Draft

Initial Study/Mitigated Negative Declaration

BART Transit Operations Facility and Lake Merritt Plaza Redesign

San Francisco Bay Area Rapid Transit District

September 22, 2017

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Initial Study/Mitigated Negative Declaration

BART Transit Operations Facility and Lake Merritt Plaza Redesign

Prepared for

San Francisco Bay Area Rapid Transit District

300 Lakeside Drive, 21st floor

Oakland, CA 94612

Prepared by

AECOM

300 California Street, Suite 600

San Francisco CA 94104

September 22, 2017

DRAFT INITIAL STUDY/MITIGATED NEGATIVE DECLARATION

Date of Publication of Initial Study/Mitigated Negative Declaration: September 22, 2017

Project Title: BART Transit Operations Facility and Lake Merritt Plaza Redesign

Sponsor and Lead Agency: San Francisco Bay Area Rapid Transit District

Contact Person and Phone Number: Hannah Lindelof (510) 464-6090

Project Location: Lake Merritt BART Station, 800 Madison Street, Oakland, CA.

Project Description: The San Francisco Bay Area Rapid Transit District (BART) currently houses much of its transit system management facilities in the Lake Merritt Complex, near the Lake Merritt Plaza at the Lake Merritt BART Station in Oakland. The existing facilities require increased physical space and state of good repair improvements to achieve state-of-the art functionality, support improved BART operations, and accommodate operation of planned BART extension projects over the next 40 years, including the extension to Silicon Valley.

The current facilities cannot be expanded because of physical constraints at the current location. Therefore, BART is proposing to design and construct a new Transit Operations Facility (TOF) at the Lake Merritt Plaza, to modernize its operations infrastructure and support system expansion. As part of the project, BART also will redesign the Lake Merritt Plaza to create an enhanced multimodal transportation hub and transit plaza that better serves the neighborhood.

This Project Would Not Have A Significant Effect on the Environment: This finding is based on the criteria of the Guidelines of the State Secretary for Natural Resources, Sections 15064 (Determining Significant Effect), 15065 (Mandatory Findings of Significance), and 15070 (Decision to Prepare a Negative Declaration), and the reasons documented in the Environmental Evaluation (Initial Study) for the project, which is attached. Mitigation measures are incorporated into this project to reduce potentially significant effects to a less-than-significant level. These mitigation measures are identified in the attached Initial Study and are summarized below.

Copies of the Initial Study/Mitigated Negative Declaration: Copies of the document can be obtained by calling the agency contact person at the following number and leaving information on how you may be contacted: (510) 464-6090. A copy of the document will be mailed to you. Copies of the Initial Study/Mitigated Negative Declaration also can be reviewed on the BART website at www.bart.gov/lakemerritt.

In addition, copies of the Initial Study/Mitigated Negative Declaration are available at the following libraries in Oakland:

- Oakland Main Library, 125 14th Street, Oakland, CA 94612
- Asian Branch Library, 388 9th Street, Oakland, CA 94607

Copies of the Initial Study/Mitigated Negative Declaration and background documents also are available for review at the offices of the San Francisco Bay Area Rapid Transit District: 300 Lakeside Drive, 21st Floor, Oakland, CA 94612. Call the information number above to make an appointment.

Public Meetings: BART will hold a public meeting to receive public comments on the Draft Initial Study/Mitigated Negative Declaration. The meeting will be held on October 11, 2017 from 4:30–6:30 p.m. at the following location:

MetroCenter
101 8th Street
Oakland, CA 94607

Persons who plan to attend the public meeting and have special accommodation needs are encouraged to call (510) 464-6090 or email TOF@bart.gov to request assistance.

Comments on the Draft Initial Study/Mitigated Negative Declaration: The comment period is scheduled from September 22, 2017 through October 22, 2017. Comments will be received at the public meeting, in writing and by e-mail. Email comments will be accepted at TOF@bart.gov. Written comments can be mailed to the following address:

San Francisco Bay Area Rapid Transit District
Attention: Hannah Lindelof
300 Lakeside Drive, 21st Floor
Oakland, CA 94612

All questions regarding the BART Transit Operations Facility and Lake Merritt Plaza Redesign Project, the Initial Study/Mitigated Negative Declaration, or how to comment on this document can be directed to (510) 464-6090. Oral comments will not be accepted by telephone. After close of the review period, the BART Board of Directors will consider public and agency comments prior to adoption of the final Mitigated Negative Declaration.

If you need language assistance services, please call 510-464-6752.
Si necesita servicios de asistencia de idiomas, llame al 510-464-6752.
如需語言協助服務，請致電 510-464-6752.
Nếu quý vị cần ðược giúp ðỡ về ngôn ngữ, xin vui lòng gọi số 510-464-6752.
통역이 필요하신 분은, 510-464-6752로 문의하십시오.
Kung kailangan mo ang tulong ng mga serbisyo ng wika, paki tawagan ang (510) 464-6752.

Mitigation Measures Incorporated into the Project. The following mitigation measures are being incorporated into the BART TOF and Lake Merritt Plaza Redesign Project and would reduce potentially significant impacts identified in the Initial Study to less than significant:

AQ-1 Basic Air Quality Construction Control Measures. The following measures will be implemented by the BART construction contractor during all phases of construction on the project site:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material will be covered.
- All visible mud or dirt track-out onto adjacent public roads will 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 will be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or soil binders are used.
- Idling times will be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.
- A publicly visible sign will be posted at the project site with the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's phone number also will be visibly posted, for compliance with applicable regulations.

BIO-1 Tree Removal or Pruning. Tree or shrub removal or pruning will be avoided from February 1 through August 31, the bird nesting period, to the extent feasible. If no tree or shrub removal or pruning is proposed during the nesting period, no surveys or further mitigation measures are required.

BIO-2 Nesting Bird Survey. If any project construction activities occur during the active nesting period (February 1 through August 31), a pre-construction survey for nesting birds (e.g., swallows) will be conducted by a qualified biologist. Nesting bird surveys will be conducted within 1 week before initiation of construction activities. If no active nests are found, no further surveys and no further mitigation will be required. However, if two weeks lapse during construction within the active nesting period (i.e.,

if no work takes place on site for two continuous weeks between February 1 and August 31), then the survey should be repeated to ensure that any nests have not been occupied or created during the work stoppage. The survey would be required each year prior to any project construction activities occurring during the active nesting period. The survey would not be required if construction only occurred outside of the active nesting period.

If active nests are found in any areas that would be directly affected by construction activities, a qualified biologist will assess the potential impacts of project construction noise levels to ensure an appropriate buffer is established to protect the active nests. The extent of these buffers will be determined by the biologist based on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. The California Department of Fish and Wildlife will be consulted if any listed species are found to nest in the proposed project area.

BIO-3 Replacement for Tree Removal. For any tree with a trunk diameter in excess of 9 inches measured at 4.5 feet above ground level that is removed because of construction, BART will plant replacement trees at or near the locations of removal after construction activities are completed. At a minimum, each removed tree that meets the 9-inch size standard will be replaced with either (i) one replacement tree of 24-inch box size, or (ii) three replacement trees of 15-gallon size.

Replacement trees need to be drought tolerant, require little maintenance, and conform to BART's approved species list. Newly planted trees will be monitored by a qualified arborist at least once a year for 5 years. Each year, any trees that do not survive will be replaced. Any trees planted as remediation for failed plantings will be planted as stipulated here for original plantings, and will be monitored for a period of 5 years following installation.

HAZ-1 Encountering Environmental Contamination. If at any point during construction, stained or odoriferous soils are encountered, these soils will be stockpiled separately on plastic sheeting. The stained or odoriferous soils encountered will be tested for environmental contaminants, including: petroleum hydrocarbons, trichloroethylene, benzene, ethylbenzene, and naphthalene. Soil and/or groundwater found to have environmental contaminants above the San Francisco Bay Regional Water Quality Control Board's environmental screening levels for commercial land use and construction worker safety will be properly characterized and disposed at an appropriate facility per applicable regulations. Material moved or removed may require individual or specific testing to verify that concentrations are below any regulatory action limits.

NOI-1 Construction Noise Controls and Best Management Practices. BART will incorporate the following practices into the construction documents to be implemented by the project contractor. A construction supervisor or other entity appointed by BART will

measure noise levels at nearest sensitive receptors before beginning construction and periodically thereafter to ensure the performance threshold for construction noise levels is not exceeded. Measurements will be taken during periods when noisy, heavy equipment is operating.

- Where feasible, BART will require that the contractor complies with a Performance Standard of 90 dBA 8-hour L_{eq} during the daytime (7 a.m. to 10 p.m.) at the property line of the sensitive receptor.
- Prior to construction, BART will ensure that a Noise Control and Monitoring Report is prepared. The report will include expected construction noise levels, noise control measures, and explain how the contractor intends to monitor and document construction noise and complaints.
- Noisy equipment will be located as far as possible from noise sensitive receptors. In addition, the use of temporary barriers will be employed around the equipment.
- Noise barriers will be installed between equipment and residential areas.
- All construction equipment powered by internal combustion engines will be properly muffled and maintained.
- Unnecessary idling of internal combustion engines will be prohibited.
- All stationary noise-generating construction equipment such as tree grinders and air compressors will be located as far as is practical from existing residences.
- Quiet construction equipment, particularly air compressors, will be selected whenever possible.
- Use of jack hammers will be prohibited on Sundays and holidays, except for emergencies.
- Construction-related truck traffic will be routed along roadways that result in the least disturbance to sensitive receptors.

NOI-2 Emergency Backup Generator Testing Controls. In order to reduce the noise from the regular testing of the emergency backup generator on the BART plaza, BART shall require the design of the generator to achieve a performance standard of 65 dBA at the exterior of the nearest sensitive receptor. This exterior performance standard would result in interior noise levels of 45 dBA or less, which would satisfy the state's interior standard for multi-unit residential units. This measure can feasibly be achieved by incorporating noise attenuation features into the generator design, including, but not limited to, exhaust silencers, enclosures with sound-absorbent materials, air flow baffles or louvers, and acoustic barriers that obstruct the line-of-sight between generator components and the sensitive receptor. Effective noise control measures will be confirmed during final design by a qualified acoustical engineer and included in the design specifications for the equipment.

NOI-3 Construction Vibration Controls and Best Management Practices. BART will include the following provisions in its construction contracts to reduce potential annoyance and effects to nearby structures from vibration.

- The contractor will minimize vibration annoyance by maintaining vibration levels at 80 VdB or less at any building at any time.
- Before construction, BART will prepare a Vibration Control and Monitoring Report, in which the contractor will indicate what vibration levels are expected to generate, vibration control measures to be implemented, and how construction vibration and complaints will be monitored and documented.
- The contractor will monitor vibration during construction to ensure compliance with the criterion for building damage for buildings within 6 feet from construction activities. The contractor will conduct a preconstruction crack survey at these structures.
- The contractor will plan routes for hauling material out of the project site to cause the least effect (annoyance).

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ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
AB	Assembly Bill
ACM	asbestos-containing material
ACTC	Alameda County Transportation Commission
AC Transit	Alameda–Contra Costa Transit District
ARB	California Air Resources Board
AST	aboveground storage tanks
ASTM	American Society for Testing and Materials
BAAQMD	Bay Area Air Quality Management District
BART	San Francisco Bay Area Rapid Transit District
BFS	BART Facilities Standards
BMP	best management practice
BRT	Bus Rapid Transit
CalEEMod	California Emissions Estimator Model
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CH_4	methane
CHRIS	California Historical Resources Information System
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2-equivalents
CRHR	California Register of Historical Resources
dB	decibel(s)

dBA	A-weighted decibels
DTSC	California Department of Toxic Substances Control
EBMUD	East Bay Municipal Utility District
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FTA	Federal Transit Administration
GHG	greenhouse gas
GWP	global warming potential
HCP	Habitat Conservation Plan
HMBP	Hazardous Materials Business Plans
HVAC	heating, ventilation, and air conditioning
I	Interstate
in/sec	inch(es) per second
IPaC	Information for Planning and Conservation
IS	Initial Study
ITEK	ITEK Enviro Services
lbs/day	pounds per day
LEED	Leadership in Energy and Environmental Design
L_{eq}	energy-equivalent noise level (the sound energy averaged over a continuous 15-minute to 1-hour period)
L_{max}	maximum sound level (the highest instantaneous sound level measured during a specified period)
LMSAP	Lake Merritt Station Area Plan
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MT	metric tons
MTC/ABAG	Metropolitan Transportation Commission/Association of Bay Area Governments
N_2O	nitrous oxide
NAHC	California Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NO_2	nitrogen dioxide
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places

NWIC	Northwest Information Center
OHP	Office of Historic Preservation
PE	Physical Education
plaza	Lake Merritt BART Station plaza
PM	particulate matter
$PM_{2.5}$	particulate matter equal to or less than 2.5 micrometers in diameter
PM_{10}	particulate matter equal to or less than 10 micrometers in diameter
PPV	peak particle velocity
PRC	Public Resource Code
PV	photovoltaic
ROG	reactive organic gas
RWQCB	Regional Water Quality Control Board
Scoping Plan	Climate Change Scoping Plan
SFBAAB	San Francisco Bay Area Air Basin
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resources
TIA	transportation impact analysis
TOF	Transit Operations Facility
USC	U.S. Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
VdB	vibration decibels

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1. BACKGROUND

1. Project Title:	BART Transit Operations Facility and Lake Merritt Plaza Redesign
2. Lead Agency Name and Address:	San Francisco Bay Area Rapid Transit District (BART) 300 Lakeside Drive, 21st Floor Oakland, CA 94612
3. Contact Person and Phone Number:	Hannah Lindelof (510) 464-6090
4. Project Location:	Lake Merritt BART Station 800 Madison Street Oakland, CA
5. General Plan Designation:	Central Business District
6. Zoning:	D-LM-2 Lake Merritt Station Area District Pedestrian Commercial Zone-2
7. Description of Project:	BART is proposing to design and construct a new Transit Operations Facility (TOF) on the Lake Merritt Plaza, to support improved and expanded BART operations. As part of the project, BART also will redesign the Lake Merritt Plaza surrounding the new facility to create an enhanced multimodal transportation hub and transit plaza that better serves the neighborhood.
8. Surrounding Land Uses and Setting:	Within the BART station area, surrounding uses consist of Madison Square Park, multifamily apartment buildings, the MetroCenter office building, and a mix of retail, auto service, and residential uses.
9. Other Public Agencies Whose Permit is Required:	City of Oakland, Bay Area Air Quality Management District, Regional Water Quality Control Board

2. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

Project impacts on each of the environmental factors listed below are evaluated in this Initial Study. None of the environmental factors listed below would result in any significant effects that cannot be mitigated to less-than-significant levels through project-specific mitigation measures identified in this Initial Study.

☐ Aesthetics	☐ Agriculture Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☐ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☐ Utilities/Services Systems	☐ Mandatory Findings of Significance

3. DETERMINATION OF APPLICABLE CEQA DOCUMENT

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED 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.

☐ 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 proposed project, nothing further is required.

Val Menotti

Signature

9.18.17

Date

Val Menotti

Printed Name

4. BART SYSTEM

The San Francisco Bay Area Rapid Transit District (BART) has operated a rapid passenger rail system since 1972 and currently serves four Bay Area counties—San Francisco, Alameda, Contra Costa, and San Mateo. It operates and maintains five routes with 112 miles of revenue track and 46 stations, serving an average of about 433,400 weekday exits.[1] BART and Santa Clara Valley Transportation Authority currently are nearing completion of the 10-mile Berryessa extension south from the Warm Springs/South Fremont Station into Santa Clara County, and BART is completing an extension of service in eastern Contra Costa County to Antioch (eBART). The BART system is shown in Figure 1.

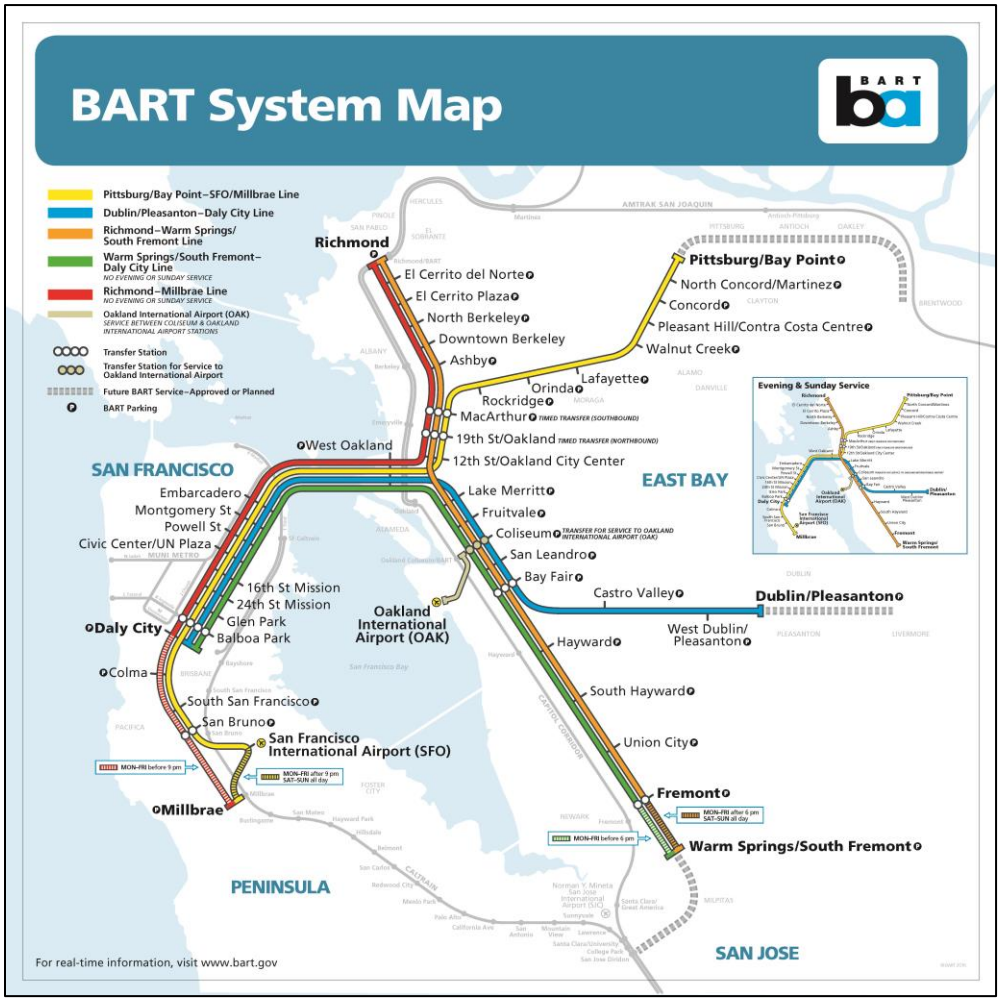

Figure 1: BART System Map

[1] BART Average Weekday Exits by Station, FY16. Available at http://www.bart.gov/about/reports/ridership.

5. PROJECT DESCRIPTION

5.1 Project Background

The BART system currently is being expanded east to Antioch and south to Santa Clara County, and BART is completing environmental review of a potential extension eastward to Livermore. Furthermore, additional system extensions are possible in the future, such as a second Transbay crossing. To provide the operations management facilities necessary for the larger and more complex system, BART requires an expanded and updated facility. The existing facility cannot be expanded in its current location in the Lake Merritt Complex because of the physical limitations of the site. The proposed project would provide expanded facilities and physical capacity to operate the larger BART system on the Lake Merritt Plaza.

5.2 Existing Conditions

BART currently houses much of its transit system management facilities in the Lake Merritt Complex, near the Lake Merritt BART Station Plaza (plaza). The existing Lake Merritt BART Station was designed in 1967 and was renovated in subsequent years. The station consists of three levels of combined structural steel and reinforced concrete construction, and was built entirely underground with the exception of the station entrances/exits, ventilation facilities, and the former BART administration building, which was demolished in 2009. The three levels of the station are the street level, mezzanine level (station concourse), and the platform level.

The project location is shown in Figure 2. The Lake Merritt BART Station Plaza occupies the entire block bound by 9th Street to the north, Oak Street to the east, 8th Street to the south, and Madison Street to the west. BART entrances/exits to the underground station are at the northeast and southeast corners of the plaza, as well as across Oak Street. The immediately surrounding area includes higher density residential uses to the north, an existing BART surface parking lot to east, the MetroCenter to the south (formerly the home to the Metropolitan Transportation Commission and the Association of Bay Area Governments), and Madison Square Park to the west.

Figure 3 shows the larger geographic context for the project site, which is located in Oakland's Chinatown and near a number of public institutions and facilities, including Laney College, Oakland Museum of California, Oakland Public Library, County and State court buildings, the multi-purpose Henry J. Kaiser Convention Center (proposed to be renovated for commercial and office tenants), and neighborhood parks and schools.

5.3 Project Purpose and Goals

The existing transit management facilities require increased physical space and state of good repair improvements to achieve state-of-the art functionality, support improved BART operations, and accommodate operation of planned BART extension projects over the next 40 years, including the extension to Silicon Valley. The existing facilities cannot be expanded because of physical constraints at the current location. Therefore, BART is proposing to design and construct a new Transit Operations Facility (TOF) building on the Lake Merritt Plaza, to modernize the current operations control infrastructure and technology to support system expansion.

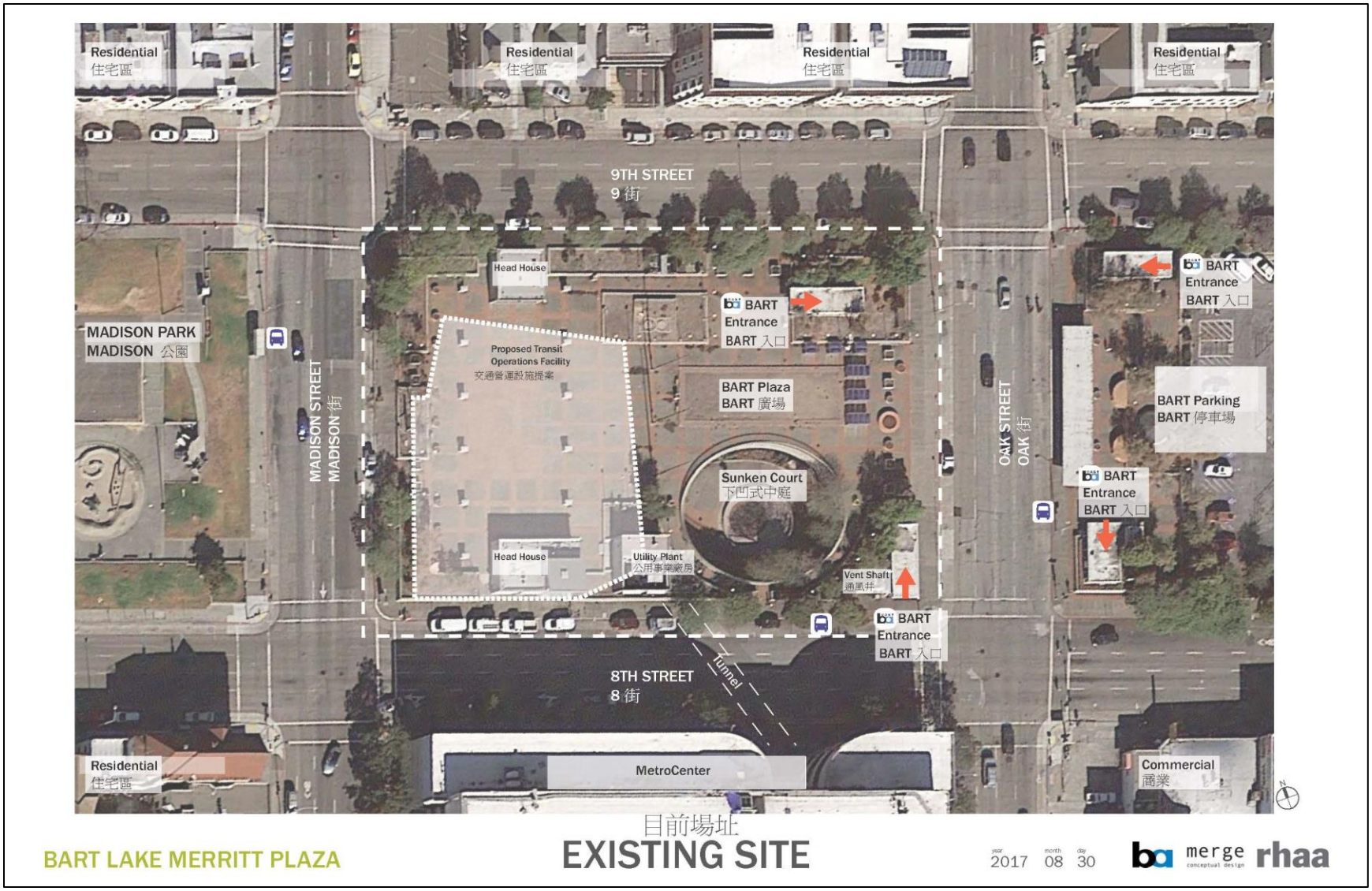

Figure 2: Proposed Transit Operations Facility and Plaza Design Project Location at the Lake Merritt BART Station

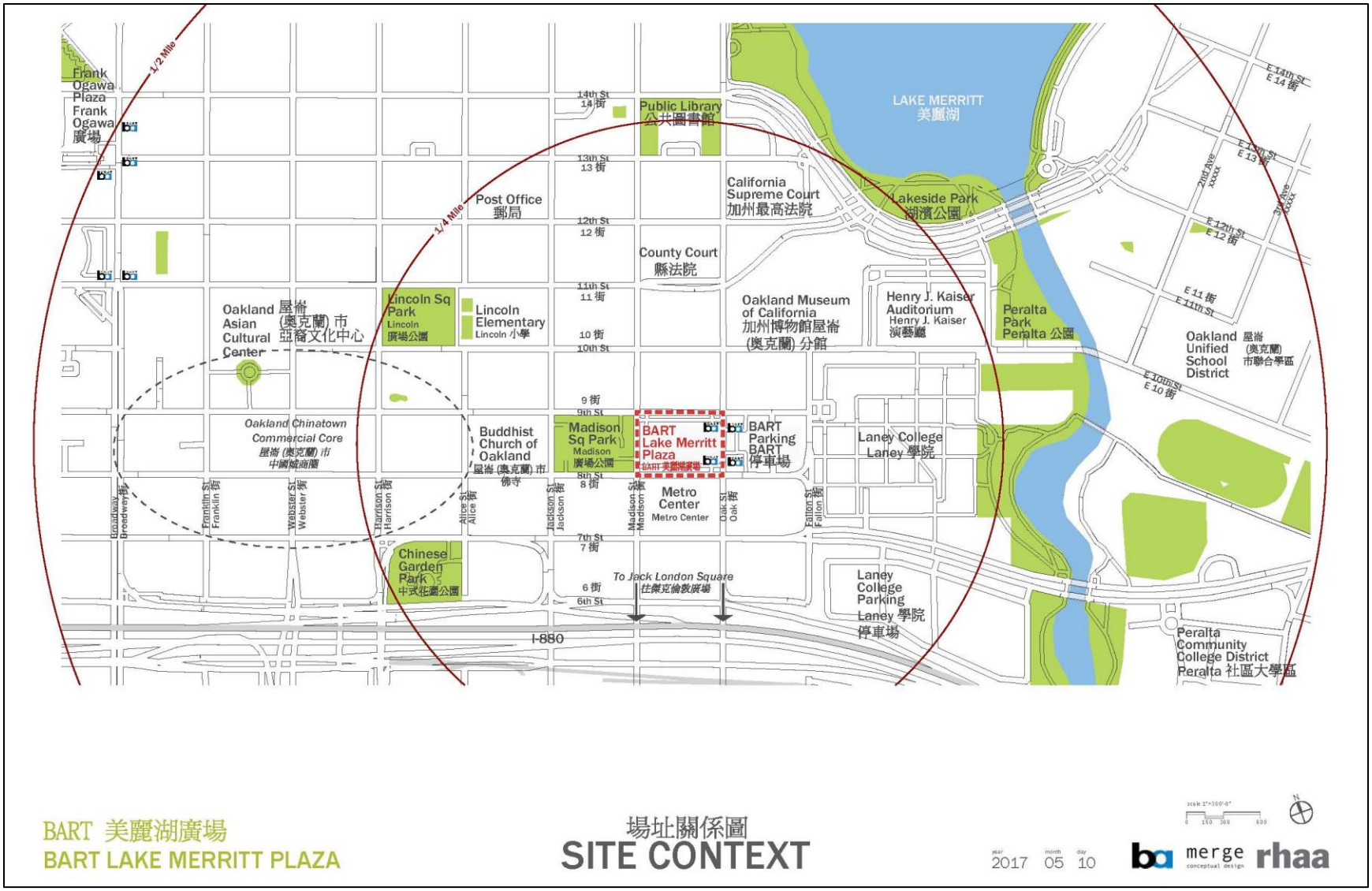

Figure 3: Project Site and Context

As of part of the proposed project, BART would redesign the existing street-level plaza to create a more inviting and flexible space for the community. Streetscape and plaza improvements, community space, and retail space are envisioned to engage the community, activate the public realm, and enhance connections between the BART station, the surrounding community, and the number of public facilities in the vicinity.

The goals of the proposed project reflect and are consistent with BART's station modernization goals to Make Transit Work, Create Place, and Connect to Community, as shown in Table 1.

Table 1: Lake Merritt Transit Operations Facility and Plaza Design Goals

Make Transit Work	Create Place	Connect to Community
• New state of the art facility • Sustainability (LEED building, photovoltaic rooftop) • Building and staff security (layering and hardening) • Incorporate and connect to existing infrastructure • Ensure robust operability now and 40 years into the future • Improve capacity to accommodate growth in ridership	• Demonstrate design excellence that is sensitive to the current and future context • Create an inviting, safe, and flexible public space for the community • Activate public realm through art, retail, programming • Prioritize safety (clear sight lines, lighting) • Integrate building and plaza design • Set stage for transit oriented development (TOD) and other private investment	• Engage with the community • Reflect the character and history of the community (Chinatown, Oakland Museum of California [OCMA], Laney College) • Preserve space for current activities in new plaza • Optimize transit access and visibility (e.g., bike station) • Provide strong connections to community assets (i.e., Chinatown, Madison Square Park, Laney College, OCMA) and future TOD

Note:
LEED = Leadership in Energy and Environmental Design
Source: BART 2017a

5.4 Proposed Project Characteristics

This Initial Study (IS) evaluates the potential physical environmental impacts of all the basic elements of the TOF building and plaza design. The project is located on the Lake Merritt Station Plaza, which is approximately 1.4 acres. During the design process, the building and plaza will continue to be refined, and some variation from the figures in this document that show the proposed project is likely to occur. However, all the basic elements have been evaluated in this IS, and the final proposed design will be within the development envelope and consistent with the impact analysis and mitigation provided in this document. The siting of the TOF at the plaza is shown in Figure 2, and Figure 4 shows the massing and dimensions of the TOF building.

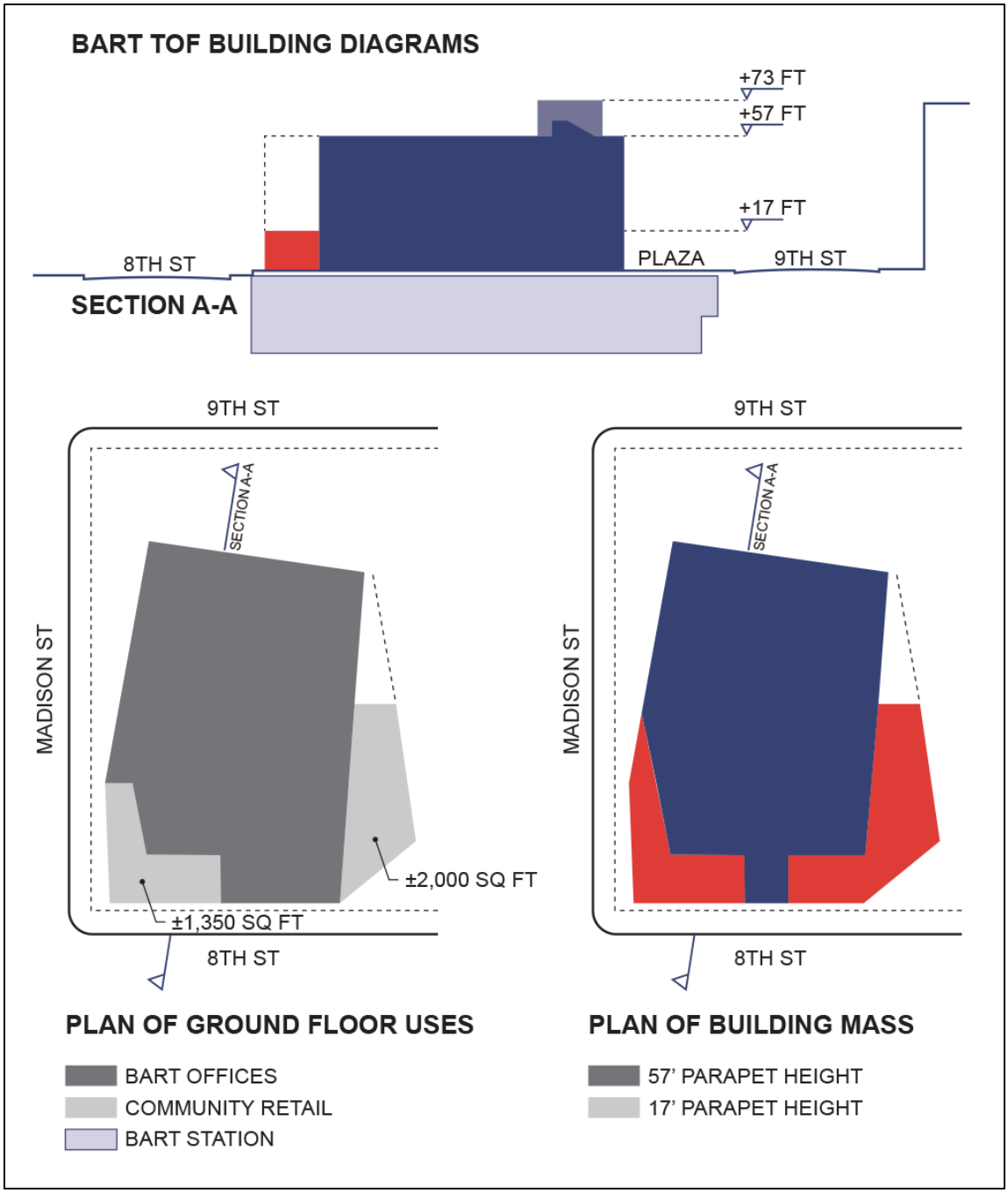

Figure 4: Proposed Transit Operations Facility Massing, Height, and Ground-Floor Uses

5.4.1 Transit Operations Facility

The TOF would consist of new and enlarged facilities, required to support improved and expanded BART operations. The new facility would not replace all operations currently at the Lake Merritt Complex, and several related systems, such as communications hubs, would continue to be located at the Lake Merritt Complex underground. Colocation with many of the underground functions is a primary consideration in the siting of the TOF at this site rather than

elsewhere in the BART system. The overall structure would have a footprint of 16,500 square feet and would be three stories tall (57 feet tall plus roof equipment such as HVAC, reaching a total height of 73 feet). The upper two stories would include 16,500 square feet of core transit management facilities, which would be designed as a secure facility. The ground floor would include 11,500 square feet of transit management support offices as well as retail "wrap." The retail wrap would consist of approximately 5,000 square feet of retail and/or community uses that would face onto city streets and the open plaza area. The retail/community space wrap would be one story high and would create a step-back to the main building height. The facility would house between 116 and 147 jobs, as shown in Table 2. Portions of the facility would operate 24 hours a day, every day, in three shifts (from 6 am to 2 pm, 2 pm to 10 pm, and 10 pm to 6 am). The facility would be Leadership in Energy and Environmental Design (LEED) certified. Participants in the LEED program receive points, based on their design and construction of energy-efficient, water-conserving buildings that use sustainable or green resources and materials. As part of the LEED-certification, there may be rooftop photovoltaic (PV) panels to generate electricity for the building if deemed feasible by BART.

Table 2: Proposed Transit Operations Facility Project Program

Program Element	Square Feet	Jobs[1]
Transit Management Core Facilities (upper two stories)	16,500	60–75
Ground Floor Transit Management Support Offices	11,500	46–62
Retail/Community Use	5,000	10
Total	**33,000**	**116–147**

Note:

[1] For the upper two stories, the number of staff is based on BART's estimate of staff needed to fulfill the functions of the facility; jobs for the ground-floor management support offices are based on one job for every 185–250 square feet, typical for office space. For retail space, one job per 500 square feet of retail is used. Although a portion of the retail space could be used for community functions and activities, the retail job estimate is likely to be greater than jobs at the community space; thus, the total estimate above represents a conservative estimate (high end) of facility employees at the project site.

Source: BART 2017a

The TOF would be constructed on the western portion of the plaza (see Figure 2), designed to fit in with the community in terms of façade materials and scale, in particular through use of the ground-floor retail/community use wrap described above. It would be supported by the columns that were used to support the former BART administration building (demolished in 2009). It would also utilize some of the existing mechanical, electrical, and communications systems available at the site. The extent to which the existing elements may be reused would be determined during the earlier phases of design. The transition of monitoring and control of the BART system from the current transit management facilities to the new replacement facility is intended to be as seamless as possible, so that train operations would not be affected.

The TOF would be constructed with a steel framing system and reinforced concrete slabs. The retail/community spaces would be constructed along the outside perimeter of the TOF and would be independent of the TOF walls and structures. The retail/community spaces would be constructed of lightweight metal framing or light gauge steel construction, fire-resistive materials, and light exterior finishes.

The building and other structural elements would be designed to meet applicable codes, industry standards, and other criteria, as well as BART Facilities Standards. BART Standard Specifications for design and construction, also known as BART Facilities Standards (BFS), are the basic requirements governing the design and material, equipment, and methods used in construction contracts administered by BART. The most recent version of the BFS was issued in May 2017. Specifications in the BFS R 3.1.1 include provisions that avoid or minimize environmental impacts that could otherwise occur. Examples include emergency procedures to address encountering hazardous materials or toxic spills (Section 01 35 24 Construction Safety); control of traffic, pollution, erosion and sediment, dust, mud, and noise during construction (Section 01 57 00 Temporary Controls); diversion of construction and demolition debris from landfills (Section 01 74 21 Waste Management); and noise controls for heating ventilation and air conditioning systems (Section 23 05 44 Sound Attenuation for HVAC Piping and Equipment).

The TOF systems would include a new heating, ventilation, and air conditioning (HVAC) system, and a plumbing mechanical system, capable of standalone operation with emergency power backup from a new emergency generator (incorporated into the plaza design, described below), except where the new systems are not critical to operation (e.g., roof drains, sanitary sewer systems). Utility tie-ins would run from the new facility to available utilities and the existing facility. Local utility lines (e.g., water, wastewater, electricity, and natural gas) would be improved and upgraded, as necessary to support the proposed project. The project would coordinate the new HVAC system with the needs of the underground complex, and therefore would allow the demolition and/or removal of several structures on the plaza, opening up those areas for plaza design.

The proposed project would include a new backup generator that would replace the existing backup generator on the roof of the MetroCenter. The new backup generator would be integrated into the plaza design. Located on the plaza adjacent to the 9th Street station entrance, the generator would be enclosed within concrete block walls that would be approximately 42’ x 19’ and 17’ tall. This facility would require a permit from the Bay Area Air Quality Management District (BAAQMD), and it would require regular testing at least every 3 months and refueling every 6 months.

