projects.

3. The SFPUC will continue to charge Wholesale Customers for assets acquired or constructed with proceeds of Indebtedness on which Wholesale Customers paid Debt Service during the Term of this Agreement on the "cash" basis (as opposed to the "utility" basis) after the expiration or earlier termination of this Agreement. The undertaking in this Section 5.10.D.3 will survive the expiration or earlier termination of this Agreement.

5.11. Classification of Existing System Assets.

Existing System Assets of the Regional Water System include the water storage, transmission, and treatment systems owned and operated by San Francisco in Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo and San Francisco Counties. These assets are managed by either the Water Enterprise or the Hetch Hetchy Enterprise and the assets have been classified for purposes of cost allocation.

A. **Water Enterprise Assets**. Water Enterprise assets are currently managed, operated, and maintained by the Water Enterprise and are generally located west of Alameda East Portal, in addition to the treatment facilities located at Tesla and the Thomas Shaft Emergency Disinfection Facility. These assets are classified as Direct Retail, Direct Wholesale, or Regional.

B. **Hetch Hetchy Enterprise Assets**. Hetch Hetchy Enterprise assets are currently managed, operated and maintained by the Hetch Hetchy Enterprise and are generally located east of the Alameda East Portal of the Coast Range Tunnel in Sunol Valley, Alameda County. These assets are classified as Power-Only, Water-Only, or Joint, in accordance with Sections 5.08 and 5.09. Through the Wholesale Revenue Requirement, the Wholesale Customers pay Existing System Asset capital costs and operating expenses in accordance with Section 5.02.F and do not pay capital costs or operating expenses associated with assets classified as Direct Retail, Power-Only, and the Power-Related portion of Joint assets.

C. **Attachment R Documents Classifications**. To facilitate WSA administration, Attachment R documents the classification of major Existing System Assets operated by the Hetch Hetchy Enterprise. Attachment R consists of three documents: R-1 Introduction, R-2 Special Classification of Discrete Projects for 2018 Amendment Purposes, and R-3 Major Hetch Hetchy Enterprise Existing System Assets. Attachment R may be modified as specified in Section 5.11.D and in the manner set forth in Section 2.03.C.

D. **Attachment R-3, Major Hetch Hetchy Enterprise Existing System Assets is Not Exhaustive**. Existing System Assets include, but are not limited to, land; fixed infrastructure such as dams, tunnels, buildings, water treatment plants and pipelines; equipment such as pumps and vehicles; and related appurtenances. Major Hetch Hetchy Enterprise Existing System Assets, and their classifications, are listed in Attachment R-3. Attachment R-3 does not include all assets of the Regional Water System, but represents the parties' best efforts to document major Hetch Hetchy Enterprise Existing System Assets that would incur capital costs and operating expenses subject to cost allocation. The classification of assets listed on R-3 may not be changed during the Term, any Extension Term, and any renewal of the Agreement, however, Attachment R-3 may be modified by mutual agreement in accordance with Section 2.03.C to (1) add an asset that was inadvertently omitted, (2) to add a new asset, and (3) remove a destroyed or obsolete asset. In the event that the parties cannot agree on the classification of any omitted or new assets, the dispute shall be subject to arbitration under Section 8.01.

E. **Attachment R-3, Major Hetch Hetchy Enterprise Existing System Assets Classifications are Fixed**. The classification of the major Hetch Hetchy Enterprise Existing System Assets is fixed and shall control the allocation of capital costs and operating expenses for the remainder of the Term, any Extension Terms, and any renewal of the Agreement. However, changes may be proposed in accordance with subsection G below. Capital costs and operating expenses are meant to be inclusive of all costs related to assets, including, but not limited to, any alterations, additions, improvements, rehabilitation, replacement of assets, and equipment that is appurtenant thereto. Since asset classifications are fixed in Attachment R-3, asset classifications may not be modified by mutual agreement in accordance with Section 2.03.C.

F. **Attachment R-2, Special Classification of Discrete Projects for 2018 Amendment Purposes**. Past, ongoing and future capital projects involving five Hetch Hetchy Enterprise Existing System Assets defined in Attachment R-2 have classifications that differ from the underlying asset classifications. These project-related classification changes shown on Attachment R-2, are part of the 2018 amendments to the Agreement and are not precedential for any other asset-related capital cost or operating expense. With the exception of the defined projects related to the five assets listed on R-2, the capital projects for all assets follow the asset classifications. Capital projects listed on Attachment R-2 must be approved by the SFPUC following necessary CEQA review.

G. **Five Year Notice of Intent to Renegotiate Cost Allocation**. In the event San Francisco or the Wholesale Customers, which may be represented by BAWSCA, wish to propose and negotiate a change in Existing System Asset classifications, or a change in the Water-Related portion (45 percent) of Joint expenses, for the next Water Supply Agreement, such party must provide the other at least 5 years' written notice prior to the expiration of the Term or Extension Term, or the renewal of the Agreement. At a minimum, the noticing party must provide a comprehensive analysis of the financial and rate impacts of the proposed change at least two years prior to the expiration of the Term or Extension Term, or the renewal of the Agreement.

To meet this requirement, the parties may agree to jointly analyze, under a separate agreement, system capacity and usage and/or new assets, as well as other possible alternative cost allocation methodologies. Either party may also unilaterally initiate such studies by consultants of their choice and bear all their own costs.

Article 6. Integration of Wholesale Revenue Requirement with SFPUC Budget Development and Rate Adjustments

6.01. General

A. The purpose of the allocation bases set forth in Article 5 is to determine the Wholesale Revenue Requirement for each fiscal year. The Wholesale Revenue Requirement can only be estimated in advance, based on projected costs and water deliveries. These projections are used to establish water rates applicable to the Wholesale Customers.

B. After the close of each fiscal year, the procedures described in Article 7 will be used to determine the actual Wholesale Revenue Requirement for that year, based on actual costs incurred, allocated according to the provisions of Article 5, and using actual water delivery data. The amount properly allocated to the Wholesale Customers shall be compared to the amount billed to the Wholesale Customers for the fiscal year, other than those identified in Section 5.10.C. The difference will be entered into a balancing account to be charged to, or credited to, the Wholesale Customers, as appropriate.

C. The balancing account shall be managed as described in Section 6.05.

6.02. Budget Development

The SFPUC General Manager will send a copy of the proposed SFPUC budget to BAWSCA at the same time as it is sent to the Commission. In addition, a copy of materials submitted to the Commission for consideration at meetings prior to the meeting at which the overall SFPUC budget is considered (including (a) operating budgets for the Water Enterprise and the Hetch Hetchy Enterprise, (b) budgets for SFPUC Bureaus, and (c) capital budgets for the Water Enterprise and the Hetch Hetchy Enterprise) will also be sent to BAWSCA concurrently with their submission to the Commission.

6.03. Rate Adjustments

A. **Budget Coordinated Rate Adjustments**. Adjustments to the rates applicable to the Wholesale Customers shall be coordinated with the budget development process described in this section except to the extent that Sections 6.03.B and 6.03.C authorize emergency rate increases and drought rate increases, respectively.

If the SFPUC intends to increase wholesale water rates during the ensuing fiscal year, it will comply with the following procedures:

1. Adjustments to the wholesale rates will be adopted by the Commission at a regularly scheduled meeting or at special meeting, properly noticed, called for the purpose of adjusting rates or for taking any other action under the jurisdiction of the Commission.

2. The SFPUC will send a written notice by mail or electronic means to each Wholesale Customer and to BAWSCA of the recommended adjustment at least thirty (30) days prior to the date of the meeting at which the Commission will consider the proposed adjustment. The notice will include the date, time and place of the Commission meeting.

3. The SFPUC shall prepare and provide to each Wholesale Customer and to BAWSCA the following materials: (a) a table illustrating how the increase or decrease in the Wholesale Revenue Requirement and wholesale rates were calculated, substantially in the form of Attachment N-1, (b) a schedule showing the projected expenses included in the Wholesale Revenue Requirement for the fiscal year for which the rates are being proposed, and supporting materials, substantially in the form of Attachment N-2, and (c) a schedule showing projected water sales, Wholesale Revenue Requirements and wholesale rates for the fiscal year for which rates are being set and the following four years, substantially in the form of Attachment N-3. These materials will be included with the notification required by Section 6.03.A.2.

4. Rate adjustments will be effective no sooner than thirty (30) days after adoption of the wholesale rate by the Commission.

5. San Francisco will use its best efforts to provide the Wholesale Customers with the information described above. San Francisco's failure to comply with the requirements set forth in this section shall not invalidate any action taken by the Commission (including, but not limited to, any rate increase or decrease adopted). In the event of such failure, the Wholesale Customers may either invoke arbitration, as set forth in Section 8.01, or seek injunctive relief, to compel San Francisco to remedy the failure as soon as is reasonably practical, and San Francisco shall be free to oppose the issuance of the requested judicial or arbitral relief on any applicable legal or equitable basis. The existence of this right to resort to arbitration shall not be deemed to preclude the right to seek injunctive relief.

6. Because delays in the budget process or other events may cause San Francisco to defer the effective date of Wholesale Customer rate adjustments until after the beginning of San Francisco's fiscal year, nothing contained in this Agreement shall require San Francisco to make any changes in the water rates charged to Wholesale Customers effective at

the start of San Francisco's fiscal year or at any other specific date. Nothing in the preceding sentence shall excuse non-compliance with the provisions of Section 6.02 and this section.

B. **Emergency Rate Increases**. The Commission may adjust the Wholesale Customers' rates without complying with the requirements of Section 6.03.A in response to an Emergency that damages the Regional Water System and disrupts San Francisco's ability to maintain normal deliveries of water to Retail and Wholesale Customers. In such an Emergency, the Commission may adopt an emergency rate surcharge applicable to Wholesale Customers without following the procedures set forth in this section, provided that any such rate surcharge imposed by the Commission shall be applicable to both Retail and Wholesale Customers and incorporate the same percentage increase for all customers. Any emergency rate surcharge adopted by the Commission shall remain in effect only until the next-budget coordinated rate-setting cycle.

C. **Drought Rates**. If the Commission declares a water shortage emergency under Water Code Section 350, implements the Tier 1 Shortage Plan (Attachment H) described in Section 3.11.C, and imposes drought rates on Retail Customers, it may concurrently adjust wholesale rates independently of coordination with the annual budget process. Those adjustments may be designed to encourage water conservation and may constitute changes to the structure of the rates within the meaning of Section 6.04. The parties agree, however, that, in adopting changes in rates in response to a declaration of water shortage emergency, the Commission shall comply with Section 6.03.A.1 and 2 but need not comply with Section 6.04.B. Drought Rate payments and payments of excess use charges levied in accordance with the Tier 1 Shortage Plan described in Section 3.11.C constitute Wholesale Customer Revenue and count towards the Wholesale Revenue Requirement. The SFPUC may use these revenues to purchase additional water for the Wholesale Customers from the State Drought Water Bank or other willing seller.

6.04. Rate Structure

A. This Agreement is not intended and shall not be construed to limit the Commission's right (a) to adjust the structure of the rate schedule applicable to the Wholesale Customers (i.e., the relationship among the several charges set out therein) or (b) to add, delete, or change the various charges which make up the rate schedule, provided that neither such charges nor the structure of the rate schedule(s) applicable to the Wholesale Customers shall be arbitrary, unreasonable, or unjustly discriminatory as among said customers. The

SFPUC will give careful consideration to proposals for changes in the rate schedule made jointly by the Wholesale Customers but, subject to the limitations set out above, shall retain the sole and exclusive right to determine the structure of the rate schedule.

B. If the SFPUC intends to recommend that the Commission adopt one or more changes to the structure of wholesale rates (currently set forth in SFPUC Rate Schedule W-25), it shall prepare and distribute to the Wholesale Customers and BAWSCA a report describing the proposed change(s), the purpose(s) for which it/they are being considered, and the estimated financial effect on individual Wholesale Customers or classes of customers. Wholesale Customers may submit comments on the report to the SFPUC for sixty (60) days after receiving the report. The SFPUC will consider these comments and, if it determines to recommend that the Commission adopt the change(s), as described in the report or as modified in response to comments, the SFPUC General Manager shall submit a report to the Commission recommending specific change(s) in the rate structure. Copies of the General Manager's report shall be sent to all Wholesale Customers and BAWSCA at least thirty (30) days prior to the Commission meeting at which the changes will be considered.

C. The SFPUC may recommend, and the Commission may adopt, changes in the structure of wholesale rates at any time. However, the new rate schedule implementing these changes will become effective at the beginning of the following fiscal year.

6.05. Balancing Account

A. **Balancing Account Established Under 1984 Agreement**. The amount of credit in favor of San Francisco as of the expiration of the term of 1984 Agreement (June 30, 2009) is not known with certainty as of preparation and execution of this Agreement. It will not be known with certainty until the Compliance Audit for FY 2008-09 is completed and disputes, if any, that the Wholesale Customers or the SFPUC may have with the calculation of the Suburban Revenue Requirement for that fiscal year and for previous fiscal years have been settled or decided by arbitration.

The parties anticipate that the amount of the credit in favor of San Francisco as of June 30, 2009 may be within the range of $15 million to $20 million.

In order to reduce the credit balance due San Francisco under the 1984 Agreement in an orderly manner, while avoiding unnecessary fluctuations in wholesale rates, the parties agree to implement the following procedure.

1. In setting wholesale rates for FY 2009-10, SFPUC will include a balancing account repayment of approximately $2 million.

2. In setting wholesale rates for FY 2010-11 and following years, SFPUC will include a balancing account repayment of not less than $2 million and not more than $5 million annually until the full amount of the balance due, plus interest at the rate specified in Section 6.05.B, is repaid.

3. The actual ending balance as of June 30, 2009 will be determined, by the parties' agreement or arbitral ruling, after the Compliance Audit report for FY 2008-09 is delivered to BAWSCA. That amount, once determined, will establish the principal to be amortized through subsequent years' repayments pursuant to this Section 6.05.A.

B. **Balancing Account Under This Agreement**

1. Operation. After the close of each fiscal year, the SFPUC will compute the costs allocable to the Wholesale Customers for that fiscal year pursuant to Article 5, based on actual costs incurred by the SFPUC and actual amounts of water used by the Wholesale Customers and the Retail Customers. That amount will be compared to the amounts billed to the Wholesale Customers for that fiscal year (including any Excess Use Charges, but excluding revenues described in Section 5.10.C). The difference will be posted to a "balancing account" as a credit to, or charge against, the Wholesale Customers. Interest shall also be posted to the balancing account calculated by multiplying the amount of the opening balance by the average net interest rate, certified by the Controller as earned in the San Francisco Treasury for the previous fiscal year on the San Francisco County Pooled Investment Account. Interest, when posted, will carry the same mathematical sign (whether positive or negative) as carried by the opening balance. The amount posted to the balancing account in each year shall be added to, or subtracted from, the balance in the account from previous years. The calculation of the amount to be posted to the balancing account shall be included in the report prepared by the SFPUC pursuant to Section 7.02.

The opening balance for fiscal year 2009-10 shall be zero.

2. Integration of Balancing Account with Wholesale Rate Setting Process. If the amount in the balancing account is owed to the Wholesale Customers (a positive balance), the SFPUC shall take it into consideration in establishing wholesale rates. However, the SFPUC need not apply the entire amount to reduce wholesale rates for the immediately ensuing

year. Instead, the SFPUC may prorate a positive ending balance over a period of up to three successive years in order to avoid fluctuating decreases and increases in wholesale rates.

a. If a positive balance is maintained for three successive years and represents 10 percent or more of the Wholesale Revenue Requirement for the most recent fiscal year, the SFPUC shall consult with BAWSCA as to the Wholesale Customers' preferred application of the balance. The Wholesale Customers shall, through BAWSCA, direct that the positive balance be applied to one or more of the following purposes: (a) transfer to the Wholesale Revenue Coverage Reserve, (b) amortization of any remaining negative balance from the ending balancing account under the 1984 Agreement, (c) prepayment of the existing asset balance under Section 5.03, (d) water conservation or water supply projects administered by or through BAWSCA, (e) immediate reduction of wholesale rates, or (f) continued retention for future rate stabilization purposes. In the absence of a direction from BAWSCA, the SFPUC shall continue to retain the balance for rate stabilization in subsequent years.

b. If the amount in the balancing account is owed to the SFPUC (a negative balance), the SFPUC shall not be obligated to apply all or any part of the negative balance in establishing wholesale rates for the immediately ensuring year. Instead, the SFPUC may prorate the negative balance in whole or in part over multiple years in order to avoid fluctuating increases and decreases in wholesale rates.

6.06. Wholesale Revenue Coverage Reserve

A. The SFPUC may include in wholesale rates for any fiscal year an additional dollar amount ("Wholesale Revenue Coverage"), which for any fiscal year shall equal the following:

1. The lesser of (i) 25% of the Wholesale Customers' share of Net Annual Debt Service for that fiscal year determined as described in Section 5.04.A, or (ii) the amount necessary to meet the Wholesale Customers' proportionate share of Debt Service coverage required by then-current Indebtedness for that fiscal year, minus

2. A credit for (i) the actual amounts previously deposited in the "Wholesale Revenue Coverage Reserve" (as defined in subsection B below), (ii) accrued interest on the amounts on deposit in the Wholesale Revenue Coverage Reserve, and (iii) an amount equal to any additional interest that would have accrued on the actual amounts previously deposited in the Wholesale Revenue Coverage Reserve assuming no withdrawals had been made therefrom.

B. During each fiscal year, the SFPUC will set aside and deposit that portion of revenue equal to Wholesale Revenue Coverage into a separate account that the SFPUC will establish and maintain, to be known as the "Wholesale Revenue Coverage Reserve." Deposits into the Wholesale Revenue Coverage Reserve shall be made no less frequently than monthly. The Wholesale Revenue Coverage Reserve shall be credited with interest at the rate specified in Section 6.05.B. The SFPUC may use amounts in the Wholesale Revenue Coverage Reserve for any lawful purpose. Any balance in the Wholesale Revenue Coverage Reserve in excess of the Wholesale Revenue Coverage amount as of the end of any fiscal year (as calculated in subsection 6.06(A) above) shall be applied as a credit against wholesale rates in the immediately following fiscal year unless otherwise directed by BAWSCA.

C. Within 180 days following the later of expiration of the Term or final payment of Debt Service due on Indebtedness issued during the Term to which Wholesale Customers were contributing, SFPUC shall rebate to the Wholesale Customers an amount equal to the Wholesale Revenue Coverage amount in effect for the fiscal year during which the Term expires or the final payment of Debt Service on Indebtedness is made based on each Wholesale Customer's Proportional Annual Use in the fiscal year during which the Term expires or the final payment of debt service on Indebtedness is made.

D. SFPUC shall provide a schedule of debt issuance (with assumptions), and the Wholesale Customers' share of Net Annual Debt Service (actual and projected) expected to be included in wholesale rates starting in 2009-10 through the expected completion of the WSIP. The schedule is to be updated annually prior to rate setting. If estimated Debt Service is used in rate setting, the SFPUC must be able to demonstrate that the Water Enterprise revenues will be sufficient to meet the additional bonds test for the proposed bonds and rate covenants for the upcoming year.

E. Conditions in the municipal bond market may change from those prevailing in 2009. If, prior to expiration of the Term, the SFPUC determines that it would be in the best financial interest of both Retail Customers and Wholesale Customers of the Regional Water System for the Debt Service coverage requirement to be increased in one or more series of proposed new Indebtedness above 1.25%, or for the coverage covenant to be strengthened in other ways, it will provide a written report to BAWSCA. The report will contain (1) a description of proposed covenant(s) in the bond indenture; (2) an explanation of how savings are expected to be achieved (e.g., increase in the SFPUC's credit rating over the then-current level; ability to

obtain credit enhancement, etc.); (3) the estimated all-in true interest cost savings; (4) a comparison of the Wholesale Revenue Requirements using the Debt Service coverage limitation in subsection A and under the proposed methodology; and (5) a comparison of the respective monetary benefits expected to be received by both Retail and Wholesale Customers. The SFPUC and BAWSCA agree to meet and confer in good faith about the proposed changes.

F. Any increase in Debt Service coverage proposed by the SFPUC shall be commensurate with Proportional Water Use by Retail and Wholesale Customers. If the SFPUC demonstrates that an increase in Debt Service coverage will result in equivalent percentage reductions in total Wholesale and Retail Debt Service payments over the life of the proposed new Indebtedness, based on Proportional Water Use, BAWSCA may agree to a modification of the Wholesale Revenue Coverage requirement in subsection A. If BAWSCA does not agree to a proposed modification in coverage requirements in the covenants for new Indebtedness, SFPUC may nevertheless proceed with the modification and the issuance of new Indebtedness. Any Wholesale Customer, or BAWSCA, may challenge an increase in the Wholesale Revenue Requirement resulting from the modification in Debt Service coverage through arbitration as provided in Section 8.01.A. If the arbitrator finds that the increase in Debt Service coverage (1) did not and will not result in equivalent percentage reductions in total Wholesale and Retail Debt Service payments over the life of the proposed new Indebtedness, based on Proportional Water Use, or (2) was not commensurate with Proportional Water Use, the arbitrator may order the Wholesale Revenue Requirement to be recalculated both retrospectively and prospectively to eliminate the differential impact to Wholesale or Retail Customers, subject to the limitation in Section 8.01.C.

6.07. Working Capital Requirement

A. The SFPUC maintains working capital in the form of unappropriated reserves for the purpose of bridging the gap between when the SFPUC incurs operating expenses required to provide service and when it receives revenues from its Retail and Wholesale Customers. The Wholesale Customers shall fund their share of working capital as part of the annual Wholesale Revenue Requirement calculation. The amount of wholesale working capital for which the Wholesale Customers will be responsible will be determined using the 60-day standard formula approach.

B. Applying this approach, annual wholesale working capital equals one-sixth of the wholesale allocation of operation and maintenance, administrative and general, and property tax

expenses for the Water and Hetch Hetchy Enterprises. Wholesale working capital shall be calculated separately for the Water and Hetch Hetchy Enterprises.

C. Each month, the sum of the Water Enterprise and Hetch Hetchy Enterprise working capital components will be compared with the ending balance in the Wholesale Revenue Coverage Reserve to determine if the Wholesale Customers provided the minimum required working capital. If the Wholesale Revenue Coverage Reserve is greater than the total Water Enterprise and Hetch Hetchy Enterprise working capital requirement, the Wholesale Customers will have provided their share of working capital. If the Wholesale Revenue Coverage Reserve is less than the total Water Enterprise and Hetch Hetchy Enterprise working capital requirement, the Wholesale Customers will be charged interest on the difference, which will be included in the adjustment to the Balancing Account under Section 6.05.B for the subsequent fiscal year.

6.08. Wholesale Capital Fund

A. The SFPUC currently funds revenue-funded capital projects through annual budget appropriations that are included in rates established for that fiscal year and transferred to a capital project fund from which expenditures are made. Consistent with the San Francisco Charter and Administrative Code, the SFPUC appropriates funds in advance of construction in order to maintain a positive balance in the capital project fund. The capital project fund also accrues interest and any unspent appropriations in excess of total project costs. It is the SFPUC's practice to regularly monitor the capital project fund balance to determine whether a surplus has accumulated, which can be credited against the next fiscal year's capital project appropriation.

B. The SFPUC shall establish a comparable Wholesale Revenue-Funded Capital Fund (Wholesale Capital Fund) to enable the Wholesale Customers to fund the wholesale share of revenue-funded New Regional Assets. The Wholesale Capital Fund balance is zero as of July 1, 2009. The SFPUC may include in wholesale rates for any fiscal year an amount equal to the wholesale share of the SFPUC's appropriation for revenue funded New Regional Assets for that year, which sum will be credited to the Wholesale Capital Fund. The wholesale share of other sources of funding, where legally permitted and appropriately accounted for under GAAP, will also be credited to the Wholesale Capital Fund, together with interest earnings on the Wholesale Capital Fund balance.

C. The SFPUC will expend revenues appropriated and transferred to the Wholesale Capital Fund only on New Regional Assets. The annual capital appropriation included in each fiscal year's budget will be provided to BAWSCA in accordance with Section 6.02 and will take into account the current and projected balance in the Wholesale Capital Fund, as well as current and projected unexpended and unencumbered surplus, as shown on attachment M-1, which will be prepared by the SFPUC each year.

D. Commencing on November 30, 2010 and thereafter in each fiscal year during the Term, the SFPUC will also provide an annual report to BAWSCA on the status of individual revenue-funded New Regional Assets, substantially in the form of Attachment M-2.

E. In order to prevent the accumulation of an excessive unexpended and unencumbered balance in the Wholesale Capital Fund, the status of the fund balance will be reviewed through the annual Compliance Audit, commencing in FY 2018-19. The FY 2018-19 Compliance Audit and the Wholesale Customer/BAWSCA review under Section 7.06 shall include Wholesale Capital Fund appropriations, expenditures and interest earnings for FY 2014-15 through 2017-18 for the purpose of determining whether a Balancing Account transfer is required. If the June 30 unencumbered balance of the Wholesale Capital Fund exceeds the lesser of the following: (i) the Target Balance; (ii) the unencumbered remaining cumulative appropriations, the amount of such excess shall be transferred to the credit of the Wholesale Customers to the Balancing Account described in Section 6.05.

In order to avoid funding delays for New Regional Asset capital projects resulting from prior year transfers of excess Wholesale Capital fund balances to the Wholesale Customers, if the June 30 unencumbered balance of the Wholesale Capital Fund is below the lesser of the following: (i) the Target Balance; (ii) the unencumbered remaining cumulative appropriation, such deficiency shall be posted to the Balancing Account described in Section 6.05 as a charge to the Wholesale Customers. Notwithstanding the foregoing, no such charge to the Wholesale Customers shall exceed $4 million annually.