5.4.2 Lake Merritt Plaza Design

The proposed project also would modernize the plaza, serving as an enhanced transportation hub and supporting the vision of the Lake Merritt Station Area Plan (LMSAP), adopted by the City of Oakland in 2014. The LMSAP identifies the BART blocks as catalytic sites that can help to establish an active neighborhood hub, provide pedestrian-oriented spines along 8th and 9th Streets, and connect neighborhood assets—including BART, Chinatown, Laney College, the

Oakland Museum of California, and the Jack London District, among others. The plaza design would aim to achieve the following design objectives, based on community feedback from public and working group meetings, convened by BART:

- Catalyze and Activate
- Connect and Integrate
- Safe and Welcoming

As shown in Figure 5, the plaza design would improve roughly 40,000 square feet by removing existing structures, landscaping, and trees, and replacing them with new, integrated elements including:

- Bike station
- Bike share parking (relocated use)
- Bike lockers (reduced in number from existing conditions)
- Open plaza area
- Shade structure
- Seating
- Widened sidewalks and possibly bulb-outs
- Low planting areas
- Special paving
- Full or partial enclosure of the sunken courtyard/fountain area (see program element #14 for its location in the southeast quadrant of the plaza), using glass paving to allow light below
  - Full closure would completely cover the sunken court with glass paving to allow light below.
  - Partial closure would cover part of the sunken courtyard, and install vertical circulation (stairs, escalators, and/or elevator) from the plaza and 8th Street leading down into the BART station concourse level.
- Game tables
- Trees in planters with bench seating
- Streetscape improvements
- Modified station entrances, potentially with new vertical circulation
- Removal of existing planters

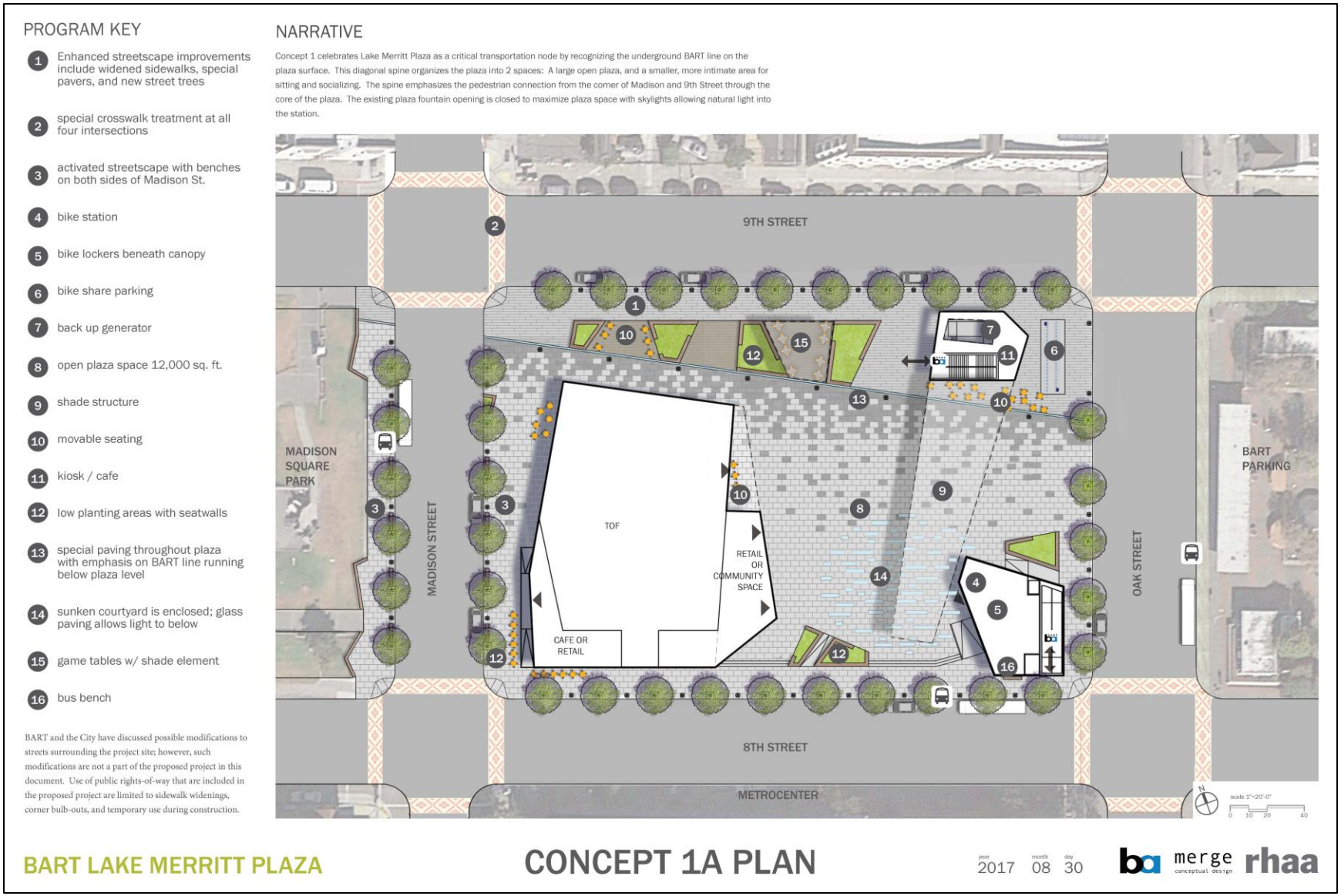

Figure 5: Proposed Plaza Layout and Design Concepts and Features

In addition to the above enhancements at the plaza, BART would continue coordination with the City of Oakland to consider improvements on the blocks east and west of the station, to visually connect the plaza to the surrounding community. Such connections may consider landscaping, sidewalk improvements, and aesthetic treatments. BART would also continue discussions with City staff regarding the temporary use of other nearby facilities that could accommodate the various users of the existing plaza that would be displaced during construction for the proposed project. These discussions would identify opportunities for existing users to relocate, taking into account the type of activity, the type and amount of space required, the desired times, and the available space at the other facilities.

5.5 Construction

The construction area for the project would encompass the entire block. The staging area also would include the sidewalk and parking lanes adjacent to the construction site along Madison Street during Phase 2 (described below). The construction zone would be enclosed with a chain-link fence with fabric covering. Some security lighting may be used (although the plaza currently is lighted) and would be focused on the enclosed area. Any security lighting would be equipped with shielding and sited to minimize light spill and glare beyond the construction site. In addition to construction at the plaza, utility improvements and upgrades to serve the proposed project would occur within the nearby street rights-of-way where the utility lines are located.

Construction of the TOF and plaza design would occur over 24 months in three general phases, expected to begin in late 2019 or early 2020. The phases would overlap with one another and would involve the activities and equipment described next.

Phase 1: Initial Demolition and Site Preparation. The first phase of construction, to be conducted over 4 to 6 months, would be demolition and site clearance. The existing vertical, stubbed columns on the plaza would be cut at a distance about 6 to 8 inches above the existing finished slab of the plaza/street level. Because of the requirement for asbestos removal, negative-pressure tents (with fans and filters) would be erected over the stubbed columns during the cutting and removal, and special removal of hazardous waste would occur. Trees, existing planters on either side of the employee staircase enclosure, and all of the planters along Madison Street also would be removed, and these areas would be temporarily paved over. Cutting torches, concrete saws, and jack hammering would be required for demolition, as well as haul trucks and/or dumpsters for material removal. No soil would be imported for use as fill on the site, and only minor subsurface work between the street-level plaza and the underground Lake Merritt Complex or station may be required. The only soil that would be hauled from the site would be the soil in the planters that would be removed, some soil from excavations associated with the utility improvements/upgrades within the street rights-of-way, and some soil from the location of the proposed generator that extends beyond the planter. The 9th and 8th Street BART station entrances would be temporarily closed for improvements to each entrance; entrance closures would be phased so only one would be closed at a time.

Phase 2: Heavy Construction. During Phase 2, which would be an estimated 18 to 20 months, standard construction methods would be used to erect the TOF structure, install a new stairway

opening cut in the plaza surface for relocated emergency egress, and complete structural work related to the fountain area and station entrances. A steel framework would be erected with cast-in-place concrete slabs for the ground and mezzanine floors and the roof. On-site construction equipment would include material delivery trucks, cranes, concrete trucks and concrete pumpers, and welding equipment. Diesel fuel storage would be provided on-site, as well as a transformer for a redundancy feed.

After completion of much of the heavy construction and testing for relevant systems (such as the HVAC and the emergency egress), those structures not removed during Phase 1, such as the stair headhouse on 9th Street and the utility headhouse on 8th Street, would be demolished. In addition, building interior work would be performed during this phase, after the building frame and cladding are completed.

Phase 3: Finishes and Systems Testing. During Phase 3, which is expected to occur over approximately 6 months, work would include the finishes, systems testing, and completion of the plaza construction. Typical construction equipment expected during this phase are pavers, pick-up trucks, pneumatic tools, rollers, a crane, forklifts, and vacuum street sweepers.

Approximately 25 to 35 construction workers are expected on-site at any one time. Construction would occur on weekdays only; no nighttime or weekend construction would occur outdoors. Workers would be on-site during standard construction hours, approximately 8 hours per day, starting no earlier than 7 a.m. and finishing no later than 5 p.m. A minimal number of parking spaces for construction workers could be provided underneath the Interstate 880 (I-880) freeway; however, workers would be encouraged to use public transit, to the greatest degree possible.

No road closures are anticipated; however, temporary lane closures would be necessary (e.g., the parking lane on Madison during Phase 2 construction and within the surrounding streets during utility improvements/upgrades and tie-ins. Normal construction deliveries would be made from Oak Street over the plaza (see Figure 6). Deliveries across the plaza are expected to occur a few times a week. Truck access over the plaza would be temporary and only for the time necessary to complete the delivery and exit the plaza. Larger construction items, such as steel beams for the building, would be delivered via a crane, which would lift the items from a truck on Madison Street directly to the building site on the plaza. The planter within the temporary truck route across the plaza would be removed and temporarily paved over in Phase 1.

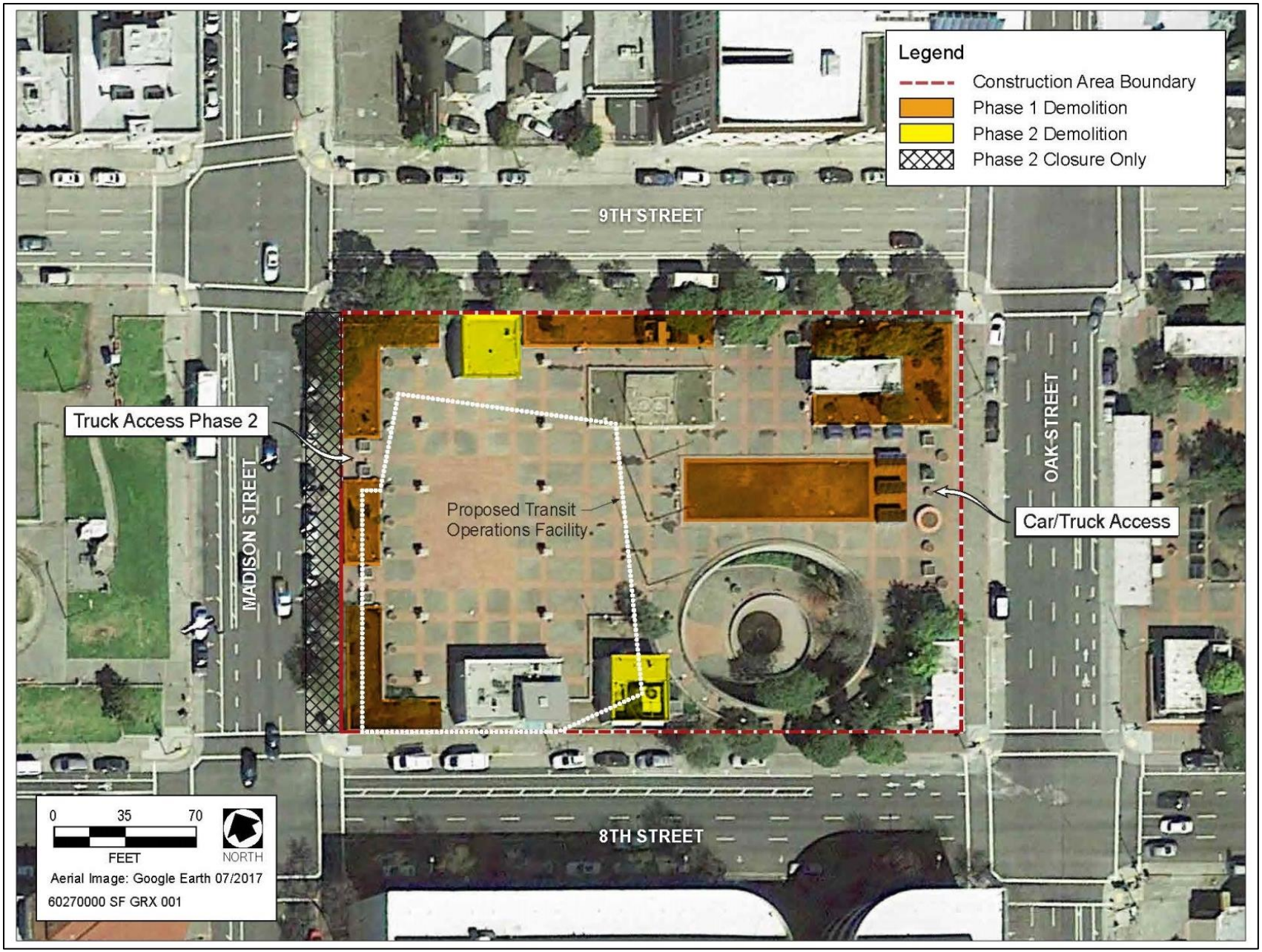

Figure 6: Proposed Construction Staging

5.6 Required Permits and Coordination

The proposed project is subject to the California Environmental Quality Act (CEQA), and this Initial Study has been prepared by BART as lead agency pursuant to CEQA. In addition, because BART may seek federal funding for the proposed project, the Federal Transit Administration (FTA) would need to make a determination regarding whether the proposed project would be exempt from the requirements of the National Environmental Policy Act (NEPA), or whether NEPA review would be required.

As proposed, the BART TOF and Plaza Design Project would likely need the following:

- a National Pollutant Discharge Elimination System (NPDES) construction general permit, pursuant to the federal Clean Water Act, from the Regional Water Quality Control Board to address stormwater runoff during construction;
- authority to construct and a permit to operate the backup generator, and oversight of asbestos removal from the BAAQMD; and
- encroachment and obstruction permits to use city streets for construction, utility improvements/upgrades, and sidewalk widening from the City of Oakland.

Agency coordination may be necessary with the following:

- City of Oakland, to comply with city standards and regulations regarding temporary construction activities, utility improvements/upgrades, and street, sidewalk, and other public realm improvements;
- the California Department of Fish and Wildlife (CDFW), if nesting birds are detected in the project vicinity during construction; and
- Native American tribes, who may request consultation with BART pursuant to Assembly Bill (AB) 52.

6. ENVIRONMENTAL CHECKLIST

The following checklists (at the beginning of each environmental resource topic) are from the environmental checklist form in Appendix G of the State CEQA Guidelines. The checklist form is used to identify the potential impacts of the proposed project. A discussion follows each environmental issue identified in the checklists, to explain how the checklist was filled out. Included in each discussion are project-specific mitigation measures, where appropriate, to reduce potentially significant impacts to a less-than-significant level. For these checklists, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which a mitigation measure must be identified. If any potentially significant impacts are identified for which mitigation is not possible, an EIR must be prepared.

Less than Significant With Mitigation Incorporated: An impact that would require mitigation to be reduced to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA, based on established significance thresholds.

No Impact: The project would not have any impact.

6.1 Aesthetics

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. Substantially degrade the existing visual character or quality of the site and its surroundings?	❑	❑	■	❑
d. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	❑	❑	■	❑

Setting

The project site is in downtown Oakland, in a mixed-use urban area within the Central/ Chinatown district. The site context and surrounding visual setting are shown from an aerial view in Figure 3. The existing Lake Merritt BART Station is an open plaza at ground level, with covered pedestrian entrances on the northeast and southeast corners of the plaza that lead down to the underground BART station. Along the southern edge of the plaza, ornamental white safety fencing encloses a sunken court (see Figure 2).

Scenic Views. Scenic views identified in the Oakland Comprehensive Plan's Open Space, Conservation, and Recreation Element include views of the Oakland Hills from the flatlands, views of downtown and Lake Merritt, views of the shoreline, and panoramic views from Skyline Boulevard, Grizzly Peak Road, and other hillside locations (City of Oakland 1996b). From the project site and the surrounding streets, views of downtown are available; views of the Oakland hills from Madison Street are available, but views of Lake Merritt and its shoreline are not available.

The Scenic Highways Element of the Oakland Comprehensive plan identifies Interstate 580 (I-580) (also a State Scenic Highway in the section closest to the project location, 1.3 miles away) and Skyline Boulevard/Grizzly Peak Boulevard/Tunnel Road (approximately 4 miles away) as Scenic Highways (City of Oakland 1974). Approximately 2.6 miles away from the project site, I-80, headed west from its junction with I-980, also is part of the State Scenic Highway system, classified as having Eligible State Scenic Highway status. The project site is not visible from these scenic highways, because they are distant (1 to 4 miles away), and there are intervening buildings and trees that obstruct views to the project site.

Visual Character, Resources, and Quality of the Project Area. Buildings adjacent to the project site to the north primarily are residential buildings between 2 to 5 stories tall. The four-

story Joseph P. Bort MetroCenter (former headquarters for the Metropolitan Transportation Commission and the Association of Bay Area Governments) office building, which has a notably different visual character than the apartment buildings and Victorian homes to the north because of its modern design, is across 8th Street south of the project site. The four-story commercial building to the south and the five-story apartment building across 9th Street to the north extend to the sidewalk and have no setback, while the scattered three-story residential Victorian homes to the north and west are set back from the sidewalk and have small front yards. Madison Square Park is across the five-lane Madison Street (including two parking lanes) to the west, and the BART surface parking lot is adjacent to the east. Madison Square Park contains a play structure, basketball courts, grassy areas, and other paved recreation surfaces. The existing plaza has trees on all four sidewalks surrounding it. The sidewalk across 9th Street to the north between Madison Street and Oak Street has three small trees, and the sidewalk adjacent to the four-story commercial building to the south has eight medium-sized trees.

One distinctive visual trait of the project area is its openness. The three-block stretch from Fallon Street to the east to Jackson Street to the west, between 8th and 9th Streets, contains very few structures, all of which are single-story.

Because of the variety of architectural styles and building types (i.e., contemporary and older buildings) and lack of distinctive patterns and notable visual attributes, the area does not have a high level of cohesiveness or visual definition, and is considered low to moderate in aesthetic value.

Views of and from the Project Site. Representative locations, known as “key observation points,” were selected to show typical views from common types of viewing areas, such as public sidewalks or parks near residential areas with exposure to the project area, and they are identified in Figure 7. Views of the project site and surrounding area from these key observation points are shown in the photographs in Figure 8 (a through h). These photographs illustrate that close-up views around the project site are defined by the mix of mid-rise buildings along 8th and 9th Street and the openness created by Madison Square Park, the BART station plaza, and the BART parking lot. Distant views of the downtown skyline are limited to the tops of taller buildings and those of the Oakland hills are confined to north/south streets, like Madison and Oak Streets.

Ambient Lighting. The study area is wholly urbanized, and street lighting is a common element of the visual setting. Sources of light and glare are limited predominantly to the interior and exterior lights of buildings and lighting visible through windows, from parking lots, city streets, and the elevated I-880 to the south.

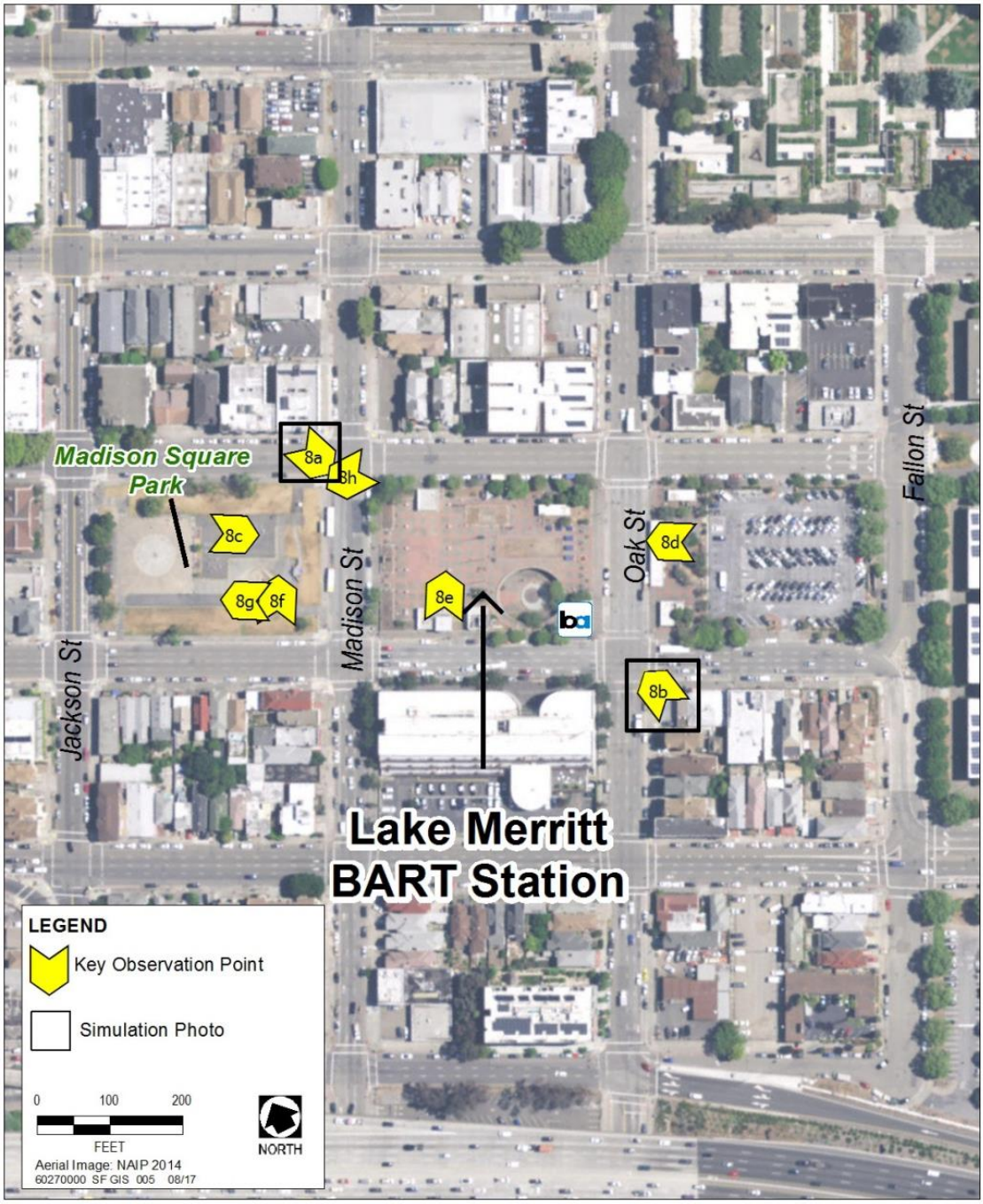

Figure 7: Key Observation Points around the Project Site

Figure 8: Photographs from Key Observation Points

Figure 8a. View from 9th Street at Madison Street looking southeast across the BART plaza to the Joseph P. Bort MetroCenter building, in the background.

Figure 8b. View from 8th Street at Oak Street looking northwest at the BART station entrance (in the foreground), with residential buildings to the right and downtown Oakland (in the background).

Figure 8c. View from Madison Square Park looking east towards the BART plaza, with the Joseph P. Bort MetroCenter building on the right and Laney College beyond the BART plaza (in the background).

Figure 8d. View from Oak Street looking west across the BART plaza. White fencing surrounds the sunken courtyard and BART station entrance in the foreground, and the downtown Oakland skyline is in the background.

Figure 8e. View from the BART plaza, looking north. The BART plaza is located in the foreground and 3- to 5-story residential buildings are in the background.

Figure 8f. View from Madison Square Park, looking north. The play structure in Madison Square Park is in the foreground. In the background, 3-story residential buildings occupy the majority of the view.

Figure 8g. View from south corner of Madison Square Park, looking west toward downtown Oakland. The Madison Square Park play structure is in the foreground. In the background, the downtown Oakland skyline is visible.

Figure 8h. View from the middle of the 9th and Madison Street intersection, looking north toward the Oakland hills. Mid-range views are dominated by 2- to 3-story buildings and the Oakland Hills are visible in the distance.

Discussion

a-b. Scenic Vista/Scenic Resources: Less-than-Significant Impact

The project site is within an urbanized area of downtown Oakland and is surrounded by a mix of office, commercial, residential, and open space (Madison Square Park and BART surface parking lot) uses. As shown in Figures 8b, 8d, and 8g, existing views of the downtown Oakland skyline are obstructed by trees and intervening development. Views of the Oakland Hills are available from the middle of Madison Street (Figure 8h); however, a pedestrian standing on the sidewalk adjacent to the plaza would not be able to see the Oakland Hills because of intervening development. In addition, the views of the Oakland Hills from the intersection of 9th and Madison Street (Figure 8h) are distant channelized views between mid-rise (2- to 4-story) apartment buildings on the west and the east sides of Madison Street.

To provide information on how the proposed project would appear and its impacts on the visual setting and scenic views of the downtown skyline and Oakland Hills, visual simulations show the project site following project implementation from two public viewing locations (Figure 9). The two viewing locations were chosen because of their close proximity to, and direct views of the plaza, and to show the height and scale of the proposed TOF relative to nearby buildings and the surrounding visual landscape. The simulations only depict the height and massing of the building; details about the façade, the architecture, the fenestration, and the "skin" or exterior of the structure will be developed in the next phase of design, and are envisioned to be compatible with the surrounding visual setting. Nevertheless, the height and massing presented in the simulations are important to understanding the scale of the proposed project relative to adjacent buildings against which it would be viewed.

The proposed TOF building would further obstruct views of the downtown Oakland skyline, as shown in the existing and visual simulations, which demonstrate the impact of the proposed height and massing of the building (Figure 9). The Oakland Hills, another scenic resource identified in the Oakland General Plan, are partially visible in long-range views looking northeast, along Madison Street. The TOF would not affect views from the middle of Madison Street. Furthermore, most long-range views of the downtown Oakland skyline from public areas adjacent to the project site are partially obstructed by intervening development under existing conditions. Although implementation of the proposed TOF would further obstruct some views, other views of downtown Oakland in the vicinity of the project site (from 8th Street, 9th Street, Oak Street, and Madison Street) would remain.

Figure 9: Existing Views and Visual Simulations of the Proposed Project Looking Southeast/Northwest

Figure 9a (existing view). View from 9th Street at Madison Street looking southeast.

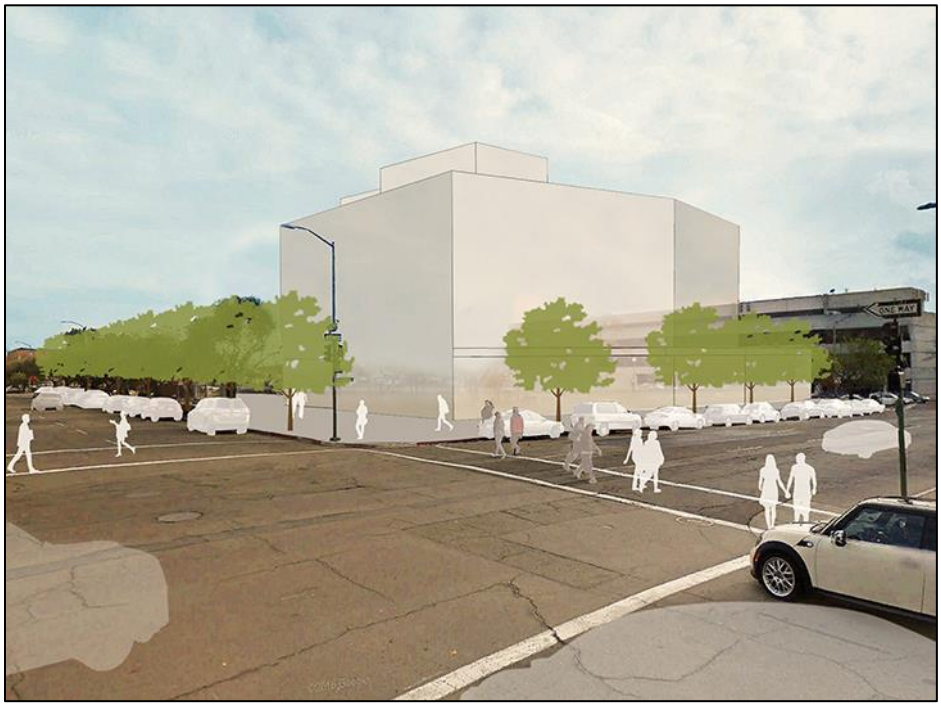

Figure 9b (simulated view). Visual simulation showing the height and massing of the proposed project from 9th Street at Madison Street looking southeast.

Figure 9c (existing view). View from 8th Street at Oak Street looking northwest toward downtown Oakland.

Figure 9d (simulated view). Visual simulation showing the height and massing of the proposed project from 8th Street at Oak Street looking northwest toward downtown Oakland.

The proposed project would not be visible from highways designated as scenic highways or routes, such as I-580, Skyline Boulevard/Grizzly Peak Boulevard/Tunnel Road, or I-80. These scenic roadways are distant from the project site (1 to 4 miles away), and intervening buildings and trees obstruct views to the project site. Thus, the proposed project would have no impact on views of scenic resources from a scenic highway.

Foreseeable development in the vicinity of the proposed project is described in the Lake Merritt Station Area Plan (LMSAP) (City of Oakland 2014b) and its companion design guidelines. The LMSAP recommends that the heart of the plan area around the Lake Merritt BART plaza be recognized as a "catalyst project." The intent of this designation is to recognize the opportunity to create an active neighborhood hub, marked by activated and pedestrian-oriented spines, ground floor commercial uses, enhanced transit plazas, and improved streets and sidewalks. Height and massing concepts are recommended to maintain community character, be compatible with historic and natural resources, and to accommodate high-density transit-oriented development. The Lake Merritt BART plaza, the blocks immediately north and south of the plaza, as well as those immediately to the east and northeast (i.e., those considered appropriate for transit-oriented development) are designated in the plan for the greatest building heights, up to 275 feet. In addition, the blocks at the western end of the LMSAP area between 12th, I-80, Broadway and approximately Webster Streets (i.e., those closest to the downtown core) are also similarly designated for the tallest structures.

The LMSAP EIR (City of Oakland 2014c) examined the visual effects of this increased height and massing in the plan area and concluded that the future development would not significantly affect scenic vistas, the area's visual character, light and glare, or shadows. The proposed project at 73 feet at its highest point above grade, the ground-floor retail, the stepped back massing above the ground floor (or base height), and the siting of the proposed TOF to help organize and accent spaces would be consistent with LMSAP and the design guidelines (City of Oakland 2014d). As a result, the proposed project with the foreseeable development within the area would not result in significant visual impacts.

Based on the above assessment, the project and cumulative impacts on scenic vistas and resources would be **less than significant**.

c. Visual Character and Quality: Less-than-Significant Impact

Construction. Temporary construction activities associated with the proposed project would involve use of heavy equipment, ground disturbance, tree removal, and lane closures in roadways for utility improvements/upgrades and construction equipment and materials. The construction site would be visible from roadways immediately surrounding the project site, and from the front yards and windows of nearby residences; however, the site would be surrounded by fencing and fabric.

Views would be temporary because project construction is expected to take approximately 24 months, with construction equipment and the level of activity varying during the different stages of initial ground clearing and building erection, to building finishing and plaza reconstruction. The construction equipment, including a crane, material delivery trucks, concrete trucks and concrete pumpers, dumpsters, and security lighting, would not be dissimilar from other construction sites. Because of the short-term, temporary nature of construction activities, the visual screening of the site, and the low-to-moderate quality of the visual character of the project site, potential visual effects associated with project construction would be minimal. The impact on the area's visual character and quality would be **less than significant**.

Visual Character and Quality. The computer-generated visual simulations in Figure 9 show the height and bulk of the proposed project relative to the existing adjacent buildings and visual setting. Detailed building design, including façade and fenestration, will be developed in the next phase of design in coordination with the community. These building features will help diminish the massing of the proposed TOF and are intended to make the building compatible with its visual setting.

Although the size of the proposed project would contrast with the single-family Victorian homes in the area, the TOF would be similar in height to the Joseph P. Bort MetroCenter building across 8th Street to the south and nearby apartment buildings to the north. The Joseph P. Bort MetroCenter building façade has a strong horizontal expression that corresponds to each floor of the building, and it occupies the majority of the block on 8th Street between Oak and Madison Streets. The historic Madison Park Apartments building on the corner of 9th Street and Oak Street has a more fine-grained façade, defined by the floors of the buildings and the fenestration. The TOF building would occupy less than half of the block along 8th Street between Oak and Madison Streets, and although the façade has not been designed yet, it is not expected to match the architectural styles of the MetroCenter building or the Madison Park Apartments building. The remaining plaza frontage along 8th and 9th Streets between Oak and Madison Streets would be used for a bike station, bike lockers, and planting areas. Because of the range of visual features, architectural styles, and building types (i.e., contemporary and older buildings, adjacent surface parking lot) and lack of distinctive patterns and notable visual attributes, the area does not have a high level of cohesiveness or visual definition. Consequently, the TOF building would not substantially degrade the existing visual character or quality of the site and its surroundings.

In addition to construction of the new TOF, the proposed project would redesign the plaza to create an inviting, safe, and flexible public space for the community; activate the public realm through art, retail, and community uses; prioritize safety (e.g., clear sight lines, lighting); integrate building and plaza design; and improve connections to the BART station entrances. Specific improvements would include removal of existing planters, modification of existing entrance canopies, integration of bike stations with station entrances, and the addition of a canopy to shade a portion of the

plaza. The overall aesthetic effect of the proposed project is expected to improve the visual quality and character of the plaza.

Therefore, the impact on the area's visual character and quality would be **less than significant**. As described in Item 1a-b, the cumulative effects of foreseeable development in the area with the proposed project on visual character and quality would also be less than significant.

Shadows. Shadow diagrams were prepared for the proposed project, to assess shadow impacts throughout the year, especially on nearby outdoor recreation facilities and other public and private open space areas. In particular, the diagrams show the effects of the proposed project's shadow on nearby Madison Square Park, sidewalks, and private front yards across the street.

In the Northern Hemisphere, the longest day and the shortest night occur on the summer solstice (typically around June 21), and the shortest day and longest night occur on the winter solstice (typically around December 21). The vernal and autumnal (i.e., spring and fall) equinoxes, on which the day and night are of equal length, occur around March 20 and September 23, respectively, and represent the midway points between the solstices. Measuring shadow lengths during the summer and winter solstices captures the extremes of shadow patterns that occur during the year.

Figures 10a through 10l show the analysis of the proposed project's shadow on the winter solstice (December 21), the spring/fall equinox (March/September 21), and the summer solstice (June 21) at 8 a.m., 10 a.m., 12 noon, and 3 p.m.

Winter Solstice. Shadows cast by the proposed TOF building would be greatest during the winter solstice due to the low angle of the sun within 1 hour after sunrise (sunrise on this day would occur at 7:23 a.m.). At 8 a.m. (Figure 10a), shadows cast on Madison Square Park would cover the majority of the park, including the play structure, slide, basketball courts, and other paved areas. By 10 a.m., shadows would recede from the park's recreational areas and would cover the southeastern sidewalk adjacent to the park. The entire block would no longer be in shade by 11 a.m.; there would be no shadows on any portion of the park for the remainder of the day.

Spring/Fall Equinox. Shadows cast by the proposed TOF at 8 a.m. (Figure 10e) would cover the play structure, slide, basketball courts, and other paved areas, which comprise approximately one-third of Madison Square Park. By 9 a.m., shadows would recede from the park entirely, but would cover the southeastern sidewalk adjacent to the park. By 10 a.m. (Figure 10f), shadows would recede entirely from sidewalk adjacent to Madison Square Park and would not cover any portion of the park for the rest of the day.

Summer Solstice. Shadows cast by the TOF during the summer solstice have the shortest duration of the year (Figures 10i through 10l). At 7 a.m. on the summer solstice, shadows cast by the proposed TOF would cover a portion of the southeastern sidewalk adjacent to Madison Square Park, but would not cover any portion of the park. By 8 a.m. (Figure 10i), shadows would recede from the sidewalk adjacent to Madison Square Park and would not cover any portion of the park for the remainder of the day. Shadows on the summer solstice would not cover the play structure, basketball courts, or other paved areas for any portion of the day.

Summary. As shown in the shadow diagrams, over a year, Madison Square Park would be in shade due to the proposed TOF at 8 a.m. in the winter, spring, and fall. In the summer, and by 10 a.m. in the other seasons, there would be no shadows on the park from the proposed project. For most of the day throughout the year, there would be no shadow cast on the play structures, basketball courts, or other paved areas. The park is heavily used by physical education classes from nearby schools and the heaviest use period occurs between 8 a.m. and 10 a.m. These classes and other park users would be in shadows during this period in the winter from the proposed TOF. Sidewalks and front yards across 9th Street from the plaza would be in shade due to the proposed TOF only during winter afternoons (after 3 p.m.) Given the limited durations of these shadows, the impact on surrounding public and private open spaces would be **less than significant**. As discussed in Item 1a-b, the cumulative impact of the foreseeable development in the area with the proposed project on shadows also would be less than significant.

Figure 10: Shadows Cast by the Proposed Project

Figure 10a. Shadows cast by the proposed TOF building on winter solstice at 8 a.m.

Figure 10b. Shadows cast by the proposed TOF building on winter solstice at 10 a.m.

Figure 10c. Shadows cast by the proposed TOF building on winter solstice at 12 noon.

Figure 10d. Shadows cast by the proposed TOF building on winter solstice at 3 p.m.

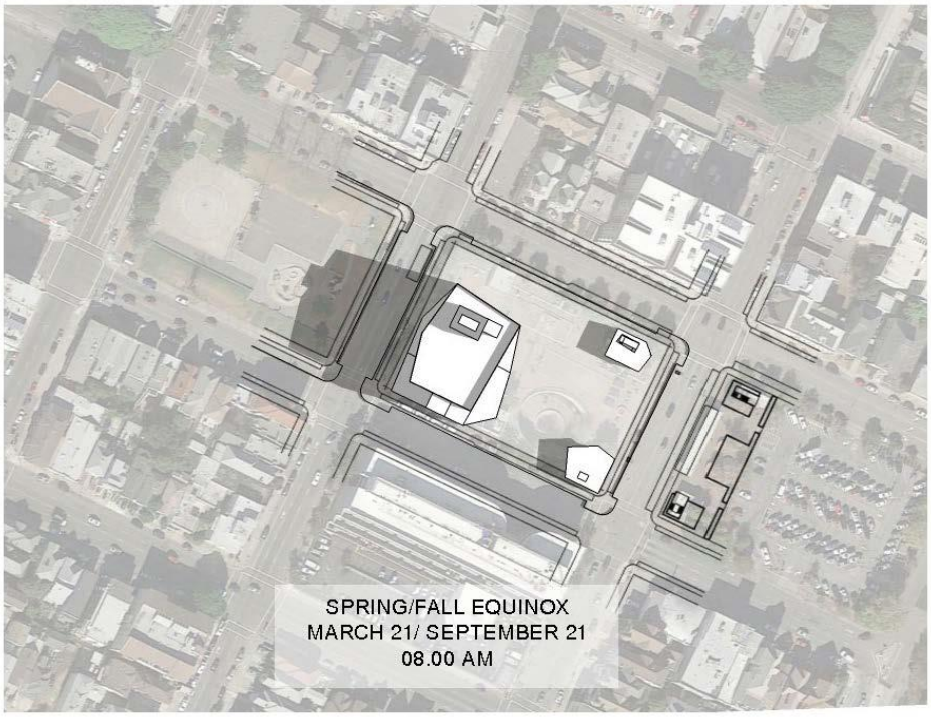

Figure 10e. Shadows cast by the proposed TOF building on spring/fall equinox at 8 a.m.

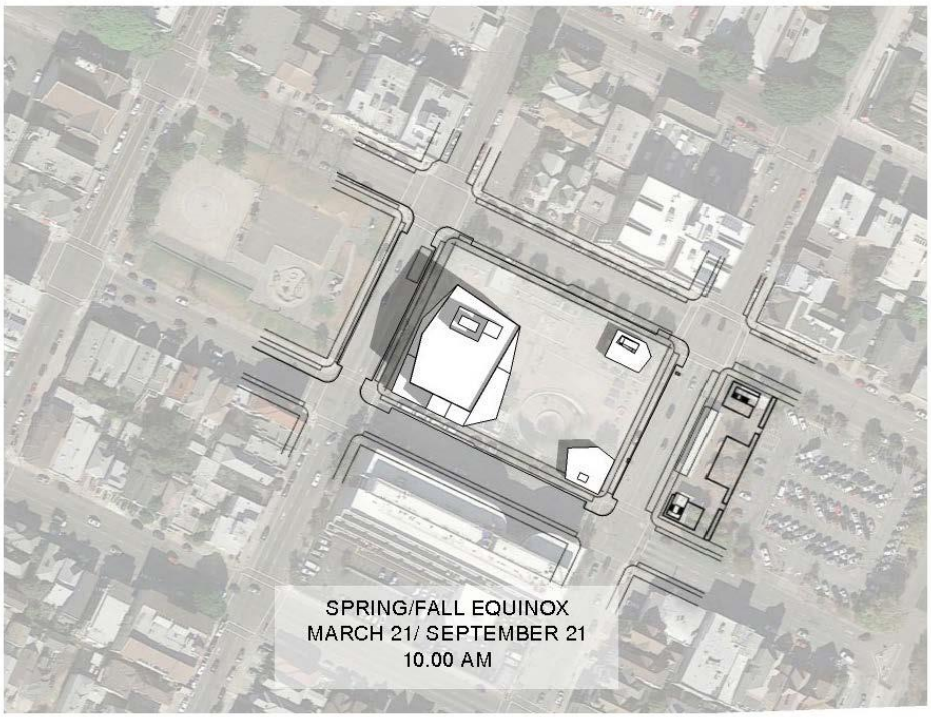

Figure 10f. Shadows cast by the proposed TOF building on spring/fall equinox at 10 a.m.

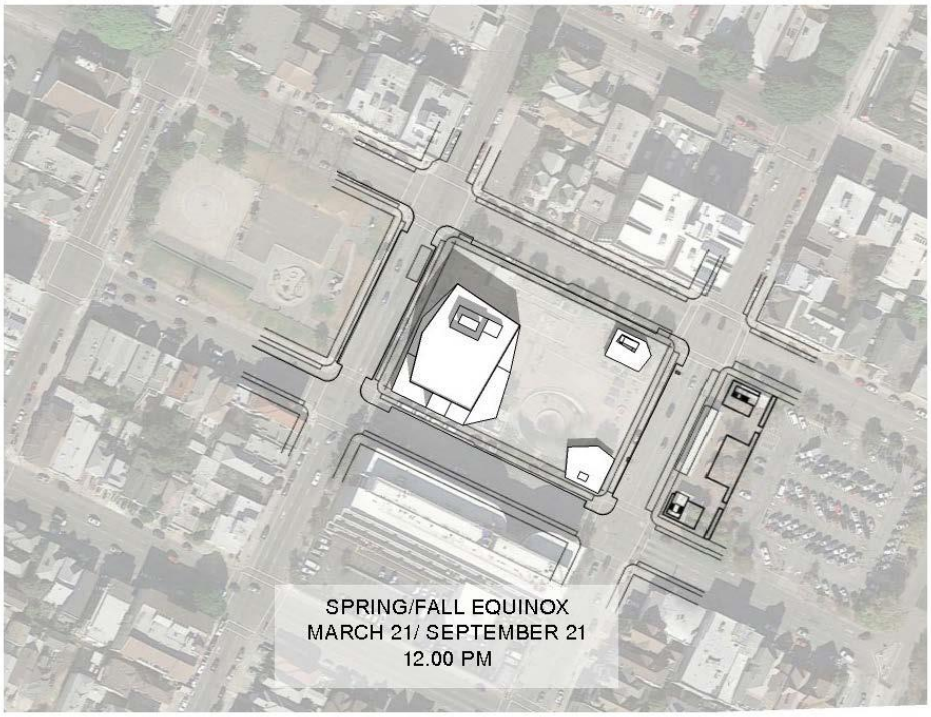

Figure 10g. Shadows cast by the proposed TOF building on spring/fall equinox at 12 noon.

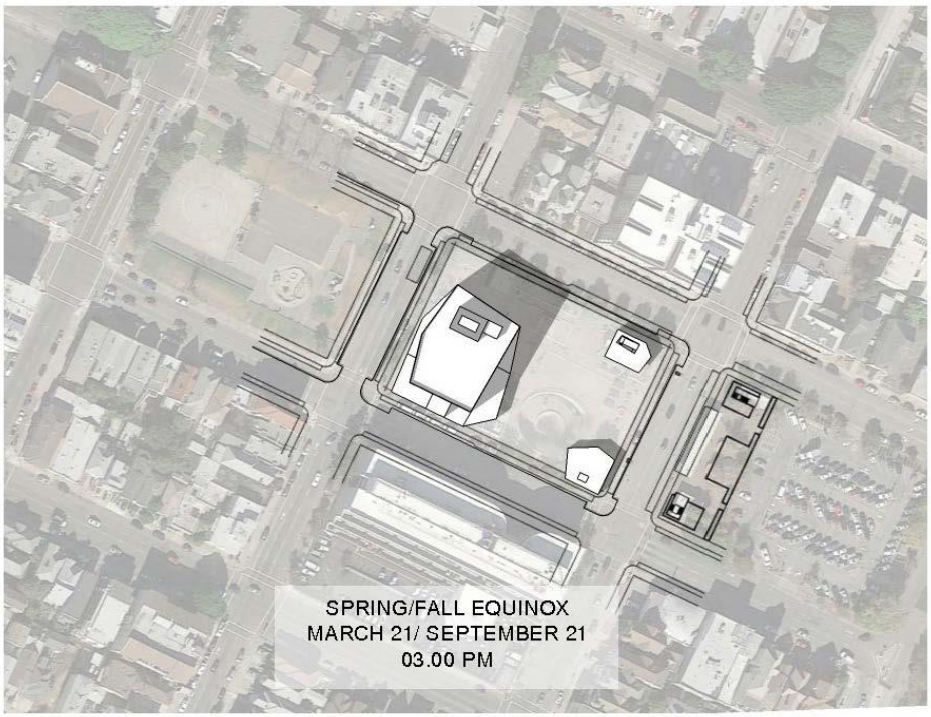

Figure 10h. Shadows cast by the proposed TOF building on spring/fall equinox at 3 p.m.

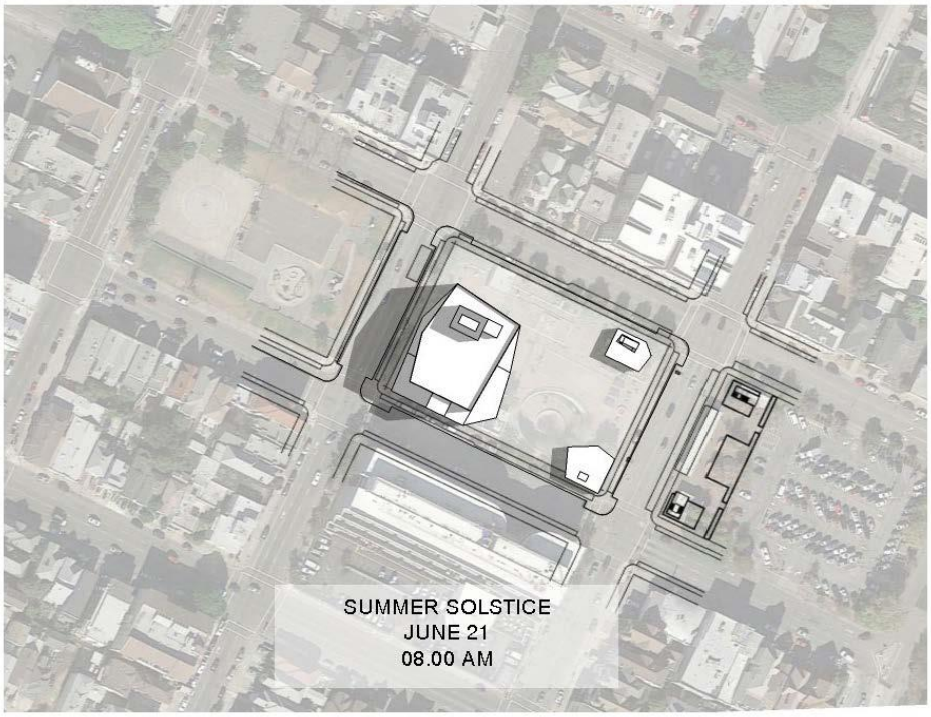

Figure 10i. Shadows cast by the proposed TOF building on summer solstice at 8 a.m.

Figure 10j. Shadows cast by the proposed TOF building on summer solstice at 10 a.m.

Figure 10k. Shadows cast by the proposed TOF building on summer solstice at 12 noon.

Figure 10l. Shadows cast by the proposed TOF building on summer solstice at 3 p.m.

d. Light or Glare: Less-than-Significant Impact

The project area currently is surrounded by office, residential, parking, and recreational land uses. Existing night light and glare in the surrounding area are from street lights, passing vehicle headlights, lighting on the elevated I-80 to the south, Lake Merritt BART Station lighting, and interior lighting from nearby residential and office uses.

The TOF and plaza design would create new sources of light and glare. Indoor lighting and outdoor lighting fixtures would be designed in accordance with specifications outlined in BFS Section 26 50 00, which would ensure new lighting sources are consistent with other BART facilities and appropriate for the project site's urban setting. During construction, security lighting would be used, but this lighting is not expected to contribute to substantial additional light or glare, because the plaza currently is lighted, and the security lighting would be focused on the enclosed area. Moreover, these proposed light sources would include shielding and would be located to minimize light spill and glare outside the construction site. These stipulations would be included within the construction contract. In addition, new sources of light used for construction and permanent plaza improvements would result in increased security in pedestrian areas. Existing views in the project vicinity are limited; therefore, the introduction of new lighting at the building entrances and for plaza improvements would not detract substantially from these views. Accordingly, the impact from development of the 33,000-square-foot building and associated plaza improvements would be less than significant.

Potential windows in the TOF building along the ground floor and on the third story facing the plaza could be a source of glare during the daytime; however, they would not be constructed using reflective glass, because one of the objectives of the plaza redesign is to promote a pedestrian friendly and activated public realm. Reflective glass that could create glare would not be consistent with this objective. Instead, street-facing retail and community spaces would be expected to provide transparency such that windows allow views of indoor space, as recommended by the LMSAP Design Guidelines. Therefore, effects related to glare would not be substantial.

Based on the above assessment and that in Item 1a-b, the project-related and cumulative construction and operational impacts on views from light and glare would be **less than significant**.

6.2 Agriculture and Forestry Resources

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
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 proposed project site and the surrounding environs are developed, urbanized areas, not used for or located on land zoned for agricultural use. According to the City of Oakland Zoning Map, the proposed project site is zoned D-LM-2 Lake Merritt Station Area District Pedestrian Commercial Zone-2, which is intended to "create, maintain, and enhance [the area] for ground-level pedestrian-oriented, active storefront uses" (City of Oakland 2014e).

The City of Oakland contains primarily urban and built-up land, and its zoning code does not contain a designation for agriculture. Therefore, no lands within the City are zoned or designated for agricultural use. Community gardens and small-scale urban agriculture are the only agricultural conditionally permitted uses under certain zoning designations. The nearest community gardens to the project site are the Gardens at Lake Merritt, located at 666 Bellevue Avenue north of Lake Merritt, where Oakland residents rent out small plots to grow personal gardens.

Discussion

a-b, e. Agricultural Resources and Zoning: No Impact

Based on site visits to the proposed project site and on maps prepared pursuant to the Farmland Mapping and Monitoring Program, the site is not located on or near farmland. Therefore, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

Similarly, the proposed project site is not located on land zoned for agricultural use, and no Williamson Act contract exists for the project site (DOC 2016). According to the City of Oakland Zoning Map, the proposed project site is zoned D-LM-2 Lake Merritt Station Area District Pedestrian Commercial Zone-2, which is intended to "create, maintain, and enhance [the area] for ground-level pedestrian-oriented, active storefront uses" (City of Oakland 2014e); therefore, no impact on zoning for agricultural use or a Williamson Act contract would occur.

In light of the above considerations, the proposed project would not result in conversion of farmland to non-agricultural use or involve other changes in the existing environment that could result in conversion of farmland. Therefore, **no impact** on agricultural resources would occur.

c-d, e. Timber/Forestry Resources: No Impact

The proposed project site is not located within existing zoning for forest land, timberland, or Timberland Production, nor is it located near land zoned for such uses. Therefore, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. **No impact** on forest lands or timber resources would occur.

6.3 Air Quality

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. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	❑	■	❑	❑
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a non-attainment area under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	❑	❑	■	❑
d. Expose sensitive receptors to substantial pollutant concentrations?	❑	❑	■	❑
e. Create objectionable odors affecting a substantial number of people?	❑	❑	■	❑

Setting

Air quality is defined by the concentration of pollutants in relation to their impact on human health. Concentrations of air pollutants are determined by the rate and location of pollutant emissions released by pollution sources, and by the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, and sunlight. Therefore, ambient air quality conditions in the local air basin are influenced by such natural factors as topography, meteorology, and climate, in addition to the amount of air pollutant emissions released by existing air pollutant sources.

The project site is in Oakland in Alameda County and is under the jurisdiction of the BAAQMD. The BAAQMD monitors air quality in Alameda, Contra Costa, Marin, San Francisco, San Mateo, Santa Clara, and Napa counties and portions of Solano and Sonoma counties in the San Francisco Bay Area Air Basin (SFBAAB). Local climatological effects, including wind speed and direction, temperature, inversion layers, and precipitation and fog, can exacerbate air quality problems in the SFBAAB. The SFBAAB climate is characterized by warm, dry summers and mild winters.

The Oakland climate is characterized by moderate summers and moist winters. Most of the precipitation occurs from November to April, with an average annual precipitation of 23.27 inches (WRCC 2017). The average monthly temperature in Oakland is 67 degrees Fahrenheit (°F), with an average annual low in January of 45°F and an average annual high of 75°F in September (WRCC 2017).

Individual air pollutants at certain concentrations may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation. Six air pollutants have been identified by the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (ARB) as being of concern, both on a nationwide and statewide level: ozone; carbon monoxide (CO); nitrogen dioxide (NO_2); sulfur dioxide (SO_2); lead; and particulate matter (PM), which is subdivided into two classes based on particle size: PM equal to or less than 10 micrometers in diameter (PM_{10}); and PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). Because the air quality standards for these air pollutants are regulated using human and environment health-based criteria, they commonly are referred to as criteria air pollutants.

Areas are classified under the Federal Clean Air Act and California Clean Air Act as attainment, non-attainment, or maintenance (previously non-attainment and currently attainment) for each criteria pollutant, based on whether federal and State air quality standards have been achieved. With respect to federal standards, the SFBAAB is designated as a nonattainment area for ozone and fine particulate matter standard ($PM_{2.5}$), and as an attainment or unclassified area for all other pollutants (BAAQMD 2017a). With respect to the State standards, the SFBAAB is designated as a nonattainment area for ozone, coarse particulate matter standard (PM_{10}), and $PM_{2.5}$, and as an attainment area for all other pollutants (BAAQMD 2017a).

Discussion

a. Conflict with Air Quality Plan: Less-than-Significant Impact

Air quality plans describe air pollution control strategies to be implemented by a city, county, or region. The primary purpose of an air quality plan is to bring an area that does not attain federal and State air quality standards into compliance with the requirements of the Federal Clean Air Act and California Clean Air Act requirements. The BAAQMD is responsible for developing and implementing air quality plans to address State and federal air quality. The BAAQMD prepares plans to attain State and national ambient air quality standards in the SFBAAB. The BAAQMD adopted the 2017 Clean Air Plan: Spare the Air, Cool the Climate on April 19, 2017 (BAAQMD 2017b). This plan provides a regional strategy to attain State and federal air quality standards by reducing ozone, particulate matter, toxic air contaminants (TACs), and greenhouse gas (GHG).

Air quality plans identify potential control measures and strategies, including rules and regulations that could be implemented to reduce air pollutant emissions from industrial facilities, commercial processes, on and off-road motor vehicles, and other sources. The BAAQMD implements these strategies through rules and regulations, grant and incentive programs, public education and outreach, and partnerships with other agencies and stakeholders.

Projects that are consistent with the assumptions used in development of the air quality plan are considered to not conflict with or obstruct the attainment of the air quality levels identified in the plan. Consistency with the air quality plan also is

determined through evaluation of project-related air quality impacts and demonstration that project-related emissions would not increase the frequency or severity of existing violations, or contribute to a new violation of the National Ambient Air Quality Standards or California Ambient Air Quality Standards. The BAAQMD CEQA Air Quality Guidelines include thresholds of significance that are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on the BAAQMD's ability to reach attainment (BAAQMD 2017c). Emissions that are above these thresholds have not been accommodated in the air quality plans and would not be consistent with the air quality plans. As discussed in Item 3b, project-related construction and operational criteria pollutant emissions would not exceed the BAAQMD significance thresholds. Therefore, the project would not conflict with or obstruct implementation of the applicable air quality plan. The impact would be **less than significant**.

b. Violate or Contribute Substantially to an Air Quality Violation: Less-than-Significant Impact with Mitigation Incorporated

The BAAQMD CEQA Air Quality Guidelines are for informational purposes only and should be followed by local governments at their own discretion (BAAQMD 2017c). The CEQA Air Quality Guidelines may inform environmental review for development projects in the Bay Area but do not commit local governments or the BAAQMD to any specific course of regulatory action. The thresholds for criteria pollutants were developed through a quantitative examination of the efficacy of fugitive dust mitigation measures and a quantitative examination of statewide non-attainment emissions, and they are used for the analysis of project-generated emissions.

Construction. Construction of the proposed project would result in the temporary generation of reactive organic gas (ROG), nitrogen oxide (NO_X), and PM_{10}, and $PM_{2.5}$ emissions from soil excavation and material transport. ROG and NO_X emissions are associated primarily with mobile equipment exhaust. Fugitive dust emissions are associated primarily with site preparation and vary as a function of such parameters as soil silt content, soil moisture, wind speed, acreage of disturbance area, and miles traveled by construction vehicles on- and off-site. Localized air emissions would also occur with the utility improvements/upgrades within nearby street rights-of-way.

The TOF would consist of new and enlarged facilities, required to support improved and expanded BART operations. Construction of the TOF and plaza design could start in late 2019 and would occur over 24 months, assuming 5 days per week and 8-hour working days. If construction starts later than 2019, the emissions presented in this analysis are conservative because emission factors in later years account technology improvements and efficiencies. Approximately 25 to 35 construction workers are expected on-site at any one time. Construction-related emissions associated with typical construction activities were modeled using the California Emissions Estimator Model (CalEEMod), Version 2016.3.1. CalEEMod allows the user to enter project-specific construction information, such as types, number, and

horsepower of construction equipment, and number and length of off-site motor vehicle trips. Emissions were calculated using default equipment lists from CalEEMod and construction schedules estimated by BART. Total construction emissions were calculated and converted from total tons to average pounds per day (lbs/day), using the estimated construction duration of 24 months. The average daily criteria pollutant construction emissions for the project are shown in Table 3. Additional modeling assumptions and details are provided in Appendix A.

Table 3: Construction Emissions

Emissions Sources	ROG	NO_X	PM_{10} (exhaust)	$PM_{2.5}$ (exhaust)
Total Emissions (tons/year)	1.8	13.2	0.7	0.6
Average Daily Emissions* (lbs/day)	6.7	49.9	2.5	2.3
Thresholds of Significance	54	54	82	54
Exceeds Thresholds	No	No	No	No

Notes:

* Average Daily Emissions are calculated based on 22 working days per month over a 24-month construction period. Detailed modeling outputs are provided in Appendix A.

BAAQMD = Bay Area Air Quality Management District; lbs/day = pounds per day; NO_X = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases

Source: Data compiled by AECOM in 2017

As shown in Table 3, construction-generated emissions of ROG, NO_X, $PM_{2.5}$ exhaust, and PM_{10} exhaust would not exceed applicable mass emission thresholds of significance. The BAAQMD does not have quantitative mass emissions thresholds for fugitive PM_{10} and $PM_{2.5}$ dust. Instead, the BAAQMD recommends that all projects, regardless of the level of average daily emissions, implement applicable best management practices (BMPs), including those listed as Basic Construction Measures in the BAAQMD CEQA Guidelines (BAAQMD 2017c).

*Mitigation Measure***.** Compliance with BFS Section 01 57 00 and BFS Section 02 41 00, would reduce emissions during construction; however, the following mitigation measure is needed to comply with the BAAQMD Basic Construction Measures and will be incorporated into the construction contract specifications from implementation by the contractor. With implementation of the standard BART air emission controls and Mitigation Measure AQ-1 below, the proposed project would be consistent with BAAQMD guidance and would not result in the generation of significant fugitive dust emissions. As a result, project-related construction air quality would not violate or contribute substantially to an existing or projected air quality violation and would be **less than significant with mitigation incorporated**.

AQ-1 Basic Air Quality Construction Control Measures. The following measures will be implemented by the BART construction contractor during all phases of construction on the project site:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) will be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material will be covered.
- All visible mud or dirt track-out onto adjacent public roads will 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 will be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading, unless seeding or soil binders are used.
- Idling times will be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by California airborne toxics control measure Title 13, Section 2485 of the California Code of Regulations). Clear signage will be provided for construction workers at all access points.
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified visible emissions evaluator.
- A publicly visible sign will be posted at the project site with the telephone number and person to contact regarding dust complaints. This person will respond and take corrective action within 48 hours. The BAAQMD's phone number also will be visibly posted, for compliance with applicable regulations.

Operations. Operational emissions following project construction would be generated by area, energy, and mobile sources. Area sources would include consumer products, periodic architectural coatings, and landscape equipment. Energy sources would include natural gas combustion for space and water heating of the TOF. Mobile sources would include vehicle trips associated with employees, commuters, visitors to the TOF, and retail users. Consistent with the peak hour analysis discussed in Section 6.16, Transportation/Traffic, the net increase in daily vehicle trips were estimated for the analysis of criteria pollutant emissions. As shown in Table 4, the analysis assumed that 250 daily trips would be generated in addition to existing conditions.

Table 4: Vehicle Trip Generation of the Proposed Project

	# of Units	Daily Rate	Daily Trips
Existing Facilities			
Existing TOF	60 employees	3.32 per employee [1]	199
Total	--	--	199
With Proposed Modifications			
Proposed TOF	137 employees	3.32 per employee [1]	455
Retail Space	5,000 sq. ft.	42.7 per 1,000 sq. ft. [2]	214
Total	--	--	669
Net Change in Vehicle Trips			
Gross Change in Vehicle Trips		470	
City of Oakland Adjustment Factor [3]		-220	
Net Change in Vehicle Trips		250	

Notes:

[1] From 9th Edition ITE Trip Generation Manual for General Office Building (710)

[2] From 9th Edition ITE Trip Generation Manual for Shopping Center (820). This trip generation rate was used because the specific retail type and proportion of usage has not yet been finalized.

[3] From City of Oakland Transportation Impact Review Guidelines (April 14, 2017): "Trip generation analysis in Oakland should explicitly account for mode split and internal capture." The project site is within 0.5 miles of a rail/ferry station and thus only 53.1 percent of ITE trip generation values should be considered motor vehicle trips.

Source: Data compiled by AECOM in 2017

Operational emissions were calculated using CalEEMod Version 2016.3.1. Table 5 shows the proposed project's average daily operational emissions and maximum annual emissions in tons per year. See Appendix A for a detailed summary of the CalEEMod modeling assumptions, inputs, and outputs.

The TOF systems would include emergency power backup from a new emergency generator integrated with the BART station entrance at 9th Street. BAAQMD regulates backup emergency generators, fire pumps, and other sources of TACs through its New Source Review (Regulation 2, Rule 5) permitting process. Although emergency generators are intended to be used only during periods of power outages, regular testing of each generator is required (at least every 3 months); however, BAAQMD limits testing to no more than 50 hours per year. Therefore, the analysis assumes emissions associated with 50 hours of maintenance and testing of the emergency generator.

Table 5: Operational Emissions

Emissions Sources	Average Daily Emissions (lbs/day)*				Maximum Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$	ROG	NO_X	PM_{10}	$PM_{2.5}$
Total Emissions	1.8	2.8	0.8	0.3	0.3	0.5	<0.1	0.1
Thresholds of Significance*	54	54	82	54	10	10	15	10
Exceeds Thresholds	No	No	No	No	No	No	No	No

Notes:

* Thresholds from Table 2-1 of the BAAQMD CEQA Air Quality Guidelines (BAAQMD 2017c). Average Daily Emissions are calculated based on 365 days per year.

BAAQMD = Bay Area Air Quality Management District; lbs/day = pounds per day; NO_X = oxides of nitrogen; PM_{10} = particulate matter with aerodynamic diameter less than 10 microns; $PM_{2.5}$ = particulate matter with aerodynamic diameter less than 2.5 microns; ROG = reactive organic gases

Source: Data compiled by AECOM in 2017

As shown in Table 5, the long-term operational emissions attributable to the project would generate emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ that would not exceed the thresholds of significance. Because long-term operational emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ would not exceed the thresholds of significance, the project would not violate or contribute substantially to an existing or projected air quality violation. The project's operational impact on air quality would be **less than significant**.

c. Cumulatively Considerable Net Increase of Criteria Pollutant: Less-than-Significant Impact

By its very nature, air pollution generally is a cumulative impact. The nonattainment status of regional pollutants results from past and present development within the SFBAAB, and this regional impact is cumulative rather than attributable to any one source. Per CEQA Guidelines Section 15064(h)(4), "the existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable."

The SFBAAB currently is designated as a nonattainment area for State and national ozone standards, and national particulate matter ambient air quality standards. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. In developing thresholds of significance for air pollutants, the BAAQMD has considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project does not exceed the identified significance thresholds, its emissions would not be cumulatively considerable, resulting in less-than-significant air quality impacts on the region's existing air quality conditions.

Based on the project-level analysis described above in Item 3b, the proposed project's construction and operational emissions would not exceed the thresholds of significance. Therefore, emissions associated with the proposed project would not be cumulatively considerable. The cumulative impact on air quality would be **less than significant**.

d. Expose Sensitive Receptors to Substantial Air Emissions: Less-than-Significant Impact

According to BAAQMD, if a project area is likely to be a place where people live, play, or convalesce, or if sensitive individuals are likely to spend a substantial amount of time there, it should be considered a receptor (BAAQMD 2017c). Sensitive individuals refer to those segments of the population most susceptible to poor air quality: children, the elderly, and those with pre-existing serious health problems affected by air quality. Examples of receptors include residences, schools and school yards, parks and play grounds, daycare centers, nursing homes, and medical facilities. The nearest sensitive receptors to the project site are the residences to the west on 8th Street and to the north on 9th Street, and the recreational activities at Madison Square Park immediately to the west.

Construction. The greatest potential for TAC emissions during project construction would be related to diesel PM emissions, generated by heavy-duty construction equipment. According to the Office of Environmental Health Hazard Assessment, health risk assessments that determine the health risks associated with exposure of sensitive receptors to TAC emissions should be based on a 30-year exposure period (OEHHA 2015). However, health risk assessments should be limited to the period/duration of emissions-generating activity. The duration for project construction would be approximately 24 months, which would be about 7 percent of the required exposure period for health risk assessments. Emissions would occur intermittently throughout the construction period and would not occur as a constant plume of emissions from the project site. Based on the anticipated construction schedule and the highly dispersive nature of diesel PM emissions, project construction would not expose sensitive receptors to substantial TAC concentrations. As a result, the construction air quality impact to sensitive receptors would be **less than significant**.

Operations. The proposed project would introduce new office and retail/community space and redesign the existing plaza to activate the public realm and provide greater opportunities for community use. The project would also include a back-up emergency generator. As part of the permitting process, BAAQMD limits the excess cancer risk from any facility, including emissions from emergency generators, and would require any source that would result in an excess cancer risk to install Best Available Control Technology. As a result, the proposed project would not be a substantial source of TAC and/or $PM_{2.5}$ emissions. The operational air quality impact to sensitive receptors would be **less than significant**.

e. Create Objectionable Odors: Less-than-Significant Impact

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Construction activities associated with the proposed project could result in short-term odor emissions from diesel exhaust associated with construction equipment. The proposed project would use typical construction techniques, and the odors would be typical of most construction sites and temporary in nature.

Projects with the potential to frequently expose individuals to objectionable odors are deemed to have a significant impact. Typical facilities that generate odors include wastewater treatment facilities, sanitary landfills, composting facilities, petroleum refineries, chemical manufacturing plants, and food processing facilities. The odors associated with the proposed project would be similar to those from the existing land uses.

Therefore, the construction and operation of the proposed project would not create objectionable odors affecting a substantial number of people. The impact would be **less than significant**.

6.4 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 Game or U.S. Fish and Wildlife Service?	❑	❑	❑	■
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 Game or U.S. Fish and Wildlife Service?	❑	❑	❑	■
c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marshes, 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

Data Collection and Review. A review of publicly available aerial imagery and mapping was conducted to evaluate potential biological resources in the project area. The aerial images were combined with a review of online databases to identify locations where special-status species, wetlands and waters of the U.S., and other sensitive biological resources would have the potential to occur.

In addition, AECOM biologist and certified arborist Saana Deichsel conducted a reconnaissance-level field survey on January 27, 2016. The purpose of the visit was to determine whether any wetlands or potential habitat for special-status plant or wildlife species

occur in the project area. Before the site visit, queries of the California Natural Diversity Database (CNDDB) (CDFW 2017), the U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) online tool (USFWS 2017), and the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2017) were conducted to identify those special-status species that have potential to occur in the project vicinity. The CNDDB list and an official species list obtained from the USFWS Information for Planning and Conservation online tool website on September 6, 2017 are provided in Appendix B. The survey of the site consisted of walking within the site and around the perimeter, while recording plant and wildlife species, vegetation communities, and potential wetlands. A query of observations in eBird, an online data source provided by the National Audubon Society, was conducted to obtain a list of bird species identified in the study area (eBird 2016).

Project Setting and Regional Context. The project site is surrounded by existing development within the City of Oakland. Because of the developed nature of the site and surrounding area, natural vegetation communities and habitats are not present. The majority of the project site is paved, with concrete planters located along the periphery of the site. Vegetation within the project site consists primarily of ornamental vegetation, non-native annual grasses, and weeds. The area surrounding the project site includes typical residential and commercial landscaping materials. Lawns, shrubs, and trees of various size, density, and arrangement are found throughout the City of Oakland.

Plant species that occur within or surrounding the project site include non-native grasses, such as brome (*Bromus* spp.) and wild oat (*Avena fatua*). Introduced weeds that were observed include Bermuda buttercup (*Oxalis pes-caprae*), dwarf nettle (*Urtica urens*), English ivy (*Hedera helix*), common groundsel (*Senecio vulgaris*), bristly ox-tongue (*Picris echioides*), common dandelion (*Taraxacum officinale*), and cheeseweed (*Malva parviflora*). Shrubby ornamentals planted in and around the periphery of the site include California lilac (*Ceanothus* sp.), iris (*Iris* sp.), bird of paradise (*Strelitzia* sp.), and Indian hawthorn (*Rhaphiolepsis indica*). Trees planted in the planters at the site or along the sidewalks around the perimeter include olive (*Olea eucopaea*), plum pine (*Podocarpus s*p.), Brazilian pepper-tree (*Schinus terebinthifolius*), and Victorian box (*Pittosporum undulatum*).

The project site is 0.25 mile southwest of Lake Merritt, a wildlife refuge with a large population of migratory and non-migratory birds. Although no suitable nesting habitat for these bird species exists at the project site, some bird species from Lake Merritt may be observed foraging at the project site or perched on trees adjacent to the project site. Wildlife species that occur in urban areas typically include introduced species that have adapted to human habitation, and they may be present at the project site. Wildlife observed at the project site include a number of common bird species, including rock pigeon (*Columba livia*), house sparrow (*Passer domesticus*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), mourning dove (*Zenaida macroura*), and western gull (*Larus occidentalis*). An old nest (likely from the previous nesting season) was observed in a tree on the southwest side of the project site; this nest did not appear to be active.

Special-Status Species. The potential occurrence of special-status plant and wildlife species within the project site and in the surrounding region has been determined from habitat information collected through a review of CDFW CNDDB, the USFWS online species list database (Appendix B), the CNPS online Inventory of Rare and Endangered Vascular Plants of California, and the January 27, 2016 reconnaissance field survey. For this section, special-status species include:

- species listed, proposed, or candidate species for listing as Threatened or Endangered by USFWS, pursuant to the Federal Endangered Species Act (FESA) of 1973, as amended;
- species listed as Rare, Threatened, or Endangered by CDFW, pursuant to the California Endangered Species Act (CESA) of 1984, as amended;
- species designated as Fully Protected under Sections 3511 (birds), 4700 (mammals), and 5050 (reptiles and amphibians) of the California Fish and Game Code;
- species protected under other regulations (e.g., local policies, Migratory Bird Treaty Act [MBTA]);
- species designated by CDFW as California Species of Special Concern;
- plant species listed as Category 1B.1 and 1B.2 in the CNPS online Inventory of Rare and Endangered Vascular Plants of California; and
- species not currently protected by statute or regulation, but considered rare, threatened, or endangered under CEQA Guidelines Section 15380.

Special-status species identified through the means described above (database searches and field survey), along with their status and likelihood of occurrence in the project area, are shown in Table 6. The list in Table 6 represents those species identified in the review of the CNDDB, USFWS, and CNPS queries having the highest likelihood to occur in the project vicinity (i.e., within the known range, and/or with potential habitat present). Species identified by these sources as potentially occurring in the region, but for which no suitable habitat exists and the project area is outside the known range of the species, are not addressed further. In addition, species identified in the CNDDB, USFWS, and CNPS queries that do not meet the status criteria described above are not addressed in this document. Furthermore, because no aquatic habitat is present in the project area, no special-status fish species known to occur in the region are addressed in this document.

Because of the disturbed and urban nature of the project area, the project site does not support suitable habitat for the special-status species listed in Table 6, and no occurrences of CNDDB-listed special-status species have been reported within the project site. No special-status plant or wildlife species were observed during the reconnaissance survey.

Table 6: Special-Status Species Potentially Occurring in the Project Vicinity

Common Name	Scientific Name	Status[1] Fed/CA/Other	Habitat and Seasonal Distribution in California	Likelihood of Occurrence Within the Project Vicinity[2]
Plants				
Fragrant fritillary	*Fritillaria liliacea*	1B.2	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland habitats often in association with serpentine soils. Blooms February – April.	**Not Likely.** No suitable habitat is present in the project area.
Diablo helianthella	*Helianthella castanea*	1B.2	Found in broad-leafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, and valley and foothill grassland habitats. Blooms March – June.	**Not Likely.** No suitable habitat is present in the project area.
Santa Cruz tarplant	*Holocarpha macradenia*	FT/SE/1B.1	Found in coastal prairie, valley and foothill grasslands. Blooms from June – October.	**Not Likely.** No suitable habitat is present in the project area.
Most beautiful jewel-flower	*Streptanthus albidus ssp. Peramoenus*	1B.2	Chaparral, cismontane woodland, valley and foothill grasslands, often on serpentine soils. Blooms April – June.	**Not Likely.** No suitable habitat is present in the project area.
California seablite	*Suaeda californica*	FE/1B.1	Coastal salt marsh and wetland-riparian. Blooms July – October.	**Not Likely.** No suitable habitat is present in the project area.
Invertebrates				
Monarch butterfly	*Danaus plexippus*	Wintering sites protected by CDFW	Eucalyptus groves used as winter roost sites.	**Not Likely.** No suitable habitat is present in the project area.
Bay checkerspot butterfly	*Euphydryas editha bayensis*	FT	Prefers shallow, serpentine-derived or similar soils, which support the larval host plants (primarily *Plantago erecta*; also *Castilleja densiflora, C. exserta*).	**Not Likely.** No suitable habitat is present in the project area.

Common Name	Scientific Name	Status[1] Fed/CA/Other	Habitat and Seasonal Distribution in California	Likelihood of Occurrence Within the Project Vicinity[2]
Reptiles				
Alameda whipsnake [=striped racer]	*Masticophis lateralis euryxanthus*	FT/ST	Scrub and chaparral habitats in Alameda and Contra Costa Counties but may occur in any inner Coast Range plant communities, including grasslands, open woodlands, rocky slopes, and along open streams and arroyos near scrub and chaparral.	**Not Likely.** No suitable habitat is present in the project area.
Birds				
Cooper's hawk	*Accipiter cooperii*	MBTA/CSC	Deciduous and mixed forests and open woodland habitats. Sometimes observed in city parks, quiet neighborhoods, and over agricultural fields.	**Low.** Nearby occurrences are recorded in the CNDDB (located 0.75 mile north, near Lake Merritt). However, no suitable nesting habitat is within or immediately adjacent to the project area.
Western snowy plover	*Charadrius alexandrinus nivosus*	FT	Inhabits beaches, dry mud, or salt flats. Nests on coastal beaches.	**Not Likely.** No suitable habitat is present in the project area.
Northern harrier	*Circus cyaneus*	MBTA/CSC	Grasslands and open habitats; typically nests on the ground in dense vegetation.	**Not Likely.** No suitable habitat is present in the project area.
White-tailed kite	*Elanus leucurus*	MBTA/CSC	Preferred habitat is marshes and waste fields in the Central Valley and coastal plains of California.	**Not Likely.** No suitable habitat is present in the project area.
Ridgway's rail (formerly California clapper rail)	*Rallus longirostris obsoletus*	FE/SE	Found in marshlands near tidal ponds. Common habitat includes pickleweed, cordgrass, gum plant, and salt grass.	**Not Likely.** No suitable habitat is present in the project area.
California least tern	*Sterna antillarum browni*	FE/SE	Nests along the coast on bare or sparsely vegetated, flat substrates from San Francisco Bay south to northern Baja.	**Not Likely.** No suitable habitat is present in the project area.

Common Name	Scientific Name	Status[1] Fed/CA/Other	Habitat and Seasonal Distribution in California	Likelihood of Occurrence Within the Project Vicinity[2]
Mammals				
Pallid bat	*Antrozous pallidus*	CSC	Found in deserts, grasslands, shrublands, woodlands and forests. Roosts in rock crevices, buildings, and bridges in arid regions.	**Not Likely.** No suitable habitat is present in the project area.

Notes:

1 Federal

FE Federally listed as Endangered

FT Federally listed as Threatened

MBTA Protected under the Migratory Bird Treaty Act

State

SE State listed as Endangered

ST State listed as Threatened

CSC California Department of Fish and Wildlife designated "Species of Special Concern"

CNPS

1A Presumed extinct

1B California Native Plant Society (CNPS) Ranking. Defined as plants that are rare, threatened, or endangered in California and elsewhere.

CNPS Threat Code Extension

.1 Species seriously endangered in California

.2 Species fairly endangered in California

2 Likelihood of Occurrence: CDFW California Natural Diversity Database (CNDDB) 2017

Likelihood of occurrence evaluations:

- A rating of "known" indicates that the species has been observed on the site.
- A rating of "high" indicates that the species has not been observed, but sufficient information is available to indicate suitable habitat and conditions are present on-site and the species is expected to occur on-site.
- A rating of "moderate" indicates that it is not known if the species is present, but suitable habitat exists on-site.
- A rating of "low" indicates that species was not found during biological surveys conducted to date on the site and may not be expected given the species' known regional distribution or the quality of habitats located on the site.
- A rating of "not likely" indicates that the taxa would not be expected to occur on the project site because the site does not include the known range or does not support suitable habitat.

Sources: CDFW 2017; Data compiled by AECOM in 2017

Discussion

a. Special-Status Species: No Impact

As indicated above under "Setting," the project site is predominately paved and is surrounded by existing development within the City of Oakland. The landscaped areas (including concrete planters) are highly disturbed. Therefore, the project site does not provide suitable habitat for any regional special-status species. **No impact** on special-status species would occur.

b-c. Sensitive Biological Habitats, Natural Communities, and Wetlands: No Impact

The project site is an existing, developed area and, based on field surveys and direct observation of the project site and vicinity, no riparian habitats, natural communities, or wetlands are present on-site. All ground disturbances would be limited to the existing, developed areas only and would not involve modification to any sensitive habitats. No acreage of riparian habitat, natural community, or wetlands would be lost during implementation of the proposed project. Therefore, **no impact** on sensitive biological habitats would occur.

d. Wildlife Movement: Less-than-Significant Impact with Mitigation Incorporated

Trees and shrubs found within the project site could provide nesting habitat for a wide variety of native birds. Although no suitable trees are within the project site for nesting raptors, a small nest was observed during the reconnaissance survey in a Victorian box tree on the southwestern side of the project site. All migratory birds, including feathers or other parts, nests, eggs, or products are protected under the MBTA of 1918 (16 U.S. Code [USC] 703–712). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 Code of Federal Regulations (CFR) Part 10, except as allowed by implementing regulations (50 CFR 21). Disturbance that causes nest abandonment or loss of nest productivity (e.g., killing or abandonment of eggs or young) may be considered a "take" and potentially is punishable by fines and imprisonment. Incidental take permits are not issued for this act. Any proposed project must take measures to avoid the take of any migratory birds, nests, or eggs. All nesting birds protected under this law would need to be avoided during construction of the proposed project.