Amended Attachment M-3 illustrates the process for determining the Wholesale Capital Fund balance as of June 30, 2019.

F. Three years prior to the end of the Term, the SFPUC and BAWSCA will discuss the disposition of the Wholesale Capital Fund balance at the end of the Term. Absent

agreement, any balance remaining in the Wholesale Capital Fund at the end of the Term shall be transferred to the Balancing Account, to the credit of the Wholesale Customers.

6.09. SFPUC Adoption of Regional Water System 10-Year Capital Improvement Program

A. **Established Level of Service Goals and Objectives**. In approving the WSIP, the Commission adopted Level of Service Goals and Objectives that are, in part, used to develop capital programs related to water, including the 10-Year Capital Improvement Program for the Regional Water System ("10-Year CIP"). BAWSCA and the Wholesale Customers shall have the opportunity to review and provide written or oral comments on any changes to the Level of Service Goals and Objectives that may be submitted to the Commission for approval.

B. **Submittal of an Asset Management Policy**. Prior to December 31, 2020, the SFPUC shall develop and submit to the Commission for approval an Asset Management Policy applicable to the Regional Water System.

C. **Coordination of 10-Year CIP and SFPUC Budget Meetings**. The Commission annually reviews, updates, and adopts a 10-Year CIP pursuant to Section 8B.123 of the San Francisco Charter. At two-year intervals, the Commission holds two budget meetings concerning the 10-Year CIP. Over the course of the two budget meetings, the SFPUC reviews its budget priorities, potential changes to projects in the previously adopted 10-Year CIP, and the potential financial implications of such changes. In the event that Charter amendments are placed on the ballot that could alter or amend the City's budget preparation and adoption efforts, BAWSCA shall be notified in advance of any proposed change that could result in a less robust CIP development effort, and BAWSCA and the SFPUC shall meet to consider BAWSCA's comments on maintaining a robust CIP development effort.

D. **Mid-cycle Changes to the 10-Year CIP**. The SFPUC shall include within the Water Enterprise Capital Improvement Program Quarterly Projects Reports that it provides to the Commission ("CIP Quarterly Projects Reports") discussion of any material changes proposed to projects that are included in the most recently adopted 10-Year CIP. The SFPUC defines a material change as a change that applies to a CIP project whose approved CIP budget is equal to or greater than $5,000,000 that results in one or more of the following:

1. Increases the cost of the CIP project by more than 10%.

2. Increases the schedule of the CIP project by extending said schedule by 12 calendar months or greater.

3. Affects the SFPUC's ability to meet the Level of Service Goals and Objectives.

The SFPUC shall also include within the CIP Quarterly Projects Reports discussion of any new capital project that is not included in the most recently adopted 10-Year CIP if the SFPUC has 1) begun spending on the project and 2) anticipates that it will require total funding in excess of $5,000,000. For such projects, the parties recognize that the work may be of an urgent nature and that details of those projects may be developing quickly to address a critical need. The SFPUC commits that, for these projects, an expanded discussion will be provided in quarterly reports generated 6 months following the creation of the project in the City's finance and accounting system. At a minimum, the discussion will include: 1) a detailed scope of work, 2) schedule, 3) cost breakdown, and 4) proposed source of funding. This level of detail shall continue to be included in subsequent quarterly reports through either the completion of the work or until the work is included as part of an adopted 10-Year CIP.

E. **BAWSCA and Wholesale Customer Notice and Review**. Beginning in 2020, at least 30 days before the first budget meeting, the SFPUC shall provide BAWSCA and the Wholesale Customers with written notice of the dates of the two budget meetings. At least 30 days before the first budget meeting, the SFPUC shall also provide BAWSCA and the Wholesale Customers with a draft of the 10-Year CIP and meet with those same parties to review potential candidate projects that it is considering for inclusion in the 10-Year CIP. Final materials for the first budget meeting will be made available to BAWSCA and the Wholesale Customers no less than 14 days prior to that budget meeting. Final materials for the second budget meeting will be made available to BAWSCA and the Wholesale Customers on the same date that they are made available to the Commission. Prior to the Commission's adoption of the 10-Year CIP at the second budget meeting, San Francisco shall respond, in writing, to all written comments by BAWSCA and the Wholesale Customers on the 10-Year CIP that were submitted prior to the date of the first budget meeting.

F. **Contents of Draft 10-Year CIP – Projects in Years One and Two of 10-Year Schedule**. The SFPUC's CIP projects generally fall into three categories: defined projects, placeholder concepts that could become projects, and programmatic spending for expenses likely to be made but for which there is no schedule. Projects in the near-term years of the 10-Year CIP have more definition than those in the outer years, and as a result more detailed information is available for them. For each project listed that has significant expected

expenditures identified in the first two years of the 10-Year CIP, the draft 10-Year CIP made available to BAWSCA and the Wholesale Customers shall include the following elements:

1. Project name.
2. Project description and justification.
3. Description of the project's relationship to the Level of Service Goals and Objectives.
4. Project asset classification for cost-allocation purposes, pursuant to Attachment R for Hetch Hetchy Enterprise assets, or as Regional or Retail for Water Enterprise assets.
5. Project schedule where applicable, broken down by phase, through to completion.
6. Total project budget estimate including a proposed inflation rate.

G. **Contents of Draft 10-Year CIP – Projects Listed After First Two Years of 10-Year Schedule**. For each project that is listed in years three through ten of the 10-Year CIP, the draft 10-Year CIP made available to BAWSCA and the Wholesale Customers shall include the following elements:

1. Project name.
2. Project description and justification.
3. Description of the project's relationship to the Level of Service Goals and Objectives.
4. Project asset classification for cost-allocation purposes, pursuant to Attachment R for Hetch Hetchy Enterprise assets, or as Regional or Retail for Water Enterprise assets.
5. Project schedule information that forms the basis for project planning if available.
6. Total project budget estimate.

H. **Additional Contents of Draft 10-Year CIP**. The draft 10-Year CIP made available to BAWSCA and the Wholesale Customers shall also include the following:

1. A discussion of any changes to projects in the previously adopted 10-Year CIP, the reasons for such changes, any impact of the proposed changes on the SFPUC's ability to achieve the Level of Service Goals

and Objectives, and the SFPUC's proposal for meeting the specific Level of Service Goals and Objectives in question.

2. A discussion of factors that have influenced the 10-Year CIP budget or identified projects, or have the potential to influence the overall budget or the number, cost and scale of identified projects, such as rate increase considerations, local rate setting policies, etc.
3. A discussion of how the CIP will be staffed.
4. A cash flow estimate for each project included as part of the first five years of the 10-Year CIP that considers historical spending and changes in the amount of work to be done.
5. Project spreadsheets that separate new projects from existing projects.
6. A summary roll-up for Regional costs, including all programmatic costs budgeted in the 10-Year CIP.

I. **Quarterly Reporting and Meetings**.

1. CIP Quarterly Projects Reports. The SFPUC shall include within the CIP Quarterly Projects Reports a detailed status update of each Regional project in the 10-Year CIP that has an estimated cost greater than $5 million and a summary of the work completed to date for such projects. The CIP Quarterly Projects Reports shall focus on the first two years' projects in the 10-Year CIP, but shall also demonstrate a connection to the 10-Year CIP asset classification and the Level of Service Goals and Objectives. The CIP Quarterly Projects Reports shall identify any Regional project in the 10-Year CIP with an estimated cost greater than $5 million that is behind schedule, and, for each project so identified, shall describe the SFPUC's plan and timeline for either making up the delay or adopting a revised project schedule. In each fourth quarter of the fiscal year CIP Quarterly Projects Report, the SFPUC will also address the status of Regional projects in the 10-Year CIP that have an estimated cost of less than $5 million, noting any such projects that are behind schedule and describing the SFPUC's plan and timeline for either making up the delay or adopting a revised project schedule.

2. Quarterly Meetings. If requested by BAWSCA, the SFPUC shall hold quarterly meetings with BAWSCA to review each CIP Quarterly Projects Report, during which the SFPUC shall present information and detail about the individual projects and overall implementation of the 10-Year CIP, as well as the need for re-prioritization and/or the proposal

of new candidate projects for consideration as part of the next update of the 10-Year CIP. As part of the meeting held in each fourth quarter of the fiscal year, the SFPUC shall provide additional information and detail regarding the CIP development schedule and associated coordination proposed with BAWSCA.

Article 7. Accounting Procedures; Compliance Audit

7.01. SFPUC Accounting Principles, Practices

A. **Accounting Principles**. San Francisco will maintain the accounts of the SFPUC and the Water and Hetch Hetchy Enterprises in conformity with Generally Accepted Accounting Principles. San Francisco will apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB) as well as statements and interpretations of the Financial Accounting Standards Board and Accounting Principles Board opinions issued on or before March 30, 1989, unless those pronouncements or opinions conflict with GASB pronouncements.

B. **General Rule**. San Francisco will maintain the accounting records of the SFPUC and the Water and Hetch Hetchy Enterprises in a format and level of detail sufficient to allow it to determine the annual Wholesale Revenue Requirement in compliance with this Agreement and to allow its determination of the Wholesale Revenue Requirement to be audited as provided in Section 7.04.

C. **Water Enterprise**. San Francisco will maintain an account structure which allows utility plant and operating and maintenance expenses to be segregated by location (inside San Francisco and outside San Francisco) and by function (Direct Retail, Regional and Direct Wholesale).

D. **Hetch Hetchy Enterprise**. San Francisco will maintain an account structure which allows utility plant and operating and maintenance expenses to be segregated into Water Only, Power Only and Joint categories.

E. **SFPUC**. San Francisco will maintain an account structure which allows any expenses of SFPUC bureaus that benefit only the Wastewater Enterprise, the Power-Only operations of the Hetch Hetchy Enterprise or Retail Customers to be excluded from the Wholesale Revenue Requirement.

F. **Utility Plant Ledgers**. San Francisco will maintain subsidiary plant ledgers for the Water and Hetch Hetchy Enterprises that contain unique identifying numbers for all assets included in the rate base and identify the original cost, annual depreciation, accumulated depreciation, date placed in service, useful life, salvage value if any, source of funding (e.g., bond series, revenues, grants), and classification for purposes of this Agreement.

G. **Debt.** San Francisco will maintain documentation identifying:

1. The portion of total bonded debt outstanding related to each series of each bond issue.

2. The portion of total interest expense related to each series of each bond issue.

3. The use of proceeds of each bond issue (including proceeds of commercial paper and/or other interim financial instruments redeemed or expected to be redeemed from bonds and earnings on the proceeds of financings) in sufficient detail to determine, for each bond issue, the proceeds and earnings of each (including proceeds and earnings of interim financing vehicles redeemed by a bond issue) and the total amounts expended on Direct Retail improvements and the total amounts expended on Regional improvements.

H. **Changes in Accounting**. Subject to subsections A thru G, San Francisco may change the chart of accounts and accounting practices of the SFPUC and the Water and Hetch Hetchy Enterprises. However, the allocation of any expense to the Wholesale Customers that is specified in the Agreement may not be changed merely because of a change in (1) the accounting system or chart of accounts used by SFPUC, (2) the account to which an expense is posted or (3) a change in the organizational structure of the SFPUC or the Water or Hetch Hetchy Enterprises.

I. **Audit**. San Francisco will arrange for an audit of the financial statements of Water and Hetch Hetchy Enterprises to be conducted each year by an independent certified public accountant, appointed by the Controller, in accordance with Generally Accepted Auditing Standards.

7.02. Calculation of and Report on Wholesale Revenue Requirement

A. Within five months after the close of each fiscal year, San Francisco will prepare a report showing its calculation of the Wholesale Revenue Requirement for the preceding fiscal year and the change in the balancing account as of the end of that fiscal year. The first such report will be prepared by November 30, 2010 and will cover fiscal year 2009-10 and the balancing account as of June 30, 2010.

B. The report will consist of the following items:

1. Statement of changes in the balancing account for the fiscal year being reported on, and for the immediately preceding fiscal year, substantially in the form of Attachment O.

2. Detailed supporting schedules 8.1 through 8.2 substantially in the form of Attachment N-2.

3. Description and explanation of any changes in San Francisco's accounting practices from those previously in effect.

4. Explanation of any line item of expense (shown on Attachment N-2, schedules 1 and 4) for which the amount allocated to the Wholesale Customers increased by (a) ten percent or more from the preceding fiscal year, or (b) more than $1,000,000.

5. Representation letter signed by the SFPUC General Manager and by other SFPUC financial staff shown on Attachment P, as the General Manager may direct, subject to change in position titles at the discretion of the SFPUC.

C. The report will be delivered to the BAWSCA General Manager by the date identified in Subsection A.

Once the report has been delivered to BAWSCA, San Francisco will, upon request:

1. Provide BAWSCA with access to, and copies of, all worksheets and supporting documents used or prepared by San Francisco during its calculation of the Wholesale Revenue Requirement;

2. Make available to BAWSCA all supporting documentation and calculations used by San Francisco in preparing the report; and

3. Promptly provide answers to questions from BAWSCA staff about the report.

7.03. Appointment of Compliance Auditor

A. **Purpose**. The purpose of this section is to provide for an annual Compliance Audit by an independent certified public accountant of the procedures followed and the underlying data used by San Francisco in calculating the Wholesale Revenue Requirement for the preceding fiscal year. The annual Compliance Audit shall also determine whether the Wholesale Revenue Requirement has been calculated in accordance with the terms of the Agreement and whether amounts paid by the Wholesale Customers in excess of or less than

the Wholesale Revenue Requirement have been posted to the balancing account, together with interest as provided in Section 6.05.

B. **Method of Appointment**. The Controller shall select an independent certified public accountant ("Compliance Auditor") to conduct the Compliance Audit described below. The Compliance Auditor may be the same certified public accountant engaged by the Controller to audit the financial statements of the Water and Hetch Hetchy Enterprises. Subject to approval by the Controller and the General Manager of the SFPUC, the Compliance Auditor shall have the authority to engage such consultants as it deems necessary or appropriate to assist in the audit. The terms of this Article shall be incorporated into the contract between San Francisco and the Compliance Auditor, and the Wholesale Customers shall be deemed to be third-party beneficiaries of said contract.

7.04. Conduct of Compliance Audit

A. **Standards**. The Compliance Auditor shall perform the Compliance Audit in accordance with Generally Accepted Auditing Standards. In particular, its review shall be governed by the standards contained in Section AU 623 (Reports on Specified Elements, Accounts or Items of a Financial Statement) of the AICPA, Professional Standards, as amended from time to time.

B. **Preliminary Meeting; Periodic Status Reports; Access to Data**. Prior to commencing the audit, the Compliance Auditor shall meet with San Francisco and BAWSCA to discuss the audit plan, the procedures to be employed and the schedule to be followed. During the course of the audit, the Compliance Auditor shall keep San Francisco and BAWSCA informed of any unforeseen problems or circumstances which could cause a delay in the audit or any material expansion of the audit's scope. The Compliance Auditor shall be given full access to all records of the SFPUC and the Water and Hetch Hetchy Enterprises that the Auditor deems necessary for the audit.

C. **Audit Procedures**. The Compliance Auditor shall review San Francisco's calculation of the Wholesale Revenue Requirement and the underlying data in order to carry out the purpose of the audit described in Section 7.03.A and to issue the report described in Section 7.05. At a minimum, the Compliance Auditor shall address the following:

1. Water Enterprise Operating and Maintenance Expenses. The Compliance Auditor shall review Water Enterprise cost ledgers to determine whether the

recorded operating and maintenance expenses fairly reflect the costs incurred, were recorded on a basis consistent with applicable Generally Accepted Accounting Principles, and were allocated to the Wholesale Customers as provided in this Agreement.

2. Water Enterprise Administrative and General Expenses. The Compliance Auditor shall review Water Enterprise cost ledgers and other appropriate financial records, including those of the SFPUC, to determine whether the recorded administrative and general expenses fairly reflect the costs incurred by or allocated to the Water Enterprise, whether they were recorded on a basis consistent with applicable Generally Accepted Accounting Principles, whether SFPUC charges were allocated to the Water Enterprise in accordance with this Agreement, and whether the amount of administrative and general expenses allocated to the Wholesale Customers was determined as provided by this Agreement.

3. Property Taxes. The Compliance Auditor shall review Water Enterprise cost ledgers to determine whether the amount of property taxes shown on the report fairly reflects the property tax expense incurred by San Francisco for Water Enterprise property outside of San Francisco and whether there has been deducted from the amount to be allocated (1) all taxes actually reimbursed to San Francisco by tenants of Water Enterprise property under leases that require such reimbursement and (2) any refunds received from the taxing authority. The Compliance Auditor also shall determine whether the amount of property taxes allocated to the Wholesale Customers was determined as provided in this Agreement.

4. Debt Service. The Compliance Auditor shall review SFPUC records to determine whether debt service, and associated coverage requirements, were allocated to the Wholesale Customers as provided in this Agreement.

5. Amortization of Existing Assets in Service as of June 30, 2009. The Compliance Auditor shall review both Water and Hetch Hetchy Enterprise records to determine whether the payoff amount for Existing Assets allocated to the Wholesale Customers as shown on Attachment K-1 through K-4 was calculated as provided in Section 5.03 of this Agreement.

6. Revenue-Funded Capital Appropriations/Expenditures. The Compliance Auditor shall review San Francisco's calculation of actual expenditures on the wholesale share of revenue-funded New Regional Assets and remaining unexpended and unencumbered project balances in the "Wholesale Capital Fund" described in Section 6.08, to determine whether the procedures contained in that section were followed.

7. Hetch Hetchy Expenses. The Compliance Auditor shall determine whether Hetch Hetchy Enterprise expenses were allocated to the Wholesale Customers as provided in this Agreement.

D. **Use of and Reliance on Audited Financial Statements and Water Use Data**

1. In performing the audit, the Compliance Auditor shall incorporate any adjustments to the cost ledgers recommended by the independent certified public accountant, referred to in Section 7.01.I, which audited the financial statements of the Water and Hetch Hetchy Enterprises. The Compliance Auditor may rely upon the work performed by that independent certified public accountant if the Compliance Auditor reviews the work and is willing to take responsibility for it as part of the compliance audit.

2. In performing the Compliance Audit and issuing its report, the Compliance Auditor may rely on water use data furnished by the Water Enterprise, regardless of whether the Wholesale Customers contest the accuracy of such data. The Compliance Auditor shall have no obligation to independently verify the accuracy of the water use data provided by San Francisco; however, the Compliance Auditor shall disclose in its report any information which came to its attention suggesting that the water use data provided by San Francisco are inaccurate in any significant respect.

E. Exit Conference. Upon completion of the audit, the Compliance Auditor shall meet with San Francisco and BAWSCA to discuss audit findings, including (1) any material weakness in internal controls and (2) adjustments proposed by the Compliance Auditor and San Francisco's response (i.e., booked or waived).

7.05. Issuance of Compliance Auditor's Report

A. San Francisco will require the Compliance Auditor to issue its report no later than nine months after the fiscal year under audit (i.e., March 31 of the following calendar year). The Compliance Auditor's report shall be addressed and delivered to San Francisco and BAWSCA. The report shall contain:

1. A statement that the Auditor has audited the report on the calculation of the Wholesale Revenue Requirement and changes in the balancing account, and supporting documents, prepared by San Francisco as required by Section 7.02.

2. A statement that the audit was conducted in accordance with auditing standards generally accepted in the United States of America, and that the audit provides a reasonable basis for its opinion.

3. A statement that in the Compliance Auditor's opinion the Wholesale Revenue Requirement was calculated by San Francisco in accordance with this Agreement and that the change in the balancing account shown in San Francisco's report was calculated as required by this Agreement and presents fairly, in all material respects, changes in and the balance due to (or from) the Wholesale Customers as of the end of the fiscal year under audit.

7.06. Wholesale Customer Review

A. One or more Wholesale Customers, or BAWSCA, may engage an independent certified public accountant (CPA) to conduct a review (at its or their expense) of San Francisco's calculation of the annual Wholesale Revenue Requirement and a review of changes in the balancing account.

B. If a Wholesale Customer or BAWSCA wishes such a review to be conducted it will provide written notice to SFPUC within 30 days of the date the Compliance Auditor's report is issued. The notice will identify the CPA or accounting/auditing firm that will conduct the review and the specific aspects of the Compliance Auditor's report that are the subject of the review. If more than one notice of review is received by the SFPUC, the requesting Wholesale Customers shall combine and coordinate their reviews and select a lead auditor to act on their behalf for the purposes of requesting documents and conducting on-site investigations.

C. San Francisco will cooperate with the CPA appointed by a Wholesale Customer or BAWSCA. This cooperation includes making requested records promptly available, making knowledgeable SFPUC personnel available to timely and truthfully answer the CPA's questions and directing the Compliance Auditor to cooperate with the CPA.

D. The Wholesale Customer's review shall be completed within 60 days after the date the Compliance Auditor's report is issued. At the conclusion of the review, representatives of San Francisco and BAWSCA shall meet to discuss any differences between them concerning San Francisco's compliance with Articles 5 or 6 of this Agreement during the preceding fiscal year or San Francisco's calculation of the Wholesale Revenue Requirement for the preceding fiscal year. If such differences cannot be resolved, the dispute shall be submitted to arbitration in accordance with Section 8.01.

Article 8. Other Agreements of the Parties

8.01. Arbitration and Judicial Review

A. **General Principles re Scope of Arbitration**. All questions or disputes arising under the following subject areas shall be subject to mandatory, binding arbitration and shall not be subject to judicial determination:

1. the determination of the Wholesale Revenue Requirement, which shall include both the calculations used in the determination and the variables used in those calculations;

2. the SFPUC's adherence to accounting practices and conduct of the Compliance Audit; and

3. the SFPUC's classification of new or omitted assets for purposes of determining the Wholesale Revenue Requirement.

All other questions or disputes arising under this Agreement shall be subject to judicial determination. Disputes about the scope of arbitrability shall be resolved by the courts.

B. **Demand for Arbitration**. If any arbitrable question or dispute should arise, any Wholesale Customer or the SFPUC may commence arbitration proceedings hereunder by service of a written Demand for Arbitration. Demands for arbitration shall set forth all of the issues to be arbitrated, the general contentions relating to those issues, and the relief sought by the party serving the Demand. Within 45 days after service of a Demand upon it, any Wholesale Customer or the SFPUC may serve a Notice of Election to become a party to the arbitration and a Response to the issues set forth in the Demand. The Response shall include the party's general contentions and defenses with respect to the claims made in the Demand, and may include any otherwise arbitrable claims, contentions and demands that concern the fiscal year covered by the Demand. If a timely Notice of Election and Response is not filed by any such entity, it shall not be a party to the arbitration but shall nonetheless be bound by the award of the arbitrator. If no party to this Agreement serves a timely Notice of Election and Response, the party seeking arbitration shall be entitled to the relief sought in its Demand for Arbitration without the necessity of further proceedings. Any claims not made in a Demand or Response shall be deemed waived.

If a Demand or Notice of Election is made by the SFPUC, it shall be served by personal delivery or certified mail to each Wholesale Customer at the address of such customer as set forth in the billing records of the SFPUC. If a Demand or Notice of Election is made by a Wholesale Customer, service shall be by certified mail or personal delivery to the General Manager, SFPUC, 525 Golden Gate Avenue, 13th Floor, San Francisco, California 94102, and to each of the other Wholesale Customers. If arbitration is commenced, the Wholesale Customers shall use their best efforts to formulate a single, joint position with respect thereto. In any event, with respect to the appointment of arbitrators, as hereinafter provided, all Wholesale Customers that take the same position as to the issues to be arbitrated shall jointly and collectively be deemed to be a single party.

C. **Limitations Period**. All Demands For Arbitration shall be served within twelve months of receipt by BAWSCA of the Wholesale Revenue Requirement Compliance Auditor's Report for that year. If a party fails to file a Demand within the time period specified in this subsection, that party waives all present and future claims with respect to the fiscal year in question. If no such Demand is served within the twelve month period specified above, the SFPUC's determination of the Wholesale Revenue Requirement for that year shall be final and conclusive. Whether any particular claim is barred by the twelve month limitations period provided for herein shall be for the arbitrator to determine. Prior to the expiration of the twelve month limitations period, the parties to the dispute may agree by written stipulation to extend the period by up to six additional months.

The Arbitrator may order the alteration or recalculation of underlying Water Enterprise and/or Hetch Hetchy Enterprise accounts or asset classifications. Such changes shall be used to calculate the Wholesale Revenue Requirement for the fiscal year in dispute and shall also be used to determine future Wholesale Revenue Requirements, if otherwise applicable, even though the existing entries in such accounts or the asset classifications, in whole or in part, predate the twelve month period described above, so long as a timely arbitration Demand has been filed in accordance with this subsection.

D. **Number and Appointment of Arbitrators**. All arbitration proceedings under this section shall be conducted by a single arbitrator, selected by the SFPUC and a designated representative of the Wholesale Customers or each group of Wholesale Customers that take the same position with respect to the arbitration, within 75 days after service of the Demand. If the parties to the arbitration cannot agree on an arbitrator within 75 days, any party may petition

the Marin County Superior Court for the appointment of an arbitrator pursuant to Code of Civil Procedure Section 1281.6 (or any successor provision).