Active nests of most birds also are protected under Section 3503 of the California Fish and Game Code, which reads, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Raptor nests also are protected under Section 3503.5. Thus, CDFW typically recommends preconstruction surveys for potentially suitable nesting habitat that would be directly (actual removal of trees/vegetation) or indirectly (noise disturbance) affected by construction-related activities. Implementation of the proposed project would require tree and shrub removal from planters along the perimeter of the project site, in preparation for

project construction. Tree and shrub removal during the nesting season (February 1 to August 31) could result in the loss of active bird nests. The loss of active nests because of tree and shrub removal would be a potentially significant impact.

Mitigation Measures. The following mitigation measures will be incorporated into BART's construction contracts and implemented by the contractor as part of construction. As a result, the proposed project's impact on nesting migratory birds would be **less than significant with mitigation incorporated**.

BIO-1 *Tree Removal or Pruning.* Tree or shrub removal or pruning will be avoided from February 1 through August 31, the bird nesting period, to the extent feasible. If no tree or shrub removal or pruning is proposed during the nesting period, no surveys or further mitigation measures are required.

BIO-2 *Nesting Bird Survey.* If any project construction activities occur during the active nesting period (February 1 through August 31), a pre-construction survey for nesting birds (e.g., swallows) will be conducted by a qualified biologist. Nesting bird surveys will be conducted within 1 week before initiation of construction activities. If no active nests are found, no further surveys and no further mitigation will be required. However, if two weeks lapse during construction within the active nesting period (i.e., if no work takes place on site for two continuous weeks between February 1 and August 31), then the survey should be repeated to ensure that any nests have not been occupied or created during the work stoppage. The survey would be required each year prior to any project construction activities occurring during the active nesting period. The survey would not be required if construction only occurred outside of the active nesting period.

If active nests are found in any areas that would be directly affected by construction activities, a qualified biologist will assess the potential impacts of project construction noise levels to ensure an appropriate buffer is established to protect the active nests. The extent of these buffers will be determined by the biologist based on the level of noise or construction disturbance, line of sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. The California Department of Fish and Wildlife will be consulted if any listed species are found to nest in the proposed project area.

e. Local Ordinances Protecting Biological Resources: Less-than-Significant Impact with Mitigation Incorporated

Pursuant to California Government Code Section 53090, as a rapid transit district, BART is not subject to local ordinances and regulations of the City of Oakland. Although the project is not subject to the City of Oakland's Protected Tree Ordinance

(Oakland Municipal Code Chapter 12.36), BART considers this City Code as a useful guide for determining when trees warrant protection or replacement. Typically, a permit from the City of Oakland Public Works Agency is required for the removal of, or any work that may damage or destroy a protected tree.

All of the trees located on the project site are non-native ornamentals. Project construction would require that some existing trees be removed. Tree removal would be required for approximately 21 Victorian box trees within the project footprint, in planters along Madison Street, and along 8th and 9th Streets on the west side of the project area. Many of these trees have multi-stemmed trunks. The majority of the trees within the project site are in poor health, and several of the small trees in planters appear to be dead. Based on the field survey conducted in January 2016, three Victorian box trees on the northwest side of the project site have been identified for removal and qualify as protected trees under the City of Oakland's Protected Tree Ordinance (because their diameters are greater than 9 inches, measured at 4.5 feet above the ground). Nearby trees, including Brazilian pepper trees (with diameters larger than 9 inches), on the sidewalk along Madison Street may be affected by project activities. The proposed project could remove tree(s) along Madison Street, 9th Street, or 8th Street. As part of the project design, on-site trees would be removed during construction but replaced by later planting trees in planters on the redesigned plaza. Nevertheless, BART considers urban trees an amenity to the environment and the loss of protected trees would be considered potentially significant without mitigation.

Mitigation Measure. The proposed project's conceptual plans include new trees in planters. These replacement trees would reduce the loss of trees and the mitigation measure below will be implemented by BART. As a result, the project's impacts on biological resources protected by a city ordinance would be **less than significant with mitigation incorporated**.

BIO-3 *Replacement for Tree Removal.* For any tree with a trunk diameter in excess of 9 inches measured at 4.5 feet above ground level that is removed because of construction, BART will plant replacement trees at or near the locations of removal after construction activities are completed. At a minimum, each removed tree that meets the 9-inch size standard will be replaced with either (i) one replacement tree of 24-inch box size, or (ii) three replacement trees of 15-gallon size.

Replacement trees need to be drought tolerant, require little maintenance, and conform to BART's approved species list.

Newly planted trees will be monitored by a qualified arborist at least once a year for 5 years. Each year, any trees that do not survive will be replaced. Any trees planted as remediation for failed plantings will be

planted as stipulated here for original plantings, and will be monitored for a period of 5 years following installation.

f. Adopted Habitat Conservation Plan: No Impact

The project area is not within the boundaries of any adopted Habitat Conservation Plan (HCP) or Natural Communities Conservation Plan (NCCP). The nearest adopted HCPs are the San Francisco Alameda Watershed Habitat Conservation Plan (20 miles to the southeast) and the East Contra Costa County Habitat Conservation Plan (15 miles to the east). Because the project area is not located within the boundaries of either of these plans, **no impact** on an adopted habitat conservation plan would occur.

6.5 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 as defined in Section 15064.5?	❑	❑	❑	■
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	❑	❑	❑	■
c. Disturb any human remains, including those interred outside of formal cemeteries?	❑	❑	❑	■
d. Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code §21074?	❑	❑	❑	■

Setting

Data Collection and Review. Baseline historic and archaeological conditions in the project vicinity are based on a review of ethnographic and historic literature and maps, archaeological base maps and site records, survey reports, and atlases of historic places on file at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS) at Sonoma State University; a review of the Office of Historic Preservation's (OHP) Directory of Properties in the Historic Property Data File for Alameda County; and a Sacred Lands File review by the California Native American Heritage Commission (NAHC). No cultural resources or Sacred Lands were identified within the project site and surrounding area. The records search and OHP list did, however, identify nine historic architectural resources on the blocks opposite the Lake Merritt BART Station, which are described next.

Project Setting and Context. The project area is within a highly developed, mixed residential/commercial urban area in downtown Oakland's Chinatown neighborhood. The project site is occupied by a street-level plaza, entrance/exit structures to the below-ground Lake Merritt BART Station, and other BART station-related facilities. The station was designed and constructed in combination with the BART administration building and BART's central control facilities. The administration building was demolished in 2009, as part of a separate BART project, because the building was determined to be "at risk" in the event of a large magnitude earthquake.

The station was built in 1969 by Rothschild, Raffin & Weirick and has been subject to various renovation efforts in subsequent decades (BART 1969). The station consists of one street level and two below-grade levels of combined structural steel and reinforced concrete construction. Except for the station entrance/exits, ventilation facilities, and the now removed administration building, the BART facilities on the project site were constructed entirely underground. Street trees ring the entirely paved parcel, bound by 8th, 9th, Madison, and Oak Streets. A sunken

courtyard is in the southeastern quadrant of the plaza, and although it is open to the sky, it is accessible only via the below-ground station concourse. Lining the walls of the station at the concourse level of the sunken courtyard is what is referred to by BART as carved plaster murals by William Mitchell (BART 1972). The perimeter of the sunken courtyard is surrounded by a security fence at the plaza level. Like the former administration building, the Lake Merritt BART Station is not yet 50 years old nor recognized as a historic resource.

Historic-era buildings surround the Lake Merritt BART Station and adjacent Madison Square Park, and are visible from the project site. The row of historic-era residences along 8th Street is fronted by a four-lane, one-way street with parking on both the north and south sides. Nearby built-environment structures include the ten-lane I-880 running east-west, two blocks south of the properties on 8th Street and three blocks south of the properties on 9th Street. The westbound off-ramp for Broadway begins near 6th Street and Madison Street. From the residences on 8th Street, the view around the Madison Square Park perimeter mostly is of historic-era homes, except for the park's east side, where the Lake Merritt BART Station Plaza is located. Larger, more modern buildings are visible in the distance. The historic-era residences and apartment building on 9th Street front a three-lane, one-way street with parking on both the north and south sides. The BART station plaza is visible across 9th Street from these properties, with only small intervening trees lining 9th Street's south side. At the western end of this row of historic-era properties is a large billboard in a vacant lot, at the northeastern corner of Madison and 9th Streets.

Historical Properties. The records search at the NWIC and OHP directory indicated that nine previously identified historical resources, all elements of the built environment, are present in the immediate project vicinity (i.e., structures located either on street frontages directly across from the project site or with potentially unscreened, oblique views of the station from across Madison Square Park).[2] As per the OHP directory, eight of the resources have been determined eligible for the National Register of Historic Places (NRHP), as contributors to a district[3] and one resource has been listed in the NRHP.

According to the EIR prepared for the Lake Merritt Station Area Plan (City of Oakland 2014c), the parcel containing the station is near but not within the 7th Street/Harrison Square Residential District that has been recognized by the City of Oakland.[4] As a resource recognized by the City of Oakland, the district represents a historic resource under CEQA. The 7th Street/Harrison Square Residential District is primarily south of the Lake Merritt BART Station,

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[2] Additional historic properties (as identified in the OHP Directory) occur along Madison Street including the structures located at 717, 721, 727, and 731 Madison Street. The view of the Lake Merritt BART Station from each of these structures is either entirely or nearly entirely blocked by the Joseph P. Bort MetroCenter.

[3] Some of the structures listed in the OHP Directory have NRHP status codes of "3D" (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing); however, no NRHP historic district is identified in this vicinity. Instead, these structures appear to be components of a historic district recognized by the City of Oakland, specifically the 7th Street/Harrison Square Residential District. Neither the district nor these structures directly front the Lake Merritt BART Station.

[4] The Oakland City list was not found among the materials filed at the NWIC. This district also does not appear in the Oakland Heritage listing.

with the closest boundary of the district lying kitty-corner from the southwest corner of the parcel on which the station is located (Figure 11).

Figure 11: 7th Street/Harrison Square Residential District from across Intersection of 8th Street and Madison Street

Cheney House, 157 8th Street (1893) (NRHP Status Code 3D). The Cheney House, at 157 8th Street, is a two-and-a-half-story residence, built in the Queen Anne architectural style in 1893, as reflected by the chamfered corners with pendant drop detailing, elaborate wood panels, and fish-scale shingles. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

161 8th Street (1894) (NRHP Status Code 3D). The house at 161 8th Street is a two-and-a-half-story residence, built in the vernacular Victorian architectural style in 1894. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

Kelly House #1, 165 8th Street (1900) (NRHP Status Code 3D). Kelly House #1 at 165 8th Street is a one-and-a-half-story residence, built in the Victorian Eclectic architectural style in 1900, and incorporating Gothic Revival details such as steeply pitched roof shed dormers, a Gothic (pointed arch) patio entry, and horizontal board siding. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register:

Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

Kelly House #2, 167 8th Street (1900) (NRHP Status Code 3D). Kelly House #2 at 167 8th Street is a two-story residence, built in the vernacular Victorian architectural style in 1900. Kelly House #2 has the same ogee arch at the patio entrance as Kelly House #1 at 165 8th Street. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

Jacobovich House, 171 8th Street (1911) (NRHP Status Code 3D). The Jacobovich House at 171 8th Street is a one-and-a-half-story Victorian eclectic-style bungalow, built in 1911 and incorporating elements of the Colonial Revival architectural style, such as the centered front-gable, full entablature, porch columns, and projecting cornice molding. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

173 8th Street (1875) (NRHP Status Code 3D). The one-story building at 173 8th Street was constructed in 1875 with a false front in the Italianate architectural style, as reflected by the low-pitched roof, moderately overhanging eaves supported by decorative brackets, molded panels, and single-pane sash windows. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

Madison Park Apartments, 100 9th Street (1908) (NRHP Status Codes 1S and 7J) (NRIS #82002164, listed in the NRHP on April 1, 1982). The Madison Park Apartments, a five-story building with 98 apartment units and a full basement, is one of the largest surviving early wood apartment buildings in the San Francisco Bay Area (Figure 12). Originally constructed in 1908 by Charles MacGregor, the building was rehabilitated in 1995, to repair damage from the 1989 Loma Prieta earthquake (Madison Park Apartments 2017). The property is listed on the NRHP for its architectural significance, although the OHP assigned the property NRHP status code 7J (Undetermined) in 1993, following the earthquake.

Figure 12: Madison Park Apartments from Across Plaza at Lake Merritt BART Station

Garrett L. Lansing House, 138 9th Street (1878) (NRHP Status Code 3D). The Garrett L. Lansing House at 138 9th Street is a two-and-a-half-story residence, built in the Victorian Eclectic architectural style in 1878 and incorporating Italianate design features, such as a square tower and decorative brackets (Figure 13). The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

Levis Bromwell/DT Curtis House, 142 9th Street (1878) (NRHP Status Code 3D). The Levis Bromwell/DT Curtis House at 142 9th Street has the same design, appearance, and built date as the Garrett L. Lansing House at 138 9th Street (Figure 13). The Levis Bromwell/DT Curtis House also is a two-and-a-half-story residence, built in the Victorian Eclectic architectural style in 1878 and incorporating Italianate design features, such as a square tower and decorative brackets. The OHP has assigned the property NRHP status code 3D (Appears Eligible for the National Register: Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing). The date of this status code assignment was not specified.

Figure 13: Garrett L. Lansing (left) and Levis Bromwell/DT Curtis (right) Houses from Sidewalk Bordering Northern Edge of Lake Merritt BART Station

Table 7 summarizes the status of the historic properties around the project site.

Table 7: Summary Historic Status for Buildings near the Project Site

Address	Name (Historic)	Year Built	NRHP Status Code*
157 8th Street	N/A	1893	3D
161 8th Street	N/A	1894	3D
165 8th Street	Kelly House #1	1900	3D
167 8th Street	Kelly House #2	1900	3D
171 8th Street	Jacobovich House	1911	3D
173 8th Street	N/A	1875	3D
100 9th Street	Madison Park Apartments	1908	1S, 7J
138 9th Street	Garrett L. Lansing House	1878	3D
142 9th Street	Levi Bromwell/DT Curtis House	1878	3D

Notes:

*NRHP Status Code reflects the designation assigned by the OHP.

1S – Separately listed in the NRHP

3D – Contributor to a district that has been fully documented according to OHP instructions and appears eligible for listing

7J – Undetermined

Source: City of Oakland 2014c

Discussion

a. Historical Resources: No Impact

Under CEQA, a historical resource (these include both archaeological and historic architectural resources) is considered significant if it meets the criteria for listing in the California Register of Historical Resources (CRHR). These criteria are set forth in CEQA Section15064.5, and define as significant any resource that:

a. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

b. Is associated with lives of persons important in our past;

c. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

d. Has yielded, or may be likely to yield, information important in prehistory or history.

Resources that are listed in or formally determined to be eligible for listing in the NRHP are automatically listed in the CRHR, and are thus considered historical resources for the purposes of CEQA compliance.

Archaeological Resources. As per the files of the NWIC, no recorded archaeological resources are within 0.25 mile of the project site. Furthermore, the proposed project would not require any ground-disturbing activities that could result in an adverse change in the significance of an archaeological resource, pursuant to Section 15064.5. Any disturbance of the plaza/street level would not affect archaeological resources, because the construction would occur within the BART plaza block which is predominantly underlain by the existing underground BART station and Lake Merritt Complex. Moreover, excavations related to the utility improvements/upgrades would occur within the existing street rights-of-way, where prior utility installations and maintenance would have already disturbed any archaeological resources present. Therefore, **no impact** on archaeological resources would occur.

Historic Architectural Resources. The nine historic-era residential properties that were identified during the records search have construction dates ranging from 1878 to 1911. The nine properties were built primarily in the Victorian eclectic period style. Several have been significantly altered since their original construction. Nearly all the houses retain some degree of historical integrity, but many have accumulated modifications that have obscured their historic appearance, thereby diminishing their integrity of design, materials, workmanship, feeling, and association. Of the nine

properties identified in the research, only the Madison Park Apartments is listed in the NRHP.

The project's potential impacts on historical resources would be limited to indirect visual impacts that may diminish the integrity of nearby resources, which is defined by seven features: location, design, setting, materials, workmanship, feeling, and association. Of these aspects of integrity, indirect visual impacts could affect the design, setting, feeling, and association of the resources. All of the buildings that have been ranked as 3D were constructed around the turn of the twentieth century. The project area is in the 19th century location of Madison Square Park, before it was moved a block west. The construction of a three-story building, above the Lake Merritt BART Station, and the plaza improvements to create a place for the community to gather, interact, and socialize would be consistent with the existing urban infrastructure present within the setting of the buildings in this Victorian-era, residential urban neighborhood. Modification of the sunken courtyard, whether a complete or partial enclosure, would not be visible to the neighboring historic structures and would not alter their integrity. Thus, the proposed project would not cause a substantial adverse change in the significance of a historic architectural resource pursuant to Section 15064.5. Therefore, **no impact** on a historic architectural resource would occur.

b. Archaeological Resources: No Impact

In addition to assessing impacts on archaeological resources meeting the requirements for listing as historical resources, impacts on unique archaeological resources also are considered under CEQA, as described in Section 15064.5, as well as under California Public Resource Code (PRC) (Section 21083.2).

No known archaeological resources are within 0.25 mile of the project area. The proposed project would not require implementation of any ground-disturbing activities that could result in an adverse change to the significance of an archaeological resource, pursuant to Section 15064.5. Disturbance of the plaza/street level to construct the TOF and to redesign and upgrade the plaza would not affect archaeological resources, because the construction would occur above the existing BART station and Lake Merritt Complex. Also, excavations related to the utility improvements/upgrades would occur within the existing street rights-of-way, where prior utility installations and maintenance would have already disturbed any archaeological resources present. Therefore, **no impact** on archaeological resources would occur.

c. Human Remains: No Impact

Section 15064.5 of CEQA assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are detailed under PRC Section 5097.98.

No known burial locations are within the project area and no known archaeological sites have the potential to harbor human remains within 0.5 mile of the project area. The proposed project would not require any ground-disturbing activities that could result in the disturbance of human remains, including those interred outside formal cemeteries. Disturbance of the plaza/street level would not affect human remains, because the construction would occur above the existing BART station and Lake Merritt Complex. Similarly, excavations for utility improvements/upgrades to support the proposed project would occur within street rights-of-way where prior ground disturbance and utility work would have already encountered any human remains present. Therefore, **no impact** on human remains would occur.

d. Tribal Cultural Resources: No Impact

With the recent adoption of AB 52, impacts on tribal cultural resources (TCR) must be addressed under CEQA. As defined in PRC Section 21074, a TCR is a site, feature, place, cultural landscape, sacred place, or object with cultural value to a "California Native American tribe," that is either on, or eligible for inclusion in, the CRHR or a local historic register, or is a resource that the lead agency, at its discretion and supported by substantial evidence, determines should be treated as a TCR.

No known prehistoric archaeological sites are within 0.25 mile of the project area. Such prehistoric resources also may be considered TCRs and can include sites, features, and objects that are CRHR-listed, eligible to be listed, or in a local register of historical resources as defined in PRC Section 5020.1(k). In addition, the Sacred Lands File maintained by the NAHC did not reveal the presence of sacred lands in the project vicinity.

The proposed project would not require ground-disturbing activities that could result in an adverse change to a TCR. Any disturbance of the plaza/street level would not affect a TCR, because the construction would occur above the existing BART station and Lake Merritt Complex. Additionally, excavations for utility improvements/upgrades to support the proposed project would occur within street rights-of-way where prior ground disturbance for utility installation and maintenance would have already encountered any TCRs present. Therefore, **no impact** on a TCR would occur.

6.6 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Expose people or structures to 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 California Building Code (1998), creating substantial risks to life or property?	❑	❑	❑	■
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	❑	❑	❑	■
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	❑	❑	❑	■

Setting

The project site is in the City of Oakland, where numerous earthquake faults occur at the intersection of the North American and Pacific tectonic plates. The nearest earthquake fault, the Hayward Fault, is about 3.5 miles east of the project site (CDMG 1982). According to the California Geological Survey and the City of Oakland, the project site is not within a landslide hazard zone with the potential for landslides, because of the flat terrain of the project area (CGS 2003a).

Geologic maps prepared by the U.S. Geological Survey (USGS) show the distribution of geologic materials in the area are dominated by Merritt sands from the Holocene and Pleistocene era, which accumulated from the San Francisco Bay and led to the formation of the underlying soils at the project site. The soil map units mapped by the Natural Resource Conservation Service (NRCS) show Urban Land-Baywood Complex soil to be present at the project site. Baywood soil typically is a loamy sand, non-expansive soil, meaning it does not expand or shrink in size when water is introduced to or removed from the soil, which can lead to cracking or tilting of structures atop expansive soils (NRCS 2015).

Discussion

a.(i) Fault Rupture: No Impact

Alquist-Priolo Earthquake Fault Zones are areas surrounding active earthquake faults with higher potential hazards related to fault rupture from an earthquake. These zones are used by cities and counties to regulate development by preventing buildings for human occupancy from being built on top of a fault. Based on information from the California Geological Survey's regulatory fault zone map for the Oakland West quadrangle, the project site is not within an Alquist-Priolo Earthquake Fault Zone (CGS 2003b). The closest active fault is the Hayward Fault, approximately 3.5 miles east of the project site (CDMG 1982). Therefore, the proposed project would not expose people or structures to potential adverse effects from a rupture of a known earthquake fault. **No impact** would occur.

a.(ii) Groundshaking: Less-than-Significant Impact

Earthquakes can be measured by magnitude and intensity. Magnitude identifies the total amount of energy released during an earthquake, and intensity describes the effects of an earthquake on structures, humans, and the environment. Moment magnitude commonly is used to report the "size" of an earthquake. According to USGS, the overall probability of a moment magnitude 6.7 or greater earthquake (an earthquake causing significant damage in a populated area) occurring in the San Francisco Bay Region during the next 30 years is 63 percent (USGS 2008). Therefore, the potential exists that a strong to very strong earthquake would affect the project during its lifetime.

A commonly used descriptor for an earthquake's intensity is the Modified Mercalli Intensity scale, which indicates the results of an earthquake, based on 12 different levels of intensity. USGS identifies the Modified Mercalli Intensity shaking severity level of the project site as level 8, "Very Strong," which indicates "considerable damage to ordinary buildings," "severe damage to poorly built structures," and "some walls collapse" (ABAG 2015; MTU 2007). This rating indicates that the project site would experience periodic minor or major earthquakes associated with a regional fault, resulting in very strong groundshaking.

Although a high potential exists for strong seismic groundshaking, the risk of excessive permanent damage would be reduced because the proposed structures would comply with seismic safety standards of the California Building Code (CBC) and the BFS. The CBC contains design and construction standards to ensure buildings and structures are able to withstand seismic hazards and groundshaking and address different types of construction, excavation, fill, grading, expansive soil, and foundation design and construction. These standards reduce risk to a level considered acceptable to those in the building industry. The general design policy of the BFS Structural Criteria for Seismic Design incorporates the relevant seismic safety provisions of the CBC, ensuring that the structures built for BART projects are designed to withstand seismic events, along with other professional industry standards. BART design criteria require that all operating facilities, such as the proposed TOF, be designed to withstand the effects of the Maximum Credible Earthquake (the greatest probable earthquake that could occur in a region) without substantial degradation of structural integrity.

Because BART must comply with these design standards and building and safety codes in construction of the TOF and the plaza design, the proposed project is not expected to expose people or structures to substantial risks associated with strong seismic groundshaking. The impact from groundshaking would be **less than significant**.

a.(iii) Ground Failure: No Impact

According to the California Geologic Survey, the proposed project site is not within an area where historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements, so that mitigation would be required (CGS 2003a). In addition, standards and provisions of the CBC and the BFS would require structural design to avoid and minimize potential seismic-related ground failure. Therefore, the proposed project would not expose people or structures to risks associated with liquefaction or ground failure. **No impact** from seismic-related ground failure would occur.

a.(iv) Landslides: No Impact

As shown on the California Geological Survey's regulatory fault zone map for the Oakland West quadrangle, prepared under the Alquist-Priolo Earthquake Fault Zoning Act of 1972 and the Seismic Hazards Mapping Act of 1990, the project site is not in an area exposed to risk of landslides (CGS 2003b). The Safety Element of the City of Oakland General Plan also does not designate the project site as a potential landslide area (City of Oakland 2012a). These classifications reflect the flat terrain in the project vicinity and the absence of any nearby slopes that would be susceptible to movement or failure. Therefore, the project would not expose people or structures to potential substantial adverse effects involving landslides. **No impact** from landslides would occur.

b. Erosion: No Impact

The proposed project would not involve the substantial removal of soil from the site. The only soil removed during construction would be from the aboveground planters, some soil from excavations associated with the utility improvements/upgrades within the street rights-of-way, and some soil from the location of the proposed generator that extends beyond the planter. Virtually all of the subsurface work would occur between the existing concrete at the plaza and the Lake Merritt Complex and BART station below, or within the street rights-of-way to improve and upgrade the utility lines. This subsurface construction would take place within the existing underground structure and would not disturb soils at the project site or within the streets where soils would be excavated to access the underground utilities. Therefore, **no impact** from substantial soil erosion would occur.

c. Unstable Geologic or Soil Units: No Impact

As described for Item 6a(iii), the project site is not located in an area where historical occurrence of liquefaction or local geological, geotechnical, and groundwater conditions indicate a potential for permanent ground displacements, so that mitigation would be required. In addition, standards and provisions of the CBC and the BFS would require structural design to avoid and minimize potential ground failure. Therefore, the proposed project would not be located on a geologic unit or soil that is unstable, or that would become unstable, and would not potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. **No impact** from unstable geologic or soil units would occur.

d. Expansive Soils: No Impact

According to the Web Soil Survey tool from the California Department of Conservation, the soil at the project site is classified as Urban Land-Baywood Complex (NRCS 2015). This soil is not classified as expansive. Therefore, **no impact** from expansive soils would occur.

e. Soil Suitability for Septic Systems: No Impact

The proposed project would not involve the use of septic systems. The existing Lake Merritt Complex is, and the proposed TOF would be, connected to the City's sewerage system that conveys wastewater to the East Bay Municipal Utility District wastewater treatment plant. Therefore, **no impact** from use of septic or alternative wastewater systems would occur.

f. Unique Paleontological or Geologic Resource: No Impact

The proposed project would not require ground-disturbing activities that could result in the destruction of paleontological resources or unique geologic features. Excavation during project construction would not disturb the ground or geology

beyond the existing underground station structure or beyond the existing street rights-of-way where prior utility installation and maintenance would have disturbed any resources present. Therefore, **no impact** on paleontological or geologic resources would occur.

6.7 Greenhouse Gas Emissions

Would the project:	Significant or 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?	❑	❑	■	❑

Setting

Certain gases in Earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the Earth's surface temperature. A portion of the solar radiation that enters the Earth's atmosphere is absorbed by the Earth's surface, and a smaller portion of this radiation is reflected back toward space. Infrared radiation is absorbed by GHGs; therefore, infrared radiation released from Earth 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.

GHGs are present in the atmosphere naturally, are released by natural sources and anthropogenic sources, and are formed from secondary reactions taking place in the atmosphere. The following GHGs are widely accepted as the principal contributors to human-induced global climate change that would be relevant to the proposed project: carbon dioxide (CO_2); methane (CH_4); and nitrous oxide (N_2O). Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4 is the main component of natural gas and is associated with agricultural practices and landfills. N_2O is a colorless GHG that results from industrial processes, vehicle emissions, and agricultural practices.

Global warming potential (GWP) is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to CO_2. The GWP of a GHG is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time (i.e., lifetime) that the gas remains in the atmosphere atmospheric lifetime. The reference gas for GWP is CO_2; therefore, CO_2 has a GWP of 1. The other main GHGs that have been attributed to human activity include CH_4, which has a GWP of 28, and N_2O, which has a GWP of 265 (IPCC 2013). For example, 1 ton of CH_4 has the same contribution to the greenhouse effect as approximately 28 tons of CO_2. GHGs with lower emissions rates than CO_2 still may contribute to climate change, because they are more effective at absorbing outgoing infrared radiation than CO_2 (i.e., high GWP). The concept of CO_2-equivalents (CO_2e) is used to account the different GWP potentials of GHG to absorb infrared radiation.

Discussion

a. Greenhouse Gas Emissions: Less-than-Significant Impact

The impacts associated with GHG emissions that would be generated by the project are related to construction and operation emissions. Off-road equipment, materials transport, and worker commutes during project construction would generate GHG emissions. Building operation, energy use, and mobile sources from vehicle trips by employees and customers would generate GHG emissions. Total project construction and operational GHG emissions were estimated using the methodology discussed in Section 6.3, Air Quality. As shown in Table 8, the total estimated construction-related emissions would be approximately 1,776 metric tons (MT) CO_2e, with the maximum emissions of 1,002 MT CO_2e in 2020. Additional modeling assumptions and details are provided in Appendix A.

Table 8: Greenhouse Gas Emissions from Project Construction

Year	Project Emissions (MT CO_2e)
2019	251
2020	1,002
2021	523
Total Construction Emissions	**1,776**

Notes:
MT= metric tons; CO_2e = carbon dioxide equivalents
Detailed modeling outputs are provided in Appendix A.
Source: Data compiled by AECOM in 2017

The BAAQMD has not adopted thresholds for evaluating GHG emissions from construction activities. However, the BAAQMD recommends that the lead agency (in this case, BART) quantify and disclose GHG emissions that would occur during project construction, and make a determination on the significance of these construction-generated GHG emission impacts in relation to meeting AB 32 GHG reduction goals (BAAQMD 2017c).

Direct comparison of construction GHG emissions with long-term thresholds would not be appropriate because these emissions would cease on completion of construction. Other districts (e.g., SCAQMD 2008; SLOAPCD 2012) recommend that GHG emissions from construction activities be amortized over a project's operational lifetime (typically assumed to be 30 years) for comparison with long-term GHG emissions significance thresholds. For comparison to the BAAQMD threshold, construction emissions were amortized over the estimated lifetime of the project and

added to the annual operational emissions. The amortized construction emissions for the proposed project were estimated at 59 MT CO_2e per year (1,776 MT CO_2e divided by 30 years).

For operational-related GHG emissions of a land use development, such as the proposed project, the BAAQMD recommends a threshold of significance of less than 1,100 MT CO_2e per year. Operational GHG emissions include area emissions, energy demand, vehicle trips, waste, and water usage. Estimated operational GHG emissions for the proposed project are shown in Table 9. Additional modeling assumptions and details are provided in Appendix A.

Table 9: Greenhouse Gas Emissions from Project Operations

Emissions Source	Project Emissions (MT CO_2e)
Amortized Construction Emissions[1]	59
Total Annual Operational Emissions[2]	480
Total Project GHG Emissions	
Total Annual Project GHG Emissions[3]	539
Threshold of Significance	1,100

Notes:

[1] Construction emissions were amortized over the expected lifetime of the project (estimated to be 30 years) for comparison with thresholds.

[2] Annual emissions calculated assuming 365 days of operation.

[3] Total project GHG emissions include annual operational emissions and amortized construction emissions. Total may not add because of rounding.

MT= metric tons

CO_2e = carbon dioxide equivalents

Detailed modeling outputs provided in Appendix A.

Source: Data compiled by AECOM in 2017

As shown in Table 9, total annual GHG emissions were estimated at approximately 539 MT CO_2e per year. Annual project GHG emissions would not exceed the BAAQMD threshold of 1,100 MT CO_2e per year. Therefore, the proposed project would not generate GHG emissions that would have a significant impact on the environment. The impact would be **less than significant**.

b. Conflict with any Plan, Policy or Regulation to Reduce Emissions of Greenhouse Gases: Less-than-Significant Impact

In 2006, California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Section 38500, et seq.). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable

reductions in GHG emissions and establishes a cap on statewide GHG emissions. It requires that statewide GHG emissions be reduced to 1990 levels by 2020. In December 2008, ARB adopted its Climate Change Scoping Plan (Scoping Plan), which contains the main strategies California will implement to achieve the required GHG reductions required by AB 32 (ARB 2014).

In 2008 and 2014, ARB approved the Scoping Plan and the first update to the Scoping Plan, respectively (ARB 2008, 2014). In 2016, the State Legislature passed Senate Bill SB 32, which established a 2030 GHG emissions reduction target of 40 percent below 1990 levels. In response to SB 32 and the companion legislation of AB 197, ARB released a proposed Scoping Plan on January 21, 2017 (ARB 2017). The proposed 2017 Scoping Plan had not been adopted at the time of this analysis.

None of these statewide plans or policies constitutes a regulation to adopt or implement a regional or local plan for reduction or mitigation of GHG emissions. In addition, it is assumed that any requirements formulated under the mandate of AB 32 and SB 32 would be implemented consistent with statewide policies and laws.

In 2012, the City of Oakland adopted the Energy and Climate Action Plan to address the reduction of major sources of GHG emissions, with an emission target of 36 percent below 2005 conditions by 2020 (City of Oakland 2012b). To meet this goal, the City adopted strategies and actions to reduce emissions. Communitywide strategies address the following sectors: building energy, transportation and land use, and material consumption and waste. The proposed project would be consistent with the strategy of advancing the use of low-carbon transportation modes. Action TLU-19 in the Energy and Climate Action Plan calls for collaboration with regional partners, including BART, to expand and enhance public transit service, interconnections, vehicle amenities, and associated facilities. The existing facilities at the Lake Merritt BART Station require improvements to physical space and infrastructure technology, to support improved BART operations and accommodate operation of planned BART extension projects over the next 40 years. Thus, construction of the new TOF building would modernize current operational infrastructure and technology to support system expansion. Consistent with the Energy and Climate Action Plan, the proposed project would expand and enhance public transit service and encourage the use of low-carbon transportation modes.

In addition, one of the key GHG reduction strategies in the Energy and Climate Action Plan is to optimize energy efficiency and consumption in new buildings. Action BE-28 of the Energy and Climate Action Plan calls for collaboration with local partners to increase local use of renewable energy. Consistent with the goals of the Energy and Climate Action Plan, the new TOF would be LEED-certified and may include rooftop PV panels.

As mentioned above, the proposed project would not exceed emission thresholds adopted by the BAAQMD and would be consistent with the goals and strategies of

the Oakland Energy and Climate Action Plan. Therefore, the project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The impact on these plans would be **less than significant**.

6.8 Hazards and Hazardous Materials

Would the project:	Significant or 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. Be located within an airport land use plan area or, where such a plan has not been adopted, be within two miles of a public airport or public use airport, and result in a safety hazard for people residing or working in the project area?	❑	❑	❑	■
f. Be located within the vicinity of a private airstrip and result in a safety hazard for people residing or working in the project area?	❑	❑	❑	■
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	❑	❑	■	❑
h. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	❑	❑	❑	■

Setting

Hazardous Materials Use at Existing TOF. Asbestos-containing debris was discovered on top of ceiling tiles at the former Lake Merritt Administration Building (which was formerly located on the project site), during a 1989 investigation by ITEK Enviro Services (ITEK) (BART 2006). The dismantling of the LMA building complied with federal, State, and BAAQMD laws and regulations and asbestos-containing materials (ACMs) were disposed accordingly. Several of

the existing BART structures on-site are expected to contain asbestos and all asbestos removal will be performed in compliance with BART procedures and the BAAQMD Regulation 11 Rule 2 concerning asbestos demolition, removal, and manufacturing.

Nearby Hazardous Materials Sites. A record search of the California Department of Toxic Substances Control's (DTSC) online EnviroStor database and the State Water Resources Control Board's (SWRCB) online GeoTracker database was conducted for facilities and uses near the project site that are on federal and State hazardous materials site lists. The results of these searches were reviewed for information on whether hazardous substances, wastes, or petroleum products have been improperly handled, stored, or disposed within 1 mile of the project site. A total of 201 sites were identified within 1 mile (SWRCB 2017; DTSC 2017). The search distance was based on the American Society for Testing and Materials (ASTM) guidance document, ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, E1527-13. ASTM-recommended search distances vary based on the type of hazardous materials site. For instance, the ASTM recommends a 1-mile search distance for Federal and State National Priority List sites, and a 0.5-mile search distance for leaking underground storage tanks, voluntary cleanup sites, and brownfield sites.

Sites identified within these recommended search distances were further evaluated for the likelihood of hazardous substances or petroleum products to migrate toward the project site. Of the 201 sites within 1 mile, 21 were determined to be active and of concern in evaluating the proposed project's potential impacts related to hazardous materials (SWRCB 2017; D 2017). Of these active sites, two at 1424 Harrison and 301 12th Street are at elevations greater than the proposed project and contamination from these sites could migrate towards the project site. These sites are further described below. The active sites are described in Appendix C.

Schools. The proposed project is within 0.25 mile of three schools: American Indian Public Charter School II, Laney College, and Lincoln Elementary School.

Airports. The closest airport to the project site is the Oakland International Airport, approximately 7 miles to the south. Therefore, the project site is not included in any airport land use plans or near a private airstrip.

Emergency Response or Emergency Evacuation Plans. The Alameda County Emergency Operations Plan (2012), prepared jointly by Alameda County, its cities, and special districts provides an overview of the approach to emergency operations within the County. It identifies emergency response policies, describes the response and recovery organization, and assigns specific roles and responsibilities to County departments, agencies, and community partners. The Emergency Operations Plan has the flexibility to be used for all emergencies and strives to facilitate response and recovery activities in an efficient and effective way.

On a larger Bay Area scale, the 2008 Regional Emergency Coordination Plan establishes an all-hazards framework for collaboration among responsible entities and coordination during emergencies in the San Francisco Bay Area. Spearheaded by the State Governor's Office of Emergency Services and local Bay Area governments, the plan builds on and complements other national and state emergency management systems and plans. Key elements of the plan

address care and shelter, communications, medical and health services/facilities, and transportation. BART is recognized in the plan as a "regional organization" that has authority or may conduct operations across more than one county and provides liaison to one or more operational area emergency operation centers (CALOES 2008).

In addition, the Association of Bay Area Governments led a Regional Resilience Initiative, the goal of which is improve the resilience of the Bay Area by planning to more quickly and efficiently recover from disasters, ranging from fires to earthquakes to flooding (ABAG 2013a). Convened over an 18-month period beginning in 2012, the Regional Resilience Initiative focuses on regional efforts to expedite recovery informed through a series of workshops and policy papers. BART is recognized in the initiative as a critical component of the regional infrastructure, for which failure or significant damage could temporarily paralyze San Francisco or a wider regional area. BART was also a presenter in the workshops to educate participants in the Regional Resilience Initiative about how interdependencies of the region's utilities and transportation systems could impact recovery from a disaster.

Wildland Fire Hazards. The project site is within a developed, highly urbanized downtown area of the City of Oakland. Therefore, the project site does not fall within a wildfire hazard area or within a wildland/urban interface.

Discussion

a-b. Routine Handling of Hazardous Materials: Less-than-Significant Impact

The proposed project would involve demolition of the existing vertical-stubbed columns on the Lake Merritt BART Station plaza and construction of an approximately 33,000-square-foot building. The project also would include improvements to the existing plaza, to create an inviting, safe, and flexible public space for the community; activate the public realm through art, retail, and programming; and enhance accessibility to the BART station entrances. The following discussion relates to the routine transport, use, or disposal of hazardous materials.

Construction. Construction of the BART TOF and redesign of the plaza would disturb the ground surface and potentially expose construction workers, the public, and the environment to soil or groundwater contamination.

Contaminated Soils, Sediments, and Groundwater. There are 20 active hazardous materials sites listed on the "Cortese List" within 0.5 mile of the project site, and one State response site within 1 mile of the proposed project. Of these active sites, two are located at elevations higher than the proposed project, meaning that contaminants migrating by way of groundwater could be transported toward the project site.

Because these sites are 1,900 feet and 2,700 feet from the proposed project, the likelihood of encountering contaminated soil and/or groundwater beneath the project

site would be low. Furthermore, the BART Lake Merritt Complex under the plaza is enclosed with concrete slabs that would likely prevent migration into the construction zone for the proposed project. Therefore, impacts from ground disturbance at the project site would be **less than significant**.

Hazardous Construction Materials. As described in Section 6.9, Hydrology and Water Quality, construction and site preparation for the proposed project would involve use of heavy equipment and vehicles containing fuel, oil, and grease, as well as materials such as cement, asphalt, paint, and solvents. Fluids such as oil or grease could leak from construction vehicles or could be released inadvertently in the event of an accident, potentially releasing petroleum compounds laden with metals and other pollutants. In addition, as stated above, asbestos-containing debris was discovered on top of ceiling tiles during a 1989 investigation by ITEK at the former Lake Merritt Administration Building, which formerly was located within the footprint of the proposed TOF (BART 2006). Asbestos is likely to be in the remaining vertical-stubbed columns from the former administration building and other structures on the plaza.

Because of the requirement for asbestos removal, negative-pressure tents (with fans and filters) would be erected over the stubbed columns during their cutting and removal. As described in Section 6.9, Hydrology and Water Quality, on BART projects, construction contractors are responsible for emergency plans during project construction, and the BART System Safety Department would provide emergency support. Emergency plans during project construction would outline procedures to ensure coordination with local jurisdictions in evacuating areas and notifying BART and emergency response personnel. In addition, accidental release during construction would need to comply with applicable federal, State, and local regulations, including Titles 8, 22, and 26 of the Code of California Regulations, the Uniform Fire Code, and Chapter 6.95 of the California Health and Safety Code. Furthermore, the contractor would comply with specifications outlined in BFS Sections 01 35 24 and 31 00 00, which would limit the potential for hazardous materials to be released into the environment.

Therefore, the proposed project's potential to create a significant hazard to the public or the environment through the accidental release of hazardous materials during project construction would be **less than significant**.

Operations. Development of the TOF with office and commercial uses and the plaza redesign could involve the storage, use, and transport of hazardous materials. During operation, the proposed project would require relatively small quantities of hazardous materials associated with janitorial, maintenance, and repair activities (i.e., commercial cleaners, lubricants, paint).

BART operates a quarterly hazardous waste disposal program through the Environmental Compliance Division in BART's System Safety Department.

Hazardous and nonhazardous wastes (including cleaning supplies, lubricants, and paint) at every BART service location are packaged according to EPA guidelines and are disposed by a licensed contractor at approved disposal facilities. Copies of hazardous waste manifests are kept on file at BART.

If the proposed project includes storage of 55 gallons or more of hazardous materials, the Environmental Compliance Division would monitor the proposed project as part of the Hazardous Materials Business Plans (HMBPs) for facilities storing 55 gallons or more of hazardous materials. Facilities listed in this plan are monitored as part of an annual environmental compliance program, in accordance with the HMBPs. The HMBPs include a complete inventory of all hazardous materials used and stored at the site, hazardous wastes generated and any treatment systems present, underground storage tanks (USTs) or aboveground storage tanks (ASTs) at the site, emergency response plans and procedures, and an employee training for hazardous materials releases. BART currently implements a waste minimization and waste recycling program, thereby reducing the amount of waste generated and transported to disposal facilities. BART also complies with AST and UST regulations regarding permitting, secondary containment, and monitoring systems. Because the proposed project would be required to comply with BART's HMBPs if storage of more than 55 gallons of hazardous materials occurs, and because of the quarterly hazardous waste disposal program, limiting the accidental release of hazardous materials into the environment, the impact would be **less than significant**.

c. Hazardous Materials Emissions near Schools: Less-than-Significant Impact

The proposed project is within 0.25 mile of three schools: American Indian Public Charter School II; Laney College; and Lincoln Elementary School. As described in Items 8a and b, operations of the proposed project would not release hazardous substances into the environment. Furthermore, BART construction contractors would comply with requirements for ACM removal by erecting negative-pressure tents (with fans and filters) over the stubbed columns during their cutting and removal. They also would follow standard BART contract provisions regarding the appropriate handling, storage, and disposal of hazardous materials during construction. Therefore, the impact of hazardous materials emissions on nearby schools would be **less than significant**.

d. Location on a Listed Hazardous Materials Site: Less-than-Significant Impact with Mitigation Incorporated

The project site is not on a list of hazardous materials sites, compiled pursuant to Government Code Section 65962.5. This list, known as the "Cortese List," was reviewed for this Initial Study, through the record search of the EnviroStor and GeoTracker databases (DTSC 2017; SWRCB 2017). Appendix C identifies hazardous waste and substances site near the project site.

However, there are 20 active hazardous materials sites listed on the "Cortese List" within 0.5 mile of the project site, and one State response site within 1 mile of the proposed project. Of these active sites, two are located at elevations higher than the proposed project, meaning that contaminants migrating by way of groundwater could be transported toward the project site.

The property at 1424 Harrison Street is identified as a LUST cleanup site. Two underground fuel tanks were closed in place beneath the sidewalk at 1424 Harrison Street in 1982. The tanks were filled with cement slurry. Site investigation activities (conducted for a release from a UST system at the adjacent property at 1432 Harrison Street) detected petroleum hydrocarbons in soil adjacent to and beneath the USTs closed in place at 1424 Harrison Street.

The property at 301 12th Street formerly operated as a cold storage facility and then an automobile dealership and repair center. As part of the due diligence process for the property purchase, the buyer collected soil, soil gas and groundwater samples from beneath the site. Sample results showed elevated concentrations of trichloroethylene (TCE), along with other chlorinated solvents and petroleum hydrocarbons. On March 30, 2017, DTSC and the seller entered into a Voluntary Cleanup Agreement, to address the protection of health of the students and staff of a school on the same block as this site.

Because these sites are 1,900 feet and 2,700 feet from the proposed project, the likelihood of encountering contaminated soil and/or groundwater beneath the project site would be low. Furthermore, the BART Lake Merritt Complex under the plaza is enclosed with concrete slabs that would likely prevent migration into the construction zone for the proposed project. Although the nearest active hazardous waste site up gradient from the proposed project is 1,900 feet away, contaminated soil and/or groundwater may be underneath the project site, based on the number of sites listed in government databases that have used, handled, or stored hazardous materials. This potential to encounter environmental contamination, although remote, would be a potentially significant impact. There is also a potential to encounter environmental contamination during excavations in the street rights-of-way for the utility improvements/upgrades that would be needed to support the proposed project.

Mitigation Measure. If at any point during construction, stained or odoriferous soils and/or groundwater are encountered, the BART construction contractor will implement the following mitigation measure. As a result of this measure, the impact from the proposed project's proximity to hazardous materials site's listed on the "Cortese List" would be **less than significant with mitigation incorporated**.

HAZ-1 *Encountering Environmental Contamination.* If at any point during construction, stained or odoriferous soils are encountered, these soils will be stockpiled separately on plastic sheeting. The stained or odoriferous soils encountered will be tested for environmental contaminants,

including: petroleum hydrocarbons, trichloroethylene, benzene, ethylbenzene, and naphthalene. Soil and/or groundwater found to have environmental contaminants above the San Francisco Bay Regional Water Quality Control Board's environmental screening levels for commercial land use and construction worker safety will be properly characterized and disposed at an appropriate facility per applicable regulations. Material moved or removed may require individual or specific testing to verify that concentrations are below any regulatory action limits.

e-f. Airport Hazards: No Impact

The project site is not in the vicinity of a public or private airport or within an airport land use plan. The Oakland International Airport is the closest airport, approximately 7 miles south of the project site. No private airstrips are in the project vicinity. Therefore, airport and aircraft operations would not pose a safety hazard for people working on the project site. **No impact** from proximity to airport operations would occur.

g. Emergency Response: Less-than-Significant Impact

Construction. Project construction would not require road closures, although there would be lane closures. As stated in Section 6.16, Transportation/Traffic, a traffic control plan would be submitted to the City Public Works Department, Transportation Services Division, which would define traffic control measures to maintain traffic flow and safety; notification procedures for adjacent property owners and public safety personnel regarding major deliveries, detours, and lane closures. In addition, the plan would identify the location of construction staging areas; and a process for responding to and tracking complaints regarding construction activity provisions for maintaining pedestrian flow, bicycle circulation, transit services, and emergency access. Construction activities would temporarily close the sidewalk and parking lanes adjacent to the construction site as needed. In addition, utility improvements/upgrades would occur within the existing street rights-of-way and would require traffic to divert around the construction zones. Despite these temporary lane closures, traffic circulation on the streets surrounding the project site would be maintained. Because a traffic control plan would be prepared for review by the City Public Works Department and there are multiple parallel streets around the project site, project implementation would not substantially interfere with emergency response plan or emergency evacuation plan. The impact on emergency response would be **less than significant**.

Operations. The proposed TOF and the plaza design would have minimal effect on traffic flows or intersection congestion, and would not physically interfere with emergency response. The project-related trips would contribute marginally to the traffic volumes on the surrounding streets and, thus, would not impede access or response by emergency responders to properties in the vicinity of the project site. Although the project would implement widened sidewalks, possibly bulb-outs, and

landscaping improvements, such as planter installation and bench seating, these changes would not preclude access to the site or surrounding areas by emergency vehicles. Because the proposed project would minimally affect circulation and congestion in the project vicinity and would not impede or alter the routes of emergency responders, the impact on emergency response plans or evacuation routes would be **less than significant.**

h. Wildland Fires: No Impact

The project site is in an urbanized area within the City of Oakland and is not adjacent to wildlands. Thus, **no impact** from exposure to wildland fire risks would occur.

6.9 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?	❑	❑	■	❑
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	❑	❑	❑	■
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	❑	❑	■	❑
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	❑	❑	■	❑
e. 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?	❑	❑	■	❑
f. Otherwise substantially degrade water quality?	❑	❑	■	❑
g. Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	❑	❑	❑	■
h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	❑	❑	❑	■
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	❑	❑	❑	■
j. Inundation by seiche, tsunami, or mudflow?	❑	❑	❑	■

Setting

Surface Water and Hydrology. The existing plaza sits on an approximately 5-foot slab composed of concrete and steel. The project site and surrounding area generally is paved, except for Madison Square Park to the west, which is a mix of landscaping and pavement. The project site is not within or adjacent to a creek, but it is approximately 1,300 feet from Merritt Channel, which is the nearest waterway, and approximately 1,500 feet from Lake Merritt, which is the nearest water body. The project site is part of the Sausal Creek-Frontal San Francisco Bay Estuary (the 12-digit watershed identifier number is 180500040805) (DOI 2017). Surface water from the project site is conveyed through the City's storm drainage system and into the San Francisco Bay.

Lake Merritt and the San Francisco Bay are on the SWRCB's list of impaired water bodies, requiring biennial assessment pursuant to Section 303(d) of the federal Clean Water Act. The "303(d) list" is the State's list of impaired and threatened waters (e.g. stream/river segments, lakes). For each water body on the list, the State identifies the pollutant causing the impairment, when known. For the Bay, pollutants causing impairment include chlordane, dichlorodiphenyltrichloroethane (DDT), dieldrin, dioxin compounds, furan compounds, invasive species, mercury, PCBs, selenium, and trash. For Lake Merritt, the impairment is caused by high levels of trash and low dissolved oxygen, which causes organic enrichment. In addition, the State assigns a priority for development of Total Maximum Daily Loads, based on the severity of the pollution and the sensitivity of the uses to be made of the waters, among other factors.

Surface Water Quality and Stormwater. Surface water quality in the City of Oakland is affected by land uses and activities within the watersheds, as well as by the composition of underlying geologic materials. The project site is in a highly urbanized area with substantial areas of impervious surface, including roadways, parking lots, roofs, and buildings. Surface water quality is managed by Clean Water Program Alameda County, which is composed of multiple member agencies including Alameda County, the cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, the Alameda County Flood Control and Water Conservation District, and the Zone 7 Water Agency (Clean Water Program Alameda County 2017). The Program and its member agencies are issued permits to discharge stormwater by the San Francisco Bay Regional Water Quality Control Board (RWQCB). To satisfy Clean Water Program Alameda County requirements and the federal Clean Water Act of 1972, BART would apply for a federal NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities from the RWQCB (SWRCB Order No. 2009-0009-DWQ, NPDES No. CAS000002 [Construction General Permit]), as amended.

For construction projects, BFS Section 01 57 00 requires preparation of a plan and implementation of best management practices and control measures to reduce stormwater pollution.

Drainage and Flooding. The project site is on a generally flat area within the San Francisco Bay Watershed that drains directly to the San Francisco Bay via the municipal storm drain system. As shown in the Federal Emergency Management Agency (FEMA) Flood Insurance

Rate Maps for the downtown area of Oakland, the project site is not within the 100-year flood plain (Map 06001C0067G).

The nearest dam to the project site is the flood control station at 7th Street, which controls water flow to Lake Merritt. This dam is located approximately 0.5 mile northeast from the project site. According to the Alameda County Safety Element of the Alameda County General Plan, the project site is not within a dam inundation zone (Alameda County 2014).

Groundwater. The Santa Clara Valley East Bay Plain, which is a subbasin of the Santa Clara Groundwater Basin, underlies the project site and is on the western edge of Alameda County. The Santa Clara East Bay Plain Subbasin is a northwest-trending alluvial plain, bounded on the north by San Pablo Bay, on the east by contact with Franciscan Basement rock, and on the south by the Niles Cone Groundwater Basin. The East Bay Plain basin extends beneath San Francisco Bay to the west. The East Bay Plain basin is not listed in Bulletin 118, prepared by the California Department of Water Resources (2016), and thus is not a critically overdrafted groundwater basin. Those basins identified as being critically overdrafted require preparation of a groundwater sustainability plan, pursuant to the Sustainable Groundwater Management Act.

Discussion

a, e-f. Water Quality and Water Quality Standards: Less-than-Significant Impact

Construction. Site preparation and project construction would involve use of heavy equipment and vehicles, using fuel, oil, and grease, as well as materials such as cement, asphalt, and paint and solvents. Fluids such as oil or grease could leak from construction vehicles or could be released inadvertently in the event of an accident, potentially releasing petroleum compounds, metals, and other pollutants that could drain into and affect the water quality of the receiving waters.

Soil could be released into surface waters or the stormwater system via wind or rain. Soil and associated contaminants that enter waterways can increase turbidity, stimulate the growth of algae, increase sedimentation of aquatic habitat, and introduce compounds that are toxic to aquatic organisms. In addition, construction may cause soil erosion and sedimentation, which could affect the quality of runoff into local drainages. These impacts would be temporary but potentially could be significant.

However, as with all construction projects exceeding 1 acre, BART must obtain coverage under the federal NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (SWRCB Order No. 2009-0009-DWQ, NPDES No. CAS000002 [Construction General Permit]), as amended. BART, in turn, would require its construction contractor to implement control measures that would be consistent with the Construction General Permit and with the recommendations and policies of the RWQCB, which would include submitting a Notice of Intent and site map to the RWQCB, developing a Storm Water Pollution Prevention Plan (SWPPP), and implementing site-specific best

management practices to prevent pollution to surface waters. The control measures also would be consistent with the Alameda County Clean Water Program guidelines and BMPs. BART would submit a copy of the SWPPP to the City for review.

On BART projects, construction contractors are responsible for emergency plans during project construction, and the BART System Safety Department would provide emergency support. Emergency plans during project construction would outline procedures to ensure coordination with local jurisdictions in evacuating areas and notifying BART and emergency response personnel. In addition, in the event of an accidental release during construction, the BART contractor would comply with applicable federal, State, and local regulations, including Titles 8, 22, and 26 of the Code of California Regulations, the Uniform Fire Code, and Chapter 6.95 of the California Health and Safety Code. The BART contractor would also comply with specifications outlined in BFS Section 01 57 00, which would prevent erosion, siltation, or sedimentation of drainage systems. Furthermore, equipment refueling and/or maintenance would take place only within the designated staging areas, and construction vehicles would be inspected daily for leaks.

Because BART and its construction contractors must comply with the NPDES General Permit requirements and BART will adhere to its own standard practices governing safety at construction sites, the construction impact on water quality would be **less than significant**.

Operations. Impervious surfaces decrease the volume of water that percolates into the ground and increases the volume of runoff. This, in turn, reduces the amount of water filtered through ground percolation and increases the amount of polluted water transported to streams.

The plaza redesign would improve roughly 40,000 square feet by removing existing paving, structures, landscaping, and trees, and replacing them with new, integrated elements, including bike facilities, seating, a shade structure, low planting areas, special paving, game tables, trees in planters with bench seating, and streetscape improvements, among others. In addition, the TOF with a footprint of roughly 16,500 square feet would be constructed within the site.

Although drainage flow patterns across the project site may be slightly different because of the addition of the TOF, with a roughly 16,500-square-foot footprint, altering the direction of the runoff, the overall runoff volumes would be substantially the same because the existing impervious plaza surface at the TOF site would be replaced by the impervious TOF rooftop. Similarly, the project proposes new landscaping and planters that would replace existing ones (see Figure 5). Overall, the proposed project would not increase the amount of impervious surfaces and, consequently, runoff volumes from the project site would be similar to existing conditions.

The stormwater pollutant loading and the potential downstream water quality impacts from the proposed project likewise would be similar to existing conditions. Pollutant loading is a function of land use activities and housekeeping practices. The majority of the project site (approximately 60 percent) would continue with the same uses as existing conditions. The only change in land use would be the replacement of a portion of the existing plaza space for the BART TOF building. Stormwater runoff from the TOF building would not be industrial, commercial, or auto-related and, thus, significant pollutant deposition would be limited. Therefore, the change in land uses affecting about 40 percent of the site is not expected to alter the stormwater runoff quality from existing conditions, and thus the proposed project would have a less-than-significant impact on the water quality of the receiving water body. Because the project would not substantially increase the amount of impervious surfaces or the activities that would contribute to stormwater pollutant loading, the operational impact on water quality would be **less than significant**.

b. Groundwater: No Impact

The proposed project would result in minimal change to the amount impervious and pervious surfaces at the site, as described in Item 9a. Because minimal change would occur to the ground surface, no impact on groundwater recharge would occur. The proposed project would not intercept or change the use of groundwater resources at the project site. In addition, the proposed project would not involve groundwater injections, nor is the project site located over a natural recharge zone. Consequently, no groundwater augmentation would occur, and no changes in surface infiltration characteristics would affect groundwater recharge. Therefore, **no impact** on groundwater supplies or recharge would occur.

c-d. Drainage: Less-than-Significant Impact

The proposed project would not result in construction of additional impervious surfaces, as described in Item 9a. Because the rate and amount of surface runoff would not differ substantially from existing conditions, the proposed project would not result in flooding on- or off-site. Furthermore, no streams or rivers are in the project vicinity; therefore, the proposed project would not alter the course of a stream or river, nor would it result in erosion and siltation impacts on- or off-site. The impact on drainage patterns would be **less than significant**.

g-j. Flood Hazards: No Impact

The proposed project would not include housing, and the project site is not within a FEMA-designated floodplain; 100-year flood zone, or 500-year flood zone; therefore, the proposed project would not result in new structures in the 100-year flood zone.

Similarly, the proposed project would not expose people to flood hazards in the event of a dam failure. In addition, people at the project site would not be affected by a

levee failure along the San Francisco Bay shoreline, because the project site is approximately 2,800 feet from the shoreline and 10 feet above mean sea level.

Because Lake Merritt is approximately 140 acres and 8 to 10 feet deep, any oscillation created in its waters during a major earthquake would not be likely to create water movement that would be powerful enough to substantially damage structures or people at the project site, approximately 1,500 feet away. In addition, according to the California Governor's Office of Emergency Services (CALOES 2017), the project site is not in a Tsunami Emergency Response Planning Zone. Furthermore, a very low threat would exist of waters from the San Francisco Bay reaching the project site.

Based on the above assessment, **no impact** from flood hazards would occur.

6.10 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. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	❑	❑	❑	■
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	❑	❑	❑	■

Setting

California Government Code Section 53090 exempts rapid transit districts, such as BART, from complying with local land use plans, policies, and zoning ordinances. However, consistency with local plans including the Lake Merritt Station Area Plan (LMSAP) is described here for informational purposes.

Existing Land Uses. The City of Oakland's LMSAP defines seven plan districts that characterize the current development patterns surrounding the project site.

The project site and the adjacent eight blocks make up the BART Station Area (City of Oakland 2014b). With the Lake Merritt BART Station plaza in the center of this plan district, surrounding uses consist of Madison Square Park, which contains a playground, grassy areas, a basketball court, and open asphalt, to the west; multifamily apartment buildings to the north; the BART parking lot to the east; and the former Metropolitan Transportation Commission/Association of Bay Area Governments (MTC/ABAG) office building and a mix of retail, auto service, and residential uses to the south.

The LMSAP districts closest to the BART Station Area are the Chinatown Commercial Center, the heart of Chinatown's restaurants, retail, and other commercial uses; Upper Chinatown, an "active urban neighborhood" with a variety of land uses; the 14th Street Corridor, a corridor containing retail, mixed-use housing developments, historic buildings, and public resources such as the Oakland Public Library; and the I-880 Freeway Corridor, the area along the north side of I-880, made up mainly of multi-family residential uses (City of Oakland 2014b).

Proposed Uses. According to the LMSAP, the project site is an "opportunity site," or an area with a potential to realize or support more intense land uses. These sites may be underused, vacant, a parking lot, or adjacent to a site with the potential to be redeveloped. The LMSAP also

envisions the two blocks containing the plaza, the BART parking lot, and the adjacent MTC/ABAG block as a potential "catalyst project" to create an active, pedestrian-oriented neighborhood hub, connecting Chinatown, Laney College, and the Lake Merritt BART Station; enhanced transit plazas near the station entrances; community facilities; wayfinding signage; cultural markers; and higher intensity uses around the BART station (City of Oakland 2014b).

Zoning. The area is zoned "D-LM-2 Lake Merritt Station Area District Pedestrian Commercial Zone-2" by the City of Oakland, which is intended to "create, maintain, and enhance areas of the Lake Merritt Station Area Plan District for ground-level, pedestrian-oriented, active storefront uses" (City of Oakland 2017c).

Discussion

a. Division of Established Community: No Impact

Existing land uses in the project vicinity include residential, institutional, pedestrian commercial, mixed commercial, and recreational uses. The proposed project would be at street level on the existing plaza in the heart of the LMSAP BART Station Area district. The project would construct a three-story building on a 16,500-square-foot footprint on the plaza. The TOF building would be on the western portion of the plaza, where the former administration building was located. As part of the proposed project, the plaza would be redesigned and reconfigured to provide increased space accessible to the community; community room(s); small-scale retail uses; and seating areas. Roads for motor vehicles surrounding the project location would not change, and no project features would block or decrease road connectivity.

The redesign of the existing plaza to create a "place" and to connect to the community would support and help implement the objectives of the LMSAP. Therefore, the TOF building and the plaza redesign would not physically or visually divide the community; rather, the ground-floor retail/community space and the revitalized plaza would serve to attract the community; provide opportunities for an inviting, safe, and flexible public space for the community; and provide a strong connection to existing community assets. **No impact** from division of an established community would occur.

b. Consistency with Applicable Plans: No Impact

California Government Code Section 53090 exempts rapid transit districts, such as BART, from complying with local land use plans, policies, and zoning ordinances. Nevertheless, as shown in Table 10, the proposed project would comply with the objectives of the applicable area plans by not only maintaining the character of the project area, but also by supporting the City's development vision for the project area as a community hub and pedestrian commercial zone.

Table 10: Consistency Analysis of Proposed Project with Applicable Land Use Plans and Policies

Plan	Policy	Consistency Determination
Oakland General Plan (1998)	**Policy T2.4 Linking Transportation and Economic Development**. Encourage transportation improvements that facilitate economic development.	**Consistent**. Construction of a new TOF would support BART's expansion objectives to support economic development in Oakland and throughout the San Francisco Bay Area.
	Policy T2.5 Linking Transportation and Activities. Link transportation facilities and infrastructure improvements to recreational uses, job centers, commercial nodes, and social services (i.e., hospitals, parks, or community centers).	**Consistent**. Improvement of the Lake Merritt BART Station plaza area and addition of game tables, seating, shade, and other features would link leisure, social, and community activities to BART at the Lake Merritt Station.
	Policy T4.1 Incorporating Design Features for Alternative Travel. The City will require new development, rebuilding, or retrofit to incorporate design features in their projects that encourage use of alternative modes of transportation such as transit, bicycling, and walking.	**Consistent**. The proposed project would include bike lockers, bike parking, and other features that would encourage alternative modes of transportation and improve access to the BART station.
Lake Merritt Station Area Plan (2014)	**Policy LU-4. Active ground floor uses.** Encourage active uses in new buildings on key streets in neighborhood hubs in order to transform key streets into activated pedestrian connections over time and expand the vibrancy and activity that already exists in some areas, as shown in Figure 4.2. These active ground floor uses should be located at the street edge, or at the edge of parks, plazas, or other public spaces. Activated neighborhood hubs include: • Chinatown Commercial Core: key streets through this hub include 8th Street, 9th Street, Webster Street, Harrison Street, and portions of Franklin Street, 7th Street, and 10th Street. • Lake Merritt BART Station Area: key streets through this hub include Oak Street, Madison Street (excluding Madison Square Park), 8th Street, and 9th Street. • 14th Street Corridor: 14th Street. • Eastlake Gateway: key streets through this hub include 1st Avenue, East 12th Street, and International Boulevard.	**Consistent.** The proposed project would include ground-floor retail uses along those portions of the TOF building that front onto 8th and Madison Streets.

Plan	Policy	Consistency Determination
	LU-27 Community benefit. New development on the Lake Merritt BART blocks should reflect the unique community heritage of Chinatown, serve the existing and future community, and incorporate public amenities.	**Consistent**. Policy LU-27 applies to the Lake Merritt BART Station Area district, where the proposed project would provide opportunities for an inviting, safe, and flexible public space for the community.
	LU-28 Community involvement. Work closely with the community and BART to develop the desired program of uses for the Lake Merritt BART blocks and ensure the provision of an appropriate range of community services, public uses, and amenities throughout the area.	**Consistent**. BART has performed outreach to the surrounding community on multiple occasions during the proposed project design process, including working group meetings during which BART solicited input on potential design models and the plaza redesign concepts.
	LU-29 Catalyst development. Promote development on the Lake Merritt BART blocks that acts as a catalyst project that creates an active neighborhood hub and serves as part of activated spines along 8th, 9th, and Oak Streets, connecting the heart of Chinatown, the Lake Merritt BART Station, and Laney College.	**Consistent**. The proposed project would provide space on the plaza for community use as well as retail uses surrounding the ground level of the TOF building, which would support the creation of an "active neighborhood hub." Improved pedestrian connections, bicycle access, and safe, convenient access to the BART station entrances would enhance the BART station's connection to other community assets and other nearby opportunity sites.

Source: Data compiled by AECOM in 2017

According to the LMSAP, the proposed project site is designated as an "opportunity site," and the plan envisions development of the Lake Merritt BART blocks as a catalyst project that would create an active neighborhood hub (City of Oakland 2014b). The area also is zoned as "D-LM-2 Lake Merritt Station Area District Pedestrian Commercial Zone-2" by the City of Oakland, which is intended to "create, maintain, and enhance areas of the Lake Merritt Station Area Plan District for ground-level, pedestrian-oriented, active storefront uses" (City of Oakland 2015). The proposed project would comply with the LMSAP's vision for the area to create a neighborhood hub, because the proposed project would provide community space in the plaza, game tables, tree planters with bench seating, shade structures, and retail space. This also would be consistent with objectives of the pedestrian commercial zoning, because it would provide community space for pedestrians as well as active

storefront uses. Therefore, **no impact** on plans, policies, and regulations adopted for the purpose of avoiding or mitigating an environmental effect would occur.

c. Habitat Conservation Plans: No Impact

No habitat conservation plans cover the proposed project site or area surrounding it. The nearest habitat conservation plan, the San Francisco Alameda Watershed Habitat Conservation Plan, cover lands distant from the project site, and is discussed in further detail in Section 6.4, Biological Resources. Therefore, **no impact** on a habitat conservation plan would occur.

6.11 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 California Division of Mines and Geology has classified mineral resource zones for the entire state consistent with the Surface Mining and Reclamation Act of 1975. Based on these classifications, the proposed project site is classified as MRZ-1, which is defined as "areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence" (CDMG 2000).

Discussion

a-b. Mineral Resources: No Impact

Neither the City of Oakland General Plan nor the LMSAP delineates any locally important mineral resource recovery sites (City of Oakland 1998, 2014b). As described in the setting section, the proposed project site is classified as MRZ-1, which indicates that no significant mineral deposits are present (CDMG 2000). Therefore, **no impact** on mineral resources would occur.

6.12 Noise

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	❑	■	❑	❑
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	❑	■	❑	❑
c. Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	❑	■	❑	❑
d. Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	❑	■	❑	❑
e. Be located within an airport land use plan area, or, where such a plan has not been adopted, within two miles of a public airport or public use airport and expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	■
f. Be located in the vicinity of a private airstrip and expose people residing or working in the project area to excessive noise levels?	❑	❑	❑	■

Setting

Noise and Vibration Sensitive Uses and Sources in the Project Area. Noise-sensitive land uses are those uses where quiet is essential to the purpose of the land use. Noise-sensitive land uses include residences and buildings where people normally sleep, including hospitals and hotels. They also include uses where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material, such as schools, libraries, theaters, and houses of worship. Parks are special cases and may be considered sensitive if they are used for passive recreation such as reading, conversation, and meditation. Offices and industrial uses are typically not considered noise sensitive.

For the proposed project, the closest noise-sensitive receptors are the homes to the north along 9th Street directly across from the BART plaza and to the west along 8th Street, approximately 110 feet from the project site. The closest vibration-sensitive use to the project site is the plaza, because of existing BART employees in the Lake Merritt Complex. The existing noise environment in the project vicinity is influenced by ambient noise sources: BART operations, aircraft noise, vehicular traffic noise primarily from local streets, and mechanical equipment on buildings in the vicinity.

Existing Noise Measurements. Two short-term (15 minutes) measurements[5] of existing noise levels near the residences fronting 8th and 9th Streets were conducted on Wednesday, January 27, 2016 (see Figure 14). The energy-equivalent noise level (L_{eq}) and maximum sound level (L_{max})[6] values at each noise measurement location are shown in Table 11. Measured noise levels at the residences closest to the project site range between 60.0 and 60.1 A-weighted decibels (dBA) L_{eq}.

Table 11: Ambient Noise Levels in the Project Area

		Measured Sound Level, dBA		
Receiver	**Location**	**Start Time**	**L_{eq}**	**L_{max}**
ST-01	Madison Square Park, along 8th Street	3:45 pm	60.0	68.5
ST-02	Lake Merritt BART Station Plaza, along 9th Street	4:10 pm	60.1	77.7

Notes:

dBA = A-weighted decibels; Leq = energy-equivalent noise level (the sound energy averaged over a continuous 15-minute to 1-hour period); Lmax = maximum sound level (the highest instantaneous sound level measured during a specified period); ST = short-term.

Source: Data compiled by AECOM in 2016

Standards and Regulations. BART is exempt from the requirements of city and county general plans, land use policies, and ordinances, per California Government Code Sections 53090 and 53091. In addition, FTA guidance recognizes that "… local noise ordinances are not very useful in evaluating construction noise. They usually relate to nuisance and hours of allowed activity and sometimes specify limits in terms of maximum levels, but are generally not practical for assessing the impact of a construction project" (FTA 2006). Nevertheless, there are relevant information and standards from the City of Oakland General Plan Noise Element that are described here for background on existing and "acceptable" levels of noise for different land uses in the project area.

[5] The ambient noise measurements were conducted in accordance with ANSI standards, using a Larson Davis Laboratories (LDL) Model 824 precision integrating sound-level meter. The sound-level meter was calibrated before and after use with an LDL Model CAL200 acoustical calibrator, to ensure that the measurements were accurate. The equipment that was used met all pertinent ANSI specifications for Type 1 sound-level meters (ANSI S1.4-1983[R2006]).

[6] Leq (Equivalent Noise Level): The energy mean (average) noise level, the steady state sound level in a specified period of time that contains the same acoustical energy as a varying sound level over the same time period. Lmax (Maximum Noise Level): The highest A-weighted, integrated noise level occurring during a specific period of time.

Source: AECOM 2017

Figure 14: Noise-Monitoring Locations

BART Thresholds. BART has adopted the significance thresholds identified in FTA's Noise and Vibration Impact Assessment (May 2006). These guidelines are appropriate for typical noise from transit operations and from construction of transit facilities. Because the future operations from the proposed project would generate noise related to office, retail, community, and plaza uses, and not typical transit noise sources (e.g., train passbys, maintenance facilities, station and parking operations), FTA's operational noise thresholds for proposed project operations are not applicable. For this project, BART uses FTA thresholds for construction impacts, and evaluates long-term operational effects related to the compatibility of the proposed project with

the existing noise environment and with other uses in the area in terms of the Noise Element of the City's General Plan, which is described below.

For construction noise and vibration impacts, BART standards are identical to those issued by the FTA in its 2006 guidelines (FTA 2006) and are set to identify levels when a substantial number of people would complain, typically because of interference with daily activities. Standards for, and impacts from, construction noise use the L_{eq} metric. For general assessments, FTA recommends the following one-hour L_{eq} (dBA) thresholds:

- For residential areas: 90 dBA during the day, and 80 dBA at night.
- For commercial areas: 100 dBA during the day and 100 dBA at night.

The project area has a mix of residential and commercial uses, and construction is scheduled only during the day. To account for impacts to the most sensitive uses in the project vicinity, 90 dBA is used to identify significant construction noise impacts.

Standards for, and impacts from, construction vibration are defined for damage to nearby buildings (and differ depending on the type of building construction) and for human perception, or annoyance.[7]

- For damage, the threshold is 0.5 peak particle velocity (PPV measured in inches/second) for reinforced concrete, steel, or timber buildings and 0.3 PPV for engineered concrete and masonry.
- For annoyance, the threshold is a maximum of 80 Vdb for nearby residential uses; 83 VdB for nearby office uses.

As described below, the City has no thresholds for construction vibration.

City Thresholds. The Noise Element quantifies, to the extent practicable, current and projected noise levels from major noise sources throughout the city. Noise levels for these sources are shown on noise contour maps, which establish the locational relationship between existing and projected land uses and noise sources. The Noise Element also includes land use policies to reduce noise impacts, especially to sensitive receptors, and to implement measures that address existing and foreseeable noise issues. Oakland's Noise Element identifies "normally acceptable" noise levels by different land use categories. These levels mean that development in a particular land use category may occur without an analysis of potential noise impacts to the proposed development, although it may still be necessary to analyze the impacts that the project might have on its surroundings. The proposed project is most similar to the City's land

[7] Vibration results from rapidly fluctuating motions. Like noise, there are multiple descriptors used to measure vibration. Peak particle velocity is often used since it is related to the stresses that are experienced by buildings, and it measures the maximum instantaneous fluctuation in inches per second. However, for evaluating human response, a different metric is commonly used – "root mean square velocity," which measures the average vibration amplitude, expressed also in inches/second or vibration decibels, Vdb. Human perception of vibration occurs around 65 Vdb, but human response is not usually significant until vibration exceeds 70 Vdb (FTA 2006). Impacts during construction are most often concerned with building damage, and the thresholds recommended for use in environmental documents vary based on the type of building construction.

use categories for Office (the proposed TOF building) and Parks (the plaza redesign). The normally acceptable exterior noise environment for offices and for parks is up to 65 decibels (dB) L_{dn} or CNEL. For residential uses, the normally acceptable exterior noise level is 60 dB L_{dn} or CNEL. Within multi-unit residential buildings, the City uses the State's interior noise threshold of 45 dBA (CNEL). The City of Oakland regulates noise levels through enforcement of its Noise Ordinance (17.120 of the Oakland Municipal Code, Performance Standards). In Section 17.120.050, Table 17.120.01 establishes maximum allowable noise levels received by residential zones, and Table 17.120.02 establishes maximum allowable noise levels received by commercial zones. For residential zones, the maximum is 60 dBA during the daytime and 45 dBA during the nighttime (based on a noise exposure of 20 cumulative minutes in a one-hour time period). For commercial zones, such as the project site and the properties across 8th and 9th Streets, the maximum is 65 dBA anytime (also for 20 cumulative minutes of noise exposure in a one-hour time period). Construction equipment standards for weekdays (7:00 a.m. to 7:00 p.m.) are an L_{max} of 80 dBA at residential properties and an L_{max} of 85 dBA at commercial/industrial properties. Section 17.120.060 of the Oakland Planning Code regulates operational vibration (activities should not result in a vibration that is perceptible by the average person at or beyond the lot containing those activities) but exempts vibration from temporary construction or demolition work (City of Oakland 2016).

Discussion

a, c-d. Permanent or Temporary Increase in Noise: Less-than-Significant Impact with Mitigation Incorporated

Construction. The proposed project would generate temporary and short-term construction noise from equipment operating at the project site and within nearby street rights-of-way for utility improvements/upgrades needed to support the proposed project. As described in Chapter 5, Project Description, construction of the TOF and plaza would occur over three phases extending over a 24-month period. The phases would vary in their duration, level of activity, types of construction equipment, and thus potential impacts on nearby noise-sensitive receptors.

Noise from Construction Equipment. Project construction noise was estimated using the FTA assessment guidelines (FTA 2006), project-related construction equipment (Table 12), and the federal Roadway Construction Noise Model (FHWA and DOT 2006).[8] Detailed modeling results are provided in Appendix D. Equipment operation during project construction would generate unmitigated noise levels of approximately 84 to 88 dBA at a distance of 50 feet (Table 13). Assuming standard noise attenuation that occurs with distance from the noise source (-6 dB per doubling of

[8] The FTA methodology for a general assessment for construction noise involves deriving the projected noise levels assuming the two noisiest pieces of construction equipment operating in the center of the project site. The FHWA methodology is a more conservative approach and assumes more pieces of construction equipment not all located in the center of the project site. This more conservative methodology has been used here because of the sensitivity of the surrounding community. As demonstrated in the analysis, construction noise impacts would not exceed the FTA construction noise thresholds under either of the assessment methodologies.

distance), the noise levels at the nearest noise-sensitive uses were estimated to be 79 to 81 dBA L_{eq} (Table 13). These noise levels would not exceed the BART significance thresholds for residential or commercial uses during the daytime hours (90 and 100 dBA L_{eq}, respectively). Therefore, noise impacts from construction equipment would not be considered significant**.** Table 13 does reveal, however, that the maximum predicted exterior noise levels at the nearest residences would be about 20 dBs above ambient noise levels, which would be noticeable and could result in community complaints.

Table 12: Construction Phases, Equipment, and Calculated Noise Levels

Construction Phase	**Anticipated Type of Equipment that May Be Used by the Contractor**	**Noise Level at 50 Feet**	
		L_{eq}, dBA	**L_{max}, dBA**
Phase 1-Initial Demolition	Welder/Torch	60	73
	Jackhammer	78	85
	Concrete Saw	83	90
Maximum and Combined Noise Level		**84**	**90**
Phase 2-Heavy Construction and Secondary Phase of Demolition	Flat Bed Truck	80	84
	Crane	77	85
	Concrete Mixer Truck	81	85
	Concrete Pump Truck	75	82
	Welder/Torch	60	73
	Jackhammer	78	85
	Concrete Saw	83	90
Maximum and Combined Noise Level		**88**	**90**
Phase 3-Finishing and Testing	Paver	85	82
	Pickup Truck	55	51
	Pneumatic Tools	85	82
	Roller	85	78
	Vacuum Street Sweeper	80	70
	Crane	77	85
	Man Lift	78	85
Combined Noise Level		**86**	**85**

Notes:

dB = decibels; Leq = energy-equivalent noise level;

Lmax = maximum sound level, the highest instantaneous sound level measured during a specified period

Source: Data compiled by AECOM in 2017

Table 13: Construction Equipment Noise Levels at the Nearest Noise-Sensitive Uses

Receiver	Nearby Noise-Sensitive Use	Shortest Distance (feet) between Noise-Sensitive Uses and Proposed Construction Areas	Exterior Noise Level, dB L_{eq}	
			Ambient Noise	Maximum Project Construction Noise
ST-01	Residences to the west along 8th Street, between Madison and Jackson Streets	110	60	81
ST-02	Residences along 9th Street including Madison Park Apartments, across 9th Street, between Oak and Madison Streets	130	60	79

Notes:

dB = decibels; Leq = energy-equivalent noise level (the sound energy averaged over a continuous 15-minute to 1-hour period); ST = short-term.