E. **Guidelines for Qualifications of Arbitrators**. The Wholesale Customers and the SFPUC acknowledge that the qualifications of the arbitrator will vary with the nature of the matter arbitrated, but, in general, agree that such qualifications may include service as a judge or expertise in one or more of the following fields: public utility law, water utility rate setting, water system and hydraulic engineering, utility accounting methods and practices, and water system operation and management. The parties to the arbitration shall use their best efforts to agree in advance upon the qualifications of any arbitrator to be appointed by the Superior Court.

F. **Powers of Arbitrator; Conduct of Proceedings**

1. Except as provided in this section, arbitrations under this section shall be conducted under and be governed by the provisions of California Code of Civil Procedure Sections 1282.2 through 1284.2 (hereinafter, collectively, "Code sections"), and arbitrators appointed hereunder shall have the powers and duties specified by the Code sections.

2. Within the meaning of the Code sections, the term "neutral arbitrator" shall mean the single arbitrator selected by the parties to the arbitration.

3. Unless waived in writing by the parties to the arbitration, the notice of hearing served by the arbitrator shall not be less than 90 days.

4. The lists of witnesses (including expert witnesses), and the lists of documents (including the reports of expert witnesses) referred to in Code of Civil Procedure Section 1282.2 shall be mutually exchanged, without necessity of demand therefore, no later than 60 days prior to the date of the hearing, unless otherwise agreed in writing by the parties to the arbitration. Upon application of any party, or on his or her own motion, the arbitrator may schedule one or more prehearing conferences for the purposes of narrowing and/or expediting resolution of the issues in dispute. Strict conformity to the rules of evidence is not required, except that the arbitrator shall apply applicable law relating to privileges and work product. The arbitrator shall consider evidence that he or she finds relevant and material to the dispute, giving the evidence such weight as is appropriate. The arbitrator may limit testimony to exclude evidence that would be immaterial or unduly repetitive, provided that all parties are afforded the opportunity to present material and relevant evidence.

5. Within thirty days after the close of the arbitration hearing, or such other time as the arbitrator shall determine, the parties will submit proposed findings and a proposed remedy to the arbitrator. The parties may file objections to their adversary's proposed findings and remedy within a time limit to be specified by the arbitrator. The arbitrator shall not base his or her award on information not obtained at the hearing.

6. The arbitrator shall render a written award no later than twelve months after the arbitrator is appointed, either by the parties or by the court, provided that such time may be waived or extended as provided in Code of Civil Procedure Section 1283.8.

7. The provisions for discovery set forth in Code of Civil Procedure Section 1283.05 are incorporated into and made part of this Agreement, except that: (a) leave of the arbitrator need not be obtained for the taking of depositions, including the depositions of expert witnesses; (b) the provisions of Code of Civil Procedure Section 2034.010 et seq., relating to discovery of expert witnesses, shall automatically be applicable to arbitration proceedings arising under this Agreement without the necessity for a formal demand pursuant to Section 2034.210 and the date for the exchange of expert discovery provided by Sections 2034.260 and 2034.270 shall be not later than 60 days prior to the date for the hearing; and (c) all reports, documents, and other materials prepared or reviewed by any expert designated to testify at the arbitration shall be discoverable. In appropriate circumstances, the arbitrator may order any party to this Agreement that is not a party to the arbitration to comply with any discovery request.

8. For the purposes of allocation of expenses and fees, as provided in Code of Civil Procedure Section 1284.2, if any two or more Wholesale Customers join together in a single, joint position in the arbitration, those Wholesale Customers shall be deemed to be a single party. If any Wholesale Customer or customers join together with the SFPUC in a single joint position in the arbitration, those Wholesale Customers and the SFPUC together shall be deemed to be a single party.

9. Subject to any other limitations imposed by the Agreement, the arbitrator shall have power to issue orders mandating compliance with the terms of the Agreement or enjoining violations of the Agreement. With respect to any arbitration brought to redress a claimed wholesale overpayment to the SFPUC, the arbitrator's power to award monetary relief shall be limited to entering an order requiring that an adjustment be made in the amount posted to the balancing account for the fiscal year covered by the Demand.

10. All awards of the arbitrator shall be binding on the SFPUC and the Wholesale Customers regardless of the participation or lack thereof by any Wholesale Customer or the SFPUC as a party to the arbitration proceeding. The parties to an arbitration shall have the power to modify or amend any arbitration award by mutual consent. The arbitrator shall apply California law.

8.02. Attorneys' Fees

A. **Arbitration or Litigation Between San Francisco and Wholesale Customers Arising under the Agreement or Individual Water Sales Contracts**. Each party will bear its own costs, including attorneys' fees, incurred in any arbitration or litigation arising under this Agreement or the Individual Water Sales Contracts between San Francisco and the Wholesale Customers. Notwithstanding the foregoing, and subject to the limitations contained herein, the SFPUC may allocate to the Wholesale Customers as an allowable expense, utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses, any attorneys' fees and costs incurred by the SFPUC in connection with arbitration and/or litigation arising under this Agreement and/or the Individual Water Sales Contracts. Attorneys' fees incurred by the SFPUC for attorneys employed in the San Francisco City Attorney's office shall be billed at the hourly rates charged for the attorneys in question by the San Francisco City Attorney's Office to the SFPUC. Attorneys' fees incurred by the SFPUC for attorneys other than those employed in the San Francisco City Attorney's Office shall be limited to the hourly rates charged to the SFPUC for attorneys and paralegals with comparable experience employed in the San Francisco City Attorney's office and in no event shall exceed the highest hourly rate charged by any attorney or paralegal employed in the City Attorney's Office to the SFPUC.

B. **Arbitration or Litigation Outside of Agreement Concerning the SFPUC Water System or Reserved Issues**

1. The attorneys' fees and costs incurred by the SFPUC in litigation between San Francisco and one or more of the Wholesale Customers arising from matters outside of the Agreement, including, without limitation, litigation and/or arbitration concerning the issues specifically reserved in the Agreement, shall be allocated between the Retail Customers and the Wholesale Customers utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses.

2. If, in any litigation described in subsection B.1 above, attorneys' fees and costs are awarded to one or more of the Wholesale Customers as prevailing parties, the

SFPUC's payment of the Wholesale Customers' attorneys' fees and costs shall not be an allowable expense pursuant to subsection A.

3. If, in any litigation described in subsection B.1, the SFPUC obtains an award of attorneys' fees and costs as a prevailing party against one or more of the Wholesale Customers, any such award shall be reduced to offset the amount of the SFPUC's fees and costs, if any, that have already been paid by the Wholesale Customers in the current or any prior fiscal years pursuant to subsection B.1 and the provisions of Articles 5 and 6 of the Agreement.

4. Nothing contained in this Agreement, including this subsection, shall authorize a court to award attorneys' fees and costs to a prevailing party as a matter of contract and/or the provisions of Civil Code Section 1717, in litigation between San Francisco and one or more of the Wholesale Customers arising from matters outside of the Agreement, including, without limitation, litigation and/or arbitration concerning the issues specifically reserved in the Agreement.

C. **Attorneys Fees and Costs Incurred by the SFPUC in Connection with the Operation and Maintenance of the SFPUC Water Supply System**. All attorneys' fees and costs incurred by the SFPUC in connection with the operation and maintenance of the SFPUC's water supply system shall be allocated between Retail Customers and the Wholesale Customers utilizing the composite rate used for allocating other Water Enterprise administrative and general expenses.

8.03. Annual Meeting and Report

A. The parties wish to ensure that the Wholesale Customers may, in an orderly way, be informed of matters affecting the Regional Water System, including matters affecting the continuity and adequacy of their water supply from San Francisco.

For this purpose, the General Manager of the SFPUC shall meet annually with the Wholesale Customers and BAWSCA during the month of February, commencing February 2010. At these annual meetings, the SFPUC shall provide the Wholesale Customers a report on the following topics:

1. Capital additions under construction or being planned for the Regional Water System, including the status of planning studies, financing plans, environmental reviews, permit applications, etc.;

2. Water use trends and projections for Retail Customers and Wholesale Customers;

3. Water supply conditions and projections;

4. The status of any administrative proceedings or litigation affecting San Francisco's water rights or the SFPUC's ability to deliver water from the watersheds which currently supply the Regional Water System;

5. Existing or anticipated problems with the maintenance and repair of the Regional Water System or with water quality;

6. Projections of Wholesale Revenue Requirements for the next five years;

7. Any other topic which the SFPUC General Manager places on the agenda for the meeting;

8. Any topic which the Wholesale Customers, through BAWSCA, request be placed on the agenda, provided that the SFPUC is notified of the request at least 10 days before the meeting.

B. The General Manager of the SFPUC, the Assistant General Manager of the Water Enterprise, and the Assistant General Manager of Business Services-CFO will use their best efforts to attend the annual meetings. If one or more of these officers are unable to attend, they will designate an appropriately informed assistant to attend in their place.

8.04. 8.04 Administrative Matters Delegated to BAWSCA

A. The Wholesale Customers hereby delegate the authority and responsibility for performing the following administrative functions contemplated in this Agreement to BAWSCA:

1. Approval of calculations of Proportional Annual Water Use required by Section 3.14 and Attachment J, "Water Use Measurement and Tabulation";

2. Approval of amendments to Attachments J and K-3 and K-4, "25-Year Payoff Schedules for Existing Rate Base";

3. Agreement that the Water Meter and Calibration Procedures Manual to be prepared by the SFPUC may supersede some or all of the requirements in Attachment J, as described in Section 3.14;

4. Conduct of Wholesale Customer review of SFPUC's calculation of annual Wholesale Revenue Requirement/Change in Balancing Account described in Section 7.06;

5. Approval of an adjustment to Wholesale Revenue Coverage as described in Section 6.06.

B. A majority of the Wholesale Customers may, without amending this Agreement, delegate additional administrative functions to BAWSCA. To be effective, such expanded delegation must be evidenced by resolutions adopted by the governing bodies of a majority of the Wholesale Customers. In 2014, all twenty-six Wholesale Customers adopted resolutions delegating authority to BAWSCA to initiate, defend and settle arbitration for the matters that, pursuant to Section 8.01 of this Agreement, are subject to mandatory, binding arbitration.

C. Unless otherwise explicitly stated, the administrative authority delegated to BAWSCA may be exercised by the General Manager/CEO of BAWSCA, rather than requiring action by the BAWSCA Board of Directors. In addition, the Wholesale Customers may, with the consent of BAWSCA, delegate to BAWSCA the initiation, defense, and settlement of arbitration proceedings provided for in Section 8.01.

8.05. Preservation of Water Rights; Notice of Water Rights Proceedings

A. It is the intention of San Francisco to preserve all of its water rights, irrespective of whether the water held under such water rights is allocated under this Agreement. Nothing in this Agreement shall be construed as an abandonment, or evidence of an intent to abandon, any of the water rights that San Francisco presently possesses.

B. San Francisco shall use its best efforts to give prompt notice to BAWSCA of any litigation or administrative proceedings to which San Francisco is a party involving water rights to the Regional Water System. The failure of San Francisco to provide notice as required by this section, for whatever reason, shall not give rise to any monetary liability.

8.06. SFPUC Rules and Regulations

The sale and delivery of all water under this Agreement shall be subject to such of the "Rules and Regulations Governing Water Service to Customers" of the Water Enterprise adopted by the Commission, as those rules and regulations may be amended from time to time, as are (1) applicable to the sale and delivery of water to the Wholesale Customers, (2) reasonable, and (3) not inconsistent with either this Agreement or with an Individual Water

Sales Contract. The SFPUC will give the Wholesale Customers notice of any proposal to amend the Rules and Regulations in a manner that would affect the Wholesale Customers. The notice will be delivered at least thirty days in advance of the date on which the proposal is to be considered by the Commission and will be accompanied by the text of the proposed amendment.

8.07. Reservations of, and Limitations on, Claims

A. **General Reservation of Raker Act Contentions**. The 1984 Agreement resolved a civil action brought against San Francisco by certain of the Wholesale Customers. Plaintiffs in that action contended that they, and other Wholesale Customers that are municipalities or special districts, were "co-grantees" within the meaning of Section 8 of the Act and were entitled to certain rights, benefits and privileges by virtue of that status. San Francisco disputed those claims.

Nothing in this Agreement, or in the Individual Water Sales Contracts, shall be construed or interpreted in any way to affect the ultimate resolution of the controversy between the parties concerning whether any of the Wholesale Customers are "co-grantees" under the Act and, if so, what rights, benefits and privileges accrue to them by reason of that claimed status.

B. **Claims Reserved but not Assertable During Term or Portions Thereof**. The following claims, which San Francisco disputes, are reserved but may not be asserted during the Term (or portions thereof, as indicated):

1. The Wholesale Customers' claim that the Act entitles them to water at cost.

2. The Wholesale Customers' claim that San Francisco is obligated under the Act or state law to supply them with additional water in excess of the Supply Assurance. This claim may not be asserted unless and until San Francisco decides not to meet projected water demands of Wholesale Customers in excess of the Supply Assurance pursuant to Section 4.06.

3. The claim by San Jose and Santa Clara that they are entitled under the Act, or any other federal or state law, to permanent, non-interruptible status and to be charged rates identical to those charged other Wholesale Customers. This claim may not be asserted unless and until San Francisco notifies San Jose or Santa Clara that it intends to interrupt or terminate water deliveries pursuant to Section 4.05.

4. he Wholesale Customers' claim that the SFPUC is not entitled to impose a surcharge for lost power generation revenues attributable to furnishing water in excess of the Supply Assurance. This claim may not be asserted unless and until SFPUC furnishes water in excess of the Supply Assurance during the Term and also includes such a surcharge in the price of such water.

5. Claims by Wholesale Customers (other than San Jose and Santa Clara, whose service areas are fixed) that SFPUC is obligated under the Act or state law to furnish water, within their Individual Supply Guarantee, for delivery to customers outside their existing service area and that Wholesale Customers are entitled to enlarge their service areas to supply those customers. Such claims may be asserted only after compliance with the procedure set forth in Section 3.03, followed by SFPUC's denial of, or failure for six months to act on, a written request by a Wholesale Customer to expand its service area.

C. **Waived Activities**. The Wholesale Customers (and the SFPUC, where specified) will refrain from the following activities during the Term (or portions thereof, as specified):

1. The Wholesale Customers and the SFPUC will not contend before any court, administrative agency or legislative body or committee that the methodology for determining the Wholesale Revenue Requirement (or the requirements for (a) amortization of the ending balance under the 1984 Agreement, or (b) contribution to the Wholesale Revenue Coverage) determined in accordance with this Agreement violates the Act or any other provision of federal law, state law, or San Francisco's City Charter, or is unfair, unreasonable or unlawful.

2. The Wholesale Customers will not challenge the transfer of funds by the SFPUC to any other San Francisco City department or fund, provided such transfer complies with the San Francisco City Charter. The transfer of its funds, whether or not permitted by the City Charter, will not excuse the SFPUC from its failure to perform any obligation imposed by this Agreement.

3. The Wholesale Customers and the SFPUC will not assert monetary claims against one another based on the 1984 Agreement other than otherwise arbitrable claims arising from the three fiscal years immediately preceding the start of the Term (i.e., FYs 2006-07, 2007-08 and 2008-09). Such claims, if any, shall be governed by the dispute resolution provisions of this Agreement, except that the time within which arbitration must be commenced shall be 18 months from delivery of the Compliance Auditor's report.

D. **Other**

1. This Agreement shall determine the respective monetary rights and obligations of the parties with respect to water sold by the SFPUC to the Wholesale Customers during the Term. Such rights and obligations shall not be affected by any judgments or orders issued by any court in litigation, whether or not between parties hereto, and whether or not related to the controversy over co-grantee status, except for arbitration and/or litigation expressly permitted in this Agreement. No judicial or other resolution of issues reserved by this section will affect the Wholesale Revenue Requirement which, during the Term, will be determined exclusively as provided in Articles 5, 6 and 7 of this Agreement.

2. Because delays in the budget process or other events may cause the SFPUC to defer the effective date of changes in wholesale rates until after the beginning of the fiscal year, this Agreement does not require the SFPUC to make changes in wholesale rates effective at the start of the fiscal year or at any other specific date.

3. he Wholesale Customers do not, by executing this Agreement, concede the legality of the SFPUC's establishing Interim Supply Allocations, as provided in Article 4 or imposing Environmental Enhancement Surcharges on water use in excess of such allocations. Any Wholesale Customer may challenge such allocation when imposed and/or such surcharges if and when levied, in any court of competent jurisdiction.

4. The furnishing of water in excess of the Supply Assurance by San Francisco to the Wholesale Customers shall not be deemed or construed to be a waiver by San Francisco of its claim that it has no obligation under any provision of law to supply such water to the Wholesale Customers, nor shall it constitute a dedication by San Francisco to the Wholesale Customers of such water.

8.08. Prohibition of Assignment

A. This Agreement shall be binding on, and shall inure to the benefit of, the parties and their respective successors and permitted assigns. Each Wholesale Customer agrees that it will not transfer or assign any rights or privileges under this Agreement, either in whole or in part, or make any transfer of all or any part of its water system or allow the use thereof in any manner whereby any provision of this Agreement will not continue to be binding on it, its assignee or transferee, or such user of the system. Any assignment or transfer in violation of this covenant, and any assignment or transfer that would result in the supply of water in violation of the Act, shall be void.

B. Nothing in this section shall prevent any Wholesale Customer (except the California Water Service Company and Stanford) from entering into a joint powers agreement or a municipal or multi-party water district with any other Wholesale Customer (except the two listed above) to exercise the rights and obligations granted to and imposed upon the Wholesale Customers hereunder, nor shall this section prevent any Wholesale Customer (except the two listed above) from succeeding to the rights and obligations of another Wholesale Customer hereunder as long as the Wholesale Service Area served by the Wholesale Customers involved in the succession is not thereby enlarged.

8.09. Notices

A. All notices and other documents that San Francisco is required or permitted to send to the Wholesale Customers under this Agreement shall be sent to each and all of the Wholesale Customers by United States mail, first class postage prepaid, addressed to each Wholesale Customer at the address to which monthly water bills are mailed by the Water Enterprise.

B. All notices or other documents which the Wholesale Customers are required or permitted to send to San Francisco under this Agreement shall be sent by United States mail, first class postage prepaid, addressed as follows:

General Manager
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94123

C. Each Wholesale Customer is a member of BAWSCA. San Francisco shall send a copy of each notice or other document which it is required to send to all Wholesale Customers to BAWSCA addressed as follows:

General Manager/CEO
Bay Area Water Supply and Conservation Agency
155 Bovet Road, Suite 650
San Mateo, CA 94402

The failure of San Francisco to send a copy of such notices or documents to BAWSCA shall not invalidate any rate set or other action taken by San Francisco.

D. Any party (or BAWSCA) may change the address to which notice is to be sent to it under this Agreement by notice to San Francisco (in the case of a change desired by a Wholesale Customer or BAWSCA) and to the Wholesale Customer and BAWSCA (in the case of a change desired by San Francisco).

The requirements for notice set forth in Section 8.01 concerning arbitration shall prevail over this section, when they are applicable.

8.10. Incorporation of Attachments

Attachments A through R, referred to herein, are incorporated in and made a part of this Agreement.

8.11. Interpretation

In interpreting this Agreement, or any provision thereof, it shall be deemed to have been drafted by all signatories, and no presumption pursuant to Civil Code Section 1654 may be invoked to determine the Agreement's meaning. The marginal headings and titles to the sections and paragraphs of this Agreement are not a part of this Agreement and shall have no effect upon the construction or interpretation of any part hereof.

8.12. Actions and Approvals by San Francisco

Whenever action or approval by San Francisco is required or contemplated by this Agreement, authority to act or approve shall be exercised by the Commission, except if such action is required by law to be taken, or approval required to be given, by the San Francisco Board of Supervisors. The Commission may delegate authority to the General Manager in accordance with the San Francisco City Charter and Administrative Code, except for actions that this Agreement requires to be taken by the Commission.

8.13. Counterparts

Execution of this Agreement may be accomplished by execution of separate counterparts by each signatory. San Francisco shall deliver its executed counterpart to BAWSCA and the counterpart which each Wholesale Customer executes shall be delivered to San Francisco. The separate executed counterparts, taken together, shall constitute a single agreement.

8.14. Limitations on Damages

A. Unless otherwise prohibited by this Agreement, general or direct damages may be recovered for a breach of a party's obligations under this Agreement. No party is liable for, or may recover from any other party, special, indirect or consequential damages or incidental damages, including, but not limited to, lost profits or revenue. No damages may be awarded for a breach of Section 8.17.

B. The limitations in subsection A apply only to claims for damages for an alleged breach of this Agreement. These limitations do not apply to claims for damages for an alleged breach of a legal duty that arises independently of this Agreement, established by constitution or statute.

C. If damages would be an inadequate remedy for a breach of this Agreement, equitable relief may be awarded by a court in a case in which it is otherwise proper.

D. This section does not apply to any claim of breach for which arbitration is the exclusive remedy pursuant to Section 8.01.A.

8.15. Force Majeure

A. **Excuse from Performance**. No party shall be liable in damages to any other party for delay in performance of, or failure to perform, its obligations under this Agreement, including the obligations set forth in Sections 3.09 and 4.06, if such delay or failure is caused by a "Force Majeure Event."

B. **Notice**. The party claiming excuse shall deliver to the other parties a written notice of intent to claim excuse from performance under this Agreement by reason of a Force Majeure Event. Notice required by this section shall be given promptly in light of the circumstances, and, in the case of events described in (c), (d) or (e) of the definition of Force Majeure Event only, not later than ten (10) days after the occurrence of the Force Majeure Event. Such notice shall describe the Force Majeure Event, the services impacted by the claimed event, the length of time that the party expects to be prevented from performing, and the steps which the party intends to take to restore its ability to perform.

C. **Obligation to Restore Ability to Perform**. Any suspension of performance by a party pursuant to this section shall be only to the extent, and for a period of no longer duration

than, required by the nature of the Force Majeure Event, and the party claiming excuse shall use its best efforts to remedy its inability to perform as quickly as possible.

8.16. No Third-Party Beneficiaries

This Agreement is exclusively for the benefit of the parties and not for the benefit of any other Person. There are no third-party beneficiaries of this Agreement and no person not a party shall have any rights under or interests in this Agreement.

No party may assert a claim for damages on behalf of a person other than itself, including a person that is not a party.

8.17. Good Faith and Fair Dealing

San Francisco and the Wholesale Customers each acknowledge their obligation under California law to act in good faith toward, and deal fairly with, each other with respect to this Agreement.

Article 9. Implementation and Special Provisions Affecting Certain Wholesale Customers

9.01. 9.01 General; Individual Water Sales Contracts

A. As described in Section 1.03, San Francisco previously entered into Individual Water Sales Contracts with each of the Wholesale Customers. The term of the majority of Individual Water Sales Contracts will expire on June 30, 2009, concurrently with the expiration of the 1984 Agreement. Except as provided below in this Article, each of the Wholesale Customers will execute a new Individual Water Sales Contract with San Francisco concurrently with its approval of the Agreement.

B. The Individual Water Sales Contracts will describe the service area of each Wholesale Customer, identify the location and size of connections between the Regional Water System and the Wholesale Customer's distribution system, provide for periodic rendering and payment of bills for water usage, and in some instances contain additional specialized provisions unique to the particular Wholesale Customer and not of general concern or applicability. A sample Individual Water Sales Contract is provided at Attachment F. The Individual Water Sales Contracts between San Francisco and the Wholesale Customers will not contain any provision inconsistent with Articles 1 through 8 of this Agreement except (1) as provided below in this Article or (2) to the extent that such provisions are not in derogation of the Fundamental Rights of other Wholesale Customers under this Agreement. Any provisions in an Individual Water Sales Contract which are in violation of this section shall be void.

9.02. California Water Service Company

A. The parties recognize that the California Water Service Company is an investor-owned utility company and, as such, has no claim to co-grantee status under the Act, which specifically bars private parties from receiving for resale any water produced by the Hetch Hetchy portion of the Regional Water System. Accordingly, the following provisions shall apply to the California Water Service Company, notwithstanding anything to the contrary elsewhere in this Agreement.

B. The total quantity of water delivered by San Francisco to the California Water Service Company shall not in any calendar year exceed 47,400 acre feet, which is the estimated average annual production of Local System Water. If San Francisco develops additional Local System Water after the Effective Date, it may (1) increase the maximum

delivery amount stated herein; and (2) increase the Supply Assurance, but not necessarily both. San Francisco has no obligation to deliver water to California Water Service Company in excess of the maximum stated herein, except as such maximum may be increased by San Francisco pursuant to this subsection. The maximum annual quantity of Local System Water set forth in this subsection is intended to be a limitation on the total quantity of water that may be allocated to California Water Service Company, and is not an Individual Supply Guarantee for purposes of Section 3.02. The maximum quantity of Local System Water set forth in this subsection is subject to reduction in response to (1) changes in long-term hydrology or (2) environmental water requirements that may be imposed by or negotiated with state and federal resource agencies in order to comply with state or federal law or to secure applicable permits for construction of Regional Water System facilities. San Francisco shall notify California Water Service Company of any anticipated reduction of the quantity of Local System Water set forth in this subsection, along with an explanation of the basis for the reduction.

C. Notwithstanding anything in Section 8.08 to the contrary, California Water Service Company shall have the right to assign to a public agency having the power of eminent domain all or a portion of the rights of California Water Service Company under any contract between it and San Francisco applicable to any individual district of California Water Service Company in connection with the acquisition by such public agency of all or a portion of the water system of California Water Service Company in such district. In the event of any such assignment of all the rights, privileges and obligations of California Water Service Company under such contract, California Water Service Company shall be relieved of all further obligations under such contract provided that the assignee public agency expressly assumes the obligations of California Water Service Company thereunder. In the event of such an assignment of a portion of the rights, privileges and obligations of California Water Service Company under such contract, California Water Service Company shall be relieved of such portion of such obligations so assigned thereunder provided that the assignee public agency shall expressly assume such obligations so assigned to it.

D. Should California Water Service Company seek to take over or otherwise acquire, in whole or in part, the service obligations of another Wholesale Customer under Section 3.03.E, it will so inform San Francisco at least six months prior to the effective date of the sale and provide information concerning the total additional demand proposed to be served, in order that San Francisco may compare the proposed additional demand to the then-current estimate of Local System Water. In this regard, California Water Service Company has notified

the SFPUC that it has reached an agreement to acquire the assets of Skyline County Water District ("Skyline") and assume the responsibility for providing water service to customers in the Skyline service area. California Water Service Company has advised the SFPUC that, on September 18, 2008, the California Public Utilities Commission approved California Water Service Company's acquisition of Skyline. The SFPUC anticipates approving the transfer of Skyline's Supply Guarantee as shown on Attachment C to California Water Service Company and the expansion of California Water Service Company's service area to include the current Skyline service area before the Effective Date of this Agreement. All parties to this Agreement authorize corresponding modifications of Attachment C, as well as any of the Agreement's other provisions, to reflect the foregoing transaction without the necessity of amending this Agreement.

E. Nothing in this Agreement shall preclude San Francisco from selling water to any county, city, town, district, political subdivision, or other public agency for resale to customers within the service area of the California Water Service Company. Nothing in this Agreement shall require or contemplate any delivery of water to California Water Service Company in violation of the Act.

F. Nothing in this Agreement shall alter, amend or modify the Findings of Fact and Conclusions of Law and the Judgment dated May 25, 1961, in that certain action entitled City and County of San Francisco v. California Water Service Company in the Superior Court of the State of California in and for the County of Marin, No. 23286, as modified by the Quitclaim Deed from California Water Service Company to San Francisco dated August 22, 1961. The rights and obligations of San Francisco and California Water Service Company under these documents shall continue as therein set forth.

9.03. <u>City of Hayward</u>

A. San Francisco and the City of Hayward ("Hayward") entered into a water supply contract on February 9, 1962 ("the 1962 contract") which provides, inter alia, that San Francisco will supply Hayward with all water supplemental to sources and supplies of water owned or controlled by Hayward as of that date, in sufficient quantity to supply the total water needs of the service area described on an exhibit to the 1962 contract "on a permanent basis." The service area map attached as Exhibit C to the 1962 contract was amended in 1974 to remove an area of land in the Hayward hills and in 2008 to make minor boundary adjustments identified in SFPUC Resolution No. 08-0035.

B. The intention of the parties is to continue the 1962 contract, as amended, in effect as the Individual Water Sales Contract between San Francisco and Hayward. Accordingly, it shall not be necessary for San Francisco and Hayward to enter into a new Individual Water Sales Contract pursuant to this Article and approval of this Agreement by Hayward shall constitute approval of both this Agreement and an Individual Water Sales Contract for purposes of Section 1.03. The 1962 contract, as amended, will continue to describe the service area of Hayward, while rates for water delivered to Hayward during the Term shall be governed by Article 5 hereof. The 1962 contract, as amended, will continue in force after the expiration of the Term.

9.04. Estero Municipal Improvement District

A. San Francisco and the Estero Municipal Improvement District ("Estero") entered into a water supply contract on August 24, 1961, the term of which continues until August 24, 2011 ("the 1961 Contract"). The 1961 Contract provides, inter alia, that San Francisco will supply Estero with all water supplemental to sources and supplies of water owned or controlled by Estero as of that date, in sufficient quantity to supply the total water needs of the service area described on an exhibit to the 1961 Contract.

B. The intention of the parties is to terminate the 1961 Contract and replace it with a new Individual Water Sales Contract which will become effective on July 1, 2009. The new Individual Water Sales Contract will describe the current service area of Estero. The Individual Supply Guarantee applicable to Estero shall be 5.9 MGD, rather than being determined as provided in the 1961 Contract.

9.05. Stanford University

A. The parties recognize that The Board of Trustees of The Leland Stanford Junior University ("Stanford") operates a non-profit university, and purchases water from San Francisco for redistribution to the academic and related facilities and activities of the university and to residents of Stanford, the majority of whom are either employed by or students of Stanford. Stanford agrees that all water furnished by San Francisco shall be used by Stanford only for domestic purposes and those directly connected with the academic and related facilities and activities of Stanford, and no water furnished by San Francisco shall be used in any area now or hereafter leased or otherwise used for industrial purposes or for commercial purposes

other than those campus support facilities that provide direct services to Stanford faculty, students or staff such as the U.S. Post Office, the bookstore and Student Union.

Nothing in this Agreement shall preclude San Francisco from selling water to any county, city, town, political subdivision or other public agency for resale to Stanford or to customers within the service area of Stanford.

B. Notwithstanding anything in Section 8.08 to the contrary, Stanford shall have the right to assign to a public agency having the power of eminent domain all or a portion of the rights of Stanford under this Agreement or the Individual Water Sales Contract between it and San Francisco in connection with the acquisition by such public agency of all or a portion of Stanford's water system. In the event of any such assignment of all the rights, privileges, and obligations of Stanford under such contract, Stanford shall be relieved of all further obligations under such contract, provided that the assignee public agency expressly assumes Stanford's obligations thereunder. In the event of such an assignment of a portion of the rights, privileges, and obligations of Stanford under such contract, Stanford shall be relieved of such obligations so assigned thereunder, provided that the assignee public agency shall expressly assume such obligations so assigned to it.

Nothing in this Agreement shall require or contemplate any delivery of water to Stanford in violation of the Act.

9.06. City of San Jose and City of Santa Clara

A. **Continued Supply on Temporary, Interruptible Basis**. During the term of the 1984 Agreement, San Francisco provided water to the City of San Jose ("San Jose") and the City of Santa Clara ("Santa Clara") on a temporary, interruptible basis pursuant to SFPUC Resolution No. 85-0256. Subject to termination or reduction of supply as provided in Section 4.05 of this Agreement, San Francisco will continue to supply water to San Jose and Santa Clara on a temporary, interruptible basis pending a decision by the Commission, pursuant to Section 4.05.H, as to whether to make San Jose and Santa Clara permanent customers of the Regional Water System. San Francisco will furnish water to San Jose and Santa Clara at the same rates as those applicable to other Wholesale Customers pursuant to this Agreement. Water delivered to San Jose and Santa Clara after July 1, 2009 may be limited by the SFPUC's ability to meet the full needs of all its other Retail and Wholesale Customers. The service areas of San Jose and Santa Clara set forth in their Individual Water Sales Contracts may not be

expanded using the procedure set forth in Section 3.03. The combined annual average water usage of San Jose and Santa Clara shall not exceed 9 MGD. The allocation of that total amount between San Jose and Santa Clara shall be as set forth in their Individual Water Sales Contracts.

B. **Reservation of Rights**. In signing this Agreement, neither San Jose nor Santa Clara waives any of its rights to contend, in the event that San Francisco (1) elects to terminate or interrupt water deliveries to either or both of the two cities prior to 2028 using the process set forth in Section 4.05, or (2) does not elect to take either city on as a permanent customer in 2028, that it is entitled to permanent customer status, pursuant to the Act or any other federal or state law. Santa Clara's reservation of rights is limited to its existing Service Area A, as shown on Attachment Q-2. Service Area B, south of Highway 101, was added in 2018 solely for the operational convenience of Santa Clara. Santa Clara waives its right to make claims described in this Section 9.06.B and Section 8.07.B.3 with respect to Service Area B. In signing this Agreement, San Francisco does not waive its right to deny any or all such contentions.

9.07. City of Brisbane, Guadalupe Valley Municipal Improvement District, Town of Hillsborough

A. The parties acknowledge that San Francisco has heretofore provided certain quantities of water to the City of Brisbane ("Brisbane"), Guadalupe Valley Municipal Improvement District ("Guadalupe") and the Town of Hillsborough ("Hillsborough") at specified rates or without charge pursuant to obligations arising out of agreements between the predecessors of San Francisco and these parties, which agreements are referred to in judicial orders, resolutions of the SFPUC and/or the 1960 contracts between San Francisco and Brisbane, Guadalupe and Hillsborough. The parties intend to continue those arrangements and accordingly agree as follows:

1. Nothing in this Agreement is intended to alter, amend or modify the terms of SFPUC Resolution No. 74-0653 or the indenture of July 18, 1908 between the Guadalupe Development Company and the Spring Valley Water Company.

2. Nothing in this Agreement is intended to alter, amend or modify the Findings of Fact and Conclusions of Law and Judgment dated May 25, 1961 in that certain action entitled City and County of San Francisco v. Town of Hillsborough in the Superior Court of the State of California in and for the County of Marin, No. 23282, as modified by the Satisfaction of Judgment filed October 23, 1961 and the Compromise and Release between

Hillsborough and San Francisco dated August 22, 1961. The rights and obligations of Hillsborough under these documents shall continue as therein set forth.

3. Nothing in this Agreement is intended to affect or prejudice any claims, rights or remedies of Guadalupe or of Crocker Estate Company, a corporation, or of Crocker Land Company, a corporation, or of San Francisco, or of their successors and assigns, respectively, with respect to or arising out of that certain deed dated May 22, 1884, from Charles Crocker to Spring Valley Water Works, a corporation, recorded on May 24, 1884, in Book 37 of Deeds at page 356, Records of San Mateo County, California, as amended by that certain Deed of Exchange of Easements in Real Property and Agreement for Trade in Connection Therewith, dated July 29, 1954, recorded on August 4, 1954, in Book 2628, at page 298, Official Records of said San Mateo County, or with respect to or arising out of that certain action involving the validity or enforceability of certain provisions of said deed entitled City and County of San Francisco v. Crocker Estate Company, in the Superior Court of the State of California in and for the County of Marin, No. 23281.

///

///

///

///

///

///

///

///

///

///

///

AGREEMENT

FOR GROUNDWATER STORAGE AND RECOVERY FROM

THE SOUTHERN PORTION OF THE WESTSIDE BASIN

BY AND AMONG

THE SAN FRANCISCO PUBLIC UTILITIES COMMISSION,

THE CITY OF DALY CITY,

THE CITY OF SAN BRUNO

AND

CALIFORNIA WATER SERVICE COMPANY

TABLE OF CONTENTS

RECITALS 1

ARTICLE 1: DEFINITIONS 4

1.1. "Aggregate Designated Quantity" 4

1.2. "Agreement" 4

1.3. "Basin" 4

1.4. "Basin Management Objectives" 4

1.5. "Conjunctive Use Pilot Program" 4

1.6. "Consumer Price Index" 4

1.7. "Designated Quantity" 4

1.8. "Emergency" 4

1.9. "Existing Facilities" 5

1.10. "Force Majeure Event" 5

1.11. "Hold Periods" 5

1.12. "In Lieu Water" 5

1.13. "Individual Water Supply Guarantee" 5

1.14. "Management Plan" 5

1.15. "Minimum Groundwater Requirements" 6

1.16. "Minimum Surface Water Requirements" 6

1.17. "New Well" 6

1.18. "Nonparticipating Pumpers" 6

1.19. "Operating Committee" 6

1.20. "Over Production" 6

1.21. "Participating Pumpers" 6

1.22. "Preexisting Conditions" 6

1.23. "Project" 6

1.24. "Project Capital Costs" 7

1.25. "Project Facilities" 7

1.26. "Project Operation and Maintenance Expenses" 7

1.27. "Project Wells" 7

1.28. "Recovery Notice" 7
1.29. "Recovery" or "Recovery Periods" 7
1.30. "Replacement Water" 7
1.31. "SFPUC System" 8
1.32. "SFPUC System Water" 8
1.33. "SFPUC Storage Account" 8
1.34. "Shared Facilities" 8
1.35. "Shortage" 8
1.36. "Shortage Allocation" 8
1.37. "Shortage Allocation Plan" 8
1.38. "Storage" or "Storage Periods" 8
1.39. "Supply Assurance" 8
1.40. "Supply Year" 9
1.41. "Undesirable Effects" 9
1.42. "Wholesale Water" 9
1.43. "WSA" 9
ARTICLE 2: EFFECTIVE DATE, TERM AND AMENDMENT 9
2.1. Effective Date 9
2.2. Term 9
2.3. Amendment 9
2.4. Conditions Precedent in Article 3; Termination 10
2.5. Consequences of Non-Extension or Termination 10
ARTICLE 3: CONDITIONS PRECEDENT TO IMPLEMENTATION OF PROJECT 10
3.1. Permits and Approvals 10
3.2. No Force Majeure Event 11
ARTICLE 4: GROUNDWATER STORAGE PERIODS 11
4.1. SFPUC Storage Through In Lieu Water Deliveries 11
4.2. Notice of In Lieu Deliveries; Duty to Take Delivery of In Lieu Water 11
4.3. Reduction in Pumping from Existing Facilities; Minimum Groundwater Requirements 11
4.4. Location of Delivery of In Lieu Water to Participating Pumpers 12

4.5. Aggregate Designated Quantity; Initial Designated Quantities Assigned to Participating Pumpers....12

4.6. Increase of Aggregate Designated Quantity....13

4.7. Reduction in Aggregate Designated Quantity; Provision of Replacement Water by the SFPUC....13

4.8. Over Production of Water in Excess of Aggregate Designated Quantity....14

ARTICLE 5: RECOVERY OF SFPUC STORAGE ACCOUNT WATER FROM PROJECT WELLS....15

5.1. Circumstances Triggering Recovery of SFPUC Storage Account Water by Participating Pumpers....15

5.2. Timing of Recovery of Water from SFPUC Storage Account....15

5.3. Issuance of Recovery Notice by the SFPUC....16

5.4. Quantities of Water Available to Participating Pumpers from Project Facilities and SFPUC System Connections During Shortages Caused by Drought....16

5.5. Minimum SFPUC System Water Deliveries to Participating Pumpers during Recovery Periods....16

5.6. Recovery of Stored Water by the SFPUC....16

5.7. Limitations on Recovery....17

ARTICLE 6: PROJECT WATER ACCOUNTING....17

6.1. Accounting for Storage and Recovery....17

6.2. Accounting for Wholesale Water....18

6.3. Accounting for In Lieu Water Delivered during Conjunctive Use Pilot Program....18

6.4. Deferred Payment for Stored In Lieu Water Supplies....20

6.5. Accounting for Losses....20

ARTICLE 7: OWNERSHIP, OPERATION, MAINTENANCE AND REPLACEMENT OF EXISTING FACILITIES....21

7.1. Ownership, Operation, Maintenance and Replacement of Existing Facilities....21

7.2. Operation and Maintenance of Existing Facilities....21

7.3. Failure to Maintain, Repair, or Replace Existing Facilities....22

7.4. Measurement of Water Pumped Using Existing Facilities....22

7.5. Drilling and Operation of New Wells by Parties....22

ARTICLE 8: OWNERSHIP, INSTALLATION, OPERATION, AND MAINTENANCE OF PROJECT FACILITIES 23

8.1. Project Facilities 23

8.2. Real Property Interests Required for Project Implementation 23

8.3. Ownership of Project Facilities 23

8.4. Installation of Project Facilities 23

8.5. Provision of As-Built Drawings; Modifications to Project Facilities Following Completion 24

8.6. Operation and Maintenance of Project Facilities; Potential Undesirable Effects Associated with Operation of Project Facilities as Designed 24

8.7. Modifications to Participating Pumpers' Water Supply Permits Issued by the California State Water Resources Control Board 24

8.8. Use of Project Facilities by Participating Pumpers for Non-Project Purposes 25

8.9. Use of Project Facilities During an Emergency 25

ARTICLE 9: PROJECT COST RECOVERY 26

9.1. Project Capital Costs 26

9.2. Project Operation and Maintenance Expenses 26

9.3. Use of Project Facilities by Participating Pumpers for Non-Project Purposes 27

9.4. Metering of Project Facilities Operated During Recovery Periods by the SFPUC 27

ARTICLE 10: OPERATING COMMITTEE 27

10.1. Composition of Operating Committee 27

10.2. Duties and Powers of Operating Committee 27

10.3. Operating Committee Decision-Making 29

10.4. Schedule for Meetings of Operating Committee 30

10.5. Minutes of Operating Committee Meetings 30

10.6. Duty of Each Party to Monitor Conjunctive Use Project Performance 30

ARTICLE 11: DEFAULTS AND REMEDIES 30

11.1. Remedies upon Termination 30

11.2. Remedies are Cumulative 31

ARTICLE 12: MISCELLANEOUS PROVISIONS 31

12.1. Dispute Resolution 31

12.2. Mutual Indemnity 31

12.3. Insurance and Indemnity Provisions Applicable to Construction of Project Facilities 32

12.4. Workers' Compensation Insurance for Project Operation 32

12.5. Right to Adjudicate; Limited Waiver of Prescriptive Rights Claims; No Intent to Abandon 32

12.6. Nonparticipating Pumpers 33

12.7. More Favorable Terms 33

12.8. Assignment 33

12.9. Successors 34

12.10. Entire Agreement 34

12.11. Severability 34

12.12. Counterparts 34

12.13. Notice 34

12.14. Force Majeure 35

12.15. Maintenance and Inspection of Books, Records and Reports 36

12.16. Governing Law; Venue 36

12.17. Effect of Agreement on WSA 36

12.18. Compliance with Raker Act 37

12.19. Cooperation in Implementation of Project Mitigation Measures 37

ATTACHMENT A

Map of southern portion of Westside Groundwater Basin 40

ATTACHMENT B

Maps Showing Existing Facilities Within Service Areas of Each Participating Pumper ..41

ATTACHMENT C

Map of southern portion of Westside Groundwater Basin showing Project Facilities 42

ATTACHMENT D – 1

Daly City 43

ATTACHMENT D – 2

Cal Water – South San Francisco and Colma Service Areas 44

ATTACHMENT D – 3

San Bruno 45

ATTACHMENT E

List of Project Facilities and Assets 46

ATTACHMENT F

Accounting of Joint Expenses 47

ATTACHMENT F-1

Annual Report, Actual Project Operations and Maintenance Expenses..... 48

ATTACHMENT G

Form of Licenses Exchanged by Parties..... 50

AGREEMENT
FOR GROUNDWATER STORAGE AND RECOVERY FROM THE SOUTHERN PORTION OF THE WESTSIDE BASIN

This Agreement for Groundwater Storage and Recovery from the Southern Portion of the Westside Basin ("Agreement") is entered into by and among the San Francisco Public Utilities Commission ("SFPUC"), a department of the City and County of San Francisco ("San Francisco"), a California charter city, the City of Daly City ("Daly City"), a municipal corporation of the State of California, the City of San Bruno ("San Bruno"), a municipal corporation of the State of California, and California Water Service Company ("Cal Water"), a California investor-owned utility providing water service to the City of South San Francisco. Daly City, San Bruno and Cal Water are collectively referred to as "Participating Pumpers." The SFPUC and the Participating Pumpers are collectively referred to as "Parties" and individually as a "Party".

RECITALS

A. The SFPUC provides water ("SFPUC System Water") to San Francisco retail customers and 26 Bay Area wholesale customers, including the Participating Pumpers, through the operation of an integrated local Bay Area surface water supply system and a Tuolumne River surface water supply system. Deliveries to suburban wholesale customers are pursuant to the Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda, San Mateo and Santa Clara Counties dated July 1, 2009 ("WSA"). The SFPUC's wholesale customers extend from Daly City south through the Peninsula to Santa Clara County, and up the southeast side of San Francisco Bay through Alameda County to Hayward. Some wholesale customers, such as the Participating Pumpers, have also developed other water supplies, including local surface water and groundwater, and some import surface water from the State Water Project.

B. The SFPUC has adopted a Water System Improvement Program (WSIP) to increase the reliability of the SFPUC water system through 2030 and to provide water to meet retail and wholesale water demands through the year 2018. The WSIP included the groundwater storage and recovery project ("Project") that is the subject of this Agreement, proposed by the SFPUC to benefit all customers purchasing SFPUC System Water. The environmental effects of WSIP implementation were analyzed in a Program environmental impact report (PEIR) certified by the San Francisco Planning Commission in Motion No. 17734 dated October 30, 2008, and approved by the SFPUC in Res. No. 08-200 dated October 30, 2008.

C. On August 7, 2014, the San Francisco Planning Commission certified the completion of the Final Environmental Impact Report for the Project in its Motion No. M-19209, and the SFPUC approved the Project on August 12, 2014 in resolution no. 14-0127, including the adoption of a mitigation, monitoring and reporting program. SFPUC resolution no. 14-0127 authorized the SFPUC

General Manager to negotiate and execute this Agreement following approval by the Participating Pumpers.

D. The Participating Pumpers supply water to retail customers within their respective service areas in San Mateo County through a combination of purchased water from the SFPUC ("Wholesale Water"); their own groundwater wells in the Basin; and recycled water. The Participating Pumpers purchase Wholesale Water pursuant to the terms of the WSA and Individual Water Supply Contracts. The southern portion of the Westside Groundwater Basin, shown on the map attached hereto as **Attachment A**, (hereinafter "Basin") has been a source of municipal and irrigation water supply for northern San Mateo County water users, including the Participating Pumpers. Groundwater from the Basin has also been a portion of the historical water supply for irrigation at golf courses in San Mateo County and around Lake Merced in San Francisco, and at cemeteries in Colma and San Bruno.

E. Groundwater pumping from the Basin over the past half-century has from time to time lowered water levels within the Basin, resulting in vacant storage capacity in the Basin. The purpose of the Project described in this Agreement is to enhance the use of the Basin as an underground reservoir to store water during periods when surface water supply can be made available to offset pumping by the Participating Pumpers, leading to an accumulation of stored groundwater in the Basin. The SFPUC would augment recharge in the Basin by delivering surface water to the Participating Pumpers to be used in lieu of groundwater pumping, thus allowing groundwater to accumulate in the Basin. Stored water would be recaptured by pumping during periods of insufficient surface water supplies, thereby increasing the overall supply of potable water from the Basin.

F. A Conjunctive Use Pilot Program conducted by the Parties demonstrated that water can be stored in the Basin through the SFPUC's delivery of In Lieu Water to replace groundwater that the Participating Pumpers refrain from pumping. The Project objective is to develop enough additional groundwater pumping capacity in order to produce up to an additional 8,100 acre feet per year (pumped at an annual average rate of 7.2 million gallons per day, or "mgd") for an anticipated total extraction of 61,000 acre feet of stored water under the Project to meet SFPUC System demands during a possible 8.5 year drought cycle.

G. In addition to being available during shortages caused by drought, Project Facilities would be available for use during shortages caused by natural disasters, SFPUC System rehabilitation, scheduled maintenance, or malfunction of the SFPUC System as provided for in the WSA, as well as for certain non-Project purposes by Participating Pumpers, as described in this Agreement.

H. The SFPUC, through its consulting engineering firm MWH, has completed the "*South Westside Basin Conjunctive Use Program Alternatives Analysis Report*" dated October 2007 ("AAR"), and the "South Westside Basin Conjunctive Use Program Conceptual Engineering Report dated November 2008 ("CER"). The

AAR evaluated well sites and distribution connection alternatives for Project Well sites, taking into account the availability of disinfection and treatment facilities, water quality blending options, and costs. The CER recommended 16 Project Well sites, and included preliminary site layouts and a schedule for subsequent phases of project design and potential implementation (i.e., pre-design site investigations, environmental review, design, and construction). The configuration of Project Facilities and Project Wells reflects the technical and engineering analyses contained in the CER and DEIR, and is as shown on the map attached hereto as **Attachment C**.

I. The CER updated the AAR well siting plan based upon well interference analyses conducted by the firm of Luhdorff & Scalmanini in a report entitled "*Conceptual Estimate of Static Water Level Response to Planned Conjunctive Use Operations South Westside Basin*" dated April 18, 2008. Based on this work, the Participating Pumpers and the SFPUC have improved their understanding of the possible effects associated with the operation of Project Wells.

J. A Groundwater Management Plan ("Management Plan") has been developed for the South Westside Basin with participation by San Bruno, Daly City, and Cal Water, and in collaboration with the SFPUC, under California Water Code section 10750 et. seq. The Management Plan has been adopted by San Bruno and Daly City, accepted by Cal Water, and has been received by the SFPUC.

K. It is the intent of the Parties that this Agreement be interpreted to apply only to the Groundwater Storage and Recovery Project contemplated herein and that this Agreement will have no effect whatsoever on the land use planning or land use permitting authority or decision-making of Daly City, San Bruno, South San Francisco or the City and County of San Francisco.

L. It is the intent of the Parties that this Agreement, unless expressly stated otherwise, shall not create, alter or impact the rights of the Parties to pump or utilize water from the Basin or the rights of the Participating Pumpers or Nonparticipating Pumpers as overlying owners, pumpers, appropriators, prescriptors or otherwise.

NOW, THEREFORE, in consideration of the foregoing Recitals, the Parties hereby agree as follows:

ARTICLE 1

DEFINITIONS

As used in this Agreement, each of the following capitalized terms shall have the respective meaning given to it in this section unless expressly stated to the contrary where such term is used.

1.1. **"Aggregate Designated Quantity"** is the groundwater production allocation set forth in **Section 4.5** that the Participating Pumpers can pump from their Existing Facilities and any New Wells during the Term of this Agreement.