Source: Data compiled by AECOM in 2017

Even though a significant construction noise impact is not anticipated from the proposed project based on the FTA thresholds, BART would incorporate noise control measures into the construction documents to be implemented by the project contractor in compliance with the BFS Section 01 57 00. These measures, identified below, would further reduce construction noise levels:

- minimize noise caused by construction operations;
- provide working machinery and equipment fitted with efficient noise suppression devices;
- employ other noise abatement measures as necessary for protection of employees and the public;
- restrict working hours and schedule operations in a manner that would minimize, to the greatest extent feasible, disturbance to residents in the vicinity of the work;
- monitor noise levels of work operations to assure compliance with the noise limitations specified;
- promptly inform BART of any complaints received from the public regarding noise;
- describe the action proposed and the schedule for implementation, and subsequently inform BART of the results of the action; and

- monitor noise levels day and night, and for each new activity or piece of equipment.

In addition, BFS 02 41 00 contains specifications for demolition activities, including the provision of continuous noise abatement as required to prevent disturbance and nuisance to the public and workers and to the occupants of adjacent premises. When a certain level of noise is unavoidable because of the nature of the work or equipment involved, and such noise is objectionable to the occupants of adjacent premises, BART will make arrangements with the jurisdictional authorities to perform such work or operate such equipment at the most appropriate time periods of the day.

Mitigation Measure. Compliance with BFS Sections 01 57 00 and 02 41 00 would reduce construction noise; however, the following mitigation measure would further reduce BART construction noise, provide more detailed guidelines for implementing the BFS, and help reduce the potential for community complaints. With Mitigation Measure NOI-1 below in addition to the BFS noise control measures, project-related construction noise at nearby sensitive receptors would be **less than significant with mitigation incorporated**.

NOI-1 *Construction Noise Controls and Best Management Practices.* BART will incorporate the following practices into the construction documents to be implemented by the project contractor. A construction supervisor or other entity appointed by BART will measure noise levels at nearest sensitive receptors before beginning construction and periodically thereafter to ensure the performance threshold for construction noise levels is not exceeded. Measurements will be taken during periods when noisy, heavy equipment is operating.

- Where feasible, BART will require that the contractor complies with a performance standard of 90 dBA 8-hour L_{eq} during the daytime (7 a.m. to 10 p.m.) at the property line of the sensitive receptor.
- Prior to construction, BART will ensure that a Noise Control and Monitoring Report is prepared. The report will include expected construction noise levels, noise control measures, and explain how the contractor intends to monitor and document construction noise and complaints.
- Noisy equipment will be located as far as possible from noise sensitive receptors. In addition, the use of temporary barriers should be employed around the equipment.
- Noise barriers will be installed between equipment and residential areas.

- All construction equipment powered by internal combustion engines will be properly muffled and maintained.
- Unnecessary idling of internal combustion engines is prohibited.
- All stationary noise-generating construction equipment such as tree grinders and air compressors are to be located as far as is practical from existing residences.
- Quiet construction equipment, particularly air compressors, is to be selected whenever possible.
- Use of jack hammers will be prohibited on Sundays and holidays, except for emergencies.
- Construction-related truck traffic will be routed along roadways that result in the least disturbance to sensitive receptors.

Noise from Construction Truck Trips. As described in Section 6.16, Transportation/Traffic, project-related truck trips during the first construction phase (site preparation/demolition) would be approximately 100 trips. This phase would be completed over an approximate 6–month period, and the resulting number of truck trips on any given day would therefore be minimal (an average of about one truck per day). During the heavy construction second phase, an estimated 15 trucks per day would be needed for hauling and delivery of construction materials. The third phase would require fewer truck trips than the second phase.

Project-related construction trips would use Madison Street, 8th Street, Oak Street and 9th Streets which surround the project site and provide convenient connections to the nearby freeways. The peak hour trips along these streets under existing conditions are substantially more than the project-related daily construction trips. Traffic volumes would need to double in order to result in a noticeable change in the noise environment (3 dB) (Caltrans 2013). The daily truck volumes would be a fraction of the peak hour volumes reported in Section 6.16. As a result, truck noise may be perceptible over the background traffic noise but would not result in a noticeable change. Therefore, construction trips would not increase substantially the existing traffic noise. The noise impact from construction traffic would be **less than significant.**

Operations. Operational impacts of the proposed project would include noise from stationary sources and mobile (vehicular) sources, as described next.

Stationary Sources. The operational noise impacts of the proposed project could be significant if projected noise levels at nearby noise-sensitive receptors exceed applicable City noise standards. Long-term permanent increases in noise levels would be associated primarily with project-related stationary noise sources (i.e., HVAC, backup generators) and traffic.

As described in Chapter 5, Project Description, the proposed project would include new HVAC and plumbing mechanical systems, capable of stand-alone operation with emergency power backup from a new emergency generator. The TOF HVAC systems would include rooftop-mounted mechanical equipment that would be shielded from nearby sensitive uses by building parapets and/or mechanical wells. Noise levels from commercial HVAC equipment can reach 100 dBA at a distance of 3 feet (EPA 1971). However, there are no nearby exterior noise-sensitive areas that the TOF HVAC could affect. The nearest such use is the backyard at 168-8th Street, and noise at this location would be screened by the home itself. Furthermore, the HVAC units would be attenuated in accordance with BFS Section 23 05 44, and would be fitted with noise shielding cabinets, placed on the roof or in mechanical equipment rooms that would be constructed with sound attenuating material to reduce noise levels by at least 28 dB at 7 feet (Table 1 of BFS Section 23 05 44). Therefore, with the application of these BART design specifications and noise reduction techniques, noise from these pieces of equipment would not exceed the City's exterior threshold of 60 dBA or the interior threshold of 45 dBA for residences.

The backup generator, which is proposed to be integrated into the plaza design, would be adjacent to the 9th Street BART station entrance and enclosed. Conservative noise levels from a typical generator vary depending on the size and type of motor, the number of cylinders, the design of the radiator fan, the design of the inlet, the type of exhaust system, and the amount of soundproofing in the generator enclosure. Proposed project backup generator set noise levels would conservatively be 79 dBA L_{eq} (82 dBA L_{max}) at 50 feet (FHWA 2006). A sound enclosure and concrete block wall are proposed to reduce backup generator noise during testing and emergency events requiring its operation. Noise level reductions from the proposed backup generator with the surrounding concrete block wall at the closest residences (the Madison Park Apartments) would result in an exterior noise level of approximately 58 dBA L_{eq} (assuming -6 dB per doubling of distance).

Emergency backup generator operational noise levels would be less than ambient daytime noise levels; however, testing would be conducted at night, at least every 3 months. Testing of the backup generator would contribute substantially to increases in background noise during the nighttime hours. Per the California Code of Regulations Title 24 noise standards, the maximum interior noise level for multi-unit residential uses is 45 dBA.[9]

Mitigation Measure. While the proposed concrete enclosure would attenuate noise from the emergency backup generator, regular nighttime testing of the unit may disturb nearby residents. Mitigation Measure NOI-2 below would reduce the noise

[9] Although BART does not need to comply with local regulations, the state's 45 dBA interior noise standard for multi-unit residential uses is consistent with the City of Oakland's Municipal Code Section 17.120.050 Table 17.120.01, which also specifies a maximum allowable receiving noise level standard of 45 dBA at nighttime (10 p.m. to 7 a.m.) for residential zones.

from the regular testing to acceptable levels. Accordingly, this noise impact would be **less than significant with mitigation incorporated**.

NOI-2 *Emergency Backup Generator Testing Controls.* In order to reduce the noise from the regular testing of the emergency backup generator on the BART plaza, BART shall require the design of the generator to achieve a performance standard of 65 dBA at the exterior of the nearest sensitive receptor. This exterior performance standard would result in interior noise levels of 45 dBA or less, which would satisfy the state's interior standard for multi-unit residential units.[10] This measure can feasibly be achieved by incorporating noise attenuation features into the generator design, including, but not limited to, exhaust silencers, enclosures with sound-absorbent materials, air flow baffles or louvers, and acoustic barriers that obstruct the line-of-sight between generator components and the sensitive receptor. Effective noise control measures will be confirmed during final design by a qualified acoustical engineer and included in the design specifications for the equipment.

Vehicular Noise. As described in Section 6.16, Transportation/Traffic, the proposed project would generate about 320 daily trips, 25 trips during the AM peak hour and about 32 trips during the PM peak hour. This number of trips would not result in a significant increase in vehicle traffic along area roadways in terms of noise generation. Project-related trips would use Madison, 8th, Oak and 9th Streets, which are adjacent to the project site. Although these trips would pass nearby noise-sensitive land uses (i.e., the residential uses in the vicinity), they would not substantially increase vehicular noise. Outside controlled laboratory conditions, the average human ear barely perceives a change of 3 dB. Traffic volumes would need to double to cause noise levels to increase 3 dB (Caltrans 2013). The projected traffic volumes in 2020 along these streets during the AM and PM peak hours would be about 1,000 vehicles or less, and the trips related to the project would be a small percentage of these volumes.

Because project trips would not double the existing trips along any of the area roadways, long-term noise levels from project-generated traffic sources would not result in a substantial permanent increase in ambient noise levels (3 dB or greater). Therefore, the impact from vehicular noise would be **less than significant**.

[10] Typical building construction methods and materials result in a reduction from exterior noise levels to interior noise levels of about 20 to 25 dBs with windows closed. With windows partially opened, the noise attenuation provided is about 12 to 18 dBs. The state's Title 24 standard of 45 dBA inside multi-unit residences is based on closed windows. Thus, an exterior noise level of 65 dBA would be reduced to a maximum of 45 dBA inside, with a margin of safety. This threshold is also reasonable given the sensitivity of the neighborhood, and BART's ongoing efforts to work with the community and enhance the livability of the area. In this instance, the threshold also coincides with the City's performance standards for maximum allowable receiving noise levels in commercial zones (Table 17.120.02 of the City Municipal Code); the residences fronting the BART plaza across 9th Street are zoned D-L-M-2 Pedestrian Commercial.

Exposure to Surrounding Noise Sources. The proposed project would introduce a new noise-sensitive land use (the proposed TOF) that would be exposed to noise levels from the noise sources (e.g., roadways, mechanical equipment) surrounding the project site. The proposed TOF building would consist of three stories of primarily office use for BART transit management facilities and transit management support offices. The noise level from the existing sources in the project area would be about 60 dBA (see Table 12 existing noise measurements). The City's land use-noise environment compatibility guidelines indicate that new office uses are "normally acceptable" when the existing background noise environment is up to 65 dBA. Consequently, the proposed TOF would not be exposed to noise levels above the City's thresholds. The impact of the ambient noise levels on the proposed project would be **less than significant**.

b. Groundborne Vibration or Groundborne Noise Levels: Less-than-Significant Impact with Mitigation Incorporated

Ground-borne vibration results from heavy vehicle passbys, vehicular traffic on rough roads, and construction activities. These sources can cause feelable movement of buildings, rattling of windows, shaking of items on a shelf or hanging on a wall, and rumbling sounds. In extreme cases, vibration can result in building damage; in contrast, human annoyance from vibration can be triggered when vibration exceeds the threshold of perception by a small amount. As described below, the proposed project could result in vibration impacts during construction, because of the types of equipment that would be used and the proximity of nearby receivers; however, long-term operational effects, which would be similar to those of a typical office building, would not result in impacts.

Construction. The proposed project would generate construction vibration from equipment and the transport of construction equipment, materials, and workers. Project-related construction vibration would result from the use of demolition equipment (e.g., jackhammers).

Human Perception/Annoyance. The heaviest vibration-generating equipment that would be used during construction of the proposed project would be jackhammers. Vibration levels from jackhammers would be approximately 79 VdB (0.035 inch per second [in/sec] PPV) at a distance of 25 feet (FTA 2006). The vibration threshold for human perception from an intermittent source is 80 VdB (FTA 2006). The distance between the construction activities and the closest off-site sensitive uses would be approximately 80 feet (Table 14). Assuming a standard reduction of 9 VdB per doubling of distance (FTA 2006), the vibration level at the nearest receivers would be approximately 64 VdB (0.006 inch per second). This level of vibration would be below the 80 VdB threshold of significance for human annoyance and likely would not be perceptible. Therefore, the impact on human annoyance to off-site receptors from construction vibration would be less than significant. However, with respect to vibration sensitive uses on site (the activities in the Lake Merritt Complex), receptors

less than 17 feet from the jackhammers would be exposed to a vibration level above 84 VdB. Therefore, the impact from intense construction activities for the proposed project may cause an annoyance to on-site receptors at the BART offices and possibly affect vibration-sensitive equipment.

Table 14: Construction Equipment Vibration Levels at the Nearest Receivers

Nearest Receivers	Location	Shortest Distance (feet) Between–Receivers and Proposed Construction Areas	Projected Vibration Levels	
			PPV	VdB
MetroCenter employees	101 8th Street. southwest of project site	80	0.006	64
Lake Merritt Complex employees	Within the plaza	≤6	≥0.298	98

Notes:

N/A = not available; PPV = peak particle velocity; VdB = vibration decibels

≤ = less than or equal to; ≥ = greater than or equal to

Source: Data compiled by AECOM in 2017

Building Damage. The FTA's Transit Noise and Vibration Impact Assessment technical manual provides criteria for groundborne vibration impacts with respect to building damage during construction activities (FTA 2006). According to FTA guidelines, a vibration-damage criterion of 0.50 in/sec PPV should be considered for structures or buildings constructed of reinforced concrete, steel, or timber, such as those along 8th and 9th Streets nearest to the project site. If the buildings are unreinforced, then 0.20 in/sec PPV would be appropriate. For the proposed project, BART would comply with a performance standard of 0.3 in/sec PPV at any building at any time. Vibration level from a jackhammer at 6 feet would be approximately 0.298 in/sec PPV (FTA 2006). This level of vibration would be below the building damage threshold of 0.50 in/sec PPV and even the more stringent threshold for unreinforced buildings of 0.3 in/sec PPV. Only if structures were located less than 6 feet from jack hammering might there be potential damage from project construction.

Therefore, if construction activities using jackhammers or other heavy construction equipment occur less than 6 feet from a sensitive structure (e.g., the existing BART operations complex), there would be a potentially significant impact.

Mitigation Measures. To reduce annoyance from construction vibration impacts, the following mitigation measure will be required of the construction contractor. Implementation of these control and vibration attenuation measures would help achieve the vibration threshold of 80 VdB for human perception and 0.3 in/sec PPV for structural damage. With this measure, the impact from construction vibration would be **less than significant with mitigation incorporated**.

NOI-3 *Construction Vibration Controls and Best Management Practices.* BART will include the following provisions in its construction contracts to reduce potential annoyance and effects to nearby structures from vibration.

- The contractor will minimize vibration annoyance by maintaining vibration levels at 80 VdB or less at any building at any time.
- Before construction, BART will prepare a Vibration Control and Monitoring Report, in which the contractor will indicate what vibration levels are expected to generate, vibration control measures to be implemented, and how construction vibration and complaints will be monitored and documented.
- The contractor will monitor vibration during construction to ensure compliance with the criterion for building damage for buildings within 6 feet from construction activities. The contractor will conduct a preconstruction crack survey at these structures.
- The contractor will plan routes for hauling material out of the project site to cause the least effect (annoyance).

Construction Vehicle Vibration. Project construction would result in additional vehicle trips on the local roadway network, when workers commute and equipment and materials are transported. Heavy truck traffic can generate groundborne vibration, which varies considerably depending on vehicle type, weight, and pavement conditions. However, groundborne vibration levels generated from vehicular traffic typically are not perceptible outside the road right-of-way for rubber-tired vehicles (FTA 2006). Also, ground vibration caused by motor vehicles, trains, and temporary construction or demolition work is exempt from the City's Planning Code (City of Oakland 2016). Therefore, this impact would be **less than significant**.

Operations. Project operation would not result in excessive vibration levels. Project operation would result in additional vehicle trips on the local roadway network as described in Section 6.16, Transportation/Traffic. However, vibration levels generated from vehicular traffic typically are not perceptible outside the road right-of-way for rubber-tired vehicles (FTA 2006). Therefore, the operational impact from vibration would be **less than significant**.

e-f. Airport Noise: No Impact

The proposed project is not located within 2 miles of any airport. Also, the proposed project would not include any aircraft uses for construction or operations. No private airstrips are in the project vicinity, and the proposed project would not affect any airstrip operations. The proposed project would not expose people on- or off-site to any aircraft noise. **No impact** from airport noise would occur.

6.13 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	■
c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	❑	❑	❑	■

Setting

Oakland is the eighth largest city in California, according to the U.S. Census, with a population of 419,267 in 2015 (City of Oakland 2017a), a 12 percent increase since 2005 (U.S. Census 2015). According to the City of Oakland's *Housing Element 2015-2023*, population is anticipated to reach 439,600 by 2020 and 551,100 by 2040 (City of Oakland 2014a).

The LMSAP jobs forecast, which is based on the Association of Bay Area Governments and Alameda County Transportation Commission's 2009 projections, shows the number of jobs in Oakland increasing from 202,570 in 2005 to 281,900 in 2035 (City of Oakland 2014b). It also forecasts that jobs in the Lake Merritt planning area will increase from 17,823 jobs in 2005 to 21,992 jobs in 2035—a 23 percent increase in jobs in 30 years (City of Oakland 2014b). The LMSAP also predicts the number of households in the planning area will increase from 2,643 in 2005 to 7,575 in 2035 (City of Oakland 2014b).

Discussion

a. Population Growth: Less-than-Significant Impact

The proposed project would not directly result in construction of new homes or other residential units that would increase population in the LMSAP area or the City. The proposed project would add 56 to 87 new employees to the project site, of which 46 to 77 would be associated with the new TOF building and the remaining 10 would be associated with the retail/community space. This increase in employment would be well within the employment forecasts in the LMSAP (4,169 jobs projected to be added between 2005 and 2035).

If all of the new employees represented new households in Oakland, which is unlikely since some proportion of the new employees would be expected to remain in

their existing residence and not relocate, the number of new households would be about 65 to 75, based on ABAG data for the City of Oakland and Alameda County in 2020 (ABAG 2013b). This growth in population would be within the forecasts of approximately 4,900 new households in the LMSAP area (City of Oakland 2014b). Therefore, the proposed project would not induce substantial employment or population growth. The impact would be **less than significant**.

b-c. Housing and Population Displacement: No Impact

The proposed project would construct a new building for BART operations and introduce ground-floor retail/community space, and a revitalized plaza to attract the community; provide opportunities for an inviting, safe, and flexible public space for the community; and provide a strong connection to existing community assets. This site currently is occupied by BART infrastructure and a plaza. Therefore, the proposed project would neither displace existing housing nor displace people necessitating the construction of replacement housing elsewhere. **No impact** from displacement would occur.

6.14 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. 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 following public services:				
i. Fire protection?	❑	❑	■	❑
ii. Police protection?	❑	❑	■	❑
iii. Schools?	❑	❑	❑	■
iv. Parks?	❑	❑	❑	■
v. Other public facilities?	❑	❑	❑	■

Setting

Fire and Police Protection. The project site is served by the City of Oakland Fire Department for fire and rescue response, emergency medical response, technical rescue, and hazardous material response. The project site also is served by the BART Police Department, which provides law enforcement at the existing BART facilities and has 206 sworn peace officers and 90 civilian staff (BART 2017b).

BART police officers are invested with the same powers of arrest as city police officers and county sheriff deputies, and are authorized to take enforcement action off BART property (e.g., within city limits, county jurisdictions, or on State highways) if there is immediate danger to persons or property. The BART Police Department also cooperates with the Oakland Police Department to request and provide outside assistance and mutual aid when required (BART 2017c).

Schools and Parks. The American Indian Public Charter School II, Laney College, and Lincoln Elementary School are within 0.25 mile of the project site. Madison Square Park, Lincoln Square Park, and Chinese Garden Park are also all within 0.25 mile of the project site.

Other Public Facilities. The California Supreme Court, Oakland Public Library, and Oakland Museum of California are within 0.25 mile of the project site.

Discussion

a(i-ii). Fire and Police Protection: Less-than-Significant Impact

As discussed in Section 6.13, Population and Housing, the proposed project would not induce population or housing growth, because it would not involve development of new residential uses. The proposed project would add 56 to 87 jobs and would attract community residents to the flexible public space envisioned for the plaza. The proposed building and the redesign of the plaza could result in a minor increase in the demand for services because of the more intensive use of the site, but the demand generated by office and community uses would be relatively minor and would not result in the need to substantially expand existing facilities or physically alter the current provision of fire or police protection.

Project construction would involve temporary closure of the parking lanes, travel lanes, and sidewalks immediately adjacent to the plaza; however, no road closures are anticipated for construction. In addition, the construction traffic management plan to be prepared for the proposed project would be coordinated with the City of Oakland, to address necessary detours, maintenance of access to residences and businesses, as well as maintenance of appropriate emergency response times. See Section 6.16, Transportation/Traffic, for more information on the construction traffic management plan that would be submitted to the City. In addition, there are multiple parallel routes that would allow emergency response vehicles to travel to or through the project vicinity. Therefore, the proposed project would not interfere or impede response times or routes.

See Section 6.16, Hazards and Hazardous Materials Item 16f, for information on the proposed project's operational effects on emergency response. Because the proposed project would not substantially alter the street network or result in traffic congestion, fire and police response to calls for service to the project site or surrounding areas would not be significantly affected. Therefore, the proposed project would not interfere or impede response times or routes.

In addition, according to the LMSAP Final EIR, future development under the LMSAP "would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities" to maintain acceptable service ratios, response times, or other performance objectives for fire and police protection, schools, parks, or other public facilities (City of Oakland 2014c). Because the proposed project would not result in substantial adverse physical impacts to maintain acceptable service ratios, response times, or other performance objectives, the proposed project in combination with foreseeable growth would not result in significant cumulative public service.

Based on the above assessment, construction, operational, and cumulative impacts on police and fire protection would be **less than significant**.

a(iii-v). Other Public Facilities: No Impact

As described in Section 6.13, Population and Housing, the proposed project would not directly increase or indirectly induce population or housing growth. Approximately 56 to 87 people would be hired for the TOF and retail/community space, which would induce a negligible demand for other public facilities. The proposed project would enliven the plaza and make it more attractive to community residents. These alterations and potential impacts in terms of recreation are discussed further in Section 6.15, Recreation. Because the additional employees would result in negligible job growth and would not induce a substantial demand for other public facilities, the proposed project would not have a substantial impact associated with provision or need for new or physically altered governmental facilities on schools, parks, or other public facilities. **No impact** on other public facilities would occur.

6.15 Recreation

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. 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. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	❑	❑	■	❑

Setting

Recreational Facilities. Oakland has more than 130 parks and athletic field complexes, encompassing a total of 2,942 acres of parkland. The parks are divided into 10 categories, ranging from regional parks to active mini-parks (City of Oakland 1996a). Madison Square Park is the park closest to the Lake Merritt BART Station and is across Madison Street from the project site. Other parks near the station include the Chinese Garden Park, which is four blocks away, and Lincoln Square Park, which is three blocks away.

The primary purpose of the Lake Merritt Plaza is transportation, as part of the Lake Merritt Station facility. The plaza is not officially designated by BART or any other agency as a public park or recreation area. However, BART acknowledges that, incidental to the plaza's primary purpose as a transportation facility, it is a public space that currently is utilized by modest numbers of recreational users. For this reason, BART has undertaken a survey of community uses for purposes of this Initial Study.

Community Use of BART Plaza and Other Nearby Facilities. A community use survey was undertaken in fall 2015 as part of this Initial Study, to assess how the plaza, the adjacent Madison Square Park, and nearby Laney College were being used by community groups and individuals, and the extent of such use. The survey was conducted between October 17 and October 30, 2015. Data were collected between 7 a.m. and 7 p.m. at the plaza and Madison Square Park sites, and every 2 hours at the Laney College location. Data were recorded for the plaza and Madison Square Park sites for each activity that was observed. Data recorded for each activity included the start and finish times, the type of activity, the number of people participating in the activity, the general space requirements for the activity, and any notes necessary. At the Laney College location, activities were recorded in a similar way to the other two sites, but the activity start and finish times were not recorded; therefore, only general findings regarding site availability are noted below. The Chinese Garden Park was not included in the survey; it receives low use because of its location along the freeway and heavy local traffic on adjacent streets, which deters users, and therefore it would be unlikely to be used by any individuals displaced from the plaza during construction of the proposed project.

Lincoln Square Park was not included in the survey because it already is being used by schools and for other activities; therefore, it would be unlikely to have space to accommodate displaced plaza users during construction.

Lake Merritt BART Station Plaza. The plaza has two main use periods, from 8 to 10 a.m. and from 2 to 7 p.m. (because of Chinese chess activity), with minimal use between 11 a.m. and 1 p.m. An average of just over 70 users/day was observed on the Lake Merritt Plaza. The Chinese chess user group, generally accounted for an average of roughly 30 percent of users at the site (21 people). Walking was observed to be the second most popular activity, with an average of 17 people participating in this activity daily. Other popular activities included dancing (an average of 9 people participating daily), stretching (an average of 8 people participating daily), and tai chi (an average of 5 people participating daily). Low use activities included badminton, bird feeding, and martial arts, with an average of 1 person participating in these activities daily or even less often. Most activities were individual activities, except for dancing and Chinese chess, which were group activities. Use of the plaza primarily was limited to the main plaza area (west of the benches in the middle of the plaza), along 9th Street, and in front of the 9th Street BART entrance.

Madison Square Park. Madison Square Park is owned and managed by the City of Oakland. A playground, basketball court, paved labyrinth, and some tables with shade structures are within the one full city block park (roughly 300 feet by 200 feet). The observers found that this site experienced heavy use by physical education (PE) classes from nearby schools, with 325 to 500 children participating in PE classes at the park on Monday through Thursday. Only one main-use period occurred at the park, between 8 and 10 a.m., with a significant decline in use starting around 11 a.m. on days without PE classes. On PE class days, students began arriving around 8:40 am and were present until about 3:15 pm. Use at the park was almost double that of the plaza, with an average of 140 users per day excluding students in PE classes. In addition, on PE class days (Monday-Thursday), an average of 426 PE students were present in the park. Dancing also was a popular activity at the park, with an average of 59 people participating in some form of dancing at the park each day. Generally, most dance use was by organized groups. Tai chi, badminton, and general stretching also were popular activities, with an average of 21, 14, and 11 people participating daily, respectively. Basketball, walking, bird feeding, Chinese chess, martial arts, meditation, and use of the playground were less popular, with zero to five people on average participating in these activities daily. The most popular locations for activities at the park were the basketball court and the paved space west of the basketball court that contains the labyrinth. Currently, the City of Oakland coordinates the timing of PE classes and some of the other recreational activities at Madison Square Park to help ensure enough time and space is provided for each activity.

Discussion

a. Recreational Use of BART Plaza and Other Nearby Recreational Facilities: Less-than-Significant Impact

Construction. Project construction would close the plaza for 20 to 24 months, resulting in displacement of all the uses at the plaza. The main uses of the plaza are

Chinese chess, walking, stretching, dancing, and tai chi. Activities with fewer participants include meditation, badminton, bird feeding, and martial arts. The total number of users of the plaza is modest, just over 70 users per day on average. Most activity in the vicinity (including PE classes) takes place at Madison Square Park, with an average of 383 users per day. Most activities currently take place in the main plaza, which would be closed during construction, because this is the most open and useable space at the plaza. Participants in Chinese chess currently gather along 9th Street. Because most of the uses that occur at the plaza also occur at Madison Square Park, located across the street from the plaza, much of the use at the plaza likely would be temporarily displaced to the park during the construction period.

It is expected that Madison Square Park would be able to accommodate most of the temporarily displaced activities from the plaza during the construction period. Although both the plaza and the park experience more use in the mornings, site visits indicated that there would be adequate space available at the park for the plaza's uses. Except for the dance group, most morning use at the plaza is by individuals, and they could choose to use the park for their activities. Although many people seem to use the plaza exclusively and repeatedly each day at the same time for the same activity, a few people were observed to use both sites in the morning.

Regarding the daily morning dance group at the plaza, sufficient space would exist for this activity at Madison Square Park, if such use was coordinated with PE classes and other organized group use at the park, to identify/designate a space available for the dance group on a daily basis. Typically, the park's larger dance group (30 to 70 people) concludes its use of the park by 8:40 a.m., when the first PE class arrives at the park. The plaza dance group, which is significantly smaller (16 people or less), usually is present between 8:30 and 10:30 a.m., and therefore because of its smaller size, the park could accommodate the dance group and PE classes. The dance group brings its own music (boombox), and therefore would not require any special facilities at the park. As an alternative, the plaza dance group also could use the Laney College plaza (located at 9th and Fallon Streets). The Laney College plaza would be large enough to accommodate the group and generally would be available; however, coordination would be required on weekends, to avoid displacing other organized group use of the Laney College plaza. The dance group's music is not very loud and would be unlikely to disturb academic or administrative uses of the surrounding buildings.

The use temporarily displaced from the plaza to the park would consist of less than 14 percent of the average daily use that exists at the park—an average of 52 users per day at the plaza (not including the Chinese chess players), compared to 383 users per day at the park. This relatively low level of use transferred from the plaza to the park would not result in substantial physical deterioration or accelerated deterioration of the facilities at the park. A substantial increase in use of the park would not occur because of the displaced users from the plaza, and the types of uses that would be displaced to the park from the plaza already occur at the park

(e.g., tai chi, dancing, stretching, badminton, walking) and are not uses that would result in physical deterioration of the pavement at the park.

In summary, the number of users displaced from the plaza by construction of the proposed project would be limited, about 70 users per day on average, and the duration of displacement would also be limited, to 20-24 months. During that period, the displaced users could be accommodated at Madison Square Park and other locations as discussed above. Therefore, the impact on recreational use of the BART plaza and nearby recreational facilities would be **less than significant**.

As stated in Section 5.4.2, BART would also continue discussions with City staff regarding the temporary use of other nearby facilities that could accommodate the various users of the existing plaza that would be displaced during construction for the proposed project. These discussions would identify opportunities for existing users to relocate, taking into account the type of activity, the type and amount of space required, the desired times, and the available space at the other facilities. Ongoing public outreach efforts by BART would also help identify any concerns or needs necessary for accommodating plaza uses at other locations.

Operations. After construction is completed, the newly redesigned plaza and plaza design features would be available for resumption of the previous uses. The operational impact on recreational facilities would be **less than significant**.

b. New or Expanded Recreational Facilities: Less-than-Significant Impact

No specific recreation facilities would be part of the proposed project, although some of the plaza design features (e.g., seating, shade, game tables) and the plaza itself could be used for the outdoor socializing and individual activities, similar to existing conditions at the plaza. Impacts from the plaza design features are described in the other resource sections of this document. Use of the plaza itself or plaza design features for activities such as dancing, tai chi, Chinese chess, walking, and meditation would not result in adverse physical effects on the environment.

As discussed in Section 6.13, Population and Housing, the proposed project would not induce population or housing growth. Therefore, additional recreation facilities or the expansion of recreation facilities would not be necessary.

Similarly, the amount of displaced use from the plaza to the park would be less than 14 percent of the average daily use that currently exists at the park and would not require any new facilities at the park, nor would the displacement of use lead to the physical deterioration of any facilities at the park. Therefore, the displacement of use from the plaza would not require expansion or construction of new facilities at the park.

Based on this assessment, the impact from construction of new or expanded recreational facilities would be **less than significant**.

6.16 Transportation/Traffic

Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	❑	❑	■	❑
b. Conflict with an applicable congestion management program, including, but no limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	❑	❑	■	❑
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	❑	❑	❑	■
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	❑	❑	❑	■
e. Result in inadequate emergency access?	❑	❑	■	❑
f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	❑	❑	❑	■

Setting

Regional and Local Road Network. The project site is in downtown Oakland and encompasses the entire block between 8th/9th Streets and Madison/Oak Streets. Downtown Oakland includes a mix of circulation routes, regional highways, connections to the city of Alameda via the Webster Street and Posey Tubes, arterials, collectors, pedestrian-oriented commercial streets, and residential streets. Highways in the project vicinity include I-580, approximately 2 miles northwest of the project site, I-880 (also known as Nimitz Freeway), approximately 0.3 mile south of the project site, and I-980, approximately 1 mile west of the project site. In the project area, 8th Street to the south, 11th Street to the north, and Webster Street to the west are the major arterial roadways. The Alameda County Transportation

Commission's (ACTC) countywide travel demand model estimates that in 2020, peak-hour volume on 8th Street will be approximately 750 vehicles in the AM peak and 1,000 vehicles in the PM peak; on 11th Street, approximately 1,400 vehicles in the AM peak and 530 vehicles in the PM peak; and on Webster Street, approximately 1,100 vehicles in the AM peak and 1,100 vehicles in the PM peak (Alameda County 2017a).

Transit Services. Transit services in the project vicinity of the LMSAP include BART, Alameda–Contra Costa Transit District (AC Transit) buses, San Francisco Bay Ferry service, and long-haul rail service via Amtrak. BART provides regional transit connections throughout the San Francisco Bay Area. As of 2015, the Lake Merritt BART Station had a bicycle mode share of 15 percent of all homebased trips, the highest bicycle mode share out of BART's stations (BART 2015). Local bus service is provided by AC Transit, with the future Bus Rapid Transit (BRT) route providing service on 11th/12th Street and Lake Merritt Boulevard. In addition, the City of Oakland coordinates with AC Transit to run the free B-shuttle along Broadway, which connects the Jack London District to the Uptown District. The Oakland Amtrak station and Oakland Ferry Terminal are located in Jack London Square. Amtrak provides passenger rail service, while San Francisco Bay Ferry provides connections to Alameda, Angel Island, and various other San Francisco destinations.

Pedestrians and Bicycles. High levels of pedestrian and bicycle activity occur in the project area. Key pedestrian activity areas include the Chinatown Commercial District, Lake Merritt BART Station, Lincoln Park, Laney College, and the Lake Merritt shoreline. Current bike facilities in the project vicinity include Class 2 bike facilities on 8th, 9th, Madison and Oak Streets, and bikeshare and bike parking at the BART station (City of Oakland 2017b). Proposed bike facilities in the project vicinity include Class 3 bike facilities on 8th and 9th Street, which is an eastward expansion of existing bike facilities, and Class 2 bike facilities on 10th Street (City of Oakland 2017b).

Relevant Plans and Programs. Relevant regulations and plans, policies, or programs that pertain to the proposed project related to transportation and traffic include the following:

- Alameda County, Congestion Management Program, 2015
- BFS R 3.1.1, May 2017
- City of Oakland, General Plan–Land Use and Transportation Element, March 1998
- City of Oakland, Bicycle Master Plan, 2007
- City of Oakland, 2017 Draft Pedestrian Master Plan, April 2017
- City of Oakland and Metropolitan Transportation Commission, Downtown Oakland Parking Management Plan, February 2016
- Lake Merritt Station Area Plan, December 2014

Discussion

a-b. Conflict with Plan Performance Measures: Less-than-Significant Impact

Congestion Management Program. The Congestion Management Program (CMP) for Alameda County describes performance measures related to the circulation system. The measures that are relevant to the proposed project are highlighted in the subsequent paragraphs, along with the proposed project's conformance or conflict with the measures.

Multimodal accessibility and transportation/land use integration - The proposed project would include improvements and expansion of BART's transit management facilities to meet the demands and requirements for future BART service throughout the region, as well as localized pedestrian and bicycle improvements at the plaza that would promote accessibility to BART. Therefore, the proposed project would support the CMP performance measure regarding multimodal accessibility and transportation/land use integration.

Transit service - The proposed project would include improvements and expansion of BART's transit management facilities to meet the demands and requirements for future BART service throughout the region. Consequently, the proposed project would support the CMP performance measure regarding transit service.

Bicycling - The proposed project would include localized bicycle improvements at the plaza. Described in further detail next and in Item 16f, the proposed project would not conflict with any existing or planned bicycle developments, the additional trips generated from the project would have no effect on bicycle circulation, and the project would include a new bike station, relocated bike share parking, and bike lockers serving to support the goals identified in the City of Oakland's Bicycle Master Plan. Therefore, the proposed project would support the CMP performance measure with respect to bicycling.

Walking - The proposed project would include local pedestrian improvements at the plaza. Described in further detail next and in Item 16f, the proposed project would improve the pedestrian environment by widening sidewalks, possibly installing bulb-outs, and adding pedestrian-scaled lighting, consistent with the City of Oakland's 2017 Draft Pedestrian Master Plan Update. Consequently, the proposed project would support the CMP performance measure with regards to walking.

Environment, equity, and health - The proposed project would improve the plaza by creating an inviting, safe, and flexible public space for the community and a strong connection to existing community assets. The community-engaging facilities and activities proposed for the plaza would benefit the dense Chinatown neighborhood of Oakland's downtown. Therefore, the proposed project would support the CMP's performance measure related to environment, equity, and health.

The CMP contains other performance measures related to roadways and goods movements. The proposed project would have no effect on these performance measures.

City of Oakland Transportation Impact Review Guidelines. According to the City of Oakland's transportation impact review guidelines, adopted in April 2017, land development projects that generate 50 vehicle-trips or more during the weekday AM and/or PM peak-hour typically require a detailed transportation impact analysis (TIA) (City of Oakland 2017d). This threshold is more conservative than the threshold used by ACTC for determining whether a land use project requires preparation of a TIA to evaluate potential impacts on regional roadways in the surrounding area that are designated as part of the CMP network.[11] In downtown Oakland, SR-260 (Posey/Webster tubes), I-580, I-880, and I-980 are considered Tier 1 CMP Network Roadways that have conformity requirements.

As shown in Table 15 and based on trip generation rates published by the Institute of Transportation Engineers, the proposed project would generate an estimated 22 weekday AM peak-hour vehicle-trips and 29 weekday PM peak-hour vehicle-trips. Therefore, the project would be under the thresholds for projects for which a detailed TIA is required to evaluate potential transportation-related impacts.

The trip generation estimates are conservative and represent the worst plausible impact on the surrounding street network. The trips assume the high end of the potential number of employees needed for future TOF operations, and that all employees would contribute to the AM/PM peak-hour conditions. The TOF would be a 24-hour operation, with some shifts occurring off-peak, for instance from 6 a.m. to 2 p.m., from 2 p.m. to 10 p.m., and from 10 p.m. to 6 a.m. Consequently, the estimates in Table 15 are expected to be conservative. Therefore, the net new number of vehicles-trips would be less than significant, compared to the CTC 2020 volume forecasts on the streets surrounding the project site.

[11] "Alameda CTC reviews land use projects that will cause a net increase of 100 or more p.m. peak-hour trips. Net increase is determined with respect to the existing land use designation (if the project entails a General Plan Amendment) or with respect to existing uses at the project site (if the project is consistent with the current general plan designation)." CMP Land Use Analysis Program Transportation Impact Analysis Requirements, available at http://www.alamedactc.org/app_pages/view/13045.

Table 15: Vehicle Trip Generation of the Proposed Project

	# of Units	AM Peak Hour Rate	AM Peak Hour Trips	PM Peak Hour Rate	PM Peak Hour Trips
Existing Facilities					
Existing TOF	60 employees	0.48 per employee [1]	29	0.46 per employee [1]	28
Total	--	--	29	--	28
With Proposed Modifications					
Proposed TOF	137 employees	0.48 per employee [1]	66	0.46 per employee [1]	63
Retail Space	5,000 square feet	0.96 per 1,000 square feet [2]	5	3.71 per 1,000 square feet [2]	19
Total	--	--	71	--	82
Net Change in Vehicle Trips					
Gross Change in Vehicle Trips			42		54
City of Oakland Adjustment Factor [3]			-20		-25
Net Change in Vehicle Trips			22		29

Notes:

[1] From 9th Edition Institute of Transportation Engineers (ITE) Trip Generation Manual for General Office Building (710).

[2] From 9th Edition ITE Trip Generation Manual for Shopping Center (820). This trip generation rate was used because the specific retail type and proportion of usage has not yet been finalized.

[3] From City of Oakland Transportation Impact Review Guidelines (April 14, 2017): "Trip generation analysis in Oakland should explicitly account for mode split and internal capture." The project site is within 0.5 miles of a rail/ferry station and thus only 53.1 percent of ITE trip generation values should be considered motor vehicle trips.

Source: Data compiled by AECOM in 2017

The LMSAP Final EIR identified Cumulative 2035 plus incremental project volumes associated with implementing the LMSAP (City of Oakland 2014c). In the project vicinity, the LMSAP Final EIR identified significant and unavoidable cumulative impacts at the following intersections: Madison/11th Street, Madison/10th Street, Harrison/8th Street, Oak/10th Street, Oak/8th Street, Oak/7th Street, Oak/6th Street, and Oak/5th Street. The project is estimated to contribute less than 30 vehicle-trips in the peak hour, an amount that would not substantially degrade the LOS at those intersections. Therefore, the proposed project would contribute only a minimal amount of traffic impact that would cumulate with other foreseeable developments. Moreover, as previously noted, the BART TOF is a 24/7 operation with some shifts occurring outside of peak travel periods. Thus, some BART TOF employees would not follow typical AM and PM peak-hour work travel patterns, which would result in an even lower contribution to peak-hour vehicle-trips contribution. The impact would not be cumulatively considerable.