1.2. **"Agreement"** shall refer to this Agreement for Groundwater Storage and Recovery from the Southern Portion of the Westside Basin.

1.3. **"Basin"** shall refer solely to the 31 square mile southern portion of the Westside Groundwater Basin, as delineated on the map attached hereto as **Attachment A.**

1.4. **"Basin Management Objectives"** refers to the groundwater quality and quantity objectives set forth in the Management Plan.

1.5. **"Conjunctive Use Pilot Program"** is the program reflected in the First and Second Amendments to Individual Water Supply Contract between the City and County of San Francisco and the City of Daly City for Purposes of Conducting an Aquifer Recharge Study, along with any subsequent letter agreements between the SFPUC and the Participating Pumpers prior to the Effective Date of this Agreement, that authorized the continued delivery of In Lieu Water for study purposes. San Bruno and Cal Water also participated in the Conjunctive Use Pilot Program under respective amendments to their Individual Water Supply Contracts dated December 11, 2002 and December 20, 2002.

1.6. **"Consumer Price Index"** refers to the United States Department of Labor's Bureau of Labor Statistics Consumer Price Index for All Urban Consumers, San Francisco-Oakland-San Jose, California, excluding the shelter component of said index. If the aforesaid Consumer Price Index ceases to be published, any similar index published by any other branch or department of the U.S. government shall be used as the index in this Agreement, and if none is published, another index generally recognized as authoritative shall be substituted therefore by the Parties.

1.7. **"Designated Quantity"** refers to each Participating Pumper's initial production allocation of the Aggregate Designated Quantity identified in **Section 4.5**, subject to adjustment by agreement of the Participating Pumpers as provided in **Section 4.5.**

1.8. **"Emergency"** means a sudden, non-drought event, such as an earthquake or other catastrophic event that results in an insufficient supply of water available to all or part of a Party's service area, or to the combined SFPUC System

wholesale and retail service area, for basic human consumption, firefighting, sanitation, and fire protection.

1.9. **"Existing Facilities"** means those wells and associated infrastructure owned by the Participating Pumpers and in existence as of the Effective Date of this Agreement shown on **Attachment B**, and any replacements of Existing Facilities irrespective of location that may be required to pump the share of the Aggregate Designated Quantity allocated to each Participating Pumper during the Term of this Agreement.

1.10. **"Force Majeure Event"** means an event, conditions or circumstances not the fault of, and beyond the reasonable control of, the Party claiming excuse which makes it impossible or impracticable for such Party to operate Project Facilities, Shared Facilities or Existing Facilities for Project purposes, by virtue of its effect on (1) Project Facilities, Shared Facilities or Existing Facilities and their continued operation; (2) employees essential to such performance; or (3) the financial viability of a Party's continued operation of Project Facilities, Shared Facilities or Existing Facilities for Project purposes. Force Majeure Events include (a) an "act of God" such as an earthquake, flood, earth movement, or similar catastrophic event, (b) an act of the public enemy, terrorism, sabotage, civil disturbance or similar event, (c) a strike, work stoppage, picketing or similar concerted labor action, (d) delays in construction caused by unanticipated negligence or breach of contract by a third party or inability to obtain essential materials after diligent and timely efforts; or (e) adopted legislation or a decision, order or regulation issued by a federal or state court or regulatory agency during the Term of this Agreement.

1.11. **"Hold Periods"** refers to all time periods during the Term of this Agreement that are not declared to be Storage Periods by the SFPUC under **Section 4.2** or deemed to be Recovery Periods under the circumstances described in **Section 5.1**.

1.12. **"In Lieu Water"** is SFPUC System Water, subject to the limitations set forth in WSA section 9.02 for water delivered to Cal Water, that the SFPUC delivers at no charge on an interruptible basis to the Participating Pumpers, up to a maximum rate of delivery of 5.52 mgd, to replace groundwater that the Participating Pumpers refrain from pumping using their Existing Facilities during Storage Periods. In Lieu Water is referred to in the Conjunctive Use Pilot Program agreements as "Supplemental Water".

1.13. **"Individual Water Supply Guarantee"** is the amount of the 184 mgd Supply Assurance guaranteed to an individual wholesale customer under §3.02 of the WSA, as shown for the Participating Pumpers on **Attachments D-1 through D-3**.

1.14. **"Management Plan"** refers to the South Westside Basin Groundwater Management Plan prepared by WRIME, Inc. on behalf of San Bruno, Daly City,

Cal Water, and adopted by San Bruno and Daly City, accepted by Cal Water and received by the SFPUC.

1.15. **"Minimum Groundwater Requirements"** means either (1) the minimum quantity of groundwater pumping that cannot be replaced by delivery of In Lieu Water due to constraints in a Participating Pumper's distribution system that a Participating Pumper must continue to pump from its Existing Facilities combined with pumping from any New Wells during Storage Periods; or (2) the minimum quantity of groundwater pumping needed for Existing Facility or New Well maintenance in accordance with prudent operating parameters, as set forth on **Attachments D-1 through D-3.**

1.16. **"Minimum Surface Water Requirements"** means the minimum quantity of SFPUC System Water that must continue to be supplied to each Participating Pumper during Recovery Periods for purposes of (1) blending with groundwater as may be required to meet drinking water standards promulgated by the California State Water Resources Control Board; or (2) meeting demands in an individual Participating Pumper's service area whose distribution system may not be configured to permit delivery of groundwater to all of its customers, as set forth in **Attachments D-1 through D-3**.

1.17. **"New Well"** means a new groundwater production well in the Basin proposed by a Party that is not intended to replace an existing well, subject to any necessary environmental review under CEQA as set forth in **Section 7.5.**

1.18. **"Nonparticipating Pumpers"** are groundwater users pumping water from the Basin that are not participating in this Agreement.

1.19. **"Operating Committee"** is the committee of SFPUC and Participating Pumper representatives formed pursuant to **Article 10** of this Agreement.

1.20. **"Over Production"** refers to the combined average pumping rate of the Participating Pumpers using their Existing Facilities, including pumping from any proposed New Wells, that exceeds the Aggregate Designated Quantity over the course of a five year period, as explained in **Section 4.5.**

1.21. **"Participating Pumpers"** are the groundwater pumpers in the Basin that are participating in this Agreement: Daly City, San Bruno and Cal Water.

1.22. **"Preexisting Conditions"** refers to conditions in Existing Facilities that, if not properly managed by a Participating Pumper, have the potential to reduce the extraction of Designated Quantities from its Existing Facilities, irrespective of the intermittent operation of Project Wells.

1.23. **"Project"** refers to the proposed Groundwater Storage and Recovery Project described in this Agreement.

1.24. **"Project Capital Costs"** means costs incurred for the construction and acquisition of Project Facilities along with all Project-related planning costs, such as engineering costs, engineering services, costs to obtain Project-related regulatory permits, fees for environmental consultants, legal fees, and other costs that are required to construct and acquire Project Facilities.

1.25. **"Project Facilities"** includes all Project assets, such as Project Wells and all related fixed assets (e.g., real property, water treatment, connecting pipelines) that are acquired or constructed by the SFPUC pursuant to this Agreement and operated as Regional Water Enterprise assets for the allocation of capital costs and operation and maintenance expenses under the WSA, as shown on the map attached as **Attachment C** and listed on **Attachment E.**

1.26. **"Project Operation and Maintenance Expenses"** means the cost of operating and maintaining Project Facilities and Shared Facilities in good working order or repairing those Facilities when necessary, including all Project-related expenses, such as labor, materials and supplies, water treatment, permitting, energy, water quality monitoring and other expenses directly attributable to operation of Project Facilities for Project purposes. Project Operation and Maintenance Expenses may also include expenses incurred by the Participating Pumpers in operating Existing Facilities and new wells provided that such expenses are recommended in advance by the Operating Committee under **Section 9.2.**

1.27. **"Project Wells"** are the wells proposed to be installed for Project purposes, as shown on the map attached as **Attachment C.**

1.28. **"Recovery Notice"** is the written notice issued by the SFPUC declaring a forecasted shortage of water in the SFPUC Water System due to drought, scheduled maintenance, or an Emergency, triggering Recovery of water stored in the SFPUC Storage Account by the Parties to this Agreement at such time as the SFPUC may direct.

1.29. **"Recovery" or "Recovery Periods"** refers to the act of pumping or to periods of pumping of water from the SFPUC Storage Account for Project purposes using Project Facilities as may be directed by the SFPUC or recommended by the Operating Committee under **Section 5.1**. Recovery does not include the pumping of Project Wells for non-Project purposes as described in **Section 8.8**, the pumping of Project Wells for non-Project Emergency purposes under **Section 8.9**, or any volume of Over Production by a Participating Pumper.

1.30. **"Replacement Water"** means the quantity of SFPUC System Water made available by the SFPUC, in accordance with **Section 4.7,** to some or all of the Participating Pumpers based on a determination by the Operating Committee that the Aggregate Designated Quantity in **Section 4.5** should be reduced based on the criterion set forth in **Section 4.7.**

1.31. **"SFPUC System"** is the surface water importation system operated by the SFPUC that diverts, delivers, and accounts for SFPUC System Water to wholesale and retail customers in the SFPUC service area.

1.32. **"SFPUC System Water"** is the water the SFPUC diverts from local Bay Area watersheds and the Tuolumne River for use within the SFPUC service area, and includes any positive balance in the SFPUC Storage Account that is available for pumping using Project Wells connected to SFPUC System transmission mains or to the Participating Pumpers' water distribution systems.

1.33. **"SFPUC Storage Account"** means the book account maintained by the SFPUC showing the amount of water stored in the Basin during Storage Periods under this Agreement, and the amounts described in **Section 6.3** that were previously stored as a result of participation in the Conjunctive Use Pilot Project, less the amount of water pumped by the Participating Pumpers and the SFPUC from Project Wells during Recovery Periods and less losses from the Basin, as determined by the Operating Committee as provided in **Section 6.5**.

1.34. **"Shared Facilities"** refers to an Existing Facility that is owned by a Participating Pumper, as upgraded though the expenditure of Regional capital costs under section 5.04 of the WSA and operated in part as a Project Facility.

1.35. **"Shortage"** means a reduction in SFPUC System Water available to the SFPUC System or portions thereof caused by drought, Emergencies, scheduled maintenance activities, or malfunction of the SFPUC System.

1.36. **"Shortage Allocation"** refers to each Participating Pumper's allocation of SFPUC System Water during periods of mandatory rationing as determined by the wholesale customers in Tier 2 of the Shortage Allocation Plan or any successor plan that may be agreed to by the SFPUC and its wholesale customers during the Term of this Agreement.

1.37. **"Shortage Allocation Plan"** is the Water Shortage Allocation Plan attached as Attachment H to the WSA that describes a method for allocating water between the SFPUC retail and wholesale customer classes during system-wide water shortages that require an average system-wide reduction in water use of up to twenty percent.

1.38. **"Storage" or "Storage Periods"** refers to the act of storing water, or to periods of time when such storage occurs, through the provision of In Lieu Water to the Participating Pumpers, as may be directed by the SFPUC in accordance with **Section 4.3**.

1.39. **"Supply Assurance"** is the total amount (184 mgd) that the SFPUC guarantees it will make available to its wholesale customers on an annual average basis under §3.01 of the WSA.

1.40. **"Supply Year"** refers to the period from July 1 to June 30.

1.41. **"Undesirable Effects"** means a substantial adverse physical change to the Basin caused by Project operation that would result in (1) seawater intrusion, land subsidence, or water quality degradation; (2) material reductions in well yield at, or the inability to pump from, without experiencing excessive pump lifts, one or more wells owned and operated by a Participating Pumper; (3) lowering of groundwater levels such that there would be a substantial (greater than 5%) reduction in the amount of water available in the SFPUC Storage Account; (4) a substantial lowering of groundwater levels such that the impacts identified in subparts (1), (2) or (3) above would result, or any other material adverse physical change on the water supply or operations of a participating pumper. For purposes of this Agreement, "Undesirable Effects" also includes material increases in the cost of operation of Existing or Project Facilities.

1.42. **"Wholesale Water"** is SFPUC System Water that the SFPUC delivers to a Participating Pumper pursuant to the WSA within a Participating Pumper's Individual Water Supply Guarantee, and does not include supplies of In Lieu Water delivered to the Participating Pumpers on an interruptible basis.

1.43. **"WSA"** refers to the Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda, San Mateo and Santa Clara Counties dated July 1, 2009.

ARTICLE 2

EFFECTIVE DATE, TERM AND AMENDMENT

2.1. Effective Date

This Agreement shall be effective as of December 16, 2014, the date that the General Manager of the SFPUC signed this Agreement following approval by the Participating Pumpers (the "Effective Date").

2.2. Term

The term ("Term") of this Agreement shall be co extant with the term of the WSA, subject to the limitations and terms and conditions set forth herein. The Term shall begin on the Effective Date, and shall end on the expiration of the WSA, June 30, 2034. If the term of the WSA is extended as provided in section 2.02 thereof through the addition of any Extension Term(s), the term of this Agreement shall be automatically extended for an identical Extension Term.

2.3. Amendment

The Parties may agree to amend this Agreement in writing from time to time following duly authorized approval of their governing bodies. The matters to be determined by the Operating Committee under **Section 10.2**, and amendments to **Attachments A through G**, do not require the approval of the Parties' governing bodies.

2.4. Conditions Precedent in Article 3; Termination

In the event of the failure or non-waiver of any of the conditions precedent in **Article 3**, the Parties shall meet and confer on the feasibility of satisfying or waiving the conditions. If, after reasonable efforts by the Parties, the conditions precedent in **Article 3** cannot be satisfied or waived, this Agreement shall terminate automatically.

2.5. Consequences of Non-Extension or Termination

If the term of the WSA is not extended pursuant to **Section 2.2**, or if this Agreement terminates pursuant to **Sections 11.1 or 12.14**, the SFPUC shall continue to own and have access to all Project Facilities, and shall have the right to direct the Participating Pumpers to extract and use any remaining water reflected as a credit balance in the SFPUC Storage Account as provided in **Article 5** of this Agreement, until there is no remaining water in the SFPUC Storage Account. Alternatively, the SFPUC may in its sole discretion pump any remaining stored water reflected as a credit balance in the SFPUC Storage Account, subject only to the limitations contained in this Agreement until there is no remaining water in the SFPUC Storage Account. The SFPUC shall allocate the water supply benefit that accrues as a result of such pumping in accordance with Section 3.17 of the WSA. Upon the expiration of this Agreement, the SFPUC shall otherwise have no right, claim or interest in the Basin, or to water in the Basin, pursuant to this Agreement.

ARTICLE 3

CONDITIONS PRECEDENT TO IMPLEMENTATION OF PROJECT

The construction of Project Facilities, the Parties' obligations to operate Project Facilities, Existing Facilities and Shared Facilities in accordance with this Agreement, and the taking of any discretionary actions by any Party in accordance with this Agreement, are subject to the following conditions precedent:

3.1. Permits and Approvals

Compliance with CEQA (California Public Resources Code Section 21000 et seq.) and any other authorizations, consents, licenses, permits and approvals from any governmental authority or person required by applicable law to construct and operate the Project shall have been obtained.

In considering any proposed future discretionary actions that may be proposed in this Agreement, the Parties retain absolute discretion to: (1) make such modifications to any of the proposed discretionary actions as may be necessary to mitigate significant environmental impacts; (2) select feasible alternatives to the proposed discretionary actions that avoid significant adverse impacts; (3) require the implementation of specific measures to mitigate the significant adverse environmental impacts as part of the decision to approve the discretionary actions; (4) balance the benefits of the proposed discretionary actions against any significant environmental impacts before taking final actions to approve the proposed discretionary actions if such significant impacts cannot otherwise be avoided; or (5) determine not to proceed with the proposed discretionary actions.

3.2. No Force Majeure Event

No Force Majeure Event (as defined in **Section 1.10**) shall have occurred and be continuing.

ARTICLE 4

GROUNDWATER STORAGE PERIODS

4.1. SFPUC Storage Through In Lieu Water Deliveries

During Storage Periods the SFPUC may require the Participating Pumpers to store In Lieu Water in the Basin up to a maximum rate of 5.52 mgd. All quantities of In Lieu Water stored in the Basin shall be added to the SFPUC Storage Account, up to a total maximum storage of 61,000 acre feet. All quantities of In Lieu Water delivered to Cal Water shall be in accordance with the terms of the Raker Act and the requirements of WSA section 9.02.

4.2. Notice of In Lieu Deliveries; Duty to Take Delivery of In Lieu Water

The amount of In Lieu Water available for delivery to the Participating Pumpers shall be at the sole discretion of the SFPUC, taking into account hydrologic, operational and other conditions of concern to the SFPUC as the operator of the SFPUC System. If the SFPUC elects to declare a Storage Period and deliver In Lieu Water, the Participating Pumpers shall accept In Lieu Water delivered by the SFPUC in accordance with the terms and conditions of this Agreement.

In accordance with the schedule set forth in the Shortage Allocation Plan, the SFPUC informs its wholesale customers, including the Participating Pumpers, of its final estimate of available SFPUC System Water by April 15th (or sooner if adequate snow survey measurement data is available) to form a robust estimate of the water supply available to the retail and wholesale customer classes for the coming Supply Year. As a part of that annual determination, the SFPUC will give written notice to the Participating Pumpers and the Operating Committee on or before April 15th of the availability, anticipated quantities, and timing of SFPUC In Lieu Water deliveries.

4.3. Reduction in Pumping from Existing Facilities; Minimum Groundwater Requirements

If the SFPUC's notice of available SFPUC System Water states that In Lieu Water is available for delivery to the Participating Pumpers at the maximum total rate of 5.52 mgd, the Participating Pumpers shall each respond to the SFPUC in writing by May 15th regarding whether and to what extent they can accept delivery of In Lieu Water over the course of the coming Supply Year by reducing pumping of their Designated Quantities from their Existing Facilities to the amounts of their respective Minimum Groundwater Requirements shown in **Attachments D-1, D-2 and D-3**.

The Participating Pumpers' may indicate in their responses that they elect to pump groundwater from their Existing Facilities at rates higher than their individual Minimum Groundwater Requirements, up to a cumulative total exceedance of 1.9 mgd, as may be allocated based on mutual agreement of the Participating Pumpers. The Participating Pumpers shall take delivery of a minimum of 5 mgd of In Lieu Water during Storage Periods, or of any smaller quantity of In Lieu Water that is made available by the SFPUC in the notice issued on or before April 15th.

The Participating Pumpers shall decrease pumping from their Existing Facilities on such date as the Parties may agree but no later than July 1, at which time the SFPUC will commence delivery of In Lieu Water up to the amount made available by the SFPUC, and as requested by the Participating Pumpers. All quantities of In Lieu Water delivered by the SFPUC up to a rate of 5.52 mgd will be accounted for as credits in the SFPUC Storage Account.

The Participating Pumpers may operate their Existing Facilities to pump less than their individual Minimum Groundwater Requirements during Storage Periods. Deliveries of SFPUC System Water to offset pumping reductions below a Participating Pumper's Minimum Groundwater Requirement shall not be considered In Lieu Water and are subject to the provisions of **Section 6.4.** Increases in Minimum Groundwater Requirements may be made only with the approval of the Operating Committee under **Section 10.2.5**.

4.4. Location of Delivery of In Lieu Water to Participating Pumpers

The SFPUC shall deliver In Lieu Water to the Participating Pumpers at the existing service connections detailed in each Participating Pumper's Individual Water Supply contract with the SFPUC. To the extent that delivery of In Lieu Water under the Project requires additional service connections to the SFPUC System, such connections shall be considered Project Facilities for cost allocation purposes under **Article 9** of this Agreement.

4.5. Aggregate Designated Quantity; Initial Designated Quantities Assigned to Participating Pumpers

The Participating Pumpers agree to restrict the pumping of groundwater from the Basin utilizing their Existing Facilities, combined with any pumping from proposed New Wells, to the Aggregate Designated Quantity of 7,724 acre feet per year, extracted at an annual cumulative rate of 6.9 mgd. Subject to the limitation on Over Production expressed in **Section 4.8**, the Participating Pumpers may in their sole discretion exceed the 6.9 mgd annual cumulative pumping rate provided that the five-year moving average cumulative pumping rate, computed solely with reference to the previous five years of Recovery and Hold periods, shall not exceed 6.9 mgd. The initial Designated Quantities assigned to each of the Participating Pumpers over the first Supply Year during the Term of this Agreement are as follows:

4.5.1. Daly City: 3,842 acre feet per year, extracted at an annual average rate of 3.43 mgd.

4.5.2. Cal Water: 1,534 acre feet per year, extracted at an annual average rate of 1.37 mgd.

4.5.3. San Bruno: 2,350 acre feet per year, extracted at an annual average rate of 2.1 mgd.

The Designated Quantities set forth in this section may be freely altered, transferred, adjusted or allocated by agreement (collectively, "adjustments") of the Participating Pumpers in each Supply Year during the Term of this Agreement, provided that (1) the Aggregate Designated Quantity is not increased above 6.9 mgd using the five-year moving average described in this section; (2) the adjustments in Designated Quantities are reflected, to the extent possible, in the annual operating plans developed by the Operating Committee under **Section 8.6**; and (3) such adjustments do not exceed 10%, of each Participating Pumper's agreed upon Designated Quantity, plus or minus, for that Supply Year. The Operating Committee may consider an increase to the 10% limitation on adjustments to Designated Quantities expressed in this section in accordance with the criteria set forth in **Sections 4.6.1** and **4.6.2.**

4.6. Increase of Aggregate Designated Quantity

The future operation of the Basin for Project purposes, and continued water level monitoring by the Parties in accordance with the Management Plan, may result in mutual agreement that the Aggregate Designated Quantity set forth in **Section 4.5** may be below the yield of the Basin. Requests by the Participating Pumpers to extract groundwater above the Aggregate Designated Quantity may be approved by the Operating Committee as set forth in **Section 10.2.12**. As of the Effective Date of this Agreement, the Participating Pumpers are not planning to extract groundwater above the Aggregate Designated Quantity, but are incorporating a process for adjusting the Aggregate Designated Quantity should the Operating Committee decide to exercise its discretion to do so in the future, following compliance with CEQA to the extent required. Potential increases in the Aggregate Designated Quantity may be considered by the Operating Committee under any of the following circumstances:

4.6.1. Based on actual water level data and operational experience, or changed conditions, following the completion and acceptance of Project Facilities as reflected in a resolution of the SFPUC.

4.6.2. At any time following the permanent replacement of groundwater pumped by a Nonparticipating Pumper with water from another source, e.g. recycled water.

4.7. Reduction in Aggregate Designated Quantity; Provision of Replacement Water by the SFPUC

The Operating Committee may determine under **Section 10.2.12** that it is necessary to reduce the Aggregate Designated Quantity set forth in **Section 4.5**. Any decision of the Operating Committee to reduce the Aggregate Designated Quantity shall be based solely on a determination that continued pumping of the Aggregate Designated Quantity will result in the long term decline of Basin water levels absent Project operations in a manner that substantially interferes with the ability to extract water from the SFPUC Storage Account during Recovery Periods.

The determination of each Participating Pumper's share of any reduction in the Aggregate Designated Quantity shall be by agreement of the Participating Pumpers. In the event the Participating Pumpers are unable to reach agreement, Section 12.1 shall apply. Following such agreement, the SFPUC agrees that it will provide a total of up to 500 acre feet of Replacement Water per year to the Participating Pumpers at a cost of $226.53 per acre foot within 60 days of receipt of written notification by the affected Participating Pumper(s). The price of Replacement Water may be adjusted annually by the SFPUC based on the Consumer Price Index.

The supply of Replacement Water by the SFPUC shall not increase a Participating Pumper's Individual Water Supply Guarantee under the WSA and shall be consistent with section 9.02 of the WSA. In the event that the SFPUC offers to increase the Supply Assurance under section 4.06 of the WSA, and one or more Participating Pumpers receiving Replacement Water requests and receives an increase in its Individual Water Supply Guarantee, then the SFPUC's obligation to provide Replacement Water shall cease to the extent of the increase in the Participating Pumper's Individual Water Supply Guarantee that is offered by the SFPUC, and the corresponding amount of Replacement Water formerly supplied by the SFPUC shall be priced at the then-current SFPUC wholesale water rate. Alternatively, the SFPUC's obligation to provide a Replacement Water supply to one or more Participating Pumpers may be retired in whole or part if the SFPUC pays a mutually agreed upon one-time capital cost contribution towards a permanent replacement of groundwater pumped by a Nonparticipating Pumper with water from

another source in the Basin as provided in **Section 4.6.2.** Prior to making any decision to retire a Replacement Water obligation by making a capital cost contribution towards a permanent replacement of groundwater pumped from the Basin, the SFPUC agrees that it will solicit input and recommendations from the Bay Area Water Supply and Conservation Agency and the wholesale customers under WSA section 3.15.B. The provision of Replacement Water described in this section shall not be construed as precedent for the allocation of surface water by the SFPUC in any future water transfer or SFPUC System capital project involving other wholesale water customers of the SFPUC.

The notice(s) from the affected Participating Pumper(s) requesting delivery of Replacement Water shall, on an annual basis, select one of the following options:

4.7.1. An annual transfer of storage credits in the SFPUC Storage Account.

4.7.2. Provision of interruptible supplies of surface water from the SFPUC System, provided that the SFPUC determines, in its sole discretion, that such supplies are available.

4.8. Over Production of Water in Excess of Aggregate Designated Quantity

At the close of each Supply Year, beginning in the fifth year of Project operations, the Operating Committee will determine whether the Participating Pumpers engaged in Over Production, and if so, identify which Participating Pumper(s) were responsible for the Over Production by pumping more than its agreed upon Designated Quantity during the previous five year averaging period. Over Production shall never exceed an amount that is 10% over the Aggregate Designated Quantity (7.6 mgd) in any Supply Year or the five-year moving average amount of 6.9 mgd calculated as provided in **Section 4.5** above. No volume of Over Production shall result in any deduction of water from the SFPUC Storage Account. Any Participating Pumper determined by the Operating Committee to be responsible for Over Production shall take one of the following corrective actions:

4.8.1. reduce pumping below its Designated Quantity, not including Storage Periods, by a commensurate amount to restore water to the Basin in the amount of the Over Production which will result in the five year moving average basis of 6.9 mgd being achieved;

4.8.2. replace the quantity of water pumped in excess of the Designated Quantity with water from another source or supply, resulting in an equivalent amount of water being stored in the Basin, subject to the approval of the Operating Committee under **Section 10.2.12**; or

4.8.3. other appropriate measures proposed by the Parties, subject to the approval of the Operating Committee under **Section 10.2.12.**

A Participating Pumper that engages in Over Production shall propose its preferred method for remedying the Over Production by August 1st of the succeeding Supply Year and shall so inform the other members of the Operating Committee. If the proposed remedy for Over Production requires a decision of the Operating Committee under **Section 10.2.12,** the Operating Committee shall convene within 30 days of receipt of the proposal. The corrective measures set forth in **Sections 4.8.1 through 4.8.3** shall not be applicable to Over Production required solely due to an Emergency or for Project Management purposes as directed by the Operating Committee under **Section 5.2.3.**

ARTICLE 5

RECOVERY OF SFPUC STORAGE ACCOUNT WATER FROM PROJECT WELLS

5.1. Circumstances Triggering Recovery of SFPUC Storage Account Water by Participating Pumpers

Pursuant to **Section 5.2**, the SFPUC will determine the quantity of groundwater to be pumped from the SFPUC Storage Account using Project Wells in any of the following circumstances:

5.1.1. During Shortages caused by drought using the process set forth in the Shortage Allocation Plan, and as set forth in Section 5.2.1; or

5.1.2. During Shortages caused by an Emergency, SFPUC System rehabilitation, scheduled maintenance, or malfunction of the SFPUC System, any of which permit the SFPUC to temporarily reduce deliveries of Wholesale Water to all or some of its wholesale customers as set forth in WSA §3.11; or

5.1.3. Upon recommendation of the Operating Committee, including for purposes of managing the SFPUC Storage Account.

5.2. Timing of Recovery of Water from SFPUC Storage Account

5.2.1. Drought Recovery

The SFPUC may issue a Recovery Notice during droughts when the SFPUC determines that available water supplies from the SFPUC System are insufficient to meet customer purchase projections using the process set forth in the Shortage Allocation Plan. During Shortages caused by drought, the SFPUC may choose to exercise its dry year water supply options, including but not limited to Recovery of water from the SFPUC Storage Account; requesting voluntary reductions in water use or imposition of mandatory rationing; or any combination of these measures. Upon issuance of a Recovery Notice by the SFPUC, the Parties and the Operating Committee shall make plans and preparations for the possible Recovery of SFPUC Storage Account water commencing on July 1 or such later date as the Recovery Notice shall direct, pursuant to **Section 5.3** below. In successive dry years, the SFPUC's initial determination of water availability under the Shortage Allocation Plan shall include the remaining volume of water in the SFPUC Storage Account, and the SFPUC may direct the Participating Pumpers to continue Recovery from Project Wells under their operational control in each successive dry year until the total volume in the SFPUC Storage Account is exhausted.

5.2.2. Non-Drought Shortages

During Shortages that would be caused by SFPUC System rehabilitation or scheduled maintenance, the SFPUC's Recovery Notice shall provide not less than 60 days' advance notice to the Participating Pumpers and the Operating Committee that water must be pumped from the SFPUC Storage Account using Project Wells. During Emergencies or malfunctioning of the SFPUC System that

prevent the SFPUC from meeting water demands in its combined retail and wholesale service areas at established level of service goals for the delivery of SFPUC System Water, the SFPUC may issue a written Recovery Notice that requires Recovery by the Participating Pumpers as soon as is reasonably practicable.

5.2.3. Management of SFPUC Storage Account

For purposes of managing the SFPUC Storage Account, the Operating Committee may authorize pumping outside of Recovery Periods and shall develop a schedule of pumping pursuant to **Section 10.2.2** that provides adequate notice to the Parties of the need to pump water from the SFPUC Storage Account.

5.3. Issuance of Recovery Notice by the SFPUC

Based on the circumstances and timing set forth in **Sections 5.2.1 and 5.2.2**, the SFPUC may, in order to manage the limited supply of SFPUC System Water during Shortage, issue a Recovery Notice directing that groundwater be pumped by Participating Pumpers from Project Wells in the Basin, up to the cumulative total amount available in the SFPUC Storage Account and in accordance with the Operating Committee's (1) operating schedule developed pursuant to **Section 10.2.2** and (2) rules for accounting for storage losses from the Basin pursuant to **Sections 6.5** and **10.2.10**.

5.4. Quantities of Water Available to Participating Pumpers from Project Facilities and SFPUC System Connections During Shortages Caused by Drought

During Shortages caused by drought that require mandatory rationing, the quantity of groundwater pumped by each Participating Pumper from the SFPUC Storage Account using Project Facilities, plus each Participating Pumper's Minimum Surface Water Requirement, shall not exceed the volume of the Wholesale Water allocation that would have been available to that Participating Pumper under the methodology adopted by all of the wholesale customers under section 2.2 of the Shortage Allocation Plan. During Shortages caused by drought that require mandatory rationing, the Participating Pumpers may not take delivery of SFPUC Surface Water in excess of the volumes that would have been available to them under section 2.2 of the Shortage Allocation Plan as a substitute for reduced pumping from their Existing Facilities or from Project Wells under their operational control.

5.5. Minimum SFPUC System Water Deliveries to Participating Pumpers during Recovery Periods

During Recovery Periods, the SFPUC shall continue to supply each Participating Pumper with its Minimum Surface Water Requirements, as set forth in **Attachment D**. Changes in Minimum Surface Water Requirements may be made only with the approval of the SFPUC, which shall not be unreasonably withheld.

5.6. Recovery of Stored Water by the SFPUC

Project Facilities include Project Wells located on SFPUC System transmission line rights of way which may, in addition to Project Wells operated by the Participating Pumpers, be operated by the SFPUC for the Recovery of SFPUC Storage Account water pursuant to **Section 5.1**. These Project Wells are shown on **Attachment C**.

5.7. Limitations on Recovery

The Parties agree that Recovery will never exceed the cumulative amount of water available in the SFPUC Storage Account (taking into consideration Basin losses measured in accordance with the methodology adopted by the Operating Committee in accordance with **Section 6.5**), and that Recovery will never exceed 8,100 acre-feet per Supply Year withdrawn at an average rate of 7.2 mgd. The SFPUC further agrees that it will not pump or recover any water from the Basin unless there is a positive balance in the SFPUC Storage Account. If the SFPUC pumps or recovers any water from the Basin in excess of the balance available in the SFPUC Storage Account, the SFPUC must transfer a corresponding amount of SFPUC System Water to the Basin over the course of the succeeding Supply Year at no cost to the Participating Pumpers.

ARTICLE 6

PROJECT WATER ACCOUNTING

6.1. Accounting for Storage and Recovery

Accounting for Storage and Recovery of groundwater in the SFPUC Storage Account is to be performed on the following basis:

6.1.1. Storage Period Accounting. All quantities of In Lieu Water delivered to the Participating Pumpers will result in a corresponding credit to the SFPUC Storage Account. The SFPUC's calculation of Storage Account credits will be based on the volume of In Lieu Water delivered to each Participating Pumper through its service connections to the SFPUC System. The total volume of In Lieu Water delivered during Storage Periods will be measured based on the delta between the combined metered reductions in each Participating Pumper's annual Designated Quantity and its respective Minimum Groundwater Requirement. The Participating Pumpers will provide metered volumes of groundwater produced from their Existing Facilities to the SFPUC on a monthly basis. Quantities of In Lieu Water delivered to each Participating Pumper by the SFPUC will be reflected in the next SFPUC monthly billing to each Participating Pumper for Wholesale Water, along with the cumulative total of prior In Lieu Water deliveries during Storage Periods.

6.1.2. Recovery Period Accounting. All quantities of groundwater pumped from Project Wells by the Parties for Project purposes will result in a corresponding debit to the SFPUC Storage Account. Pumping for Project purposes includes pumping of up to 265 acre feet per year from Project Wells for purposes of maintaining well capacity when idle during Storage Periods and Hold Periods. The SFPUC's calculation of Storage Account debits will be based upon Project Well meter readings made by or provided to the SFPUC. During Recovery Periods, the SFPUC's monthly billings to each Participating Pumper for Wholesale Water will include the total metered extractions of SFPUC Storage Account Water from Project Wells by the Parties, along with the balance remaining in the SFPUC Storage Account.

6.1.3. Water Accounting for Use of Project Facilities for Non-Project Purposes or During Emergencies. The Participating Pumpers' use of Project Facilities for non-Project purposes under **Section 8.8** shall not result in a corresponding debit to the volume of water stored in the SFPUC Storage Account. A Participating Pumper's use of Project Facilities during a local Emergency under **Section 8.9** shall not result in a corresponding debit to the volume of water stored in the SFPUC Storage Account, unless the SFPUC determines, in its sole discretion, that such pumping is required under **Section 5.2.2** in order to maintain water deliveries from the SFPUC System to its combined wholesale and retail service area at the SFPUC's established level of service goals.

6.2. Accounting for Wholesale Water

Wholesale Water deliveries shall continue to be paid for by the Participating Pumpers pursuant to the WSA and shall not increase the credit balance in the SFPUC Storage Account. The SFPUC's delivery of Replacement Water, and interruptible supplies of In Lieu Water to a Participating Pumper in excess of its Individual Water Supply Guarantee, shall not be construed to create any liability, dedication to public use, or obligation on the part of the SFPUC to provide a greater volume of water to that Participating Pumper than its Individual Water Supply Guarantee, as set forth in Attachment C to the WSA.

Apart from changes in the timing of SFPUC System Water delivery and payment therefore in accordance with conjunctive operation of the Basin, and as is set forth in **Section 12.18** of this Agreement, nothing in this Agreement is intended to affect the Participating Pumpers' rights to, and payment for, Wholesale Water, including each Participating Pumper's share of payment for SFPUC System Regional asset capital costs and associated operating expense categories under the WSA.

6.3. Accounting for In Lieu Water Delivered during Conjunctive Use Pilot Program

During the Conjunctive Use Pilot Program, the SFPUC delivered In Lieu Water to the Participating Pumpers. The following quantities of water have been added to the SFPUC Storage Account as a result of the Conjunctive Use Pilot Program:

6.3.1. **Daly City** - During the Conjunctive Use Pilot Program, up until April 1, 2006, the SFPUC delivered 9,573 acre feet of In Lieu Water to Daly City, which paid for that water at the $0.35 per unit rate established under the Conjunctive Use Pilot Program. That water, which is included as a credit balance to the SFPUC Storage Account, shall be pumped first at no charge to Daly City upon the future initiation of Recovery.

From April 1, 2006 through March 31, 2011, the SFPUC continued to periodically deliver In Lieu Water to Daly City at no charge, resulting in an additional credit of 7,864 acre feet in the SFPUC Storage Account. Those deliveries shall be credited to the SFPUC Storage Account, and, when Recovery is initiated, and after Daly City has received, at no charge, 9,573 acre feet stored under the Conjunctive Use Pilot Program, Daly City shall pay for groundwater

pumped from the SFPUC Storage Account as provided in **Section 6.4** of this Agreement.

6.3.2. **Cal Water** - During the first phase of the Conjunctive Use Pilot Program, between February 1, 2003 and November 30, 2003, the SFPUC delivered 802 acre feet of In Lieu Water to Cal Water, which paid for that water at the $0.35 per unit rate established under the Conjunctive Use Pilot Program.

When the Conjunctive Use Pilot Program restarted on April 1, 2004, Cal Water did not participate and did not resume pumping any part of its Designated Quantity, but continued to rely on Wholesale Water for all of its water needs in its South San Francisco service area. This resulted in an increase in Basin water levels as if Cal Water had continued to participate in the Conjunctive Use Pilot Program, and a corresponding increase in the SFPUC Storage Account of 938 acre feet between April 1, 2004 and March 1, 2005. The SFPUC will reduce Cal Water's FY 2014-15 Wholesale Water billings by $315,323 (three hundred fifteen thousand three hundred twenty three dollars), representing the difference between the rate charged for 938 acre feet of water delivered under the Conjunctive Use Pilot Program and the established FY 2003-04 and FY 2004-05 SFPUC Wholesale Water rates paid by Cal Water, as if Cal Water had continued to participate in the Conjunctive Use Pilot Program between April 1, 2004 and March 1, 2005. The SFPUC will make the credit adjustment to Cal Water's FY 2014-15 Wholesale Water account by no later than June 30, 2015. Following the SFPUC's adjustment of Cal Water's Wholesale Water payment balance to reflect the previous storage of 938 acre feet in the SFPUC Storage Account, the total quantity of water delivered to Cal Water between February 1, 2003 - November 30, 2003 and April 1, 2004 – March 1, 2005 (1,740 acre feet) shall be pumped first at no charge to Cal Water upon the future initiation of Recovery. The SFPUC shall reimburse Cal Water an amount not to exceed $80,000 (eighty thousand dollars), based on invoices submitted and approved by the SFPUC, for design costs previously incurred by Cal Water as Project Capital Costs to evaluate the feasibility of co-locating Shared Facilities for Project Well no. 13 at Cal Water's existing South San Francisco water treatment facilities. Should Cal Water ultimately approve construction of these Shared Facilities, the SFPUC will contribute an additional amount not to exceed $500,000 (five hundred thousand dollars) towards the total costs of Cal Water's Shared Facilities as a Project Capital Cost, and shall reimburse Cal Water for design and construction costs as a lump sum payment prior to construction, for a total potential not to exceed amount of $580,000 (five hundred eighty thousand dollars). Operation and maintenance expenses incurred by Cal Water as a result of operating Shared Facilities for Project purposes as a Project Facility shall be reimbursed by the SFPUC as Project Operations and Maintenance Expenses in accordance with **Section 9.2.**

When Recovery is initiated, and after Cal Water has received, at no charge, 1,740 acre feet stored between February 1, 2003 and March 1, 2005, Cal Water shall

pay for groundwater pumped from the SFPUC Storage Account as provided in **Section 6.4** of this Agreement.

6.3.3. **San Bruno** - During the Conjunctive Use Pilot Program, up until March 1, 2005, the SFPUC delivered 3,915 acre feet of In Lieu Water to San Bruno, which paid for that water at the $0.35 per unit rate established under the Conjunctive Use Pilot Program. That water, which is included as a credit balance to the SFPUC Storage Account, shall be pumped first at no charge to San Bruno upon the future initiation of Recovery.

When Recovery is initiated, after San Bruno has received, at no charge, 3,915 acre feet stored under the Conjunctive Use Pilot Program, San Bruno shall pay for groundwater pumped from the SFPUC Storage Account as provided in **Section 6.4** of this Agreement.

San Bruno and SFPUC agree to execute a memorandum of understanding that reflects the SFPUC's intent to provide for, or to construct at the SFPUC's expense, facilities for the emergency storage of one million gallons of water in pressure zone 1/4, or equivalent, during Storage Periods since San Bruno's Existing Facilities would not be immediately available to supply water during an emergency.

6.4. Deferred Payment for Stored In Lieu Water Supplies

Except as expressly provided in **Section 6.3** of this Agreement, a Participating Pumper will not pay for In Lieu Water at the time of delivery. Rather, payment will be deferred until Recovery by pumping. The SFPUC will bill, and the Participating Pumper will pay, for groundwater pumped by the Participating Pumper from the SFPUC Storage Account using Project Facilities at the then-applicable Wholesale Water rate established by the SFPUC. During Storage Periods, each Participating Pumper shall pay the established SFPUC Wholesale Water rate for all quantities of Wholesale Water that are delivered to it as a result of pumping from Existing Facilities at a rate less than its Minimum Groundwater Requirement.

6.5. Accounting for Losses

Groundwater modeling performed by the Parties as well as the Management Plan have determined that the Basin is not a closed basin. Therefore, the Operating Committee shall develop and adopt, and periodically revise, if necessary, a proposal for accounting for losses from the Basin under **Section 10.2.10**, including, if necessary, a reduction in the Aggregate Designated Quantity under **Section 4.7** or to the volume of water in the SFPUC Storage Account, which shall be consistent with generally accepted principles of groundwater accounting and management.

ARTICLE 7

OWNERSHIP, OPERATION, MAINTENANCE AND REPLACEMENT OF EXISTING FACILITIES

7.1. Ownership, Operation, Maintenance and Replacement of Existing Facilities

Each Participating Pumper will continue to own, operate, maintain and replace, if necessary, its Existing Facilities during the Term of this Agreement. This Agreement does not authorize nor prohibit the replacement of Existing Facilities, which shall be based solely on the discretion of each Participating Pumper following environmental review under CEQA, if necessary. Each Participating Pumper further agrees that it is solely responsible for all costs associated with the operation, maintenance, repair and replacement of its Existing Facilities, except to the extent authorized in **Section 9.2**.

7.2. Operation and Maintenance of Existing Facilities

Each Participating Pumper agrees, to the extent practicable and economically feasible, to operate, maintain, repair and replace its Existing Facilities (1) in accordance with this Agreement and applicable laws, rules, regulations, guidelines, well encrustation studies and prudent utility operator standards, including management of any Preexisting Conditions to avoid interference with Recovery of water from the SFPUC Storage Account; (2) in accordance with its agreed upon share of the Aggregate Designated Quantity set forth in **Section 4.5;** and (3) in a manner that will not cause Undesirable Effects on Project Wells or the wells of other Participating Pumpers. The Participating Pumpers agree to use best efforts to maintain their Existing Facilities in good repair so as to be fully capable of producing the Aggregate Designated Quantity set forth in **Section 4.5** during Recovery Periods.

7.2.1. During the period following the SFPUC's issuance of a Recovery Notice for a potential drought pursuant to **Section 5.2.1**, each Participating Pumper shall conduct such testing and perform all maintenance or rehabilitation work on its Existing Facilities that may be required to produce its agreed upon Designated Quantity by the date specified in the Recovery Notice and over successive years if the drought continues. Within 30 days of receipt of the initial Recovery Notice under **Section 5.2.1**, and during each successive drought year, each Participating Pumper shall submit a written report to the Operating Committee signed by its licensed system operator that describes (1) the condition of its Existing Facilities; (2) whether its Existing Facilities are capable of producing its Designated Quantity by the date specified in the Recovery Notice; and (3) what steps must be undertaken by the Participating Pumper to improve its Existing Facilities in the event that it cannot produce its Designated Quantity by the date specified in the Recovery Notice.

7.2.2. In the event that the initial or subsequent reports reveal that a Participating Pumper's Existing Facilities are not capable of producing its share of the Aggregate Designated Quantity, the Participating Pumper shall provide additional reports on a quarterly basis to the Operating Committee until it has resolved the problem, as certified by its licensed system operator.

7.2.3. In the event of the temporary outage of Existing Facilities, the Participating Pumper owning the Existing Facility shall notify the Operating Committee of the

nature and extent of the outage. To the extent the Participating Pumper is able to obtain permission for the use of alternative facilities owned by Nonparticipating Pumpers (such as cemetery or golf course wells) for the production of its Designated Quantity, the Participating Pumper may utilize such alternative facilities after notification to and review by the Operating Committee.

7.3. Failure to Maintain, Repair, or Replace Existing Facilities

In the event that a Participating Pumper cannot provide certification by its licensed system operator that it has undertaken and completed the work identified in the initial report to the Operating Committee under **Section 7.2** by the date specified in the SFPUC's Recovery Notice under **Section 5.2.1**, the SFPUC shall have no obligation to increase the quantity of Wholesale Water available to the Participating Pumper under the Shortage Allocation Plan to make up any shortfall in the production of that Participating Pumper's Designated Quantity caused by the unavailability of its Existing Facilities.

7.4. Measurement of Water Pumped Using Existing Facilities

All Parties shall install, maintain and use adequate measuring devices on all water pumped from Existing Facilities, New Wells, and Project Wells, and shall report accurate measurements of all water pumped from Existing Facilities, New Wells and Project Wells to any Party and the Operating Committee upon request. All meters shall be maintained to be accurate within plus or minus 2%.

7.5. Drilling and Operation of New Wells by Parties

The SFPUC agrees not to construct or operate New Wells in the Basin other than (1) pursuant to this Agreement; (2) the certified Project final environmental impact report, and any addenda or supplements thereto; and (3) with the approval and agreement of the Participating Pumpers following amendment of this Agreement as provided in **Section 2.3**. Prior to drilling a test hole that may result in construction of a New Well, each Party proposing to construct and operate a New Well shall (i) provide written notice to the Operating Committee and the other Parties of its intent to do so; (ii) conduct environmental review to the extent required under CEQA of the impacts associated with construction and operation of the proposed New Well; (iii) if necessary, provide the Operating Committee with an analysis of mutual pumping interference effects between the proposed New Well and potentially affected Project Facilities and Existing Facilities operated by other Parties; and (iv) obtain a well construction permit from San Mateo County or the public entity with jurisdiction over well construction permits for the proposed New Well, if necessary. The Parties shall be given written notice and opportunity to comment on any environmental documentation prepared for a New Well within the time frame allowed for public comment under CEQA, and shall also be copied on any CEQA notices of exemption or notices of determination filed by a Party in connection with carrying out the approval of a New Well. All New Wells proposed by the Parties shall be located, constructed and operated in a manner that will not cause Undesirable Effects. Once operational, New Wells installed by the Participating Pumpers shall be considered to be Existing Facilities.

ARTICLE 8

OWNERSHIP, INSTALLATION, OPERATION, AND MAINTENANCE OF PROJECT FACILITIES

8.1. Project Facilities

Project Facilities, shown on the map attached as **Attachment C** and listed on **Attachment E**, are required to make use of 61,000 acre feet per year of the available storage capacity in the Basin by facilitating the simultaneous extraction of the Aggregate Designated Quantity by the Participating Pumpers from their Existing Facilities and stored SFPUC System Water by the Parties from Project Wells during Recovery Periods.

8.2. Real Property Interests Required for Project Implementation

Project Facilities may be located on lands within the service areas of the Participating Pumpers and/or on lands owned or acquired by the SFPUC. The SFPUC will acquire all real property interests that are necessary for the installation of, and access to, Project Facilities. The SFPUC agrees to grant suitable licenses to each Participating Pumper to the extent required for access to Project Facilities connected to a Participating Pumper's water distribution system. Each Participating Pumper agrees to grant the SFPUC suitable licenses for all Project Facilities on or across land owned by that Participating Pumper. All licenses exchanged by the Parties will follow the format used in **Attachment G**, subject to modification as necessary to address site specific needs and conditions. Each Participating Pumper further agrees to use reasonable best efforts to assist the SFPUC in securing fee title or easements for Project Facilities that may be located on property owned by other governmental entities within the service areas of the Participating Pumpers.

8.3. Ownership of Project Facilities

All Project Facilities will be owned by the SFPUC, subject to the limitations and restrictions within this Agreement.

8.4. Installation of Project Facilities

The SFPUC shall be solely responsible for the permitting, licensing, design, construction, and installation of Project Facilities under this Agreement. Each Participating Pumper shall have the right to approve the location of Project Facilities on land owned by such Participating Pumper, along with the design and the construction schedule for installation of any Project Facilities in its service area, which approvals shall not be unreasonably delayed or withheld. At the 10, 35, 65, 95 and 100% stages of design, the SFPUC will provide each Participating Pumper with the plans and specifications of work to be performed on the Participating Pumper's property or within its service area. Pending completion of design, the proposed location of Project Facilities is generally shown on the map attached as **Attachment C** and described in **Attachment E**. As set forth in **Section 12.3** of this Agreement, the SFPUC will require in all construction contracts for Project Facilities that the Participating Pumpers, and their respective officers, agents and employees, be named (1) as additional insureds on all required insurance policies, and (2) as additional indemnitees in any contractual indemnity provisions. Project Facilities constructed on land owned or acquired by the SFPUC shall be immune from San Bruno and Daly City planning,

zoning and building permit requirements pursuant to the doctrine of intergovernmental immunity set forth in the case law interpreting California Government Code §§53090 et seq.

8.5. Provision of As-Built Drawings; Modifications to Project Facilities Following Completion

Within three (3) months of completion and acceptance of Project Facilities (as reflected in a Resolution adopted by the SFPUC), the SFPUC shall deliver to each Participating Pumper a complete set of as-built drawings and specifications for all Project Facilities located within its service area. Should improvements and/or modifications be made to Project Facilities, the SFPUC will provide each Participating Pumper with revised as-built drawings and specifications within three (3) months of completing the improvements and/or modifications to Project Facilities.

8.6. Operation and Maintenance of Project Facilities; Potential Undesirable Effects Associated with Operation of Project Facilities as Designed

The Operating Committee will develop annual operation, maintenance and monitoring plans under the Project pursuant to Section 10.2.1. The Operating Committee will also develop annual operating schedules for each Supply Year during Recovery Periods, including projected groundwater storage and/or Recovery from Project Wells of any water available in the SFPUC Storage Account and pursuant to Section 10.2.2. Each Participating Pumper agrees to operate, maintain, and repair Project Facilities (except those Project Facilities connected to the SFPUC System transmission mains) that are connected to its distribution system as necessary to comply with the terms of this Agreement and to further the aims of the Project in accordance with applicable laws, rules, regulations, guidelines, and prudent utility operator and asset management standards, and in accordance with the annual operation, maintenance and monitoring plans approved by the Operating Committee under **Sections 10.2.1** and **10.2.2**. The SFPUC will operate, maintain and repair all Project Facilities connected to SFPUC System transmission mains. When the Project Facilities reach the end of their useful service lives, the SFPUC shall reasonably determine whether to replace or abandon all or any portion of Project Facilities.

8.6.1. The estimated pumping level drawdown effects upon Existing Facilities resulting from the future operation of Project Wells over a hypothetical seven and one-half year drought are set forth in **Attachments D-1, D-2 and D-3**. The Participating Pumpers agree that the estimated pumping water levels shown in **Attachments D-1, D-2 and D-3** are acceptable and will not cause any Undesirable Effects to their Existing Facilities.

8.6.2. Should actual operating experience of Project Wells cause greater pumping level drawdown effects than estimated in **Attachments D-1, D-2 or D-3**, that are determined by the Operating Committee to be Undesirable Effects, the Operating Committee shall have the authority to require the measures outlined in **Section 10.2.8** in order to eliminate or reduce the Undesirable Effect(s) to a less than significant level.

8.7. Modifications to Participating Pumpers' Water Supply Permits Issued by the California State Water Resources Control Board

Installation and operation of Project Facilities may require amendments to the Parties' drinking water supply permits issued by the Division of Drinking Water and Environmental Management

(DDWEM). The Parties will be solely responsible for obtaining any DDWEM permit modifications and for permit compliance related to the operation of Project Facilities connected to their water transmission and distribution systems. The SFPUC will assist in preparing exhibits required for the Participating Pumpers' permit amendment packages submitted to DDWEM. All costs incurred by the Parties in obtaining such permit modifications shall be considered Project Capital Costs. Each Party that operates Project Wells, and the downstream facilities that receive water from those Project Wells, shall be named as the Operator of Record in the modified water supply permits issued by DDWEM.

8.8. Use of Project Facilities by Participating Pumpers for Non-Project Purposes

The Participating Pumpers may use Project Facilities for non-Project purposes upon satisfaction of all of the following conditions precedent:

(a) the SFPUC has not issued a Recovery Notice directing the Participating Pumpers to pump water from the SFPUC Storage Account under **Section 5.3** of this Agreement;

(b) use of Project Facilities for non-Project purposes does not interfere with future Recovery under the Project, as determined by the Operating Committee;

(c) the quantity of water pumped using Project Facilities for non-Project purposes does not, when combined with pumping from Existing Facilities, exceed the Participating Pumper's Designated Quantity; and

(d) the Operating Committee has approved the proposed use of Project Facilities for non-Project purposes.

The Operating Committee will consider all requests for use of Project Facilities for non-Project purposes within 30 days. As of the Effective Date of this Agreement, the Parties do not contemplate any specific use of Project Facilities for non-Project purposes, but the Parties desire to incorporate a process for allowing such use should they decide to exercise their discretion to do so in the future following compliance with CEQA to the extent required. Except as approved by the Operating Committee, use of Project Facilities for non-Project purposes pursuant to this section shall not exceed thirty (30) days' duration. The approved use of Project Facilities for non-Project purposes is not subject to the limitation on Recovery set forth in **Section 5.7**, and groundwater pumped pursuant to this section will not be debited against the SFPUC Storage Account as provided in **Section 6.1.3**.

8.9. Use of Project Facilities During an Emergency

The Parties may use Project Facilities within their service areas without the advance approval of the Operating Committee for non-Project purposes during a local Emergency that does not result in the SFPUC issuing Recovery Notice under **Section 5.3**, provided that the Project Facilities are capable of operation during an Emergency. Such pumping may continue only for the duration of the Emergency. Within 48 hours of such Emergency, the Party or Parties shall notify and explain to the Operating Committee the basis of the Emergency. The Party will, at intervals established by the Operating Committee, report on its efforts to resolve the Emergency.

ARTICLE 9

PROJECT COST RECOVERY

9.1. Project Capital Costs

The SFPUC will provide all funding required for payment of Project Capital Costs. To the extent that the Participating Pumpers directly provide in-kind services, real property, equipment assets in furtherance of the construction of Project Facilities, and Shared Facilities for Project purposes, the value of these contributions shall be included within Project Capital Costs. All Project Facilities listed on **Attachment E** will be classified as Regional SFPUC System assets for purposes of cost recovery under the WSA, unless indicated otherwise. The capital costs and operation expenses of Shared Facilities that are used and useful to a Participating Pumper irrespective of Project operations shall be allocated between the SFPUC and that Participating Pumper on the basis of mutual agreement or as otherwise specified in this Agreement. On an annual basis during construction of Project Facilities and Shared Facilities, the SFPUC will include information detailing estimated and actual Project Capital Costs in accordance with the requirements of WSA sections 5.04 and 6.08.

9.2. Project Operation and Maintenance Expenses

The SFPUC shall annually reimburse each Participating Pumper for all Project Operation and Maintenance Expenses actually incurred in the operation and maintenance of Project Facilities and Shared Facilities for Project purposes. The SFPUC's reimbursement obligation does not extend to Project Operation and Maintenance Expenses incurred by the Participating Pumpers for the operation of Project Facilities for non-Project purposes permitted in **Sections 8.8** and **8.9**. By November First of each year during the Term, each Participating Pumper shall provide an estimated Project Operations and Maintenance Expenses budget to the Operating Committee for the coming Supply Year as referenced in **Section 10.2.1**. The Operating Committee, on a case-by-case basis, may also recommend that the SFPUC reimburse the Participating Pumpers for operations and maintenance expenses incurred in the operation of Existing Facilities that are attributable to Undesirable Effects caused by Project operations. A Participating Pumper requesting reimbursement of expenses for the operation and maintenance of Existing Facilities shall certify that it has been operating and maintaining its Existing Facilities in a reasonable and prudent manner, including but not limited to management of the effects of Preexisting Conditions. All Project Operation and Maintenance Expenses, including expenses incurred by the SFPUC for the operation and maintenance of Project Wells connected to SFPUC System transmission mains, shall be considered Regional operation and maintenance expenses under WSA section 5.05, as further detailed in **Attachment F**. Project Operation and Maintenance Expenses incurred by a Participating Pumper in the operation of Shared Facilities shall be allocated based on the proportionate use of Shared Facilities for Project purposes. After the close of each Supply Year on June 30, each Participating Pumper shall submit an accounting, including invoices and other documentation, supporting its actual Project Operation and Maintenance Expenses over the preceding Supply Year to the SFPUC. Accounting detail submitted by a Participating Pumper for reimbursement of annual Project Operation and Maintenance Expenses shall be of sufficient detail to permit the SFPUC to properly allocate these expenses between (1) the SFPUC's retail and wholesale water customers under the WSA and (2) Project Facilities, Shared Facilities, and the Participating Pumper's Existing Facilities. The SFPUC shall reimburse each Participating Pumper for incurred Project Operation and Maintenance Expenses within sixty (60) days of receipt of the annual accounting. In the alternative, the SFPUC may, with the agreement of the Participating Pumper, reimburse the Participating Pumper for the previous fiscal year's Project Operation and Maintenance Expenses as one or more credits on monthly invoices for Wholesale Water over the course of the following

Fiscal Year. Disputes between the SFPUC and one or more Participating Pumpers concerning the reimbursement or accuracy of accounting of annual Project Operation and Maintenance Expenses will be resolved by the Operating Committee, or pursuant to **Section 12.1.**

9.3. Use of Project Facilities by Participating Pumpers for Non-Project Purposes

If the temporary use of Project Facilities by a Participating Pumper for non-Project purposes is approved by the Operating Committee under **Section 8.8** of this Agreement, or is approved by the SFPUC during a local Emergency under **Section 8.9**, the Participating Pumper shall deduct a proportionate share of operation and maintenance expenses reflecting such operation from the annual total of Project Operations and Maintenance Expenses submitted to the SFPUC for reimbursement under **Section 9.2.**

9.4. Metering of Project Facilities Operated During Recovery Periods by the SFPUC

The metered volume of water pumped from Project Wells connected to SFPUC transmission mains pursuant to **Section 5.6** shall be used to account for pumping of water for Project purposes as provided in **Section 6.1.2.** Meters that measure the flow of water pumped during Recovery Periods that is added to SFPUC transmission lines shall be considered new "System Input Meters" in accordance with Section 3.14 and Attachment J of the WSA.

ARTICLE 10

OPERATING COMMITTEE

10.1. Composition of Operating Committee

Upon the Effective Date of this Agreement, the Parties shall form a four member Operating Committee comprised of one representative each from the Participating Pumpers and the SFPUC. For decisions requiring a majority vote, the Operating Committee shall select a neutral fifth member not currently employed by or serving as a consultant to any of the Parties to serve as a tie-breaker as necessary in the event of a deadlock between the other members of the Operating Committee. The neutral fifth member may be employed by, or a consultant to, the Bay Area Water Supply and Conservation Agency. If a majority of members of the Operating Committee cannot agree to the identity of the neutral fifth member, the name shall be selected at random from the list of names proposed by members of the Operating Committee. The fifth member of the Operating Committee shall have no voting authority apart from serving as a tie-breaker. All 5 members of the Operating Committee shall have experience and technical expertise in water supply, groundwater wells and pump operations.

10.2. Duties and Powers of Operating Committee

The Management Plan contains Basin Management Objectives that are consistent with the sustainable management of the Basin. The Operating Committee will consider, but not be bound by, (1) the Basin Management Objectives and (2) the Mitigation, Monitoring and Reporting Program adopted by the SFPUC as a binding commitment in Resolution No. 14-0127 in making the decisions authorized in Article 10 of this Agreement. The duties and powers of the Operating Committee are limited to the following.

10.2.1. Development of annual Project operation, maintenance and monitoring plans, and estimated budgets for these activities, as set forth in **Section 8.6** and **Section 9.2,** to ensure proper management of the Project, including protocols for reporting collected data back to the Operating Committee by the Parties, review of operation, maintenance and monitoring plans submitted by the Parties, and recovery of Project Operations and Maintenance Expenses. The annual plans required by this section shall be completed by December 1 of each year.

10.2.2. Development of Project Well operating schedules during Recovery Periods by May 1st of each drought year that projects Recovery, including where such pumping shall occur, in what quantities, and any redirection or reduction in pumping to avoid Undesirable Effects or well interference impacts identified in the Project Mitigation, Monitoring and Reporting Program, subject to the sole discretion of the SFPUC to determine the volumes of In Lieu Water available for Storage and subsequent Recovery of any water available in the SFPUC Storage Account under **Articles 4** and **5** of this Agreement. Project Well operating schedules for non-drought Shortages under **Sections 5.2.2** and **5.2.3** shall be developed and approved by the Operating Committee on an as-needed basis.

10.2.3. Review of (1) annual reports submitted by the Participating Pumpers' licensed operators certifying that the Existing Facilities within their respective service areas are capable of operation during droughts in compliance with the standards set forth in **Section 7.2** of this Agreement; and (2) a Participating Pumper's proposed use of facilities owned by Nonparticipating Pumpers as required to pump Designated Quantities due to the unavailability of the Participating Pumper's Existing Facilities referenced in **Section 7.2** of this Agreement.

10.2.4. Review and approval of a request by a Participating Pumper to use Project Facilities for non-Project purposes, under the conditions set forth in **Section 8.8**.

10.2.5. Review and approval of a Participating Pumper's request for an increase in its Minimum Groundwater Requirement, pursuant to **Section 4.3**.

10.2.6. Monitoring pumping from all Existing and Project Facilities within the Basin to evaluate water quality trends and whether increases in the volume of water produced are occurring, including any Over Production in pumping from Existing Facilities resulting from higher Basin operating levels attributable to Storage under the Project. In response to changed conditions within the Basin, the Operating Committee may make recommendations to the Parties as to whether any action or changes in Project water accounting rules set forth in **Section 6.1** may be necessary to protect the Recovery of SFPUC Storage Account Water and Designated Quantities or to ensure the recovery of Project costs in accordance with Article 9 of this Agreement.

10.2.7. Approval of pumping Project Wells outside of Recovery Periods for Project management pursuant to **Section 5.2.3.**

10.2.8. Determining whether the operation of Project Wells caused Undesirable Effects on Existing Facilities under **Section 8.6** and identifying measures that the SFPUC must take to reduce or eliminate such Undesirable Effects and otherwise avoid harm to the Participating Pumpers and ensure long-term viability of the Basin as a drinking water supply. To the extent that the Operating Committee determines that the pumping of any Project Well caused Undesirable Effects, the Operating Committee may require one or more of the following actions, subject to necessary CEQA compliance: (1) redirect pumping to other Project Facilities; (2) reduce pumping at particular Project Well(s) while preserving the cumulative ability of the SFPUC to order the extraction of up to 8,100 acre feet annually from the SFPUC Storage Account; (3) modification of Existing Facilities as a Project Capital Cost (e.g., resetting pumps, installing water treatment facilities, vacuum pumps etc.); (4) reimbursement of additional cost as a Project Operation and Maintenance Expense under **Section 9.2**; or (5) such other remedy as may be appropriate.

10.2.9. Request and approval of studies and such technical support as is necessary to assist in Project management, conduct required monitoring, to refine Project goals and operations, to use the Basin more effectively, and to identify and address potential problems. Technical support may be provided by employees of the Parties or by third-party contractors. The costs of all technical support authorized by the Operating Committee shall be deemed a Project Operations and Maintenance Expense.

10.2.10. Determine the appropriate methodology of accounting for losses from the Basin under **Section 6.5.**

10.2.11. Review of information provided by the Parties required under **Section 7.5** concerning proposed New Wells.

10.2.12. Increases in the limitation on adjustments to Designated Quantities expressed in **Section 4.5** and the Aggregate Designated Quantity, using the criteria set forth in **Section 4.6**; reductions in the Aggregate Designated Quantity as provided in **Section 4.7**, and the approval of actions to remedy Over Production that is delegated to the Operating Committee under **Section 4.8.3**.

10.3. Operating Committee Decision-Making

The development of Project Well operating schedules under **Section 10.2.2** during Recovery Periods, and the decisions delegated to the Operating Committee in **Sections 10.2.5, 10.2.7, 10.2.10,** and **10.2.12**, shall require unanimous approval of the Operating Committee. All other decisions of the Operating Committee shall be by majority vote of the members of the Operating Committee, utilizing the fifth tie-breaker vote as necessary. For all matters, each member of the Operating Committee shall: (a) act in good faith; (b) utilize the best available scientific evidence relevant to the matter including but not limited to data and analysis generated by numeric models that meet prevailing industry standards for accuracy and reliability; and (c) ensure that the Storage and Recovery of water under the Project avoids Undesirable Effects to the Basin as well as ensure the long-term viability of the Basin as a drinking water supply. A minority of Operating Committee members may request voluntary mediation of certain disputes as described in **Section 12.1** of this Agreement.

10.4. Schedule for Meetings of Operating Committee

The Operating Committee shall meet within thirty days after the Effective Date of this Agreement, and thereafter as often as necessary to implement operations and take other action under this Agreement, but shall meet at least twice a year.

10.5. Minutes of Operating Committee Meetings

Minutes of all Operating Committee Meetings shall be kept and shall reflect a summary of all proceedings, actions and recommendations taken by the Operating Committee. Copies thereof shall be furnished to all Parties.

10.6. Duty of Each Party to Monitor Conjunctive Use Project Performance

Each Party has an independent obligation to review all monitoring information reported to the Operating Committee. If any Party believes that the Storage and Recovery of water under the Project is causing Undesirable Effects to its Existing Facilities, that Party shall promptly advise the Operating Committee.

ARTICLE 11

DEFAULTS AND REMEDIES

11.1. Remedies upon Termination

Notwithstanding anything to the contrary herein, if one or more of the Participating Pumpers breaches any provision of this Agreement, or invokes the existence of a Force Majeure Event under **Section 12.14**, the SFPUC may terminate this Agreement with respect to the Party or Parties by written notice to the Participating Pumpers.

11.1.1. If the SFPUC terminates this Agreement due to the occurrence of a Force Majeure Event or breach by one or more of the Participating Pumpers, any credit balance in the SFPUC Storage Account shall remain the property of the SFPUC, along with the ownership of all Project Facilities within such Party or Party's service area(s). Upon such termination, the SFPUC may in its sole discretion extract any stored water reflected as a credit balance in the SFPUC Storage Account using the Project Wells referenced in **Section 5.6** of this Agreement until there is no remaining water in the SFPUC Storage Account. Alternatively, in its sole discretion, the SFPUC may require the breaching Party or Parties, or Party(ies) subject to a Force Majeure Event, to purchase from the SFPUC the remaining balance of any water in the SFPUC Storage Account that is attributable to Storage of In Lieu Water by that Party, based on the applicable wholesale water rate for that water as provided in **Section 6.4** of this Agreement.

11.1.2. In the event that this Agreement is terminated under this section 11.1 or Section 12.14, the provisions of WSA Section 3.17, as it may be amended by the SFPUC and its wholesale customers, shall govern (1) the disposition of the balance of water in the SFPUC Stored Water Account; (2) the allocation of outstanding eligible Project Operations and Maintenance Expenses; and (3) the disposition of investments in Project Capital Costs by the SFPUC should the Project Facilities no longer be used to benefit wholesale or retail customers of the

SFPUC System. Upon the termination of this Agreement the SFPUC shall otherwise have no right, claim or interest in the Basin, credit or storage balances in the Basin, or water in the Basin, pursuant to this Agreement.

11.2. Remedies are Cumulative

The rights and remedies or the Parties are cumulative, and the exercise by any Party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same breach or any other breach by the other Party.

ARTICLE 12

MISCELLANEOUS PROVISIONS

12.1. Dispute Resolution

If (1) any dispute arises between or among the Parties regarding interpretation or implementation of this Agreement that does not concern a decision of the Operating Committee; or (2) one or more Parties file a written appeal with the Operating Committee within 14 days of an Operating Committee decision or action subject to majority vote; or (3) the members of the Operating Committee cannot achieve unanimity as described in **Section 10.3**; or (4) one or more Parties decline to follow a decision or action of the Operating Committee; or (5) one or more Parties asserts that the Operating Committee is acting beyond the scope of its authority as specified in this Agreement, the Parties will, in the first instance, attempt in good faith to resolve the dispute through their chief executive officers or their designees. If the chief executive officers cannot forge a consensus on the disputed issue, the matter shall be referred for non-binding mediation to a single mediator who will have technical expertise in groundwater management and/or public utility accounting practices. The mediator will be selected by unanimous consent of the Parties, but if unanimous consent of the Parties cannot be obtained the mediator will be selected by a majority vote of the Parties from a list of mediators maintained by the Operating Committee based on the qualifications set forth in this **Section 12.1.** Any Party may commence mediation by providing to the other Parties a written request for mediation, setting forth the subject of the dispute and the relief requested. The non-binding mediation will be governed by the American Arbitration Association's Commercial Mediation Procedures. If the dispute is not resolved by mediation, each Party will be free to pursue whatever legal or equitable remedies may be available. The fees and expenses incurred as a result of any dispute resolution activities, including attorney's fees, mediator fees and costs, expert costs, and other expenses, shall be borne solely by the Parties involved in the dispute. The Parties involved in the dispute will share the mediator's expenses on an equal basis.

12.2. Mutual Indemnity

Each Party agrees to indemnify, defend, and hold the other Parties and their respective officers, employees and agents free and harmless from and against any and all loss, liability, expense, claims, costs, suits and damages, including attorney's fees, arising out that Party's willful misconduct or negligent acts, errors, or omissions in its operation and maintenance of Existing Facilities, Shared Facilities or Project Facilities under **Articles 7** and **8** of this Agreement.

12.3. Insurance and Indemnity Provisions Applicable to Construction of Project Facilities

The SFPUC and the Participating Pumpers agree to the following provisions concerning insurance coverage and indemnity during the construction of Project Facilities.

12.3.1. Commencing from the date of Project approval by the SFPUC, every contract issued by the SFPUC for construction of Project Facilities (including associated professional services, environmental consultants, and other contracts required for construction of Project Facilities) shall require the contractor to maintain in force during the course of the contract all customary insurance required by the SFPUC, and shall include coverage for worker's compensation, commercial general liability insurance, automobile liability insurance and professional liability insurance. Each contractor's general, automobile, and professional liability insurance policies shall name as additional insured each Participating Pumper, and its officers, agents and employees.

12.3.2. Commencing from the date of Project approval by the SFPUC, every contract issued by the SFPUC for construction of Project Facilities (including associated professional services, environmental consultants, and other contracts required for construction of the Project) shall contain language requiring the contractor to indemnify, defend and hold harmless the SFPUC and each Participating Pumper for any and all claims for bodily injury or property damage arising out of the contractor's performance of work in constructing or installing Project Facilities or providing support services required for Project implementation.

12.4. Workers' Compensation Insurance for Project Operation

Each Party will provide to the other Parties evidence of Workers' Compensation insurance prior to entering into this Agreement. With respect to employees of a particular Party who are employed as operators of Project Facilities, the other Parties shall not be considered joint employers of any such employees, who shall be solely managed and controlled by each individual Party. Each Party agrees to maintain in force, during the term of this Agreement, Workers' Compensation insurance, in statutory amounts, with Employers' Liability Limits of not less than $1,000,000 each accident.

The cost of Workers' Compensation insurance applicable to the Parties' operation of Project Facilities shall be considered a Project Operations and Maintenance Expense. Approval of Workers' Compensation insurance by the SFPUC shall not relieve or decrease the liability of each Participating Pumper hereunder. In the event that any employee of a Party files a Workers' Compensation claim against another Party, the Party whose employee filed the claim agrees to indemnify, defend and hold harmless the other Parties for any such claims as provided in **Section 12.2** of this Agreement.

12.5. Right to Adjudicate; Limited Waiver of Prescriptive Rights Claims; No Intent to Abandon

12.5.1. Each Party reserves all rights to initiate or participate in a general adjudication of Basin groundwater rights. Nothing in this Agreement shall limit in any way any rights or interests that the Parties may assert related to the use or management of the Basin in the event of a general adjudication of Basin

groundwater rights, apart from the waiver of prescriptive rights claims set forth in section 12.5.2.

12.5.2. In the event of a general adjudication of Basin groundwater rights, including adjudication of issues pertaining to Basin use or management, (i) unless directed otherwise by a court or regulatory agency, the Participating Pumpers agree that the SFPUC will retain the right to any credit balance in the Storage Account, and the right to continue Storage and Recovery of up to 61,000 acre feet of water in the Basin using Project Facilities; (ii) the SFPUC expressly waives the right to store additional water in the Basin without the express written consent of all Parties effective through written amendment of this Agreement in accordance with **Section 2.2**; and (iii) each Party to this Agreement expressly waives any and all claims to prescriptive groundwater rights against the other Parties based on the production or use of groundwater pursuant to this Agreement; provided, however, that the Participating Pumpers reserve and retain all other claims to prescriptive groundwater rights which they may possess as of the Effective Date.

12.5.3. The failure of any Participating Pumper to use all of its Designated Quantity for any amount of time during periods of In Lieu Water delivery shall not be deemed to be or constitute an abandonment of such Participating Pumper's Designated Quantity.

12.5.4. The Parties agree that each Participating Pumper may file notices of reduction of groundwater use as a result of the use of an alternative supply of water from a nontributary source, pursuant to California Water Code Section 1005.1.

12.5.5. The SFPUC recognizes that it cannot and will not assert any claim to water in the Basin, including, but not limited to, as an overlying owner, pumper, or appropriator, except as expressly authorized under this Agreement or to the extent any such right exists as a result of the SFPUC's rights to the North Westside Basin.

12.6. Nonparticipating Pumpers

A Nonparticipating Pumper may become a Party to this Agreement if agreed to by all Parties in a written modification to this Agreement, as provided for in **Section 2.3**, subject to any additional terms or conditions agreed to by the Parties.

12.7. More Favorable Terms

If, at any time during the term of this Agreement, the SFPUC enters into an agreement with another party who is not signatory to this Agreement with respect to use of the Basin for a conjunctive use Project, and such agreement contains price, quantity, or other material terms that are more favorable than the terms extended to a Participating Pumper under this Agreement, the Parties will immediately modify this Agreement to extend the more favorable terms to Participating Pumpers.

12.8. Assignment

No Party shall transfer this Agreement, in whole or in part, or any of its interests, to any other person or entity without the prior written consent of the other Parties. Any attempt to transfer or

assign this Agreement, or any privilege hereunder, without such written consent shall be void and confer no right on any person or entity not a Party to this Agreement.

12.9. Successors

This Agreement shall bind and inure to the benefit of the Parties and their respective successors and permitted assigns.

12.10. Entire Agreement

This Agreement constitutes the entire agreement between the Parties pertaining to the matters provided for herein and, except as herein provided, supersedes all prior and/or contemporaneous agreements and understandings, whether written or oral, between the Parties related to the matters provided for herein.

12.11. Severability

Should any provision of this Agreement prove to be invalid or illegal, such invalidity or illegality shall in no way affect, impair or invalidate any other provisions hereof, and such remaining provisions shall remain in full force and effect; provided, however, if the illegality or invalidity of any provision undermines the intent of the Parties, then the Parties shall attempt in good faith to amend the Agreement in order to fulfill the intent of the Parties. If the Parties are unable to so amend the Agreement, then the Agreement shall terminate and be of no further force or effect.

12.12. Counterparts

This Agreement, and any document or instrument entered into, given or made pursuant to this Agreement or authorized hereby, and any amendment or supplement thereto, may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same agreement.

12.13. Notice

Formal written notices, demands, correspondence and communications between the Parties authorized by this Agreement shall be sufficiently given if personally delivered or dispatched by registered or certified mail, first-class, postage prepaid, return receipt requested, to the Parties as follows:

To the SFPUC:

Steve Ritchie
Assistant General Manager, Water Enterprise
San Francisco Public Utilities Commission
525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
email: sritchie@sfwater.org

With a copy to:
San Francisco City Attorney's Office
Attn.: Utilities General Counsel
Room 234 City Hall
1 Carlton B. Goodlett Place
San Francisco, CA 94102

To Daly City:

Patrick Sweetland
Director of Water and Wastewater Resources
City of Daly City
153 Lake Merced Blvd.
Daly City, CA 94015
email: psweetland@dalycity.org

With a copy to:
Rose Zimmerman
City Attorney
City of Daly City
233 90th Street
Daly City, CA 94015
email: rzimmerman@dalycity.org

To San Bruno:

Constance C. Jackson
City Manager
567 El Camino Real
San Bruno, CA 94066

With a copy to:
Marc Zafferano
City Attorney
567 El Camino Real
San Bruno, CA 94066

To Cal Water:

Anthony Carrasco, District Manager
California Water Service Company
Bayshore District
341 North Delaware Avenue
San Mateo, CA 94401-1727
email: acarrasco@calwater.com

With a copy to:
Lynne McGhee, Corporate Secretary and Associate
Corporate Counsel
1720 North First Street
San Jose, CA 95112-4508

email: lmcghee@calwater.com

12.14. Force Majeure

12.14.1. Excuse from Performance. No Party shall be liable in damages to any other Party for delay in performance of, or failure to perform, its obligations under this Agreement, if such delay or failure is caused by a Force Majeure Event.

12.14.2. Notice. The Party claiming excuse shall deliver to the other Parties a written notice of intent to claim excuse from performance under this Agreement by reason of a Force Majeure Event. Notice required by this section shall be

given as promptly and as reasonably possible in light of the circumstances. Such notice shall describe the Force Majeure Event, the services impacted by the claimed event, the length of time that the Party expects to be prevented from performing, and any steps which the Party intends to take to attempt to restore its ability to perform.

12.14.3. Ability to Perform. Any suspension of performance by a Party pursuant to this section shall be only to the extent, and for a period of no longer duration than, required by the nature of the Force Majeure Event, and the Party claiming excuse shall use its best efforts to remedy its inability to perform as quickly as possible.

12.14.4. If the Party claiming a Force Majeure Event is not able to restore its ability to perform its obligations within one year after giving notice pursuant to Section 12.14.2, it may elect to terminate its participation in the Project. The Party claiming excuse will thereafter give an additional 60 days written notice of said termination to the Parties and the Operating Committee.

12.14.5. In the event that a Party terminates participation in this Agreement under section 12.14.4, the provisions of WSA Section 3.17 and section 11.1 of this Agreement shall govern the disposition of investments in Project Capital Costs, allocation of outstanding eligible Project Operations and Maintenance Expenses, and the balance of water in the SFPUC Storage Account.

12.15. Maintenance and Inspection of Books, Records and Reports

The Participating Pumpers shall maintain careful, accurate and complete records of all receipts and disbursements made for (1) reimbursable Project Operations and Maintenance Expenses authorized under **Section 9.2** and detailed in **Attachment F**; and (2) expenses related to use of Project Facilities for non-Project purposes authorized under **Section 9.3.** During regular office hours, and upon reasonable notice, the Parties shall have the right to inspect and make copies of any books, records, and reports pertaining to this Agreement or related matters in the possession of the other Parties at the inspecting Party's cost. The SFPUC and its agents may conduct audits of the Participating Pumpers during the term of this Agreement for the purpose of ensuring that Project Operations and Maintenance Expenses incurred by the Participating Pumpers are eligible for reimbursement in accordance with **Attachment F**, and to ensure that any expenses incurred by the SFPUC due to the Participating Pumpers' operation of Project Wells for non-Project purposes are repaid to the SFPUC. The Participating Pumpers agree to cooperate with the SFPUC in connection with any such audit. All costs incurred by the Participating Pumpers that are associated with responding to an audit by the SFPUC shall be considered Project Operation and Maintenance Expenses.

12.16. Governing Law; Venue

The laws of the State of California shall govern the interpretation and enforcement of this Agreement. The Parties agree that Santa Clara County is an appropriate neutral county in the event one Party seeks to change venue under Code of Civil Procedure section 394.

12.17. Effect of Agreement on WSA

The provisions of this Agreement do not affect, change or modify any section, term or condition of the WSA. In the event of any conflict between this Agreement and the terms of the WSA, the terms of the WSA shall control.

12.18. Compliance with Raker Act

Nothing in this Agreement shall be construed to authorize or result in delivery of SFPUC System Water to the California Water Service Company in violation of section 6 of the Raker Act (38 Stat. 242).

12.19. Cooperation in Implementation of Project Mitigation Measures

The Participating Pumpers acknowledge the mitigation measures set forth in the Project final environmental impact report and Mitigation, Monitoring and Reporting Program adopted by the SFPUC as part of Project approval, and agree to cooperate with the SFPUC in complying with such measures to the extent that they are under the control of, or are the responsibility of, one or more of the Participating Pumpers. Any costs or expenses associated with such compliance and cooperation shall be the responsibility of the SFPUC, and the SFPUC must reimburse the Participating Pumpers for such costs and expenses as a component of Project Capital Costs.

[This space left intentionally blank; signature pages follow]

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

By: _____
Harlan L. Kelly, Jr.
General Manager

Authorized by SFPUC Res. No. 14-0127 Dated August 12, 2014

Approved as to form:

DENNIS J. HERRERA
City Attorney

_____
By: Joshua D. Milstein
Deputy City Attorney

CITY OF DALY CITY

By: _____
Patricia Martel
City Manager

Authorized by City Council Res. No. 14-153 Dated: September 8, 2014

Approved as to form:

_____
Rose Zimmerman
City Attorney

CITY OF SAN BRUNO

By: _____
Constance Jackson
City Manager

Authorized by City Council Res. No. 2014-103 Dated: September 23, 2014

Approved as to form:

_____
Marc Zafferano
City Attorney

CALIFORNIA WATER SERVICE COMPANY

By: _____ FOR

Martin Kropelnicki, President and Chief Executive Officer

Dated: 12-16-14

Approved as to form:

_____

Lynne McGhee, Vice President and General Counsel

Appendix C

SFPUC Memorandum Re: Regional Water System Supply Reliability and UWMP 2020

San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission

525 Golden Gate Avenue, 13th Floor
San Francisco, CA 94102
T 415.554.3155
F 415.554.3161
TTY 415.554.3488

TO: SFPUC Wholesale Customers

FROM: Steven R. Ritchie, Assistant General Manager, Water

DATE: June 2, 2021

RE: Regional Water System Supply Reliability and UWMP 2020

This memo is in response to various comments from Wholesale Customers we have received regarding the reliability of the Regional Water System supply and San Francisco's 2020 Urban Water Management Plan (UWMP).

As you are all aware, the UWMP makes clear the potential effect of the amendments to the Bay-Delta Water Quality Control Plan adopted by the State Water Resources Control Board on December 12, 2018 should it be implemented. Regional Water System-wide water supply shortages of 40-50% could occur until alternative water supplies are developed to replace those shortfalls. Those shortages could increase dramatically if the State Water Board's proposed Water Quality Certification of the Don Pedro Federal Energy Regulatory Commission (FERC) relicensing were implemented.

We are pursuing several courses of action to remedy this situation as detailed below.

Pursuing a Tuolumne River Voluntary Agreement

The State Water Board included in its action of December 12, 2018 a provision allowing for the development of Voluntary Agreements as an alternative to the adopted Plan. Together with the Modesto and Turlock Irrigation Districts, we have been actively pursuing a Tuolumne River Voluntary Agreement (TRVA) since January 2017. We believe the TRVA is a superior approach to producing benefits for fish with a much more modest effect on our water supply. Unfortunately, it has been a challenge to work with the State on this, but we continue to persist, and of course we are still interested in early implementation of the TRVA.

Evaluating our Drought Planning Scenario in light of climate change

Ever since the drought of 1987-92, we have been using a Drought Planning Scenario with a duration of 8.5 years as a stress test of our Regional Water System supplies. Some stakeholders have criticized this methodology as being too conservative. This fall we anticipate our Commission convening a workshop

London N. Breed
Mayor

Sophie Maxwell
President

Anson Moran
Vice President

Tim Paulson
Commissioner

Ed Harrington
Commissioner

Newsha Ajami
Commissioner

Michael Carlin
Acting
General Manager

regarding our use of the 8.5-year Drought Planning Scenario, particularly in light of climate change resilience assessment work that we have funded through the Water Research Foundation. We look forward to a valuable discussion with our various stakeholders and the Commission.

Pursuing Alternative Water Supplies

The SFPUC continues to aggressively pursue Alternative Water Supplies to address whatever shortfall may ultimately occur pending the outcome of negotiation and/or litigation. The most extreme degree of Regional Water System supply shortfall is modeled to be 93 million gallons per day under implementation of the Bay-Delta Plan amendments. We are actively pursuing more than a dozen projects, including recycled water for irrigation, purified water for potable use, increased reservoir storage and conveyance, brackish water desalination, and partnerships with other agencies, particularly the Turlock and Modesto Irrigation Districts. Our goal is to have a suite of alternative water supply projects ready for CEQA review by July 1, 2023.

In litigation with the State over the Bay-Delta Plan Amendments

On January 10, 2019, we joined in litigation against the State over the adoption of the Bay-Delta Water Quality Control Plan Amendments on substantive and procedural grounds. The lawsuit was necessary because there is a statute of limitations on CEQA cases of 30 days, and we needed to preserve our legal options in the event that we are unsuccessful in reaching a voluntary agreement for the Tuolumne River. Even then, potential settlement of this litigation is a possibility in the future.

In litigation with the State over the proposed Don Pedro FERC Water Quality Certification

The State Water Board staff raised the stakes on these matters by issuing a Water Quality Certification for the Don Pedro FERC relicensing on January 15, 2021 that goes well beyond the Bay-Delta Plan amendments. The potential impact of the conditions included in the Certification appear to virtually double the water supply impact on our Regional Water System of the Bay-Delta Plan amendments. We requested that the State Water Board reconsider the Certification, including conducting hearings on it, but the State Water Board took no action. As a result, we were left with no choice but to once again file suit against the State. Again, the Certification includes a clause that it could be replaced by a Voluntary Agreement, but that is far from a certainty.

I hope this makes it clear that we are actively pursuing all options to resolve this difficult situation. We remain committed to creating benefits for the Tuolumne River while meeting our Water Supply Level of Service Goals and Objectives for our retail and wholesale customers.

cc.: SFPUC Commissioners
Nicole Sandkulla, CEO/General Manager, BAWSCA

PHASE3
REAL ESTATE PARTNERS

May 26th, 2022

Billy Gross
Principal Planner
Billy.gross@ssf.net

Allison Knapp
Consulting Planner
aknapp@ix.netcom.com

Mitigation Measures for 121 East Grand Avenue, South San Francisco, CA
***City Project Numbers**: ND21-0001 and EIR20-0003*

Dear Mr. Gross and Ms. Knapp –

On behalf OCI San Fran, LLC., the owner of 121 E Grand Ave, South San Francisco, CA, ("Project") and Phase 3 Real Estate Partners, Inc. (Sponsor), I am pleased to present the following Mitigation Measures that ownership will implement as part of the redevelopment of the site. The Project, a 17-story building, is an opportunity to deliver an iconic community and research-focused campus in the center of South San Francisco and adjacent to the newly constructed Caltrain station. These Mitigation Measures are proposed to ensure that the Project meets the City and State's targets for thoughtful, sustainable, and high-quality redevelopment.

Sustainability:
The 121 East Grand Project will integrate sustainable design throughout the building to the extent that measures are technically and economically feasible. The approach will support the City of South San Francisco's 2022 Climate Action Plan and the specific goals set forth in the plan. The general design approaches and strategies will include a wide variety of energy reduction, water conservation and renewable energy solutions.

The project has committed to an All-Electric Design for long term reduction of greenhouse gas emissions and the future ability to operate on 100% renewable energy provided by energy company partnerships. In response to State Senate Bill 100 and the mandated decarbonization of the California electrical grid by 2045, the development will prioritize use of all-electric sources of energy. Common areas where natural gas have been traditionally used include HVAC, domestic hot water, cooking, and process uses (e.g., laboratory, R&D). In most, if not all, of these examples, cost effective and practical all-electric alternatives exist and will be prioritized for this development. Where there are technical impediments for all-electric design approaches or they are substantially more costly, life cycle cost analyses will be performed alongside assessment of relative energy / carbon performance to inform design decisions. This design decision is in alignment with SSF 2022 Climate Action Plan Goals CP-1 and CP-2.

The following items will also be considered to improve resiliency and reduce reliance on fossil fuels in accordance with the **SSF Climate Action Plan Goals – CP-2:**

- Review opportunities for installation of on-site renewable energy (e.g., PV, solar thermal).
- Plan locations for future energy storage batteries to reduce peak loads and support grid harmonization.
- Prioritization of all-electric energy sources.
- Installation of electric vehicle charging stations.
- Reduce heat island effect of developments through use of high-albedo surfaces and / or similar technologies.
- Evaluate the purchase of off-site renewable energy to offset at least 50% of building energy use as calculated by building's Title 24 modeled energy consumption.
- Wire building to be solar-ready.

The following items will be considered to reduce the overall building energy use in accordance with **the 2022 SSF Climate Action Plan Goals – CP-3-1**:

- Optimize building envelopes to balance building energy uses (e.g., artificial lighting, heating, cooling, fans) while also providing healthy, productive spaces for building occupants (e.g. daylight, views, thermal comfort). This reduces the building's energy use in alignment with CP-3-1 as well as creating better working environments and improving the well-being and overall productivity of the businesses.
- Use of passive design strategies to minimize reliance on active heating and cooling systems.
- Selection of energy efficient HVAC system approaches and equipment.
- Balance of ventilation and indoor air quality outcomes alongside energy efficiency considerations.

The following items will be considered to reduce the overall building water use in accordance with the **SSF 2022 Climate Action Plan Goals – CP-8:**

- Use of efficient water consuming devices (e.g. plumbing fixtures, appliances, cooling equipment) to minimize demand for water and manage energy consumption of domestic hot water systems.
- Prioritize water efficient landscaping practices.
- Review opportunities to reuse water on-site (e.g. stormwater or greywater reuse) to minimize water consumption and manage site outflows.
- Undertake the following water efficiency measures as outlined by the CAP:
    - Establishing a variable-speed pump exchange for water features.
    - Restricting hours of irrigation to occur between 3:00 a.m. and two hours after sunrise.
    - Installing irrigation controllers with rain sensors.
    - Landscaping with native, water-efficient plants.
    - Installing drip irrigation systems.
    - Reducing impervious surfaces.

Biology:
Sponsor is committed to ensuring that tree removal minimizes its impact on the local population of native wildlife. In order to ensure this goal, the Project is committed to:

- Tree Removal Outside Nesting Season (approximately September 1 to February 28). Sponsor will obtain a tree permit as required per South San Francisco Municipal Code Section 13.30.030, which specifies: as: (1) Any tree with a circumference of forty-eight inches or more when measured fifty-four inches above natural grade; or (2) A tree or stand of trees so designated by the director based upon findings that it is unique and of importance to the public due to its unusual appearance, location, historical significance or other factor; or (3) A stand of trees in which the director has determined each tree is dependent upon the others for survival. Prior to removing trees, the Project Sponsor, or designated representativ shall contact the Parks Division to determine if a removal permit is needed.

- Tree Removal Within Nesting Season (approximately March 1 to August 31). Sponsor will retain a qualified biologist to conduct a pre-construction survey for protected birds on the site and in the immediate vicinity if Project construction activities occur during nesting season. No construction activities of any kind, including but not limited to tree and landscape removal, demolition, site grubbing, grading, etc shall occur until the survey is completed. The survey shall be done no more than 15 days prior to the initiation of tree removal and grading and other construction activities. In the event that nesting birds are found on the Project site or in the immediate vicinity, Project Sponsor, or designated representative shallnotify the City, locate and map the nest site(s) within three (3) days, submit a report to the City and the California Department of Fish and Wildlife ("CDFW"), establish a no-disturbance buffer of 250-ft, and conduct on-going weekly surveys to ensure the no-disturbance buffer is maintained. In the event of destruction of a nest with eggs, or if a juvenile or adult raptor should become stranded from the nest, injured or killed, the qualified biologist shall immediately notify the CDFW. The licensed biologist shall coordinate with the CDFW to have the injured bird either transferred to a raptor recovery center or, in the case of mortality, transfer it to the CDFW within 48 hours of notification.

Cultural:
Sponsor does not believe construction activities will encounter culturally significant soils or resources but there is always a remote possibility of a find. That being the case, prior to the start of ground-disturbing grading, demolition, or construction, a *Worker Awareness Environmental Training* (WAET) shall be conducted by a licensed archaeologist in the state of California. WAET training shall be required for all personnel participating in ground disturbing construction to alert them to the archaeological sensitivity of the Project area and provide protocols to follow in the event of a discovery of archaeological materials.

Additionally, the Archaeologist shall be on an “on-call” basis to review and identify any potential archaeological discoveries during ground disturbing grading, demolition and excavation operation. In the event of a discovery, work shall stop within 50 feet of the find. Archaeologist shall be contacted for identification, evaluation and further recommendations consistent with California Environmental Quality Act and City of South San Francisco requirements. The grading, demolition and any other plans that require soil disturbance shall note that there is a potential for exposing buried cultural resources including prehistoric Native American burials on the site. The Sponsor’s Archaeologist shall develop and distribute for job site posting an "ALERT SHEET" summarizing potential finds that could be exposed and the protocols to be followed as well as points of contact to alert in the event of a discovery.

Upon any discovery of culturally significant findings Sponsor will stop work and contact the on-call archaeologist. If the Archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource under CEQA, the Archaeologist shall notify the appropriate parties of the evaluation and recommend mitigation measures to mitigate to a less-than significant impact in accordance with California Public Resources Code Section 15064.5. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing and data recovery among other options. The completion of a formal Archaeological Monitoring Plan (AMP) and/or Archaeological Treatment Plan (ATP) that may include data recovery may be recommended by the Professional Archaeologist if significant archaeological deposits are exposed during ground disturbing construction. Development and implementation of the AMP and ATP and treatment of significant cultural resources will be determined by the project proponent in consultation with any regulatory agencies.

The treatment of human remains, and any associated or unassociated funerary objects discovered during any soil-disturbing activity within the Project site shall follow the requirements of section 5097.99 of the Public Resources Code. The Project Sponsor shall immediately notify of the appropriate county Coroner/Medical Examiner, Project Sponsor and the City of South San Francisco. A Monitoring Closure Report shall be filed with the Applicant/Project Sponsor/designated representative and the City at the conclusion of ground disturbing construction if archaeological and Native American monitoring of excavation was undertaken.

Geology and Soils:
Sponsor will update the Geocon April 2021 report and provide to the City for peer review prior to any issuance of building, grading, grubbing or tree removal permits. The updated report shall address the revised Project description and include all design measures required to be compliant with the California Building Code. The updated report shall also include at a minimum, structural design and construction specifications, including but not limited to, undergrounding of utilities addressing any construction requirements for potentially and/or corrosive soils, grading, site stabilization, drainage, utility and infrastructure design and placement, foundation design, retaining wall specifications, and soil compaction requirements and design.

Downtown Station Area Specific Plan (DSASP):
Sponsor is familiar with the Downtown Station Area Specific Plan and will incorporate the following mitigations:

- **DSASP Mitigation Measure 4.6-1: HVAC Mechanical Equipment Shielding.** Prior to the approval of building permits for non-residential development, the applicant shall submit a design plan for the Project demonstrating that noise from the operation of mechanical equipment will not exceed the exterior noise level limits for a designated receiving land use category, as specified in Noise Ordinance Section 8.32.030. Noise control measures may include, but are not limited to, the selection of quiet equipment, equipment setbacks, silencers, and/or acoustical barriers.

- **DSASP Mitigation Measure 4.6-2: Site-Specific Acoustic Analysis – Nonresidential Development**. Prior to the approval of building permits for new non-residential land uses where exterior noise level exceeds 70 dBA CNEL, an acoustic analysis shall be performed to determine appropriate noise reduction measures such that exterior noise levels shall be reduced below 70 dBA CNEL, unless a higher noise compatibility threshold (up to 75 dBA CNEL) has been

determined appropriate by the City of South San Francisco. The analysis shall detail the measures that will be implemented to ensure exterior noise levels are compatible with the proposed use. Measures that may be implemented to ensure appropriate noise levels include, but are not limited to, setbacks to separate the proposed non-residential structure from the adjacent roadway or construction of noise barriers on site.

- **DSASP Mitigation Measure 4.6-4: Construction Vibration**. For all construction activities within the study area, the construction contractor shall implement the following measures during construction:
  - The construction contractor shall provide, at least three weeks prior to the start of construction activities, and written notification to all residential units and non-residential tenants within 115 feet of the construction site informing them of the estimated start date and duration of vibration-generating construction activities.
  - Stationary sources, such as temporary generators, shall be located as far from off-site receptors as possible.
  - Trucks shall be prohibited from idling along streets serving the construction site.

- **DSASP Mitigation Measure 4.6-5: Rail Line Groundborne Vibration**. The Project shall implement the current FTA and Federal Railroad Administration (FRA) guidelines, where appropriate, to limit the extent of exposure that sensitive uses may have to ground-borne vibration from trains. Specifically, Category 1 uses (vibration-sensitive equipment) within 300 feet from the rail line, Category 2 uses (residences and buildings where people normally sleep) within 200 feet, and Category 3 uses (institutional land uses) within 155 feet of the rail line shall require a site-specific ground-borne vibration analysis conducted by a qualified ground-borne vibration specialist in accordance with the current FTA and FRA guidelines prior to obtaining a building permit. Vibration control measures deemed appropriate by the site-specific ground-borne vibration analysis to meet 65 VdB, 72 VdB, and 75 VdB, respectively for Category 1, Category 2, and Category 3 uses, shall be implemented by the project applicant and approved by the City prior to receiving a building permit.

Gathering Spaces:
To promote Policy Goal LU-2 of SHAPE SSF, the Project is incorporating gathering spaces near mobility hubs. Specifically, the Project is including:

- multiple outdoor plazas (with upscale lighting features).
- meeting spaces (with upscale seating features).
- retail options.
- a gym/wellness studio.
- public restrooms.
- a restaurant/café.

Traffic:
Sponsor has been and will continue to work collaboratively with the city on the surrounding traffic issues. Sponsor has provided funding for the 2021 Access Study completed by Fehr & Peers. Sponsor will participate with the neighboring projects to implement the findings of the access study and has committed to significant funding contribution for improvements around the Caltrain station.

Utility-Water:
Project Sponsor is aware of Cal Water's Net Neutral Policy. As a requirement to receive water service the project will need need to implement the policy which will be complete by either (1) paying to the SSF District the required offset amount calculated according to the offset costs included in the Policy, and/or (2) conducting other activities as defined in the Policy.

Federal Aviation Administration (FAA)
Sponsor applied for and secured review and approval from the FAA to exceed the permitted height identified in the Airport Land Use Plan (C/CAG, 2012). On September 9, 2021 FAA published a 'Determination of No Hazard to Air Navigation.' (FAA (Public Notice August 8, 2021, and Final Determination September 9, 2021, ASN 2021-AWP-7652-OE / Aeronautical Study Numbers 2021-AWP-7644-OE through 2021-AWP-7655-OE. Project Sponsor is aware of and will comply with the following requirements of the FAA.

- The structure is to be marked/lighted in accordance with FAA Advisory circular 70/7460-1 M, Obstruction Marking and Lighting, red lights-Chapters 4, 5 (Red) and 15.
- Any failure or malfunction that lasts more than thirty (30) minutes and affects a top light or flashing obstruction light, regardless of its position, should be reported immediately to (877) 487-6867 so a Notice to Airmen (NOTAM) can be issued. As soon as the normal operation is restored, notify the same number.
- An FAA Form 7460-2, Notice of Actual Construction or Alteration is required to be e-filed within five days after the construction reaches its greatest height (7460-2, Part 2).

Phase 3 Real Estate Partners, Inc. is excited to partner with South San Francisco to deliver another world-class iconic project that serves both the community and the research and development companies that call the City home.

The following are our goals for the Project:

- Design and build an iconic building that honors South San Francisco as the birthplace of Biotechnology;
- Connect and celebrate the East and West areas of the City and the Caltrain Station;
- Provide a community gathering space with vibrant indoor and outdoor areas that are safe, comfortable, lighted, usable, landscaped with the environment in the forefront of design and punctuated with world-class art;
- Create an ecosystem that supports scientists in their discovery of the life-changing technologies of the future; and,
- Be a good partner and neighbor to the City of South San Francisco.

Sincerely,



Michael Gerrity, President
Phase 3 Real Estate Partners, Inc.
OCI San Fran, LLC