Draft Pedestrian Master Plan and Bicycle Master Plan. Special crosswalk treatment is proposed at all four intersections of the plaza. Widened sidewalks and possibly bulb-outs are planned to improve pedestrian access and safety. The proposed bicycle station would increase the number of bicycle parking spaces at the Lake Merritt BART Station. Site access and features would be designed according to applicable site design standards, including those from the City of Oakland, as well as the BFS, and standard engineering practice (e.g., 2010 American's with Disabilities Act Standards for Accessible Design). Therefore, the proposed project would be supportive of improved accessibility to the BART station, consistent with the Pedestrian Master Plan and Bicycle Master Plan. As described in further detail in subsequent discussion under Items 16d and 16f, the project would not substantially increase hazards because of design features or incompatible uses, nor conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities or otherwise decrease the performance or safety of these facilities.

Construction. The construction area would involve nearby streets for utility improvements/upgrades and encompass the entire Lake Merritt Plaza block, although activities would be staged so that access to at least one of the Lake Merritt BART Station plaza entrances would be maintained during construction. Duration of any closures of either entrance would be minimized.

Construction workers would be on-site during standard construction hours, approximately 8 hours per day, starting no earlier than 7 a.m. and finishing no later than 5 p.m. A minimal number of parking spaces for construction workers may be provided underneath the I-880 freeway. BFS Section 01 52 00 also requires the contractor to provide parking for personnel and delivery vehicles and to install protective barricades and safety precautions, including maintaining access for the Fire Department. No road closures are anticipated during the overall construction period. Normal construction deliveries would be made from Oak Street over the plaza, and they are anticipated to occur a few times a week. Larger construction

equipment and materials would be delivered via crane, which would lift those items from a truck on Madison Street parking lane directly to the building site on the plaza.

As described in Chapter 5, Project Description, construction would take place on the project site in three phases for a total estimated construction period of 24 months. The construction phases would include some overlap, which may result in a shorter overall construction period. Phase 1 would include site preparation, Phase 2 would include a majority of the construction activity, and Phase 3 would include finishing and testing.

Phase 1 construction activities would generate approximately 100 total construction truck trips, or about one daily construction truck trip on average over the entire Phase 1; Phase 2, approximately 15 daily construction truck trips; and Phase 3, fewer total construction truck trips than Phases 1 and 2. The construction truck trips for each phase of construction were calculated using default assumptions and other similar sized projects, and would be under the thresholds for projects for which a detailed TIA is required to evaluate potential transportation-related impacts.

BART would obtain an encroachment or obstruction permit for the proposed project from the City of Oakland. As part of obtaining this permit, a Traffic Control Plan would be submitted to the City Public Works Department, Transportation Services Division, for comments and concurrence. As part of compliance with BFS Section 01 57 00, a pedestrian handling plan and a traffic plan, which covers traffic control, protective devices, and standards for redirecting traffic would be developed. In consultation with City of Oakland staff, BART would include traffic management strategies in the Traffic Control Plan, to minimize traffic congestion and the effects of parking demand by construction works during project construction. More specifically, the plan would define traffic control measures to maintain traffic flow and safety; notification procedures for adjacent property owners and public safety personnel regarding major deliveries, detours, and lane closures; the locations of construction staging areas; and a process for responding to and tracking complaints regarding construction activity provisions for maintaining pedestrian flow, bicycle circulation, transit services, and emergency access.

In summary, the proposed project would not conflict with adopted City policies, plans, or programs regarding intersections, streets, highways, public transit, bicycle or pedestrian facilities nor would it conflict with applicable goals, policies or actions identified in an adopted City of Oakland policies, plans, or programs. Therefore, the impact would be **less than significant**.

c. Air Traffic: No Impact

The nearest airport (Oakland International Airport) is approximately 8 miles from the project site. The proposed project would include low-rise structures, the tallest being approximately three stories, and thus would not increase air traffic levels or interfere with air traffic patterns. Therefore, **no impact** on air traffic patterns would occur.

d. Hazard from Design Feature: No Impact

The proposed project would maintain clear lines of sight and would provide lighting for security and the safety of plaza users. Design features would optimize transit access and visibility, reducing the chances of an accident or collision. The open plaza area and proposed streetscape improvements would not create possible safety risks for vehicular or pedestrian traffic. The proposed project would widen sidewalks; however, their design would be coordinated with the City of Oakland and would be expected to enhance pedestrian circulation, rather than introduce hazards. Therefore, **no impact** from design features of the proposed project would occur.

e. Emergency Access: Less-than-Significant Impact

The proposed project would not make fundamental changes to the roadway network, and existing emergency access to the project site and surrounding area would continue to be provided in the same manner along the surrounding streets as done currently. Project-related trips would add traffic volumes on the surrounding streets marginally, and thus would not impede emergency access or response. Although the proposed project would implement widened sidewalks and landscaping improvements, such as planter installation and bench seating, these changes would not preclude access to the project site or surrounding areas by emergency vehicles, because existing travel lanes would be available as well as multiple alternate routes for emergency responders. Therefore, the impact on emergency access would be **less than significant**.

f. Conflict with Plans for Alternative Modes of Transportation: No Impact

Existing transit service in the immediate vicinity of the project site include AC Transit local bus service for routes 18, 62, 88, and 96, AC Transit All Nighter Line 802, and regional BART connections at the Lake Merritt BART Station. Planned transit would include the AC Transit East Bay BRT service, which would provide enhanced bus service on 11th/12th Streets and Lake Merritt Boulevard. The planned street improvements that include widened sidewalks and possibly bulb-outs would encroach into the public right-of-way, but not to the extent of affecting transit operations. The proposed project would not conflict with any existing or planned AC Transit bus service routes because it would not introduce new features that impede transit circulation or shift bus stops; the additional trips generated from the proposed project would have no effect on transit circulation; and the proposed project would provide additional operational support to planned BART extensions and expansions.

Current bike facilities in the project vicinity include Class 2 bike facilities on 8th, 9th, Madison, and Oak Streets, with proposed extension of bike facilities on 8th, 9th, and 10th Streets. The City of Oakland Bicycle Master Plan describes the City's ongoing development and long-range vision to support the bicycle network. The goals identified in the Bicycle Master Plan include infrastructure development, education, and policy coordination. The proposed project would not conflict with any existing or

planned bicycle developments, because it would not introduce new features that impede existing or proposed bike facilities, the additional trips generated from the proposed project would have no effect on bicycle circulation, and the proposed project would include a new bike station, reconfigured bike share parking, and bike lockers, which would support the goals identified in the Bicycle Master Plan.

The 2017 Draft Pedestrian Master Plan Update outlines planned investments/policy to improve safety and promote walking throughout the city. The project site is in the downtown planning area of the Pedestrian Master Plan Update. Approximately 21 percent of downtown residents walk to work, which is more than five times the citywide average. Pedestrian safety continues to be a concern for the downtown planning area because the area has the greatest number of pedestrian collisions per 1,000 residents or per street-mile in the city.

The LMSAP (City of Oakland 2014b) provides policies that guide development within a 0.5-mile radius of the Lake Merritt BART Station. The LMSAP proposes projects to improve the pedestrian environment by narrowing/reducing traffic lanes, extending curbs, adding pedestrian countdown signals and pedestrian-scaled lighting, and improving multiple pedestrian undercrossings.

The proposed project would not conflict with any existing or planned pedestrian developments or policies. Moreover, the proposed project would include an improved plaza area for pedestrians and other users, and provide pedestrian-oriented spines along 8th and 9th Streets, which would enhance pedestrian connections and access to nearby destinations such as BART, Chinatown, Laney College, and the Jack London District.

In summary, the proposed project would not conflict any adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. **No impact** would occur.

6.17 Utilities and Service Systems

Would the project:	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	❑	❑	■	❑
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❑	❑	■	❑
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	❑	❑	■	❑
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or would new or expanded entitlements be needed?	❑	❑	■	❑
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	❑	❑	■	❑
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	❑	❑	■	❑
g. Comply with federal, state, and local statutes and regulations related to solid waste?	❑	❑	■	❑

Setting

Water and wastewater services to the project site are provided by the East Bay Municipal Utility District (EBMUD). EBMUD's water system serves approximately 1.39 million people in a 332-square-mile area, while the wastewater system serves approximately 650,000 people in an 88-square-mile area, which includes Alameda and Contra Costa counties. EBMUD serves the City of Oakland with water from the Pardee Reservoir, which is part of the Mokelumne River watershed approximately 90 miles away, and Briones Reservoir, which is approximately 14 miles from the City of Oakland (EBMUD 2012). The Urban Water Management Plan (EBMUD 2015) projects that the EBMUD service area population will increase by approximately 260,000 residents (18.8 percent) by 2035, or from 1.39 million residents in 2015 to 1.65 million

residents by 2035. Between 1995 and 2004, commercial, institutional, and industrial land uses demanded 58 gallons per capita per day (EBMUD 2015).

EBMUD's main wastewater treatment facility is in Oakland at the foot of the Bay Bridge. On average, about 63 million gallons per day (mgd) receive treatment at this plant; maximum flows can reach 168 mgd. EBMUD has the capacity to treat a short-term hydraulic peak of 415 million gallons of wastewater per day (EBMUD 2017).

Solid waste collected at the project site would be sent to the Altamont Landfill and Resource Recovery site, located in Livermore. This landfill has available capacity and is not expected to close until 2049 (Alameda County 2017b).

Discussion

a. Wastewater Treatment Requirements: Less-than-Significant Impact

Wastewater flows during project operation would be from the additional 56 to 87 employees on site associated with the expansion of the TOF operations and the ground-floor office and retail space. This increase in wastewater would be minimal (less than 9,000 gallons per day), the wastewater would be typical of office uses, and it would not require pretreatment, which typically is reserved for industrial users that handle pollutants of concern. Therefore, the proposed project would cause little change to the existing quantity and type of wastewater treated at the EBMUD treatment plant. Because the project-related wastewater would be similar in quality to the existing wastewater generated at the site, the impact on the Regional Water Quality Control Board wastewater treatment requirements would be **less than significant**.

b, d-e. Water and Wastewater Services: Less-than-Significant Impact

Construction. Approximately 20 construction workers are expected on-site at any one time. In compliance with BFS Section 01 52 00, the contractor would provide portable toilets and drinking water. Therefore, **no impact** on the public water or wastewater services and facilities provided by EBMUD would occur during construction.

Water. Implementation of the proposed project would increase on-site employment by 56 to 87 additional employees, to a total of 116 to 147 employees. As stated above, the average daily water consumption per capita in EBMUD's service area for commercial, institutional, and industrial land uses is 58 gallons (EBMUD 2015). Assuming this rate, the proposed project would result in a net increase in water demand of approximately 3,250 to 5,050 gallons per day. The majority of EBMUD's water supply comes from the Mokelumne River watershed, which allows EBMUD to deliver of up to a maximum of 325 mgd (EBMUD 2015). Because of water conservation, recycled water developments, the Green Building Code, and new water supply initiatives that aim to prepare EBMUD for the demand of 260,000

additional residents by 2035, EBMUD would have sufficient capacity to meet the increase in water demand from the proposed project. Therefore, the proposed project by itself would not cause the need for new or expanded water facilities, or require EBMUD to seek additional entitlements beyond what is outlined in the Urban Water Management Plan (EBMUD 2015). While overall water supply is sufficient to meet the demand from the proposed project, local water lines would be improved and upgraded as needed to serve the proposed project. These improvements would result in temporary construction-related impacts, and such impacts are previously addressed under specific resource topics, such as air quality, cultural resources, noise, and transportation. Thus, the impact on water supplies and water distribution infrastructure would be **less than significant**.

Wastewater. Wastewater generation for the proposed project was determined by estimating the flow per square feet of space (for commercial and office buildings), based on the City Oakland Sanitary Sewer Design Standards (2008). As shown in Table 16, the amount of wastewater projected to be generated by the proposed project would be approximately 6,100 gallons per day.[12]

Table 16: Proposed TOF Wastewater Generation

Program Element	Square Feet	Average Daily Flow (gpd/unit)	Unit	Wastewater Generated (gpd)
Transit Management Facilities	28,000	200	Office 1,000 gsf	5,600
Retail/Community Use	5,000	100	Retail 1000 gsf	500
Total	**33,000**	**N/A**	**N/A**	**6,100**

Notes:
gsf=gross square feet; gpd=gallons per day
Sources: City of Oakland 2008; Data compiled by AECOM in 2017

Maximum flows treated at the wastewater treatment plant (168 mgd) are accommodated readily by the short-term hydraulic capacity peak of 415 mgd. The estimated 6,100 gallons of wastewater to be generated by the proposed project would not require construction of new wastewater treatment facilities. While overall wastewater treatment capacity is sufficient to meet the demand from the proposed project, local wastewater lines would be improved and upgraded as needed to serve the proposed project. These improvements would result in temporary construction-related impacts, and such impacts are previously addressed under specific resource

[12] The water demand and the wastewater generation estimate were calculated using different methodologies, explaining the anomaly that the wastewater demand exceeds the water demand. Nevertheless, sufficient water supply and wastewater treatment plant capacity would exist to accommodate the proposed project.

topics, such as air quality, cultural resources, noise, and transportation. Therefore, the impact on wastewater treatment capacity and collection/transmission systems would be **less than significant**.

c. Stormwater Drainage Facilities: Less-than-Significant Impact

As described under Item 8e in Section 6.9, Hydrology and Water Quality, the proposed project would not result in net new impervious surface area. Therefore, the rate and amount of surface runoff from the proposed project would be similar to existing flows and would not alter the demand on the capacity of existing or planned stormwater drainage systems. Consequently, the proposed project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities. The impact on drainage facilities would be **less than significant**.

f-g. Solid Waste: Less-than-Significant Impact

Construction. The proposed project would comply with BFS Section 01 74 21, which requires preparation of a Waste Management Plan at or before the pre-construction meeting. The BFS requires a minimum diversion of 75 percent of construction waste from landfill; 100 percent of steel, asphalt, concrete, and land-clearing waste from landfill; and an overall minimum of 70 percent of remaining demolition waste from landfill. These diversion rates exceed the requirements of the 2016 California Green Building Standards Code (a minimum of 65 percent of the nonhazardous construction and demolition waste be recycled and/or salvaged for reuse). Therefore, the construction impact on landfill capacity would be **less than significant**.

Operations. The Altamont Landfill and Resource Recovery site has available capacity and is not expected to close until 2049 (Alameda County 2017b). The 56 to 87 additional TOF employees on the project site would increase the amount of solid waste generated; however, this increase would not exceed the capacity of the Altamont Landfill. Expansion of the existing or construction of new solid waste facilities would not be necessary. The operational impact on landfill capacity would be **less than significant**.

6.18 Other Issue(s)

Would the project:
a. Result in, contribute to, or substantially affect other environmental issues(s)? If so, specify below and evaluate:

Discussion

a. Other Issues – Energy Use: Less-than-Significant Impact

CEQA requires an energy use analysis, addressing project construction and operations, but does not specify significance criteria for evaluation of impacts. In terms of energy use during project construction, BART would seek to minimize construction-related energy use by specifying in its construction contracts for equipment to be turned off when not in use, with idling of construction equipment limited to not more than 5 minutes, which would reduce energy use during construction. These requirements are specified in Mitigation Measure AQ-1 in Section 6.3, Air Quality, under Item 3b. The TOF would be a Leadership in Energy and Environmental Design (LEED)-certified building. Participants in the LEED program receive points based on their design and construction of energy-efficient, water-conserving buildings that use sustainable or green resources and materials. As part of the LEED-certification, there may be rooftop PV panels to generate electricity for the building if deemed feasible by BART, thereby further reducing the demand for additional electricity to support the new building. In addition, the TOF would comply with the California Green Building Code, including requirements for construction and demolition recycling, which would reduce the amount of energy needed to produce original building materials. As a result, the proposed project would have reduced operation and maintenance energy use compared to other buildings of a similar size. Electrical and natural gas lines may need to be improved and upgraded to serve the proposed project, the construction of which would have temporary impacts, but these localized modifications would not affect the overall energy supply and transmission systems such that major new infrastructure would be required. The localized impacts associated with improving the utility lines serving the proposed project are previously addressed under specific resource topics, such as air quality, cultural resources, noise, and transportation. In summary, the project would not result in, contribute to, or substantially affect energy consumption and energy conservation plans. The impact on energy use and conservation efforts would be **less than significant**.

6.19 Mandatory Findings of Significance

Would the project:	Significant or Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Does the project have the potential to 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, 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?	❑	■	❑	❑

Discussion

a. Degrade Habitat, Reduce Species, Restrict Species Range or Eliminate Important Examples of Major Periods of California History/Prehistory: Less-than-Significant Impact with Mitigation Incorporated

Based on the project site, background research, site visits, and analysis herein, the proposed project would have no potential to 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 wildlife habitat, or reduce the number or restrict the range of a rare or endangered plant or animal, because these listed species are not present. As discussed in Section 6.4, Biological Resources, no habitat exists at the project site for special-status species, and no wetlands or waterways are at the site. Impacts to migratory and nesting birds would be **less than significant with mitigation incorporated.**

The Initial Study in Section 6.5, Cultural Resources concludes that the proposed project would have no impact on historical resources, archaeological resources, human remains, or tribal cultural resources. The proposed project's potential impact

on historical resources would be limited to indirect visual impacts that may diminish the integrity of the proximate resources. The construction of a three-story building and the plaza improvements to create a place for the community to gather, interact, and socialize would be consistent with the existing urban infrastructure present within the setting of the buildings in this Victorian-era, residential urban neighborhood. Thus, the proposed project would not cause a substantial adverse change in the significance of a historic architectural resource, pursuant to Section 15064.5. Therefore, **no impact** would occur on historical resources would occur.

No known archaeological resources are within 0.25 mile of the project area. The proposed project would not require implementation of any ground-disturbing activities that could result in an adverse change to in the significance of an archaeological resource, pursuant to Section 15064.5. Construction the TOF and redesign of the plaza would not affect archaeological resources, because the construction footprint which is the BART plaza block is almost entirely underlain by the existing BART station and Lake Merritt Complex. Additionally, excavations related to the utility improvements/upgrades would occur within the existing street rights-of-way, where prior utility installations and maintenance would have already disturbed any archaeological resources present. Therefore, **no impact** on archaeological resources would occur.

No known burial locations are in the project area and no known archaeological sites having the potential to harbor human remains are within 0.25 mile of the project area. The proposed project would not require any ground-disturbing activities that could result in the disturbance of human remains, including those interred outside formal cemeteries. Disturbance of the plaza/street level would not affect human remains, because the construction would occur above the existing BART station and Lake Merritt Complex. As described above, excavations related to the utility improvements/upgrades would occur within the existing street rights-of-way, where prior utility installations and maintenance would have already disturbed any human remains present. Therefore, **no impact** on human remains would occur.

With the recent adoption of AB 52, impacts on TCR must be addressed under CEQA. No known prehistoric archaeological sites are within 0.25 mile of the project area. Such prehistoric resources also may be considered TCRs and can include sites, features, and objects that are CRHR listed, eligible to be listed, or in a local register of historical resources as defined in PRC Section 5020.1(k). In addition, the Sacred Lands File maintained by the NAHC did not reveal the presence of sacred lands in the project vicinity. The proposed project would not require any ground-disturbing activities that could result in an adverse change to a TCR. Any disturbance of the plaza/street level would not affect a TCR, because the construction would occur above the existing BART station and transit operations facility. Similarly, ground disturbance related to the utility improvements/upgrades would occur within the existing street rights-of-way, where prior utility installations and maintenance

would have already disturbed any TCRs present. Therefore, **no impact** on a TCR would occur.

b. Cumulative Impacts: Less-than-Significant Impact

Cumulative impacts would be less than significant or the proposed project would result in a less than cumulatively considerable contribution to cumulative impacts. The LMSAP Final EIR provides the cumulative context for most of the impacts associated with foreseeable development in the project vicinity. The Final EIR noted significant and unavoidable cumulative impacts related to transportation, air quality (TACs and odors), and historic resources.

As stated in Section 6.16, Transportation/Traffic, the project would contribute only a minimal amount of traffic impact that would cumulate with other foreseeable developments. Moreover, the BART TOF is a 24/7 operation with some employees working off-peak work shifts. Therefore, some BART TOF employees would not follow typical AM and PM peak-hour work travel patterns, which would result in an even lower contribution to peak-hour vehicle-trips contribution. The proposed project traffic impacts would not be cumulatively considerable. Therefore, the cumulative traffic impact would be **less than significant.**

As discussed in Section 6.3, Air Quality, the proposed project's construction and operational emissions would not exceed the BAAQMD thresholds of significance. Therefore, emissions associated with the proposed project would not be cumulatively considerable, and the cumulative impact would be less than significant (see Item 3c). Furthermore, the proposed project would not be a substantial source of TAC and/or $PM_{2.5}$ emissions. Neither construction nor operational emissions for the proposed project would expose sensitive receptors to substantial pollutant concentrations. The proposed project would not have a cumulatively considerable impact on TACs, and the cumulative impact with the proposed project would be **less than significant.**

Construction activities associated with the proposed project could result in short-term odor emissions from diesel exhaust associated with construction equipment. The proposed project would use typical construction techniques, and the odors would be typical of most construction sites and temporary. The odors associated with the proposed project would be consistent with existing land uses. Therefore, the proposed project would not create objectionable odors affecting a substantial number of people. No cumulatively considerable impact on odors would occur and, thus, the cumulative impacts with the proposed project would be **less than significant.**

As discussed above under Item 19a, the proposed project would have no impact on historic resources. Therefore, there would be **no cumulative impact** with the proposed project on historic resources.

No development projects currently are planned within two blocks of the project site. Any long-term future development projects would be subject to similar best

management practices and mitigation measures, such as compliance with the California Building Code, requirement for a construction Stormwater Pollution Prevention Plan, construction hour limitations, and requirement for a construction traffic management plan. Therefore, the proposed project's impacts would not be cumulatively considerable, and the cumulative impact would be **less than significant.**

c. Effects on Human Beings: Less-than-Significant Impact with Mitigation Incorporated

Based on background research, site visits, and the analysis herein, project construction would not cause substantial adverse effects on human beings with mitigation incorporated. See Section 6.3, Air Quality; Section 6.8, Hazards and Hazardous Materials; and Section 6.12, Noise for potential construction-related impacts on human beings. All other construction-related environmental impacts would be less than significant. Operational impacts would be less than significant for all environmental topics described in this Initial Study, except for noise (see Section 6.12, Noise), which is reduced to less than significant with mitigation. Therefore, construction and operational impacts on human beings would be **less than significant with mitigation incorporated.**

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APPENDICES

Appendix A

CalEEMod. 2016.3.1 GHG Emissions Modeling Assumptions

BART Transit Operations Facility and Lake Merritt Plaza Redesign

Alameda County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	44.50	1000sqft	1.02	44,500.00	0
City Park	0.92	Acre	0.92	40,000.00	0
User Defined Recreational	1.00	User Defined Unit	0.03	1,300.00	0
Strip Mall	5.00	1000sqft	0.11	5,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	63
Climate Zone	5			**Operational Year**	2021
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

BART Transit Operations Facility and Lake Merritt Plaza Redesign - Alameda County, Annual

Project Characteristics -

Land Use - TOF Building = 44,500 sq ft office space + 5,000 sq ft retail = 49,500 sq ft. 40,000 sq ft of plaza space. 1,300 sq ft for BART station entrances.

Construction Phase - Phase 1: Site Preparation/Demolition = 6 months; Phase 2: Building Construction = 20 months; Phase 3: Finishing/Testing = 6 months.

Demolition phases added only to capture emissions and haul trips associated with demolition activities.

Off-road Equipment -

Off-road Equipment - Off-Highway truck = concrete truck.

Off-road Equipment -

Off-road Equipment -

Off-road Equipment -

Off-road Equipment - Cutting torch = welder. Jack hammer = air compressor.

Trips and VMT - Assuming 20 cy haul truck capacity. Assume 35 workers per day.

Demolition - 40,000 sq ft paved area = 1,191 tons of debris with assumed density of 1.2 tons/cy of construction debris, asphalt or concrete: loose. 1,300 sq ft for demolition of existing BART station entrances.

Grading -

Vehicle Trips - All new net daily trips accounted for under the Retail - Strip Mall land use.

Stationary Sources - Emergency Generators and Fire Pumps - Assume 50 hrs/year for maintenance and testing.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	131.00
tblConstructionPhase	NumDays	220.00	435.00
tblConstructionPhase	NumDays	20.00	131.00
tblConstructionPhase	NumDays	20.00	435.00
tblConstructionPhase	NumDays	3.00	131.00
tblConstructionPhase	PhaseEndDate	8/1/2024	9/30/2021
tblConstructionPhase	PhaseEndDate	1/31/2024	7/30/2021
tblConstructionPhase	PhaseEndDate	11/30/2021	7/30/2021
tblConstructionPhase	PhaseEndDate	6/1/2022	3/31/2020
tblConstructionPhase	PhaseStartDate	2/1/2024	4/1/2021

BART Transit Operations Facility and Lake Merritt Plaza Redesign - Alameda County, Annual

tblConstructionPhase	PhaseStartDate	6/2/2022	12/1/2019
tblConstructionPhase	PhaseStartDate	4/1/2020	12/1/2019
tblConstructionPhase	PhaseStartDate	12/1/2021	10/1/2019
tblFleetMix	FleetMixLandUseSubType	General Office Building	City Park
tblFleetMix	FleetMixLandUseSubType	City Park	General Office Building
tblFleetMix	FleetMixLandUseSubType	User Defined Recreational	Strip Mall
tblFleetMix	FleetMixLandUseSubType	Strip Mall	User Defined Recreational
tblLandUse	BuildingSpaceSquareFeet	0.00	1,300.00
tblLandUse	GreenSpaceSquareFeet	40,075.20	40,000.00
tblLandUse	LandUseSquareFeet	40,075.20	40,000.00
tblLandUse	LandUseSquareFeet	0.00	1,300.00
tblLandUse	LotAcreage	0.00	0.03
tblProjectCharacteristics	OperationalYear	2018	2021
tblTripsAndVMT	HaulingTripNumber	6.00	100.00
tblTripsAndVMT	HaulingTripNumber	118.00	12.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	70.00
tblTripsAndVMT	WorkerTripNumber	13.00	0.00
tblTripsAndVMT	WorkerTripNumber	33.00	70.00
tblTripsAndVMT	WorkerTripNumber	7.00	70.00
tblVehicleTrips	ST_TR	22.75	0.00
tblVehicleTrips	ST_TR	2.46	0.00
tblVehicleTrips	ST_TR	42.04	50.00
tblVehicleTrips	SU_TR	16.74	0.00
tblVehicleTrips	SU_TR	1.05	0.00
tblVehicleTrips	SU_TR	20.43	50.00
tblVehicleTrips	WD_TR	1.89	0.00

tblVehicleTrips	WD_TR	11.03	0.00
tblVehicleTrips	WD_TR	44.32	50.00

2.0 Emissions Summary

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					
2019	0.2326	2.1719	1.5002	2.8300e-003	0.1314	0.1091	0.2405	0.0184	0.1024	0.1208	0.0000	249.6539	249.6539	0.0590	0.0000	251.1278
2020	0.8644	7.6249	5.7412	0.0115	0.2164	0.3793	0.5957	0.0405	0.3571	0.3976	0.0000	996.1640	996.1640	0.2231	0.0000	1,001.7410
2021	0.6693	3.3665	2.8692	6.0100e-003	0.0900	0.1629	0.2529	0.0236	0.1539	0.1775	0.0000	520.4072	520.4072	0.1046	0.0000	523.0220
Maximum	**0.8644**	**7.6249**	**5.7412**	**0.0115**	**0.2164**	**0.3793**	**0.5957**	**0.0405**	**0.3571**	**0.3976**	**0.0000**	**996.1640**	**996.1640**	**0.2231**	**0.0000**	**1,001.7410**

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					
2019	0.2326	2.1719	1.5002	2.8300e-003	0.1314	0.1091	0.2405	0.0184	0.1024	0.1208	0.0000	249.6537	249.6537	0.0590	0.0000	251.1276
2020	0.8644	7.6249	5.7412	0.0115	0.2164	0.3793	0.5957	0.0405	0.3571	0.3976	0.0000	996.1630	996.1630	0.2231	0.0000	1,001.7400
2021	0.6693	3.3665	2.8692	6.0100e-003	0.0900	0.1629	0.2529	0.0236	0.1539	0.1775	0.0000	520.4067	520.4067	0.1046	0.0000	523.0215
Maximum	**0.8644**	**7.6249**	**5.7412**	**0.0115**	**0.2164**	**0.3793**	**0.5957**	**0.0405**	**0.3571**	**0.3976**	**0.0000**	**996.1630**	**996.1630**	**0.2231**	**0.0000**	**1,001.7400**

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	ROG	NOx	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)
1	**10-1-2019**	**12-31-2019**	2.4030	2.4030
2	**1-1-2020**	**3-31-2020**	3.3252	3.3252
3	**4-1-2020**	**6-30-2020**	1.7039	1.7039
4	**7-1-2020**	**9-30-2020**	1.7226	1.7226
5	**10-1-2020**	**12-31-2020**	1.7249	1.7249
6	**1-1-2021**	**3-31-2021**	1.5472	1.5472
7	**4-1-2021**	**6-30-2021**	1.5625	1.5625
8	**7-1-2021**	**9-30-2021**	0.5151	0.5151
		Highest	3.3252	3.3252

2.2 Overall Operational 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
Category	tons/yr										MT/yr					
Area	0.2253	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.2000e-004	9.2000e-004	0.0000	0.0000	9.8000e-004
Energy	4.7800e-003	0.0435	0.0365	2.6000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	228.2423	228.2423	9.0900e-003	2.5600e-003	229.2325
Mobile	0.0638	0.3973	0.6048	2.0000e-003	0.1440	1.9900e-003	0.1460	0.0387	1.8700e-003	0.0406	0.0000	184.7368	184.7368	9.5200e-003	0.0000	184.9748
Stationary	0.0246	0.0688	0.0628	1.2000e-004		3.6200e-003	3.6200e-003		3.6200e-003	3.6200e-003	0.0000	11.4239	11.4239	1.6000e-003	0.0000	11.4640
Waste						0.0000	0.0000		0.0000	0.0000	9.4837	0.0000	9.4837	0.5605	0.0000	23.4956
Water						0.0000	0.0000		0.0000	0.0000	2.6267	19.3159	21.9426	0.2707	6.5500e-003	30.6614
Total	**0.3185**	**0.5096**	**0.7046**	**2.3800e-003**	**0.1440**	**8.9200e-003**	**0.1529**	**0.0387**	**8.8000e-003**	**0.0475**	**12.1105**	**443.7199**	**455.8303**	**0.8513**	**9.1100e-003**	**479.8291**

2.2 Overall Operational 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
Category	tons/yr										MT/yr					
Area	0.2253	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.2000e-004	9.2000e-004	0.0000	0.0000	9.8000e-004
Energy	4.7800e-003	0.0435	0.0365	2.6000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	228.2423	228.2423	9.0900e-003	2.5600e-003	229.2325
Mobile	0.0638	0.3973	0.6048	2.0000e-003	0.1440	1.9900e-003	0.1460	0.0387	1.8700e-003	0.0406	0.0000	184.7368	184.7368	9.5200e-003	0.0000	184.9748
Stationary	0.0246	0.0688	0.0628	1.2000e-004		3.6200e-003	3.6200e-003		3.6200e-003	3.6200e-003	0.0000	11.4239	11.4239	1.6000e-003	0.0000	11.4640
Waste						0.0000	0.0000		0.0000	0.0000	9.4837	0.0000	9.4837	0.5605	0.0000	23.4956
Water						0.0000	0.0000		0.0000	0.0000	2.6267	19.3159	21.9426	0.2707	6.5500e-003	30.6614
Total	**0.3185**	**0.5096**	**0.7046**	**2.3800e-003**	**0.1440**	**8.9200e-003**	**0.1529**	**0.0387**	**8.8000e-003**	**0.0475**	**12.1105**	**443.7199**	**455.8303**	**0.8513**	**9.1100e-003**	**479.8291**

	ROG	NOx	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	Demolition 1	Demolition	10/1/2019	3/31/2020	5	131	
2	Demolition 2	Demolition	12/1/2019	7/30/2021	5	435	
3	Site Preparation	Site Preparation	10/1/2019	3/31/2020	5	131	
4	Building Construction	Building Construction	12/1/2019	7/30/2021	5	435	
5	Finishing/Testing	Architectural Coating	4/1/2021	9/30/2021	5	131	

Acres of Grading (Site Preparation Phase): 196.5

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,200; Non-Residential Outdoor: 25,400; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

BART Transit Operations Facility and Lake Merritt Plaza Redesign - Alameda County, Annual

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition 1	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition 1	Rubber Tired Dozers	1	8.00	247	0.40
Demolition 1	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Demolition 2	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition 2	Rubber Tired Dozers	1	8.00	247	0.40
Demolition 2	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Air Compressors	1	8.00	78	0.48
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Scrapers	1	8.00	367	0.48
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Welders	1	8.00	46	0.45
Building Construction	Cement and Mortar Mixers	1	8.00	9	0.56
Building Construction	Cranes	1	8.00	231	0.29
Building Construction	Forklifts	2	7.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Off-Highway Trucks	1	8.00	402	0.38
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Finishing/Testing	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 1	5	0.00	0.00	100.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition 2	5	0.00	0.00	12.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	5	70.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	10	70.00	15.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Testing	1	70.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition 1 - 2019 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					3.2000e-004	0.0000	3.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0757	0.7483	0.4915	8.0000e-004		0.0425	0.0425		0.0397	0.0397	0.0000	70.6731	70.6731	0.0180	0.0000	71.1230
Total	**0.0757**	**0.7483**	**0.4915**	**8.0000e-004**	**3.2000e-004**	**0.0425**	**0.0428**	**5.0000e-005**	**0.0397**	**0.0397**	**0.0000**	**70.6731**	**70.6731**	**0.0180**	**0.0000**	**71.1230**

3.2 Demolition 1 - 2019 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	2.3000e-004	7.8300e-003	1.3400e-003	2.0000e-005	7.4000e-004	3.0000e-005	7.7000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	1.9493	1.9493	1.0000e-004	0.0000	1.9519
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	**2.3000e-004**	**7.8300e-003**	**1.3400e-003**	**2.0000e-005**	**7.4000e-004**	**3.0000e-005**	**7.7000e-004**	**1.9000e-004**	**3.0000e-005**	**2.2000e-004**	**0.0000**	**1.9493**	**1.9493**	**1.0000e-004**	**0.0000**	**1.9519**

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					3.2000e-004	0.0000	3.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0757	0.7483	0.4915	8.0000e-004		0.0425	0.0425		0.0397	0.0397	0.0000	70.6730	70.6730	0.0180	0.0000	71.1229
Total	**0.0757**	**0.7483**	**0.4915**	**8.0000e-004**	**3.2000e-004**	**0.0425**	**0.0428**	**5.0000e-005**	**0.0397**	**0.0397**	**0.0000**	**70.6730**	**70.6730**	**0.0180**	**0.0000**	**71.1229**

3.2 Demolition 1 - 2019 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	2.3000e-004	7.8300e-003	1.3400e-003	2.0000e-005	7.4000e-004	3.0000e-005	7.7000e-004	1.9000e-004	3.0000e-005	2.2000e-004	0.0000	1.9493	1.9493	1.0000e-004	0.0000	1.9519
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	**2.3000e-004**	**7.8300e-003**	**1.3400e-003**	**2.0000e-005**	**7.4000e-004**	**3.0000e-005**	**7.7000e-004**	**1.9000e-004**	**3.0000e-005**	**2.2000e-004**	**0.0000**	**1.9493**	**1.9493**	**1.0000e-004**	**0.0000**	**1.9519**

3.2 Demolition 1 - 2020 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					3.2000e-004	0.0000	3.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0691	0.6808	0.4764	7.8000e-004		0.0375	0.0375		0.0350	0.0350	0.0000	68.4699	68.4699	0.0176	0.0000	68.9099
Total	**0.0691**	**0.6808**	**0.4764**	**7.8000e-004**	**3.2000e-004**	**0.0375**	**0.0378**	**5.0000e-005**	**0.0350**	**0.0350**	**0.0000**	**68.4699**	**68.4699**	**0.0176**	**0.0000**	**68.9099**

3.2 Demolition 1 - 2020 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	2.1000e-004	7.2300e-003	1.2700e-003	2.0000e-005	7.4000e-004	2.0000e-005	7.6000e-004	1.9000e-004	2.0000e-005	2.2000e-004	0.0000	1.8995	1.8995	1.0000e-004	0.0000	1.9019
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	**2.1000e-004**	**7.2300e-003**	**1.2700e-003**	**2.0000e-005**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**1.9000e-004**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**1.8995**	**1.8995**	**1.0000e-004**	**0.0000**	**1.9019**

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					3.2000e-004	0.0000	3.2000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0691	0.6808	0.4764	7.8000e-004		0.0375	0.0375		0.0350	0.0350	0.0000	68.4698	68.4698	0.0176	0.0000	68.9098
Total	**0.0691**	**0.6808**	**0.4764**	**7.8000e-004**	**3.2000e-004**	**0.0375**	**0.0378**	**5.0000e-005**	**0.0350**	**0.0350**	**0.0000**	**68.4698**	**68.4698**	**0.0176**	**0.0000**	**68.9098**

3.2 Demolition 1 - 2020 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	2.1000e-004	7.2300e-003	1.2700e-003	2.0000e-005	7.4000e-004	2.0000e-005	7.6000e-004	1.9000e-004	2.0000e-005	2.2000e-004	0.0000	1.8995	1.8995	1.0000e-004	0.0000	1.9019
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	**2.1000e-004**	**7.2300e-003**	**1.2700e-003**	**2.0000e-005**	**7.4000e-004**	**2.0000e-005**	**7.6000e-004**	**1.9000e-004**	**2.0000e-005**	**2.2000e-004**	**0.0000**	**1.8995**	**1.8995**	**1.0000e-004**	**0.0000**	**1.9019**

3.3 Demolition 2 - 2019 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					6.4000e-004	0.0000	6.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2494	0.1638	2.7000e-004		0.0142	0.0142		0.0132	0.0132	0.0000	23.5577	23.5577	6.0000e-003	0.0000	23.7077
Total	**0.0253**	**0.2494**	**0.1638**	**2.7000e-004**	**6.4000e-004**	**0.0142**	**0.0148**	**1.0000e-004**	**0.0132**	**0.0133**	**0.0000**	**23.5577**	**23.5577**	**6.0000e-003**	**0.0000**	**23.7077**

3.3 Demolition 2 - 2019 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	9.0000e-005	2.0000e-005	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0235	0.0235	0.0000	0.0000	0.0235
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**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0235**	**0.0235**	**0.0000**	**0.0000**	**0.0235**

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					6.4000e-004	0.0000	6.4000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0253	0.2494	0.1638	2.7000e-004		0.0142	0.0142		0.0132	0.0132	0.0000	23.5577	23.5577	6.0000e-003	0.0000	23.7076
Total	**0.0253**	**0.2494**	**0.1638**	**2.7000e-004**	**6.4000e-004**	**0.0142**	**0.0148**	**1.0000e-004**	**0.0132**	**0.0133**	**0.0000**	**23.5577**	**23.5577**	**6.0000e-003**	**0.0000**	**23.7076**

3.3 Demolition 2 - 2019 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	9.0000e-005	2.0000e-005	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0235	0.0235	0.0000	0.0000	0.0235
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**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0235**	**0.0235**	**0.0000**	**0.0000**	**0.0235**

3.3 Demolition 2 - 2020 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					7.6800e-003	0.0000	7.6800e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2785	2.7440	1.9201	3.1600e-003		0.1510	0.1510		0.1410	0.1410	0.0000	275.9864	275.9864	0.0709	0.0000	277.7600
Total	**0.2785**	**2.7440**	**1.9201**	**3.1600e-003**	**7.6800e-003**	**0.1510**	**0.1587**	**1.1600e-003**	**0.1410**	**0.1421**	**0.0000**	**275.9864**	**275.9864**	**0.0709**	**0.0000**	**277.7600**

3.3 Demolition 2 - 2020 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-005	1.0500e-003	1.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.2767	0.2767	1.0000e-005	0.0000	0.2770
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	**3.0000e-005**	**1.0500e-003**	**1.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.2767**	**0.2767**	**1.0000e-005**	**0.0000**	**0.2770**

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					7.6800e-003	0.0000	7.6800e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2785	2.7440	1.9201	3.1600e-003		0.1510	0.1510		0.1410	0.1410	0.0000	275.9861	275.9861	0.0709	0.0000	277.7596
Total	**0.2785**	**2.7440**	**1.9201**	**3.1600e-003**	**7.6800e-003**	**0.1510**	**0.1587**	**1.1600e-003**	**0.1410**	**0.1421**	**0.0000**	**275.9861**	**275.9861**	**0.0709**	**0.0000**	**277.7596**

3.3 Demolition 2 - 2020 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-005	1.0500e-003	1.9000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	3.0000e-005	0.0000	0.2767	0.2767	1.0000e-005	0.0000	0.2770
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	**3.0000e-005**	**1.0500e-003**	**1.9000e-004**	**0.0000**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**3.0000e-005**	**0.0000**	**0.2767**	**0.2767**	**1.0000e-005**	**0.0000**	**0.2770**

3.3 Demolition 2 - 2021 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					4.4200e-003	0.0000	4.4200e-003	6.7000e-004	0.0000	6.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1505	1.4871	1.0942	1.8200e-003		0.0786	0.0786		0.0734	0.0734	0.0000	159.0886	159.0886	0.0407	0.0000	160.1056
Total	**0.1505**	**1.4871**	**1.0942**	**1.8200e-003**	**4.4200e-003**	**0.0786**	**0.0830**	**6.7000e-004**	**0.0734**	**0.0740**	**0.0000**	**159.0886**	**159.0886**	**0.0407**	**0.0000**	**160.1056**

3.3 Demolition 2 - 2021 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	2.0000e-005	5.6000e-004	1.0000e-004	0.0000	8.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1575	0.1575	1.0000e-005	0.0000	0.1577
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	**2.0000e-005**	**5.6000e-004**	**1.0000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1575**	**0.1575**	**1.0000e-005**	**0.0000**	**0.1577**

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					4.4200e-003	0.0000	4.4200e-003	6.7000e-004	0.0000	6.7000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1505	1.4871	1.0942	1.8200e-003		0.0786	0.0786		0.0734	0.0734	0.0000	159.0884	159.0884	0.0407	0.0000	160.1054
Total	**0.1505**	**1.4871**	**1.0942**	**1.8200e-003**	**4.4200e-003**	**0.0786**	**0.0830**	**6.7000e-004**	**0.0734**	**0.0740**	**0.0000**	**159.0884**	**159.0884**	**0.0407**	**0.0000**	**160.1054**

3.3 Demolition 2 - 2021 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	2.0000e-005	5.6000e-004	1.0000e-004	0.0000	8.0000e-005	0.0000	9.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.1575	0.1575	1.0000e-005	0.0000	0.1577
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	**2.0000e-005**	**5.6000e-004**	**1.0000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**9.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.1575**	**0.1575**	**1.0000e-005**	**0.0000**	**0.1577**

3.4 Site Preparation - 2019 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					0.1042	0.0000	0.1042	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0824	0.8451	0.5338	1.0200e-003		0.0371	0.0371		0.0349	0.0349	0.0000	90.0892	90.0892	0.0250	0.0000	90.7135
Total	**0.0824**	**0.8451**	**0.5338**	**1.0200e-003**	**0.1042**	**0.0371**	**0.1413**	**0.0113**	**0.0349**	**0.0461**	**0.0000**	**90.0892**	**90.0892**	**0.0250**	**0.0000**	**90.7135**

3.4 Site Preparation - 2019 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	8.7400e-003	6.6700e-003	0.0674	1.9000e-004	0.0183	1.3000e-004	0.0184	4.8600e-003	1.2000e-004	4.9800e-003	0.0000	16.7542	16.7542	4.8000e-004	0.0000	16.7662
Total	**8.7400e-003**	**6.6700e-003**	**0.0674**	**1.9000e-004**	**0.0183**	**1.3000e-004**	**0.0184**	**4.8600e-003**	**1.2000e-004**	**4.9800e-003**	**0.0000**	**16.7542**	**16.7542**	**4.8000e-004**	**0.0000**	**16.7662**

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					0.1042	0.0000	0.1042	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0824	0.8451	0.5338	1.0200e-003		0.0371	0.0371		0.0349	0.0349	0.0000	90.0891	90.0891	0.0250	0.0000	90.7134
Total	**0.0824**	**0.8451**	**0.5338**	**1.0200e-003**	**0.1042**	**0.0371**	**0.1413**	**0.0113**	**0.0349**	**0.0461**	**0.0000**	**90.0891**	**90.0891**	**0.0250**	**0.0000**	**90.7134**

3.4 Site Preparation - 2019 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	8.7400e-003	6.6700e-003	0.0674	1.9000e-004	0.0183	1.3000e-004	0.0184	4.8600e-003	1.2000e-004	4.9800e-003	0.0000	16.7542	16.7542	4.8000e-004	0.0000	16.7662
Total	**8.7400e-003**	**6.6700e-003**	**0.0674**	**1.9000e-004**	**0.0183**	**1.3000e-004**	**0.0184**	**4.8600e-003**	**1.2000e-004**	**4.9800e-003**	**0.0000**	**16.7542**	**16.7542**	**4.8000e-004**	**0.0000**	**16.7662**

3.4 Site Preparation - 2020 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					0.1042	0.0000	0.1042	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0753	0.7714	0.5030	1.0100e-003		0.0329	0.0329		0.0309	0.0309	0.0000	87.1429	87.1429	0.0244	0.0000	87.7526
Total	**0.0753**	**0.7714**	**0.5030**	**1.0100e-003**	**0.1042**	**0.0329**	**0.1371**	**0.0113**	**0.0309**	**0.0421**	**0.0000**	**87.1429**	**87.1429**	**0.0244**	**0.0000**	**87.7526**

3.4 Site Preparation - 2020 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	7.8700e-003	5.8000e-003	0.0595	1.8000e-004	0.0180	1.2000e-004	0.0181	4.7900e-003	1.1000e-004	4.9000e-003	0.0000	15.9900	15.9900	4.1000e-004	0.0000	16.0003
Total	**7.8700e-003**	**5.8000e-003**	**0.0595**	**1.8000e-004**	**0.0180**	**1.2000e-004**	**0.0181**	**4.7900e-003**	**1.1000e-004**	**4.9000e-003**	**0.0000**	**15.9900**	**15.9900**	**4.1000e-004**	**0.0000**	**16.0003**

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					0.1042	0.0000	0.1042	0.0113	0.0000	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0753	0.7714	0.5030	1.0100e-003		0.0329	0.0329		0.0309	0.0309	0.0000	87.1428	87.1428	0.0244	0.0000	87.7525
Total	**0.0753**	**0.7714**	**0.5030**	**1.0100e-003**	**0.1042**	**0.0329**	**0.1371**	**0.0113**	**0.0309**	**0.0421**	**0.0000**	**87.1428**	**87.1428**	**0.0244**	**0.0000**	**87.7525**

3.4 Site Preparation - 2020 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	7.8700e-003	5.8000e-003	0.0595	1.8000e-004	0.0180	1.2000e-004	0.0181	4.7900e-003	1.1000e-004	4.9000e-003	0.0000	15.9900	15.9900	4.1000e-004	0.0000	16.0003
Total	**7.8700e-003**	**5.8000e-003**	**0.0595**	**1.8000e-004**	**0.0180**	**1.2000e-004**	**0.0181**	**4.7900e-003**	**1.1000e-004**	**4.9000e-003**	**0.0000**	**15.9900**	**15.9900**	**4.1000e-004**	**0.0000**	**16.0003**

3.5 Building Construction - 2019 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	0.0366	0.2912	0.2152	4.3000e-004		0.0150	0.0150		0.0143	0.0143	0.0000	36.6270	36.6270	8.9800e-003	0.0000	36.8515
Total	**0.0366**	**0.2912**	**0.2152**	**4.3000e-004**		**0.0150**	**0.0150**		**0.0143**	**0.0143**	**0.0000**	**36.6270**	**36.6270**	**8.9800e-003**	**0.0000**	**36.8515**

3.5 Building Construction - 2019 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	7.4000e-004	0.0211	4.6700e-003	5.0000e-005	1.0800e-003	1.3000e-004	1.2200e-003	3.1000e-004	1.3000e-004	4.4000e-004	0.0000	4.3952	4.3952	2.7000e-004	0.0000	4.4020
Worker	2.9100e-003	2.2200e-003	0.0225	6.0000e-005	6.0900e-003	4.0000e-005	6.1300e-003	1.6200e-003	4.0000e-005	1.6600e-003	0.0000	5.5848	5.5848	1.6000e-004	0.0000	5.5887
Total	**3.6500e-003**	**0.0233**	**0.0271**	**1.1000e-004**	**7.1700e-003**	**1.7000e-004**	**7.3500e-003**	**1.9300e-003**	**1.7000e-004**	**2.1000e-003**	**0.0000**	**9.9799**	**9.9799**	**4.3000e-004**	**0.0000**	**9.9907**

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	0.0366	0.2912	0.2152	4.3000e-004		0.0150	0.0150		0.0143	0.0143	0.0000	36.6269	36.6269	8.9800e-003	0.0000	36.8515
Total	**0.0366**	**0.2912**	**0.2152**	**4.3000e-004**		**0.0150**	**0.0150**		**0.0143**	**0.0143**	**0.0000**	**36.6269**	**36.6269**	**8.9800e-003**	**0.0000**	**36.8515**

3.5 Building Construction - 2019 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	7.4000e-004	0.0211	4.6700e-003	5.0000e-005	1.0800e-003	1.3000e-004	1.2200e-003	3.1000e-004	1.3000e-004	4.4000e-004	0.0000	4.3952	4.3952	2.7000e-004	0.0000	4.4020
Worker	2.9100e-003	2.2200e-003	0.0225	6.0000e-005	6.0900e-003	4.0000e-005	6.1300e-003	1.6200e-003	4.0000e-005	1.6600e-003	0.0000	5.5848	5.5848	1.6000e-004	0.0000	5.5887
Total	**3.6500e-003**	**0.0233**	**0.0271**	**1.1000e-004**	**7.1700e-003**	**1.7000e-004**	**7.3500e-003**	**1.9300e-003**	**1.7000e-004**	**2.1000e-003**	**0.0000**	**9.9799**	**9.9799**	**4.3000e-004**	**0.0000**	**9.9907**

3.5 Building Construction - 2020 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	0.3943	3.1603	2.4911	5.1000e-003		0.1563	0.1563		0.1487	0.1487	0.0000	429.9706	429.9706	0.1050	0.0000	432.5949
Total	**0.3943**	**3.1603**	**2.4911**	**5.1000e-003**		**0.1563**	**0.1563**		**0.1487**	**0.1487**	**0.0000**	**429.9706**	**429.9706**	**0.1050**	**0.0000**	**432.5949**

3.5 Building Construction - 2020 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	7.3800e-003	0.2310	0.0498	5.4000e-004	0.0129	1.0700e-003	0.0140	3.7300e-003	1.0200e-003	4.7600e-003	0.0000	51.9763	51.9763	2.9900e-003	0.0000	52.0510
Worker	0.0317	0.0234	0.2399	7.1000e-004	0.0725	5.0000e-004	0.0730	0.0193	4.6000e-004	0.0198	0.0000	64.4518	64.4518	1.6600e-003	0.0000	64.4934
Total	**0.0391**	**0.2544**	**0.2897**	**1.2500e-003**	**0.0854**	**1.5700e-003**	**0.0870**	**0.0230**	**1.4800e-003**	**0.0245**	**0.0000**	**116.4281**	**116.4281**	**4.6500e-003**	**0.0000**	**116.5445**

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	0.3943	3.1603	2.4911	5.1000e-003		0.1563	0.1563		0.1487	0.1487	0.0000	429.9701	429.9701	0.1050	0.0000	432.5944
Total	**0.3943**	**3.1603**	**2.4911**	**5.1000e-003**		**0.1563**	**0.1563**		**0.1487**	**0.1487**	**0.0000**	**429.9701**	**429.9701**	**0.1050**	**0.0000**	**432.5944**

3.5 Building Construction - 2020 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	7.3800e-003	0.2310	0.0498	5.4000e-004	0.0129	1.0700e-003	0.0140	3.7300e-003	1.0200e-003	4.7600e-003	0.0000	51.9763	51.9763	2.9900e-003	0.0000	52.0510
Worker	0.0317	0.0234	0.2399	7.1000e-004	0.0725	5.0000e-004	0.0730	0.0193	4.6000e-004	0.0198	0.0000	64.4518	64.4518	1.6600e-003	0.0000	64.4934
Total	**0.0391**	**0.2544**	**0.2897**	**1.2500e-003**	**0.0854**	**1.5700e-003**	**0.0870**	**0.0230**	**1.4800e-003**	**0.0245**	**0.0000**	**116.4281**	**116.4281**	**4.6500e-003**	**0.0000**	**116.5445**

3.5 Building Construction - 2021 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	0.2046	1.6353	1.3949	2.9400e-003		0.0774	0.0774		0.0736	0.0736	0.0000	247.8040	247.8040	0.0595	0.0000	249.2921
Total	**0.2046**	**1.6353**	**1.3949**	**2.9400e-003**		**0.0774**	**0.0774**		**0.0736**	**0.0736**	**0.0000**	**247.8040**	**247.8040**	**0.0595**	**0.0000**	**249.2921**

3.5 Building Construction - 2021 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	3.5100e-003	0.1211	0.0257	3.1000e-004	7.4400e-003	2.5000e-004	7.6900e-003	2.1500e-003	2.4000e-004	2.3900e-003	0.0000	29.6682	29.6682	1.6300e-003	0.0000	29.7089
Worker	0.0169	0.0120	0.1260	4.0000e-004	0.0418	2.8000e-004	0.0421	0.0111	2.6000e-004	0.0114	0.0000	35.8573	35.8573	8.6000e-004	0.0000	35.8787
Total	**0.0204**	**0.1332**	**0.1516**	**7.1000e-004**	**0.0492**	**5.3000e-004**	**0.0498**	**0.0133**	**5.0000e-004**	**0.0138**	**0.0000**	**65.5255**	**65.5255**	**2.4900e-003**	**0.0000**	**65.5876**

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	0.2046	1.6353	1.3949	2.9400e-003		0.0774	0.0774		0.0736	0.0736	0.0000	247.8037	247.8037	0.0595	0.0000	249.2918
Total	**0.2046**	**1.6353**	**1.3949**	**2.9400e-003**		**0.0774**	**0.0774**		**0.0736**	**0.0736**	**0.0000**	**247.8037**	**247.8037**	**0.0595**	**0.0000**	**249.2918**

3.5 Building Construction - 2021 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	3.5100e-003	0.1211	0.0257	3.1000e-004	7.4400e-003	2.5000e-004	7.6900e-003	2.1500e-003	2.4000e-004	2.3900e-003	0.0000	29.6682	29.6682	1.6300e-003	0.0000	29.7089
Worker	0.0169	0.0120	0.1260	4.0000e-004	0.0418	2.8000e-004	0.0421	0.0111	2.6000e-004	0.0114	0.0000	35.8573	35.8573	8.6000e-004	0.0000	35.8787
Total	**0.0204**	**0.1332**	**0.1516**	**7.1000e-004**	**0.0492**	**5.3000e-004**	**0.0498**	**0.0133**	**5.0000e-004**	**0.0138**	**0.0000**	**65.5255**	**65.5255**	**2.4900e-003**	**0.0000**	**65.5876**

3.6 Finishing/Testing - 2021 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	0.2649					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1000	0.1191	1.9000e-004		6.1600e-003	6.1600e-003		6.1600e-003	6.1600e-003	0.0000	16.7238	16.7238	1.1500e-003	0.0000	16.7525
Total	**0.2792**	**0.1000**	**0.1191**	**1.9000e-004**		**6.1600e-003**	**6.1600e-003**		**6.1600e-003**	**6.1600e-003**	**0.0000**	**16.7238**	**16.7238**	**1.1500e-003**	**0.0000**	**16.7525**

3.6 Finishing/Testing - 2021 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	0.0146	0.0104	0.1093	3.4000e-004	0.0363	2.4000e-004	0.0365	9.6400e-003	2.2000e-004	9.8700e-003	0.0000	31.1080	31.1080	7.4000e-004	0.0000	31.1266
Total	**0.0146**	**0.0104**	**0.1093**	**3.4000e-004**	**0.0363**	**2.4000e-004**	**0.0365**	**9.6400e-003**	**2.2000e-004**	**9.8700e-003**	**0.0000**	**31.1080**	**31.1080**	**7.4000e-004**	**0.0000**	**31.1266**

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	0.2649					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0143	0.1000	0.1191	1.9000e-004		6.1600e-003	6.1600e-003		6.1600e-003	6.1600e-003	0.0000	16.7238	16.7238	1.1500e-003	0.0000	16.7525
Total	**0.2792**	**0.1000**	**0.1191**	**1.9000e-004**		**6.1600e-003**	**6.1600e-003**		**6.1600e-003**	**6.1600e-003**	**0.0000**	**16.7238**	**16.7238**	**1.1500e-003**	**0.0000**	**16.7525**

3.6 Finishing/Testing - 2021 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	0.0146	0.0104	0.1093	3.4000e-004	0.0363	2.4000e-004	0.0365	9.6400e-003	2.2000e-004	9.8700e-003	0.0000	31.1080	31.1080	7.4000e-004	0.0000	31.1266
Total	**0.0146**	**0.0104**	**0.1093**	**3.4000e-004**	**0.0363**	**2.4000e-004**	**0.0365**	**9.6400e-003**	**2.2000e-004**	**9.8700e-003**	**0.0000**	**31.1080**	**31.1080**	**7.4000e-004**	**0.0000**	**31.1266**

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	0.0638	0.3973	0.6048	2.0000e-003	0.1440	1.9900e-003	0.1460	0.0387	1.8700e-003	0.0406	0.0000	184.7368	184.7368	9.5200e-003	0.0000	184.9748
Unmitigated	0.0638	0.3973	0.6048	2.0000e-003	0.1440	1.9900e-003	0.1460	0.0387	1.8700e-003	0.0406	0.0000	184.7368	184.7368	9.5200e-003	0.0000	184.9748

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Strip Mall	250.00	250.00	250.00	385,008	385,008
User Defined Recreational	0.00	0.00	0.00		
Total	250.00	250.00	250.00	385,008	385,008

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
User Defined Recreational	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
City Park	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
General Office Building	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
Strip Mall	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739
User Defined Recreational	0.559358	0.040058	0.190549	0.109335	0.016678	0.005213	0.023344	0.044042	0.002152	0.002669	0.005545	0.000316	0.000739

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	180.8931	180.8931	8.1800e-003	1.6900e-003	181.6019
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	180.8931	180.8931	8.1800e-003	1.6900e-003	181.6019
NaturalGas Mitigated	4.7800e-003	0.0435	0.0365	2.6000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	47.3492	47.3492	9.1000e-004	8.7000e-004	47.6306
NaturalGas Unmitigated	4.7800e-003	0.0435	0.0365	2.6000e-004		3.3100e-003	3.3100e-003		3.3100e-003	3.3100e-003	0.0000	47.3492	47.3492	9.1000e-004	8.7000e-004	47.6306

5.2 Energy by Land Use - Natural Gas 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					
City Park	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
General Office Building	864190	4.6600e-003	0.0424	0.0356	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	46.1165	46.1165	8.8000e-004	8.5000e-004	46.3905
Strip Mall	23100	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2327	1.2327	2.0000e-005	2.0000e-005	1.2400
User Defined Recreational	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		**4.7800e-003**	**0.0435**	**0.0365**	**2.6000e-004**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**47.3492**	**47.3492**	**9.0000e-004**	**8.7000e-004**	**47.6306**

5.2 Energy by Land Use - Natural Gas 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					
City Park	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
General Office Building	864190	4.6600e-003	0.0424	0.0356	2.5000e-004		3.2200e-003	3.2200e-003		3.2200e-003	3.2200e-003	0.0000	46.1165	46.1165	8.8000e-004	8.5000e-004	46.3905
Strip Mall	23100	1.2000e-004	1.1300e-003	9.5000e-004	1.0000e-005		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	1.2327	1.2327	2.0000e-005	2.0000e-005	1.2400
User Defined Recreational	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		**4.7800e-003**	**0.0435**	**0.0365**	**2.6000e-004**		**3.3100e-003**	**3.3100e-003**		**3.3100e-003**	**3.3100e-003**	**0.0000**	**47.3492**	**47.3492**	**9.0000e-004**	**8.7000e-004**	**47.6306**

5.3 Energy by Land Use - Electricity Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	568265	165.3148	7.4800e-003	1.5500e-003	165.9626
Strip Mall	53550	15.5783	7.0000e-004	1.5000e-004	15.6394
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**180.8931**	**8.1800e-003**	**1.7000e-003**	**181.6019**

5.3 Energy by Land Use - Electricity Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
General Office Building	568265	165.3148	7.4800e-003	1.5500e-003	165.9626
Strip Mall	53550	15.5783	7.0000e-004	1.5000e-004	15.6394
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**180.8931**	**8.1800e-003**	**1.7000e-003**	**181.6019**

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	tons/yr										MT/yr					
Mitigated	0.2253	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.2000e-004	9.2000e-004	0.0000	0.0000	9.8000e-004
Unmitigated	0.2253	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.2000e-004	9.2000e-004	0.0000	0.0000	9.8000e-004

6.2 Area by SubCategory <u>Unmitigated</u>

	ROG	NOx	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	0.0265					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.2000e-004	9.2000e-004	0.0000	0.0000	9.8000e-004
Total	**0.2253**	**0.0000**	**4.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.2000e-004**	**9.2000e-004**	**0.0000**	**0.0000**	**9.8000e-004**

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	0.0265					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.1988					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	4.0000e-005	0.0000	4.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	9.2000e-004	9.2000e-004	0.0000	0.0000	9.8000e-004
Total	**0.2253**	**0.0000**	**4.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**9.2000e-004**	**9.2000e-004**	**0.0000**	**0.0000**	**9.8000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	21.9426	0.2707	6.5500e-003	30.6614
Unmitigated	21.9426	0.2707	6.5500e-003	30.6614

7.2 Water by Land Use Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.09616	1.1161	5.0000e-005	1.0000e-005	1.1205
General Office Building	7.90915 / 4.84754	19.8949	0.2585	6.2500e-003	28.2194
Strip Mall	0.370363 / 0.226996	0.9316	0.0121	2.9000e-004	1.3214
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**21.9426**	**0.2707**	**6.5500e-003**	**30.6614**

7.2 Water by Land Use Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 1.09616	1.1161	5.0000e-005	1.0000e-005	1.1205
General Office Building	7.90915 / 4.84754	19.8949	0.2585	6.2500e-003	28.2194
Strip Mall	0.370363 / 0.226996	0.9316	0.0121	2.9000e-004	1.3214
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**21.9426**	**0.2707**	**6.5500e-003**	**30.6614**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	9.4837	0.5605	0.0000	23.4956
Unmitigated	9.4837	0.5605	0.0000	23.4956

8.2 Waste by Land Use Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
General Office Building	41.39	8.4018	0.4965	0.0000	20.8151
Strip Mall	5.25	1.0657	0.0630	0.0000	2.6402
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**9.4837**	**0.5605**	**0.0000**	**23.4956**

8.2 Waste by Land Use **Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.08	0.0162	9.6000e-004	0.0000	0.0402
General Office Building	41.39	8.4018	0.4965	0.0000	20.8151
Strip Mall	5.25	1.0657	0.0630	0.0000	2.6402
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**9.4837**	**0.5605**	**0.0000**	**23.4956**

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
Emergency Generator	1	0	50	600	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources Unmitigated/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
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.0246	0.0688	0.0628	1.2000e-004		3.6200e-003	3.6200e-003		3.6200e-003	3.6200e-003	0.0000	11.4239	11.4239	1.6000e-003	0.0000	11.4640
Total	**0.0246**	**0.0688**	**0.0628**	**1.2000e-004**		**3.6200e-003**	**3.6200e-003**		**3.6200e-003**	**3.6200e-003**	**0.0000**	**11.4239**	**11.4239**	**1.6000e-003**	**0.0000**	**11.4640**

Appendix B

U.S. Fish and Wildlife Service Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: September 06, 2017
Consultation Code: 08ESMF00-2016-SLI-0745
Event Code: 08ESMF00-2017-E-08642
Project Name: Lake Merritt BART OCC Project

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to

utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2016-SLI-0745

Event Code: 08ESMF00-2017-E-08642

Project Name: Lake Merritt BART OCC Project

Project Type: TRANSPORTATION

Project Description: BART project.

Project Location:

Approximate location of the project can be viewed in Google Maps:
https://www.google.com/maps/place/37.79752193509046N122.26579728960593W

Counties: Alameda, CA

Endangered Species Act Species

There is a total of 13 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse *Reithrodontomys raviventris* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Clapper Rail *Rallus longirostris obsoletus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern *Sterna antillarum browni* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/8104	Endangered
Western Snowy Plover *Charadrius alexandrinus nivosus* Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) *Masticophis lateralis euryxanthus* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5524	Threatened
Green Sea Turtle *Chelonia mydas* Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened
Steelhead *Oncorhynchus (=Salmo) mykiss* Population: Northern California DPS There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1007	Threatened
Tidewater Goby *Eucyclogobius newberryi* There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
San Bruno Elfin Butterfly *Callophrys mossii bayensis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3394

Flowering Plants

NAME	STATUS
California Seablite *Suaeda californica*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6310

Santa Cruz Tarplant *Holocarpha macradenia*	Threatened

There is a **final** critical habitat designated for this species. Your location is outside the designated critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6832

Critical habitats

There are no critical habitats within your project area under this office's jurisdiction.

Appendix C

Active Hazardous Sites within ASTM-Recommended Search Distances from the Project Site

Active Hazardous Sites within ASTM-Recommended Search Distances from the Project Site

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
N/A	245 2nd Street	2,100	GeoTracker: T10000010636	Cleanup Program Site	Open – Active as of 6/22/2017 Contaminants of concern include waste oil, motor oil, hydraulic fluids, and lubricating fluids.	14 (lower)
Apartment Building	1455 1st Street	2,700	GeoTracker: T06019752536	Cleanup Program Site	Open – Site Assessment as of 11/22/1994 A 1,500 gallon heating oil underground storage tank (UST) was removed from the site, and floating product was observed in the excavation pit. Subsequent to several notices of violations and a pre-enforcement hearing, a work plan for three soil bores was submitted and approved. No additional work appears to have occurred at the site.	16 (lower)
Jack London Square Parcel F2	40 Jack London Square	2,500	GeoTracker: T10000006743	Cleanup Program Site	Open – Remediation as of 6/19/2015 The results of several subsurface investigations conducted at this parcel since 1994 indicate that soil and groundwater beneath the parcel are affected with total petroleum hydrocarbons (TPH), and heavy metals (arsenic, lead, mercury, and thallium) at concentrations slightly above residential environmental screening levels (ESLs). Soil gas is affected with benzene at concentrations slightly above residential ESLs.	12 (lower)
Macy's Movers (toxic)	200 Victory Court	1,900	GeoTracker: T06019763876	Cleanup Program Site	Open – Site Assessment as of 8/2/2012 The area was reported to have been occupied by a lumber and milling company in the early 1900s to about 1929. The site was used in the 1940s for possibly military related purposes, becoming vacant by the late 1950s through the early 1970s. Development of the current uses of the site occurred in the late 1970s. A 1,000-gal UST was removed in 1992. Much of the contamination documented during UST investigation was not attributable to the UST but to a more regional industrial source, possibly a lumber mill with possible wood treatment. The LUST case was closed and this Cleanup Program Site case was opened.	10 (lower)

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
Seabreeze Yacht Center	280 6th Street	1,000	GeoTracker: SL18328748 EnviroStor: 70000109	Cleanup Program Site	Open – Remediation as of 3/1/2003 Quarterly groundwater monitoring of the wells on this site was conducted from 1995 to 1998. Beginning in 1998, the wells were sampled on an annual basis and were analyzed for total petroleum hydrocarbons as diesel (TPHd) with silica gel cleanup. From 2000 to 2002, the groundwater samples also were analyzed for methyl tert-butyl ether (MTBE). MTBE was not detected in any of the wells sampled. In January 2003, the Port of Oakland (Port) requested approval from Alameda County Environmental Health (ACEH) to no longer require the analysis of groundwater samples for MTBE. Alameda County Environmental Health Department verbally agreed to remove MTBE from the required analyte testing list.	24 (lower)
The Colony/The Olson Company	311 2nd Street	2,400	GeoTracker: SL0600180448	Cleanup Program Site	Open – Site Assessment as of 5/3/2005 A 1,000-gallon fuel UST was removed in October 2007. Stained and odoriferous soil was encountered at the time of the removal. The tank pit was over-excavated, resulting in groundwater contamination. In 2009, the RWQCB determined to reduce quarterly groundwater monitoring requirements to semi-annually or less frequent monitoring at all locations on-site unless site-specific needs warranted otherwise. Contaminants of concern include copper, diesel, gasoline, lead, and naphthalene.	13 (lower)
Vukasin/ Southern Pacific	250 Fallon Street	2,300	GeoTracker: T10000007955	Cleanup Program Site	Open – Inactive as of 11/10/2015 The most recent sampling of groundwater below the site occurred in 1991. Contaminants of concern include benzene, ethylbenzene, naphthalene, and other solvent or non-petroleum hydrocarbons.	8 (lower)

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
301 12th Street Future Development	301 12th Street	2,700	EnviroStor: 60002362	Voluntary Cleanup	Active as of 5/24/2016 The location formerly operated as a cold storage facility and then an automobile dealership and repair center. As part of the due diligence process for the property purchase, the buyer collected soil, soil gas and groundwater samples from beneath the site. Sample results showed elevated concentrations of trichloroethylene (TCE), along with other chlorinated solvents and petroleum hydrocarbons, and samples of indoor air were subsequently collected from the high school and middle school, located on the same block. Sampling results provided to DTSC in May 2016 identified indoor air TCE concentrations in various rooms in the middle school that ranged from 10 to 200 micrograms per cubic meter (µg/m3), exceeding EPA Region 9's Accelerated Response Action Level (ARAL) for residential direct exposure (2 µg/m3), and DTSC directed the school to relocate the middle school students. On March 30, 2017, DTSC and the seller entered into a Voluntary Cleanup Agreement, to address the protection of health of the students and staff of the school. On July 20, 2017, DTSC approved a Zero-Valent Iron Injection Pilot Test Work Plan that was submitted by PES Environmental on behalf of the buyer. The injection of zero-valent iron into the saturated zone at the site was proposed in the Response Plan to address contaminated groundwater at the site. Implementation of the pilot test was scheduled for the week of July 24, 2017. No further updates have been published on the Envirostor website.	43 (higher)
Lakeside Non-Ferrous Metals Corp	412 Madison Street	1,000	EnviroStor: 01350115	Evaluation	Inactive – Needs Evaluation as of 6/30/2003 The site is located in the West Bay section, in an older part of Oakland. Lakeside began its recycling business approximately 60 years ago. The company buys and sells various types of recyclable metal materials, including aluminum cans, copper wire, radiators, lawn chairs, and other assorted metals. The site has received several violation notices from DTSC and Alameda County Environmental Health Department.	17 (lower)

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
N/A	1110 Jackson Street	820	GeoTracker: T10000009472	LUST Cleanup Site	Open – Active as of 10/11/2016 A site investigation—consisting of four soil borings, five temporary soil gas wells, and five sub-slab soil gas sample points—was performed in November 2016. A sixth sub-slab soil gas sample point was added with the discovery of the fourth underground storage tank (UST). Based on the findings of the investigation, vapor intrusion risk to building occupants was not apparent. However, petroleum hydrocarbon contamination is present in soil and groundwater beneath the site, and grab groundwater concentrations exceed environmental screening levels. Plume delineation is proposed.	36 (lower)
Chan's Service Station/Shell	726 Harrison Street	1,050	GeoTracker: T0600102122	LUST Cleanup Site	Open – Remediation as of 7/14/2014 Five wells on the site are monitored semi-annually. Contaminants of concern include gasoline. Based on the results of the pilot test, remediation of 706 and 726 Harrison Street was planned to begin in 2014, using air sparging and soil vapor extraction. A Remedial Action Plan describing the planned remediation was approved in July 2014, following a public comment period on the plan.	36 (lower)
Mobil #10-MHG	160 14th Street	1,580	GeoTracker: T06019782296	LUST Cleanup Site	Open – Site Assessment as of 7/23/2001 The three USTs were removed from operation in May 1986. Four soil samples collected at the time of removal were below detection limits. However, no groundwater samples were collected at the time. Subsequent sampling, beginning in 2001, detected elevated petroleum hydrocarbons in soil and groundwater. In addition, PCE, TCE, cis-1,2-DCE, and vinyl chloride were detected in water samples collected at the site. The site was converted to a condominium building with parking and commercial use on the lower floor. Soil vapor sampling and the downgradient extent of groundwater contamination sampling was requested.	34 (lower)
Oakland Auto Parts	706 Harrison Street	1,200	GeoTracker: T0600100985	LUST Cleanup Site	Open – Remediation as of 7/14/2014 Seven wells on the site are monitored semi-annually. Contaminants of concern include benzene and gasoline.	33 (lower)

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
Oakland Unified School District-Harper Building	314 10th Street	1,400	GeoTracker: T06019710391	LUST Cleanup Site	Open – Site Assessment as of 10/28/2010 Contaminants of concern include diesel, gasoline, heating/fuel oil, fuel oxygenates, insecticides, pesticides, fumigants, herbicides, polychlorinated biphenyls (PCBs) polynuclear aromatic hydrocarbons, and waste/motor/hydraulic lubricants.	31 (lower)
Salvation Army	601 Webster Street	1,800	GeoTracker: T10000003428	LUST Cleanup Site	Open – Site Assessment as of 12/9/2011 The most recent monitoring event, conducted on February 13, 2017, included groundwater from on-site wells and soil vapor samples collected from beneath the basement floor of the building, which contained both leaking underground fuel tank (LUFT)-related and chlorinated volatile organic compounds (CVOCs). However, all detected concentrations were below their respective environmental screening levels.	30 (lower)
Sparks Property	1424 Harrison Street	1,900	GeoTracker: T10000000619	LUST Cleanup Site	Open – Site Assessment as of 7/7/1995 Two underground fuel tanks were closed in place beneath the sidewalk at 1424 Harrison Street in 1982. The tanks were filled with cement slurry. Site investigation activities (conducted for a release from a UST system at the adjacent property at 1432 Harrison Street) detected petroleum hydrocarbons in soil adjacent to and beneath the USTs closed in place at 1424 Harrison Street. Further investigation of the site was requested.	38 (higher)

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
Unocal #0752	800 Harrison Street	1,000	GeoTracker: T0600101486	LUST Cleanup Site	Open – Remediation as of 7/15/2014 Eight wells on the site are monitored semi-annually. Three UST were removed in 1990, and substantially elevated concentrations of petroleum hydrocarbons were detected in soil during the UST removal. A program of groundwater monitoring was implemented in 1991, and dissolved phase contamination is migrating off-site and affecting the downgradient sites located at 726 and 706 Harrison Street. Soil and groundwater sampling, completed in 2007, detected elevated levels of MTBE in the deeper water bearing zone at 48 feet below ground surface. This site is part of a commingled plume, and remedial action is proposed to remove residual mass beneath the sites. A pilot test of multi-phase extraction and air sparging/soil vapor extraction was conducted in 2013. Based on the results of the pilot test, remediation of 706 and 726 Harrison Street was planned to begin in 2014, using air sparging and soil vapor extraction. A Remedial Action Plan describing the planned remediation was approved in July 2014, following a public comment period on the plan.	37 (same)
E-D Coat Inc.	715 4th Street	4,600	EnviroStor: 60002501	State Response	Active as of 4/21/2017 In May 2017, the liquid contents of three tanks (F1, E31 and E33) were pumped out and disposed off-site. The tanks posed an immediate risk of failure. In addition, certain other tanks and sumps were covered to provide drainage control.	15 (lower)
A. Bercovich Company	127 2nd Street	1,900	EnviroStor: 1590002	State Response or NPL	Certified Operation and Maintenance – Land Use Restrictions Only as of 11/9/2010 The A. Bercovich Company operated a junk yard, junk storage, and scrap metal business at the site from 1926 to 1963. Sanborn Fire Insurance Maps indicate that a junk business continued to operate at the site until at least 1969. Contaminants of concern include metals, petroleum products, and polychlorinated biphenyls (PCBs).	12 (lower)

Site Name	Address	Distance from Project (ft)	Environmental Database Listings		Status	Elevation (ft) in Relation to the Proposed Project
			ID	Type		
La Escuelita Education Center	314 East 10th Street	2,400	EnviroStor: 60001108	School	Certified Operation and Maintenance as of 6/15/2015 On July 18, 2011, DTSC received the Final Removal Action Completion Report (RACR). The RACR indicated that approximately 7,800 cubic yards (11,700 tons) of soil affected by lead, arsenic, PAHs, and OCPs were removed from the site. An area of TPH contaminated soil was encountered during the removal action, resulting in the removal of an additional 400 cubic yards (600 tons) of soil. Confirmation sampling was performed. Between July 2010 and May 2011, approximately 7,425 cubic yards of waste soil were classified as non-hazardous waste and were transported to the Potrero Landfill in Suisun, California in 532 end-dump trucks; and approximately 445 cubic yards of waste soil were classified as non-RCRA hazardous waste and were transported to the SFBR Railyard by 34 trucks, and then were transported by train to the ECDC Landfill in East Carbon, Utah for disposal. Confirmation soil sample results verified that removal action objectives and cleanup goals were achieved for the Phase I Northwestern Area of the site, and it no longer poses an unacceptable risk to human health or the environment. DTSC has approved the RACR as final and has certified that the removal action was completed, and no further removal actions are required for the Phase I Northwestern Area of the site. As of March 3, 2016, reporting/monitoring was to be conducted on a semi-annual or quarterly basis because of soil vapor intrusion in the Phase II area.	31 (lower)
Sources: SWRCB 2017; DTSC 2017						

Appendix D

Project-Generated Construction Source Noise Prediction Model

Project-Generated Construction Source Noise Prediction Model

AECOM

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	813	60
	50	84
ST-01	110	77
ST-02	130	76
Metro Center	80	80

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Welder / Torch	73	0.05
Jackhammer	85	0.2
Concrete Saw	90	0.2

Ground Type	Hard
Ground Factor	0.00

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Welder / Torch	60.0
Jackhammer	78.0
Concrete Saw	83.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
84.2

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, J.

[2] Based on the following from the Federal Transit Noise and Vibrat

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

AECOM

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	1,197	60
	50	88
ST-01	110	81
ST-02	130	79
Metro Center	80	84

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Flat Bed Truck	84	0.4
Crane	85	0.16
Concrete Mixer Truck	85	0.4
Concrete Pump Truck	82	0.2
Welder / Torch	73	0.05
Jackhammer	85	0.2
Concrete Saw	90	0.2

Ground Type	Hard
Ground Factor	0.00

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Flat Bed Truck	80.0
Crane	77.0
Concrete Mixer Truck	81.0
Concrete Pump Truck	75.0
Welder / Torch	60.0
Jackhammer	78.0
Concrete Saw	83.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.6

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, J.

[2] Based on the following from the Federal Transit Noise and Vibrat

$L_{eq}(equip) = E.L.+10*\log(U.F.) - 20*\log(D/50) - 10*G*\log(D/50)$

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold

Project-Generated Construction Source Noise Prediction Model

AECOM

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	1,122	60
	50	87
ST-01	110	80
ST-02	130	79
Metro Center	80	83

Assumptions:	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Paver	85	0.5
Pickup Truck	55	0.4
Pneumatic Tools	85	0.5
Roller	85	0.2
Vacuum Street Sweeper	80	0.1
Crane	85	0.16
Man Lift	85	0.2

Ground Type	Hard
Ground Factor	0.00

Predicted Noise Level [2]	L_{eq} dBA at 50 feet[2]
Paver	82.0
Pickup Truck	51.0
Pneumatic Tools	82.0
Roller	78.0
Vacuum Street Sweeper	70.0
Crane	77.0
Man Lift	78.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
87.0

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, J

[2] Based on the following from the Federal Transit Noise and Vibrat

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold