INITIAL STUDY/DRAFT MITIGATED NEGATIVE DECLARATION

Downtown Berkeley BART Plaza and Transit Improvement Project

PREPARED FOR:

San Francisco Bay Area Rapid Transit (BART) District
P.O. Box 12688 (Mail Stop LKS - 22)
Oakland, CA 94604-2688
Contact: Janie Layton
(510) 874-7423

PREPARED BY:

ICF International
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(415) 677-7162

May 2015

ICF International. 2015. Initial Study/Draft Mitigated Negative Declaration, Downtown Berkeley BART Plaza and Transit Improvement Project. May. (ICF 00036.14.) San Francisco, CA. Prepared for San Francisco Bay Area Rapid Transit (BART) District, Oakland, CA.

Initial Study/Draft Mitigated Negative Declaration

Date of Publication of Initial Study/Draft Mitigated Negative Declaration: May 20, 2015

Project Title: Downtown Berkeley BART Plaza and Transit Improvement Project

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

Contact Person and Phone Number: Janie Layton (510) 874-7423

Project Location: Berkeley, Alameda County, California

Description of Proposed Project: The San Francisco Bay Area Rapid Transit (BART) District is proposing to replace certain features and improve access to and from the existing Downtown Berkeley station for the Downtown Berkeley BART Plaza and Transit Improvement Project (Proposed Project). The purpose of the Proposed Project is to enhance multi-modal transit access and to expand BART and Alameda–Contra Costa Transit District (AC Transit) ridership by increasing and improving accessibility for pedestrian and bicyclists to and from the existing Downtown Berkeley BART station and to improve public safety and reorganize the public space around the Downtown Berkeley BART station to better accommodate transit users.

The Proposed Project would include replacement of the Downtown Berkeley BART station rotunda with a new main entrance structure, and design and construction of various improvements for the five secondary BART entrances. In addition, the Proposed Project would include replacing some sidewalk surface materials, improving pedestrian-oriented lighting and landscaping using low-impact stormwater treatments, providing covered waiting areas for local and Transbay AC Transit bus stops, and installing wayfinding signage. The Proposed Project would improve bicycle parking and disability access and integrate public art.

The Proposed Project would reduce at-grade street crossings by increasing use of secondary BART entrances with wayfinding and entrance improvements, and it would improve boarding areas and passenger loading operations at bus stops. Renovating the plaza, sidewalks and curb ramps and removing physical obstacles between BART and bus stops would improve pedestrian safety. New pedestrian-scale lighting, real-time BART arrival/departure signs, and secured BART stairwells would further improve safety. The Proposed Project would improve multi-modal access for an influx of new residents and employees anticipated in the coming years, improving inter-modal interconnectivity, improving pedestrian safety, and enhancing transit rider safety and comfort.

This Proposed Project Would Not Have a Significant Effect on the Environment: This finding is based on the criteria listed in the State of California Environmental Quality Act (CEQA) Guidelines Sections 15064 (Determining the Significance of the Environmental Effects Caused by a Project), 15065 (Mandatory Findings of Significance), and 15070 (Decision to Prepare a Negative or Mitigated Negative Declaration), and the reasons documented in the Initial Study for the Proposed Project. Mitigation measures are included in the Proposed Project to avoid potentially significant effects. These mitigation measures are identified in the Initial Study and are summarized below.

Copies of the Initial Study/Mitigated Negative Declaration: Copies of the Initial Study/Mitigated Negative Declaration can be reviewed on the BART website at: http://www.bart.gov/about/projects/dbp.

Copies are available for review at the following locations:

- BART offices at 300 Lakeside Drive, 22nd Floor, Oakland
- City of Berkeley Central Library at 2090 Kittredge Street, Berkeley
- City of Berkeley West Branch at 1125 University Avenue, Berkeley

Questions regarding where to review the Initial Study/Mitigated Negative Declaration should be directed to the project information telephone line at the following number: (510) 287-4824.

Public Meeting: BART will hold a public meeting to receive public comments on the Initial Study/Mitigated Negative Declaration. Oral and written comments will be accepted at the public meeting. A court reporter/transcriber will be available to accept oral comments. Written comments may be made on comment cards that will be provided at the public meeting. The meeting will be held at the following time and location:

City of Berkeley Central Library
Community Conference Room, 3rd Floor
2090 Kittredge Street
Berkeley, CA 94704
Monday, June 1, 2015, 4:30 PM – 6:30 PM
This public meeting is not sponsored by the Berkeley Public Library.

Persons who plan to attend the public meeting and have special accommodation needs are encouraged to call (510) 287-4824 to request assistance. If you need language assistance services, please call (510) 464-6752 at least 72 hours prior to the public meeting.

Comments on the Draft Initial Study/Mitigated Negative Declaration: A 30-day public and agency review period pursuant to Section 15073 of the State CEQA Guidelines is scheduled from May 20, 2015, to June 18, 2015. Comments may be made on comment cards provided at the public meeting or submitted in writing or by email. Comments submitted by email comments should be sent to: jlayton@bart.gov. Written comments may be mailed to the following address:

San Francisco Bay Area Rapid Transit District
Downtown Berkeley BART Plaza and Transit Improvement Project
Attention: Janie Layton, Environmental Administrator
P.O. Box 12688 (Mail Stop LKS - 22)
Oakland, CA 94604-2688

All questions regarding the Downtown Berkeley BART Plaza and Transit Improvement Project, the Initial Study/Mitigated Negative Declaration, or how to comment on this document can be directed to the project information telephone line at (510) 287-4824. **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.

Mitigation Measures: The following mitigation measures are incorporated into the Downtown Berkeley BART Plaza and Transit Improvement Project:

Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures

BART will require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD. Emission reduction measures will include, at a minimum, the following measures.

- 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 off site 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.
- All construction equipment will be maintained and property tuned in accordance with manufacture's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure).
- Publicly visible signs will be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. BAAQMD's phone number will also be visible to ensure compliance with applicable regulations.

Mitigation Measure AQ-2: Comply with BAAQMD Regulation 11, Rule 2, *Asbestos, Demolition, Renovation, and Manufacturing*.

BART will comply with BAAQMD Regulation 11, Rule 2, *Asbestos, Demolition, Renovation, and Manufacturing.* The purpose of this of the rule is to control emissions of asbestos to the atmosphere during demolition and building renovation.

Mitigation Measure BIO-1: Conduct Pre-construction Migratory Nesting Bird Surveys

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 will be required.

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.

Mitigation Measure CUL-1: Monitor Vibration Levels at Historic Buildings during Jackhammer Usage within 10 Feet of Facades

A vibration monitoring plan will be prepared by a qualified professional with experience in determining the potential for structural damage due to building vibration and appropriate instrumentation and analysis procedures for quantifying ground and building vibration. Vibration monitors will be set to respond to any vibration levels exceeding 0.225 peak particle velocity in inches per second (PPV in/sec), which is less than the vibration level that would potentially damage historic buildings in fair condition. Should vibration reach this level, the bricks will be removed by another means that will ensure that the level of vibration remains at a safe level.

Mitigation Measure CUL-2: Stop Work if Prehistoric or Historic Archaeological Resources are Encountered during Ground-Disturbing Activities

If archaeological resources are uncovered during construction activities, all work within 50 feet of the discovery will be halted until a qualified archaeologist can be contacted to evaluate the situation, determine if the deposit qualifies as an archaeological resource, and provide recommendations. If the deposit does not qualify as an archaeological resource, then no further protection or study is necessary. If the deposit does qualify as an archaeological resource, then the impacts on the deposit shall be avoided if feasible. If the deposit cannot be avoided, impacts on the deposit must be mitigated utilizing methods that may include, but are not limited to, archaeological data recovery or other methods determined adequate by the qualified archaeologist and consistent with the Secretary of Interior's Standards for Archaeological Determination. Upon completion of the archaeologist's assessment, a report will be prepared documenting the methods, findings, and recommendations. The report will be submitted to BART and the Northwest Information Center.

Mitigation Measure CUL-3: Stop Work if Paleontological or Unique Geologic Features are Encountered during Ground-Disturbing Activities

Should paleontological resources be encountered during construction or site preparation activities, such activities will be halted within 50 feet of the find. A qualified paleontologist will be contacted to evaluate the nature of the find and to determine if mitigation is necessary. All feasible recommendations of the paleontologist will be implemented. Measures may include, but are not limited to, in-field documentation and recovery of specimen(s), laboratory analysis, the preparation of a report detailing the methods and findings of the investigation, and curation at an appropriate paleontological collection facility.

Mitigation Measure CUL-4: Halt Work/Coroner's Evaluation/Native American Heritage Consultation/Compliance with Most Likely Descendent Recommendations

If human remains are encountered during construction activities, all work within 50 feet of the remains will be halted, and the Alameda County Coroner notified immediately. At the same time, an archaeologist will be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Most Likely Descendant (MLD) to

inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. The archaeologist will recover scientifically valuable information, as appropriate and in accordance with the recommendations of the MLD. Upon completion of the archaeologist's assessment, a report will be prepared documenting methods and results, as well as recommendations regarding the treatment of the human remains and any associated archaeological materials. The report will be submitted to BART and the Northwest Information Center.

Mitigation Measure HYD-1: Implement Construction Best Management Practices

BART will require the construction contractor to implement good housekeeping practices during construction, such as daily site cleanup and proper containment and disposal of construction debris, to ensure adequate containment and to prevent trash or construction debris being discharged into storm drains leading to Strawberry Creek. The construction contractor will also be required to implement the BART Best Management Practices to protect storm drains.

Mitigation Measure NOI-1: Employ Noise-Reducing Construction Practices

BART will require all construction contractors to implement noise-reducing construction practices such that construction noise does not exceed limits for continuous and intermittent construction noise specified in the BART Facilities Standards/Standard Specifications, Section 01 57 00 Temporary Controls, 1.12 Noise Control at nearby land uses. BART will implement the following construction practices into construction documents to be implemented by the construction contractor. Measures that may be employed include, but are not limited to, the following:

- All construction equipment shall be properly maintained and equipped with all feasible noise control, such as mufflers, in accordance with manufacturers' specifications.
- Noise-reducing enclosures or shielding shall be used around stationary noise-generating equipment (e.g., compressors and generators) where needed to comply with noise limits.
- Hours of operation for project-related trucking activities will be limited to 7:00 a.m. to 6:00 p.m. Monday through Friday.
- BART will coordinate with and provide advanced notification of construction activities to sensitive receptors within 50 feet of jackhammering activities. Hours of operation for jackhammering activities will be limited to 7:00 a.m. to 9:30 a.m. Monday through Friday, and 7:00 a.m. to 11:00 a.m. as well as 2:00 p.m. to 6:00 p.m. on Saturdays.
- Use alternative demolition methods such as low-energy demolition devices and hand demolition if necessary to comply with noise limits.
- Stationary construction equipment, including compressors and generators, will be located as far as feasibly possible from residential properties and other sensitive land uses.
- All construction equipment powered by gasoline or diesel engines will have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- A disturbance coordinator shall be designated and the person's telephone number shall be posted in a noticeable location around the Proposed Project site and supplied to nearby

sensitive receptors. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem.

Mitigation Measure TR-1: Implement a Traffic Control Plan

BART and the construction contractor will coordinate with the City of Berkeley, transit providers, and emergency service providers to develop a Traffic Control Plan to mitigate construction impacts on transit service, roadway operations, emergency responses, pedestrian and bicycle facilities, and public safety. Measures that will be implemented throughout the course of Proposed Project construction, will include, but are not limited to, the following:

- Provide advance notice of lane and sidewalk closures, durations, and alternative routes to emergency service providers, motorists, bicyclists and pedestrians.
- Implement traffic control measures to minimize vehicle travel delays on Shattuck Avenue through the construction zone.
- Maintain acceptable response times and performance objectives for emergency response services.
- Provide safety measures for bicyclists and pedestrians traveling to and from the Berkeley BART station.
- Limit sidewalk, bicycle, and pedestrian walkway closures to one location within each vicinity at a time.
- Provide designated areas for construction worker parking wherever feasible to minimize use of parking on streets or in business areas.

Contents

Tables

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Acronyms and Abbreviations

AB 32	Assembly Bill 32
AC Transit	Alameda-Contra Costa Transit District
ARB	California Air Resources Board
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BMPs	best management practices
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CBC	California Building Code
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CNEL	community noise equivalent level
CO	carbon monoxide
CRHR	California Register of Historic Resources
dB	decibel
dBA	A-Weighted Decibel
DPM	Diesel Particulate Matter
EIR	Environmental Impact Report
EMT	Early Period-Middle Period Transition
EPA	United States Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
GHG	greenhouse gas
HFC	hydrofluorocarbons
HI	hazard index
IS/MND	Initial Study and Mitigated Negative Declaration
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
LID	Low-Impact Development
L_{min} and L_{max}	minimum and maximum sound levels
LUSTs	leaking underground storage tanks
L_{xx}	percentile-exceeded sound levels
MCE	Maximum Credible Earthquake
MLD	Most Likely Descendant
MLT	Middle/Late Transition
MS4	Municipal Separate Storm Sewer System
NAHC	Native American Heritage Commission
NO2	nitrogen dioxide
NOX	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NWIC	Northwest Information Center

Pb	lead
PFC	perfluorinated carbons
PPV	Peak Particle Velocity
Proposed Project	Downtown Berkeley BART Plaza and Transit Improvement Project
ROG	reactive organic gases
San Francisco Bay Water Board	San Francisco Bay Regional Water Quality Control Board
sf	square foot
SF Bay MS4 Permit	San Francisco Bay Region Municipal Regional Stormwater NPDES Permit No. CAS029718
SF6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SO2	sulfur dioxide
SOSIP	Streets & Open Space Improvement Plan
State Water Board	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminants
UC	University of California
UST	underground storage tank

Introduction

Purpose of Document

This Initial Study and Draft Mitigated Negative Declaration (IS/MND) has been prepared by the San Francisco Bay Area Rapid Transit (BART) District, the lead agency under the California Environmental Quality Act (CEQA), to evaluate the potential environmental effects of implementation of the Downtown Berkeley BART Plaza and Transit Improvement Project (Proposed Project).

This document was prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations [CCR] Section 15000 et seq.). A lead agency prepares an IS to determine if a project may have a significant effect on the environment (State CEQA Guidelines Section 15063[a]) and, thus, to identify the appropriate environmental document. In accordance with State CEQA Guidelines Section 15070, a "public agency shall prepare…a proposed negative declaration or mitigated negative declaration…when: (a) The Initial Study shows that there is no substantial evidence…that the project may have a significant impact on the environment, or (b) The Initial Study identifies potentially significant effects but revisions to the project plans or proposal are agreed to by the applicant and such revisions would reduce potentially significant effects to a less-than-significant level." In this circumstance, the lead agency prepares a written statement describing its reasons for concluding that the Proposed Project would not have a significant effect on the environment and, therefore, does not require the preparation of an Environmental Impact Report (EIR).

As described in the *Environmental Checklist* section, the Proposed Project would result in potentially significant environmental impacts, but those impacts would be reduced to a less-than-significant level by Proposed Project revisions and implementation of mitigation measures. Therefore, an IS/MND is the appropriate document for compliance with the requirements of CEQA. This IS/MND conforms to these requirements and to the content requirements of State CEQA Guidelines Section 15071.

Project Purpose and Need

The BART system is one of the San Francisco Bay Area's most vital transportation links, averaging 400,000 riders every weekday. Construction of the original BART system concluded in 1972 and included the Richmond line and Berkeley stations. Since then, new track and stations have been added to the system so that it now consists of 104 miles of track and 44 stations, connecting communities in Contra Costa, Alameda, San Francisco, and San Mateo Counties. The system represents a public investment, currently valued at nearly $15 billion, with immeasurable importance to the local and regional economy.

BART is proposing to replace certain features and improve access to and from the existing Downtown Berkeley BART station for the following purposes.

- Enhance multi-modal transit access.
- Expand BART and Alameda-Contra Costa Transit District (AC Transit) ridership by increasing and improving accessibility for pedestrians and bicyclists to and from the existing Downtown Berkeley BART station.

- Improve public safety.
- Reorganize the public space around the Downtown Berkeley BART station to better accommodate transit users.

The Downtown Berkeley station has 24,000 daily entries/exits, and AC Transit has more than 6,000 daily boardings/alightings on local, trunk, Rapid, and Transbay service in the Proposed Project area. The Proposed Project area is defined as a half-mile radius around the Proposed Project site. In addition, thousands of pedestrians and hundreds of bicyclists traverse the area on a daily basis. However, aging infrastructure and design flaws reduce the accessibility and safety of this major regional transit center. From 2000 to 2005, there were seven automobile-bicycle collisions at the Shattuck Avenue/Center Avenue and the Shattuck Avenue/Allston Way intersections. The Proposed Project area also has a high number of pedestrian-vehicle collisions. Bus riders lack adequate waiting areas, seating, and wayfinding signage. Some sidewalks segments are too narrow for existing pedestrian volumes, and there are substandard curb ramps. Bicycle parking is inadequate and poorly placed. The maintenance problems and the bulk of the secondary BART lighting restricts sightlines. The current brick plaza surface landscaping and wells are difficult to clean and maintain.

Project Background

The City of Berkeley, BART, and AC Transit conducted a community-based design process from 2006 to 2010 to develop the conceptual design and preliminary engineering for the Proposed Project. The effort was guided by a Citizens Advisory Committee with representatives from seven public City Commissions, business associations and community groups, including the East Bay Bicycle Coalition. Public input was also gathered through two community workshops and written comments. At a meeting on July 1, 2014, the Berkeley City Council unanimously approved the design of the Proposed Project and requested the design team to continue refining the design.

BART anticipates that funding for the Proposed Project will be provided by the Federal Transit Administration (FTA); OneBayArea Grant (Congestion Mitigation and Air Quality Improvement [CMAQ] Program); OneBayArea Grant (State Transportation Improvement Program); Federal CMAQ; Coordinated Vehicle Registration Fee (VRF) through Alameda County Transportation Commission; Proposition 1B Public Transportation Modernization, Improvement, and Service Enhancement Account Lifeline Grant; City of Berkeley match, including funds from City Berkeley VRF and *University of California Long-Range Development Plan*; and BART match through its General Fund and Proposition 1B.

Project Objectives

BART has identified the following objectives for the Proposed Project.

- Improve transit facilities, traffic safety, and the quality of public open space to meet the transportation needs of Downtown Berkeley's planned residential and employment growth.
- Enhance multi-modal transit access and expand BART and AC Transit ridership by increasing and improving accessibility for pedestrian and bicyclists, improving public safety and reorganizing the public space to better accommodate transit users.
- Incorporate sustainable design and construction techniques.

Summary of Findings

This IS/MND contains the analysis and discussion of potential environmental impacts of the Proposed Project. It was determined that the Proposed Project would have no impact related to the following areas:

- Agriculture and forestry resources, land use and planning, mineral resources, population and housing, public services, and recreation.

Impacts of the Proposed Project were determined to be less than significant without mitigation for the following areas:

- Aesthetics, geology and soils, greenhouse gas emissions, and utilities and service systems.

A Mitigation Monitoring and Reporting Plan will be prepared, incorporating the mitigation measures identified in the IS/MND to reduce impacts related to air quality, biological resources, cultural resources, hazards and hazardous materials, hydrology and water quality, noise, and transportation and traffic. Impacts related to these resource areas would be less than significant with the incorporated mitigation measures.

Document Organization

This IS/MND contains the following sections.

- **Introduction.** This section provides an introduction and describes the purpose and need, background, objectives, summary of findings, and organization of this document.
- **Proposed Project Description.** This section provides a detail description of the Proposed Project, including site setting and location, site characteristics, and construction activities.
- **Environmental Checklist.** This section presents an analysis of a range of environmental issues identified in the CEQA Guidelines Appendix G Environmental Checklist and determines if implementation of the Proposed Project would result in no impact, less-than-significant impact, a less-than-significant impact with mitigation incorporated, or a potentially significant impact. If any of the impacts were determined to be potentially significant and unavoidable, notwithstanding the incorporation of feasible mitigation measures, an EIR would be required. For this Proposed Project, mitigation measures have been incorporated to reduce all potentially significant impacts to less-than-significant levels.
- **List of Preparers.** This section provides a list of report preparers.
- **References.** This section lists the information sources on which this IS/MND is based.

Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by this Proposed Project (i.e., the Proposed Project would involve at least one impact that is a "Potentially Significant Impact"), as indicated by the checklist on the following pages.

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

Determination

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 to the project have been made by or agreed to by the project proponent. 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 an impact on the environment that is "potentially significant" or "potentially significant unless mitigated" 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 ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature Janie L. Layton — Date 5/15/15

Printed Name Janie L. Layton — For BART

Proposed Project Description

The Proposed Project would include replacement of the Downtown Berkeley BART station rotunda with a new main entrance structure, and design and construction of various improvements for the five secondary BART entrances. In addition, the Proposed Project would include replacing some sidewalk surface materials, improving pedestrian-oriented lighting and landscaping using low-impact stormwater treatments, providing covered waiting areas for local and Transbay AC Transit bus stops, and installing wayfinding signage. The Proposed Project would improve bicycle parking and disability access and integrate public art.

The Proposed Project would reduce at-grade street crossings by increasing use of secondary BART entrances with wayfinding and entrance improvements, and it would improve boarding areas and passenger loading operations at bus stops. Renovating the plaza, sidewalks, and curb ramps and removing physical obstacles between BART and bus stops would improve pedestrian safety. New pedestrian-scale lighting, real-time BART arrival/departure signs, and secured BART stairwells would further improve safety. The Proposed Project would improve multi-modal access for an influx of new residents and employees anticipated in the coming years, improving inter-modal interconnectivity, improving pedestrian safety, and enhancing transit rider safety and comfort.

BART is proposing to replace certain features and improve access to and from the existing Downtown Berkeley BART station for the following purposes.

- Enhance multi-modal transit access.
- Expand BART and Alameda-Contra Costa Transit District (AC Transit) ridership by increasing and improving accessibility for pedestrians and bicyclists to and from the existing Downtown Berkeley BART station.
- Improve public safety.

Reorganize the public space around the Downtown Berkeley BART station to better accommodate transit users. The Proposed Project has the following purposes.

Enhance multi-modal transit access.

Expand BART and AC Transit ridership by increasing and improving accessibility for pedestrians and bicyclists to and from the existing Downtown Berkeley BART station.

Improve public safety.

Reorganize the public space around the Downtown Berkeley BART station to better accommodate transit users.

Project Location and Setting

The Proposed Project site is an existing transit hub, consisting primarily of the Downtown Berkeley BART station, AC Transit bus stops, and taxi stands in the City of Berkeley in Alameda County (Figure 1), as more particularly described below. The Proposed Project site is generally bounded by commercial development along Shattuck Avenue, with Center Street to the north and Allston Way to the south (Figure 2).

The Proposed Project site is approximately 26,250 square feet (sf) (0.60 acre). The Proposed Project site includes the station plaza, containing the circular main entrance structure (Entrance #1), the aboveground BART entrance (Entrance #2), and the public space surrounding the station on the west side of Shattuck Avenue between Center Street and Allston Way (23,000 sf). Outside of the Plaza, the Proposed Project site also includes the entrance at the northeast corner of Allston Way/Shattuck Avenue (Entrance #3, approximately 750 sf), the entrance at the northwest corner of Center Street/Shattuck Avenue (Entrance #4, approximately 1,000 sf), and the two entrances on either side of Shattuck Avenue at Addison Street (Entrance #5 and 6, approximately 1,500 sf total).

The area surrounding the Proposed Project site is largely commercial. In addition, educational uses associated with the University of California campus are located approximately 650 feet east of the Proposed Project site (Figure 3).

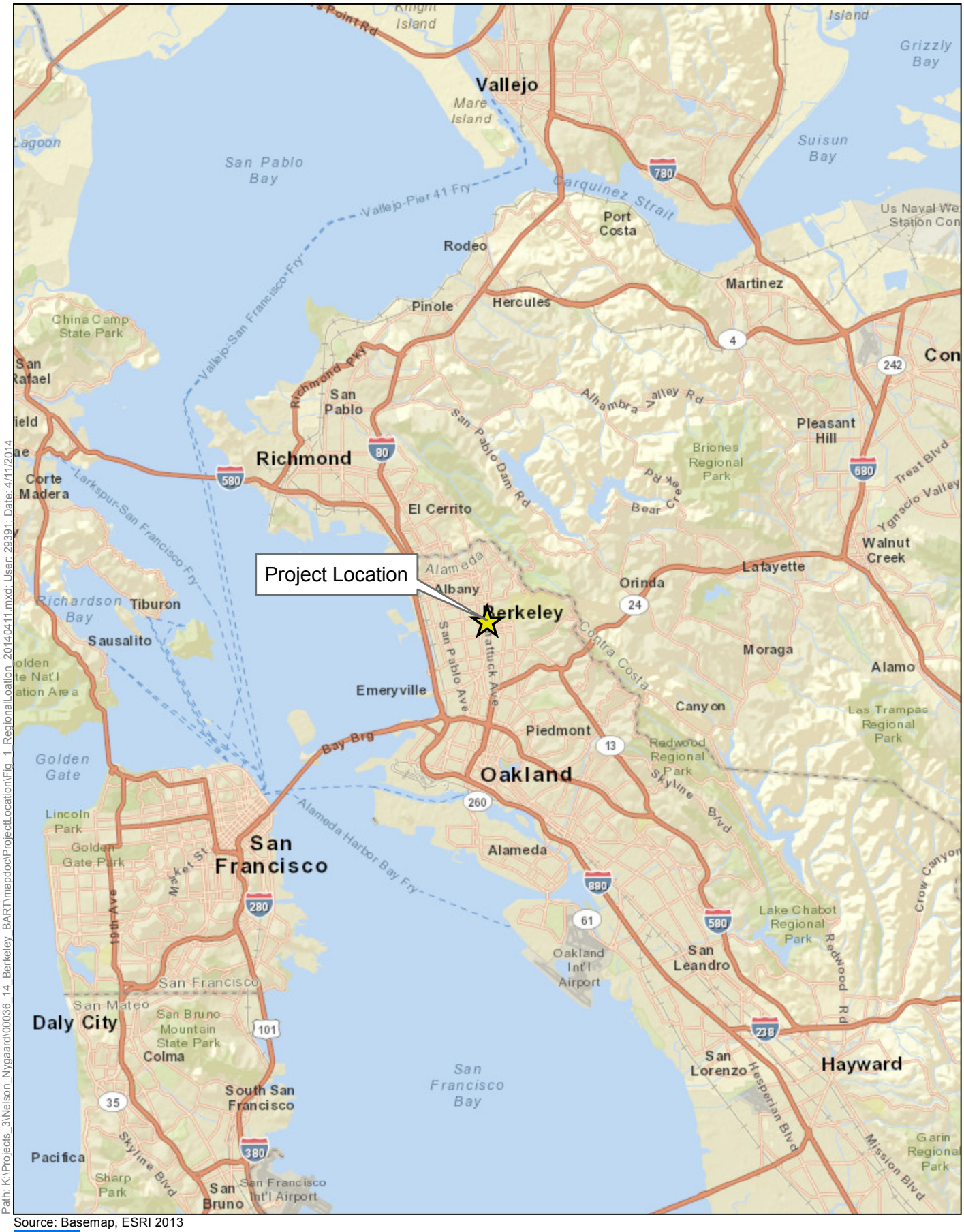

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Figure 1
Regional Location

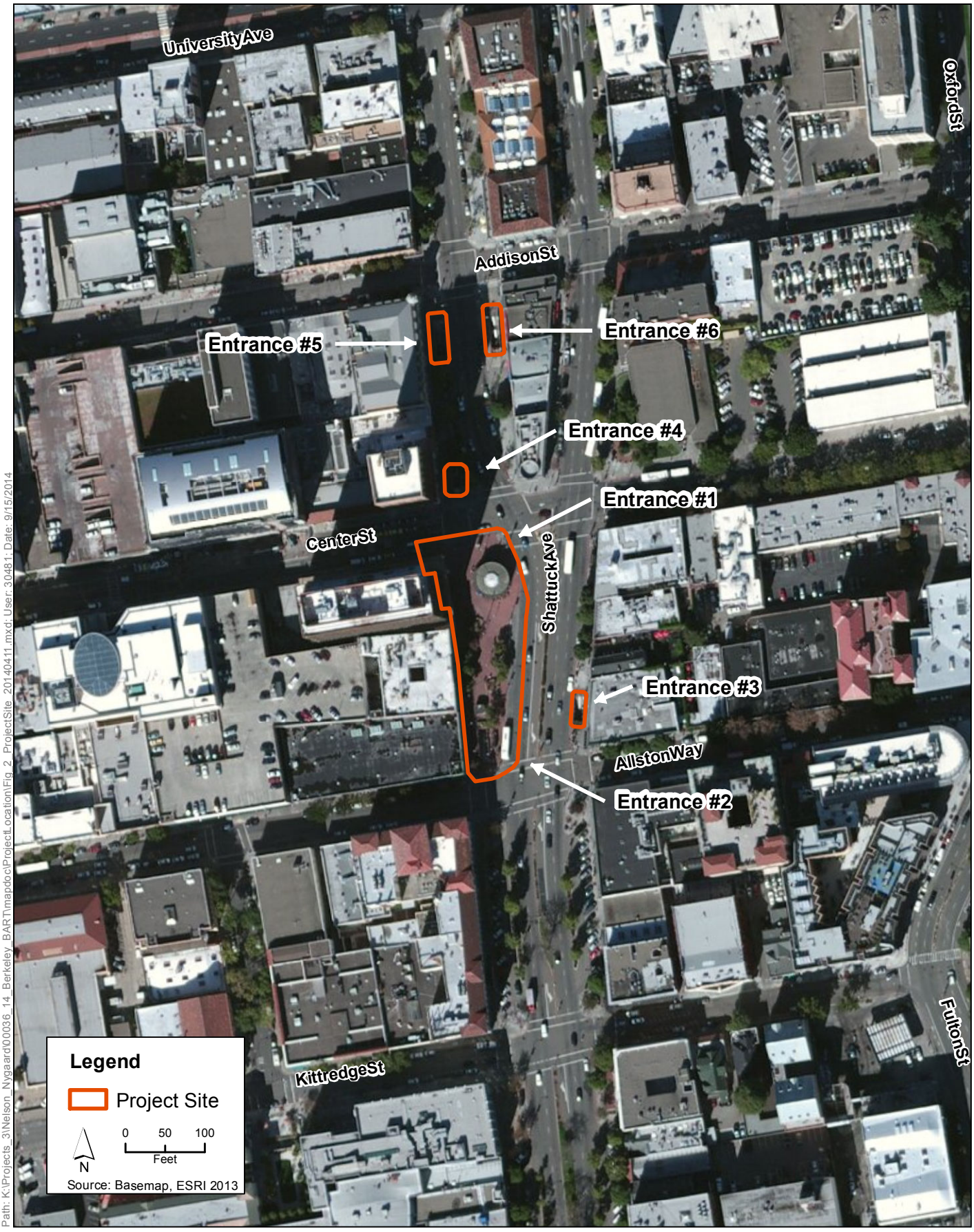

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Figure 2
Project Site

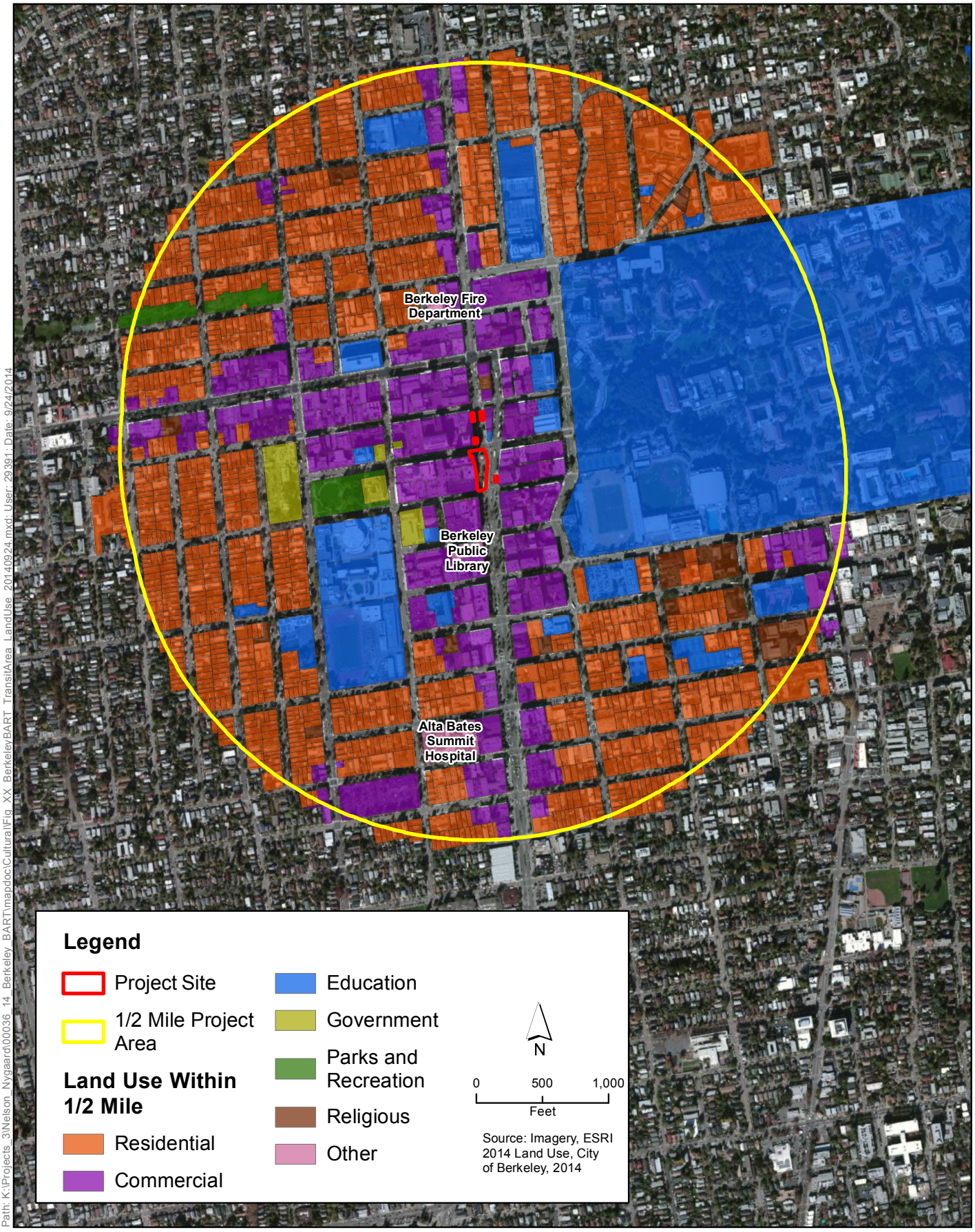

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Figure 3
Downtown Berkeley BART Plaza and Transit Area Land Use Map

Proposed Site Plan

- The Proposed Project would consist of the following elements.
  - Removal of the BART main entrance (rotunda) and design and construction of a replacement entrance structure.
  - Improvements at the five secondary BART entrances, as described further under *Construction Phase A*, *Construction Phase B*, and *Construction Phase C*.
  - Resurfacing of existing brick-covered areas with improved, pervious paving materials that also achieve low-impact development objectives.
  - Reorganization of the plaza area to create more space for pedestrian through movement and removal of vertical obstructions to improve sight lines and security.
  - Replacing 11 existing street trees with 13 street trees onsite that are taller, airy, and less bushy than the existing street trees to improve visibility, complement the redesigned plaza, and be compatible with the low-impact stormwater treatments.
  - Installation of new lighting around the BART station entrances/exits that would be pedestrian scale in design, integrated with the proposed landscaping improvements, and substantially shorter than the existing lighting poles within and near the Proposed Project site.
  - Planting new landscaping that provides for low-impact development treatment of stormwater.
  - Construction of a larger bus transit shelter with improved lighting and seating.
  - Reconstructing the curb ramps on adjacent intersections to improve pedestrian access.
  - Redistributing bike parking to improve accessibility and security.
  - Including utility and structural provisions to accommodate future art elements.
  - Installation of improved wayfinding signage, including real-time BART arrival/departure signage.
  - Installation of glass canopies at each secondary BART entrance.

The proposed improvements to the main entrance structure, plaza area, Shattuck Avenue at Allston Way secondary entrance, and the larger bus transit shelter are shown in Figures 4a and 4b.

Maintenance

The service life of the plaza and sidewalk surfaces is approximately 12 to 15 years; street pavement is approximately 8 years; transit architecture typically exceeds 30 years. BART is responsible for maintenance of BART entry structures and all property in BART's right-of-way (ROW). The City of Berkeley is responsible for maintenance of the plaza, the bus shelters, and the property in the City's ROW.

Construction Activities

Construction of the Proposed Project would occur in three phases over a period of 18 months beginning in early 2016 and ending by mid-2017. The construction phases would not necessarily occur in the sequence presented here, but there would be no overlap between each phase. Phase A would consist of removal and replacement of the main entrance structure, improvements to the plaza, and the improvements to the west side entrances on Shattuck Avenue and Addison Street. Phase B would consist of improvements to the secondary plaza entrance, and the entrance on Shattuck Avenue and Addison Street. Phase C would consist of repaving the plaza in front of the businesses along Shattuck Avenue, and improvements to the entrance on Shattuck and Allston Way. During the construction of Phase A and Phase B, the bus pad zone and one southbound travel lane on Shattuck Avenue between Center Street and Allston Way would be partially closed for a total of up to 8 weeks. The Proposed Project would be constructed primarily within existing BART ROW; the remainder would be within the City of Berkeley ROW. All construction activities, including equipment staging, would be contained within the footprint of the Proposed Project site.

Construction would occur between 7:00 a.m. and 6:00 p.m. Monday through Friday, with construction on Saturdays, Sundays, holidays as needed and coordinated with the City.

All potentially disturbed soil would consist of existing fill that was placed atop the roof of the station when originally constructed in order to fill the void between the station roof and the street/plaza level. Ground disturbance of this fill would not exceed a depth of 7 feet, which is the depth of fill between the street/plaza level and the roof of the underground station. The three phases of construction are detailed below.

Construction Phase A

- Main Entrance: The existing rotunda would be demolished and removed, while existing access to BART station would be maintained; traffic control would be provided, and construction fencing would be installed. A new main entrance structure would be constructed and concrete plaza paving, and lighting and landscaping would be installed.
- Plaza: The existing brick pavers, planters, trees, seating, bike racks, pedestrian lights, asphalt, and concrete curb and gutter would be removed. The sidewalk would be shored to ensure stability and safety. The plaza would be repaved with new concrete, and lighting, landscaping, a concrete bus pad, and curb and gutter would be installed.
- Shattuck Avenue and Addison Street west side entrance: A portion of the brick parapet and existing station entrance lighting would be removed, and a new glass canopy, security gate, and lighting would be installed. The remaining brick parapet walls would be resurfaced with new cladding over the remaining parapet wall. The planters at each secondary BART entrance would be removed and replaced with bicycle parking.

Construction Phase B

- Secondary Plaza entrance: A portion of the brick parapet and existing station entrance lighting would be removed, and a new glass canopy, security gate, and lighting would be installed. The remaining brick parapet walls would be resurfaced with new cladding over the remaining parapet wall. The planters at each secondary BART entrance would be removed and replaced with bicycle parking.

Source: BART, 2014.

Graphics ... 00036.14 (4-27-2015) tm

Figure 4a
Proposed Improvements – Main Entrance Structure

Source: BART, 2014.

Graphics ... 00036.14 (4-27-2015) tm

Figure 4b
Proposed Improvements – Secondary Entrance Structure

- Plaza: The existing brick pavers, planters, trees, seating, bike racks, pedestrian lights, asphalt, and concrete curb and gutter would be removed for the remaining portion of the plaza. This phase would also involve shoring underneath the sidewalk. The remaining portion of the plaza would be repaved with new concrete, and lighting, landscaping, a concrete bus pad, and curb and gutter would be installed.
- Entrance at Shattuck Avenue and Center Street: A portion of the brick parapet and existing station entrance lighting would be removed, and a new glass canopy, security gate, and lighting would be installed. The remaining brick parapet walls would be resurfaced with new cladding over the remaining parapet wall. The planters at each secondary BART entrance would be removed and replaced with bicycle parking. The sidewalk would be shored to ensure stability and safety. Existing access and use of elevator would be maintained except for a brief outage during construction, and traffic control measures would be put in place. Construction fencing would be erected to protect an existing tree. New cladding of concrete walls, and new station entrance lights would be installed. An existing fire department connection would be relocated.
- Shattuck Avenue at Addison Street entrance: A portion of the brick parapet and existing station entrance lighting would be removed, and a new glass canopy, security gate, and lighting would be installed. The remaining brick parapet walls would be resurfaced with new cladding over the remaining parapet wall. The planters at each secondary BART entrance would be removed and replaced with bicycle parking.

Construction Phase C

- This phase would involve demolition and removal of brick pavers in front of retail storefronts on the plaza. The plaza would be repaved with concrete, and lighting and landscaping would be installed.
- Shattuck Avenue at Allston Way entrance: A portion of the brick parapet and existing station entrance lighting would be removed, and a new glass canopy, security gate, and lighting would be installed. The remaining brick parapet walls would be resurfaced with new cladding over the remaining parapet wall. The planters at each secondary BART entrance would be removed and replaced with bicycle parking. Existing access and use of entrance would be protected, and traffic control measures would be put in place. Construction fencing would be erected to protect an existing tree.

Project Approvals

The following discretionary approvals would be required prior to development at the Proposed Project site.

- The BART Board of Directors will need to consider and adopt this IS/MND and the Mitigation Monitoring and Reporting Plan.
- BART will submit a letter to FTA requesting administrative approval of a Categorical Exclusion (23 Code of Federal Regulations [CFR] Section 771.118(c)(8)) that includes documentation demonstrating that no significant environmental effects or other unusual circumstances are involved in the Proposed Project.

Environmental Checklist

The following resource sections contain the environmental checklist from Appendix G of the State CEQA Guidelines. The checklist form is used to identify impacts resulting from implementation of the Proposed Project. A discussion follows each environmental issue in the checklist to explain the rationale for determining whether significant impacts would result. Included where appropriate are Proposed Project-specific mitigation measures to reduce potentially significant impacts to less-than-significant levels.

For this checklist, the following designations are used.

- Potentially Significant Impact: An impact that could be significant, and for which mitigation must be identified. If potentially significant impacts are identified for which mitigation is not possible, an EIR must be prepared.
- Less than Significant Impact with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a level of less than significant.
- Less-than-Significant Impact: Any impact that would not be considered significant under CEQA based on established significance thresholds.
- No Impact: The Proposed Project would result in no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
1. Aesthetics				
Would the Proposed Project:				
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 along a 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 daytime or nighttime views in the area?	☐	☐	☒	☐

Aesthetics

Environmental Setting

The Proposed Project site is a transit center in the downtown area of the City of Berkeley in Alameda County. The Proposed Project site is generally bound by commercial development along Shattuck Avenue, with Center Street to the north and Allston Way to the south. The area surrounding the Proposed Project site is largely commercial with the University of California, Berkeley campus located approximately 650 feet east of the Proposed Project site. The Proposed Project site is located within the Shattuck Avenue Corridor. This wide north-south corridor passes through the center of downtown Berkeley and provides views of many structures of architectural interest, including the tall Wells Fargo and Great Western buildings at the Center Street intersection. It features broad sidewalks, median islands, and parking bays, and provides open views of the sky along most of its length where building heights are less than three stories.

Discussion

a) Scenic Vistas

No Impact. The Proposed Project would not significantly affect scenic vistas. The Shattuck Avenue Corridor, where the Proposed Project site is located, is considered a view corridor as part of the Berkeley *Downtown Area Plan*. The Proposed Project would not affect the Wells Fargo or Great Western buildings at the Center Street intersection, visual focus points at this portion of the Shattuck Avenue Corridor. The Proposed Project would not introduce any structures over three stories, which would be incompatible with the corridor's existing scale and views of the sky. There would be no impact.

b) Scenic Resources; and

c) Visual Character and Quality

Less-than-Significant Impact. The *Downtown Area Plan* (City of Berkeley 2012d) and *Downtown Streets & Open Space Improvement Plan* (SOSIP) (City of Berkeley 2012a) characterize the area as a center for mixed-use, commercial retail, transit, and multi-modal mobility. It is visually characterized by "zero lot line buildings (no setbacks), retail frontages, and the relatively large number of buildings from earlier eras that establish its visual character. It is this built environment in combination with street trees, plazas, and open areas located in the Downtown Area that would be regarded as scenic resources by local residents and visitors" (City of Berkeley 2010) As part of the improvements at the five secondary BART entrances (Figure 4), a portion of the brick parapet and existing station entrance lighting would be removed, and a new glass canopy, security gate, and lighting would be installed. The remaining brick parapet walls would be resurfaced with new cladding over the remaining parapet wall. The planters at each secondary BART entrance would be removed and replaced with bicycle parking.

The Proposed Project elements are consistent with goals of the SOSIP. Bicycle and pedestrian infrastructure, street trees and landscaping, wayfinding signage, and lighting would be installed as part of the Proposed Project design. The Proposed Project would be consistent with the SOSIP's "Placemaking" goal of making downtown a more vibrant, attractive, memorable, and welcoming pedestrian-oriented destination by providing visual connections along the Shattuck Avenue streetscape, allowing more daylighting through the Berkeley BART station, and reducing the footprint and massing of the main entrance. The Proposed Project would also support the "Access" goal of improving transportation access to downtown for all modes, with priority given to pedestrians and bicyclists, by enhancing the pedestrian circulation for transit users and improving bicycle parking. Finally, the Proposed Project would be consistent with the "Health & Comfort" goal of providing safe environments for daytime and evening activities by renovating the plaza, sidewalks, and curb ramps and removing physical obstacles between BART and bus stops.

The Proposed Project would involve replacement of the existing rotunda with a new, lower profile structure that would improve sight lines throughout the Proposed Project site and, therefore, improve the visual quality of the streets, plazas, and open areas for all users.

Construction of the Proposed Project would result in the presence of construction vehicles, equipment, and staging areas, which would temporarily alter the visual character and quality of the Proposed Project area. However, the construction period would be temporary, and visual effects during the construction period would not be significant. To accommodate construction equipment and new structures, 11 existing street trees within the Proposed Project site would be removed: one Chinese hackberry tree (*Celtis sinensis*) on Allston Way as well as one flowering cherry tree (*Prunus* species), one Chinese tallow tree (*Triadica sebifera*), and eight Victorian box trees (*Pittosporum undulatum*) within the plaza area. As part of the Proposed Project, these existing trees would be replaced within the Proposed Project site with two Columbian London trees (*Platanus acerfolia*) and 11 Armstrong maples (*Acer freemanii*), which are taller, airy, and less bushy than the existing street trees. The replacement trees would improve visibility, complement the redesigned plaza, and be compatible with the low-impact development (LID) stormwater treatments. All other existing street trees within the Proposed Project site would be protected in place. The Proposed Project would have a less-than-significant impact on visual character and quality.

d) Light and Glare

Less-than-Significant Impact. The Proposed Project setting is highly developed and urbanized, with many existing sources of nighttime lighting. Because the Proposed Project area encompasses the main streets through downtown Berkeley that support the City's commercial center, it lends itself to being better lit than adjoining streets. Such lighting promotes higher use in the evenings by providing a welcoming environment and increased safety. Existing sources of nighttime lighting include overhead cobra street lighting, ornamental sidewalk and plaza lighting, interior and exterior building lighting, business sign lighting, Downtown Berkeley BART station stairwell lighting, and lighting from vehicles and bicycles traveling at night. In addition, although businesses and restaurants turn off the majority of interior lighting after hours, many businesses leave display window lighting turned on after hours. This business lighting, combined with the amount of street lighting and cars using Shattuck Avenue, contributes to the Proposed Project area being comparatively better lit than surrounding streets, even when businesses are closed.

The Proposed Project would improve pedestrian-scale lighting at the Proposed Project site by providing new exterior lights that would be pedestrian scale in design, integrated with the proposed landscaping improvements, and substantially shorter than the existing lighting poles within and near the Proposed Project site. Replacing these existing, taller lighting standards with shorter, pedestrian-scale lighting would reduce ambient light glow and light spill in the Proposed Project area. Taller lighting standards raise the source of light higher into the air, away from the areas intended for illumination, and increase the contribution of ambient light glow and light spill over a larger area. Replacing these existing, taller lighting with shorter, pedestrian-scale lighting would focus the lighting directly at the intended ground-level areas. Ambient light would be reduced because the lights would not protrude into the night sky and would reduce the amount of light radiating upward. In addition, areas of illumination would be reduced because the shorter lighting standards would reduce light spill. This would require slightly more lights to illuminate the intended area. Although the Proposed Project would increase illumination around the Downtown Berkeley BART station entrances/exits, the lighting would be designed to minimize excessive spillover lighting, similar to existing conditions, and provide a securely lit environment. Furthermore, pedestrian-scale lighting would provide a greater level of visibility and increased safety for pedestrians in the area, contributing to a more pleasant and safer pedestrian experience at night. The Proposed Project lighting would also be consistent with the goals and policies in the SOSIP. Therefore, the change in lighting resulting from the Proposed Project would not create a significant new source of nighttime lighting because the area is already very well lit, and the new, shorter lighting would reduce ambient light glow and light spill, would be designed to minimize excessive and spillover lighting, and would improve the viewer experience and pedestrian safety.

Urbanized areas tend to produce more glare than suburban, rural, and natural areas because urban areas typically have fewer mature trees and shrubs to absorb light and cast shade and more continuous hard and reflective surfaces that reflect light. The existing environment in the vicinity of the Proposed Project is highly urbanized and includes numerous sources of reflective materials, which contribute to glare that affects pedestrians, bicyclists, motorists, and occupants of nearby buildings during the day and night. Existing sources of glare include building windows, windows of parked and passing vehicles, paved surfaces, and light-colored building surfaces in the Proposed Project area.

The design of the Proposed Project would incorporate non-reflective materials that would reduce the potential for nuisance glare. Specifically, the Proposed Project would include polished glass

(glass treated to reduce or eliminate glare) throughout the Proposed Project site, including in the replacement entrance structure, the improvements at the five secondary BART entrances (and the proposed canopies), and the new, larger bus transit shelter. In addition, glazing would be incorporated into the glass at the replacement entrance structure to ensure that glare would be minimized and consistent with existing conditions. Depending on weather conditions and the time of day, the proposed glass canopy structures may generate intermittent instances of sun glare for short periods of time. However, planned surface treatment of the glass would substantially reduce reflective glare. Existing and replacement trees would additionally filter sunlight, shade large areas of the treated glass, and reduce the potential for surface glare. Adjacent buildings would also shade the new structures in the early morning and evening hours when the sun is at a lower angle. In addition, the Proposed Project structures would be small in scale within this existing urban context and would not introduce larger surface areas that would substantially increase glare within the Proposed Project area. With all of these factors combined, the potential for an increase in daytime glare would be minimal, and the potential increase would not result in perceivable changes that would be a nuisance for or detrimental to affected viewers within the Proposed Project area during the day. During the night, the surface treatments described above would reduce the potential for glare reflecting off the new structures at night, and replacing taller lighting with shorter lighting would reduce the amount of light that would otherwise reflect off of reflective surfaces. Therefore, the Proposed Project would slightly reduce existing nighttime glare. Overall, the Proposed Project improvements would not cause excessive glare that would be visually inconsistent with surrounding land uses, and the potential for the Proposed Project to add new sources of glare that may affect pedestrians, bicyclists, motorists, or occupants of surrounding buildings would be minimal. Impacts would be less than significant.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
2. Agricultural and Forestry Resources				
Would the Proposed Project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use or conflict with 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 that, 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?	☐	☐	☐	☒

Agricultural and Forestry Resources

Environmental Setting

The Proposed Project would be located in an urban area with a mix of commercial and residential uses. No agricultural or forestry resources are located near the Proposed Project site.

Discussion

a) Farmland Conversion

No Impact. The Proposed Project site is within an urban area designated by the Alameda County Important Farmland Map as Urban and Built-Up Land (California Department of Conservation 2011). The Proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. The Proposed Project would have no impact on agricultural or farmland resources.

b) Zoning for Agricultural Use or Williamson Act Contracts

No Impact. The Proposed Project would not conflict with zoning for agricultural use or a Williamson Act Contract. The Proposed Project would have no impact.

c) Conflict with Existing Zoning for, or Cause Rezoning of, Forest Land or Timberland

No Impact. The Proposed Project location is not occupied by forest or timberlands. The Proposed Project would not conflict with existing zoning for, or cause rezoning of, forest land or timberland. The Proposed Project would have no impact.

d) Loss or Conversion of Forest Land to Non-Forest Use

No Impact. The Proposed Project site is not occupied by forest land. The Proposed Project would not convert forest land to a non-forest use. The Proposed Project would have no impact.

e) Other Environmental Changes Resulting in Farmland or Forest Land Conversion to Other Uses

No Impact. The Proposed Project site is not located on farmland or forest land; therefore, implementation of the Proposed Project would not result in environmental changes that would convert farmland or forest land to other uses. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
3. Air Quality When available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Proposed Project:				
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 nonattainment area for an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☒	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

Air Quality

Environmental Setting

The Proposed Project would be located in Alameda County, which is in the San Francisco Bay Area Air Basin (SFBAAB). Concentrations of ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM10 and PM2.5) are commonly used as indicators of ambient air quality conditions. These pollutants are known as "criteria pollutants" and are regulated by the United States Environmental Protection Agency (EPA) and California Air Resources Board (ARB) through national and California ambient air quality standards (NAAQS and CAAQS), respectively. The NAAQS and CAAQS limit criteria pollutant concentrations to protect human health and prevent environmental and property damage. Other pollutants of concern in the Proposed Project area are nitrogen oxides (NO_X) and reactive organic gases (ROG), which are precursors to ozone and toxic air contaminants (TACs), which can cause cancer and other human health ailments.

Criteria pollutant concentrations in Alameda County are measured at seven monitoring stations throughout the County. The nearest station to the Proposed Project is the Berkeley 6th Street station, which is approximately 2 miles west of the Proposed Project. Monitoring data collected at the Berkeley 6th Street station show that the station did not violate any CAAQS or NAAQS from 2010 through 2012 (California Air Resources Board 2013a). However, recent air quality measurements

from all seven Alameda County monitoring stations indicate that Alameda County is nonattainment for the federal and state ozone and $PM_{2.5}$ standards, as well as nonattainment for the state PM_{10} standard (U.S. Environmental Protection Agency 2013; California Air Resources Board 2013b).[1]

The Bay Area Air Quality Management District (BAAQMD) is responsible for ensuring the NAAQS and CAAQS are met within the SFBAAB. The BAAQMD manages air quality through a comprehensive program that includes long-term planning, regulations, incentives for technical innovation, education, and community outreach. The recently adopted *2010 Clean Air Plan* provides an integrated strategy to reduce ozone, particulate matter, TACs, and greenhouse gas (GHG) emissions in a manner that is consistent with federal and state air quality programs and regulations.

The BAAQMD's *CEQA Guidelines* provide guidance for evaluating project-level air quality impacts. The guidelines also contain thresholds of significance for ozone, CO, PM2.5, PM10, TACs, and odors. As stated in Appendix G of the State CEQA Guidelines, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the checklist determinations. BAAQMD's significance thresholds are in litigation and currently not in effect.[2] However, pursuant to CEQA Guidelines Section 15064.7, lead agencies have the discretion to select significance thresholds that are supported by substantial evidence. In developing its criteria, BAAQMD conducted extensive analysis (see the 2011 BAAQMD *CEQA Guidelines* and the administrative record for adoption of the 2010 guidelines). Accordingly, the BAAQMD's thresholds, as outlined in its 2011 *CEQA Guidelines* and summarized in **Table AQ-1**, are supported by substantial evidence and used evaluate the significance of air quality impacts associated with the Proposed Project.

Table AQ-1. BAAQMD Thresholds of Significance

Pollutant	Construction	Operations
ROG	54 lbs/day	54 lbs/day or 10 tons/year
NO_X	54 lbs/day	54 lbs/day or 10 tons/year
CO	--	Violation of CAAQS
PM10 (exhaust)	82 lbs/day	82 lbs/day or 15 tons/year
PM2.5 (exhaust)	54 lbs/day	54 lbs/day or 10 tons/year
PM10/PM2.5 (dust)	Best management practices	--
TACs (project-level)	Increased cancer risk of 10 in 1 million; increased non-cancer risk of greater than 1.0 (hazard index [HI]); $PM_{2.5}$ increase of greater than 0.3 micrograms per cubic meter	Same as construction

[1] Local monitoring data is used to designate areas nonattainment, maintenance, or attainment for the NAAQS and CAAQS. Nonattainment areas consistently violate the standard in question, whereas maintenance areas exceeded the standard in question in the past but are no longer in violation of that standard. Attainment areas meet the standard in question over a designated period of time.

[2] In August 2013, the Court of Appeal upheld the BAAQMD CEQA Guidelines, ruling that adoption of guidelines and significance thresholds was not itself a project subject to CEQA review and was not arbitrary and capricious. The decision was appealed and is currently pending before the California Supreme Court.

Pollutant	Construction	Operations
TACs (cumulative)	Increased cancer risk of 100 in 1 million; increased non-cancer risk of greater than 10.0; PM2.5 increase of greater than 0.8 microgram per cubic meter at receptors within 1,000 feet	Same as construction
Odors	--	Five complaints per year averaged over 3 years

Source: Bay Area Air Quality Management District 2011.
CAAQS = California ambient air quality standards
CO = carbon monoxide
lbs/day = pounds per day
NO_X = nitrogen oxides
PM2.5 and PM10 = particulate matter
ROG = reactive organic gases
TACs = toxic air contaminants

Discussion

The Proposed Project does not involve a change in the type or scale of existing uses at the Proposed Project site, and therefore would not increase operational and maintenance emissions at the station, relative to existing conditions. In addition, as described in Section 16, *Transportation and Traffic,* the Proposed Project would neither generate a significant number of new vehicles trips nor add additional capacity to area roadways. Rather, the Proposed Project may reduce vehicle trips during the long term by encouraging alternative transportation and improving the reliability and frequency of transit. The following assessment, therefore, focuses exclusively on construction-related emissions because there would be no impact as a result of Proposed Project operations.

a) Conflict with an Air Quality Plan

Less-than-Significant Impact. A project is deemed inconsistent with air quality plans if it would result in population or employment growth that exceeds estimates used to develop applicable air quality plans. Projects that propose development that is consistent with the growth anticipated by the relevant land use plans would be consistent with the current BAAQMD air quality plans. Likewise, projects that propose development that is less dense than anticipated within a general plan (or other governing land use document) would be consistent with the air quality plans because emissions would be less than estimated for the region.

The Proposed Project would enhance multi-modal transit access, which supports the City's long-term goal to encourage alternative transportation and make transit more frequent, reliable, integrated and accessible. The Proposed Project features may contribute to long-term reductions in mobile source emissions throughout the region. Moreover, as discussed in Section 10, *Land Use and Planning*, and Section 13, *Population and Housing*, the Proposed Project is consistent with current land use and zoning designations and would not induce growth or employment in the area.

Based on the above analysis, the Proposed Project is consistent with recent growth projections for the region and would not conflict with the current BAAQMD air quality plans. While emissions would be generated during construction (discussed below), they are expected neither to exceed BAAQMD significance thresholds nor to impede attainment or maintenance of the NAAQS or CAAQS. Moreover, the Proposed Project contributes to the City's long-term vision for sustainable growth

and is consistent with Goal 6 from the City of Berkeley's *Climate Action Plan* (CAP). Accordingly, the Proposed Project would not conflict with or obstruct implementation of any applicable land use plan or policy. Therefore, the impact would be less than significant.

b) Violate Air Quality Standards

Less than Significant with Mitigation Incorporated. Proposed Project construction has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, and truck hauling trips. In addition, fugitive dust emissions would result from demolition of existing structures and grading. Criteria pollutant emissions generated by these sources were quantified using information provided by BART and emission factors from the CalEEMod (version 2013.2.2) and EMFAC2011 emissions models.

Estimated construction emissions are summarized in **Table AQ-2**. All construction activities are assumed to occur sequentially (i.e., there would be no overlap between the phases). Consequently, the evaluation of Proposed Project significance is made by evaluating each activity against BAAQMD's thresholds of significance, rather than summing all emissions presented in **Table AQ-2** and comparing with BAAQMD thresholds. Please refer to **Appendix A** for modeling assumptions and calculations.

Table AQ-2. Estimated Criteria Pollutant Emissions from Proposed Project Construction (pounds per day)

				PM10		PM2.5	
Construction Phase	ROG	NO_X	CO	Dust	Exhaust	Dust	Exhaust
Phase A							
Demolition	3	28	17	0.7	1.5	0.1	1.4
Foundation/Footing/Stairwell	3	29	17	0.3	1.5	0.1	1.4
New Main Entrance Structure/Glazing/ Lighting/Landscaping	4	30	19	0.2	1.6	0.0	1.5
Phase B							
Demolition	3	20	14	0.5	1.1	0.1	1.0
Foundation/Footing	3	20	14	0.2	1.1	0.1	1.1
Structures	4	30	19	0.2	1.6	0.0	1.5
Plaza/Bus Pad	3	20	14	0.2	1.1	0.0	1.1
Phase C							
Demolition	2	18	13	0.4	1.0	0.1	0.9
Structures	2	23	13	0.2	1.1	0.1	1.0
Plaza/ Landscape	2	16	10	0.2	0.8	0.0	0.7
Bay Area Air Quality Management District Threshold	*54*	*54*	-	*BMPs*[a]	*82*	*BMPs*[a]	*54*
Exceed Threshold?	*No*	*No*	-	-	*No*	-	*No*

[a] BART would implement best management practices as recommended by the Bay Area Air Quality Management District.
CO = carbon monoxide
NO_X = nitrogen oxides
PM2.5 and PM10 = particulate matter
ROG = reactive organic gases

As shown in **Table AQ-2**, construction of the Proposed Project would not generate ROG, NO_X, or particulate matter exhaust in excess of the BAAQMD's numeric thresholds. Although NO_x emissions would be up to a maximum of 30 pounds per day, construction of the Proposed Project components in non-overlapping phases would ensure that NO_x emissions would remain below the threshold.

Alameda County is designated as an attainment/maintenance area for the federal CO standard and as an attainment area for the state CO standard. During the construction of Phase A and Phase B, the bus pad zone and one southbound travel lane on Shattuck Avenue between Center Street and Allston Way would be partially closed for up to 8 weeks. Shattuck Avenue is a major street in the downtown area, and the closure of one of the two southbound through lanes would reduce vehicle capacity and potentially increase vehicle delay for vehicles traveling through the Proposed Project area. It is anticipated that surrounding streets may also experience a temporary increase in traffic volumes and travel times due to the temporary change in travel patterns of drivers who wish to avoid the potential congestion on Shattuck Avenue in the Proposed Project area, especially during the peak commute hours.

As stated in 40 CFR 93.123(c)(5), "CO, PM_{10}, and $PM_{2.5}$ hot-spot analyses are not required to consider construction-related activities that cause temporary increases in emissions. Each site that is affected by construction-related activities shall be considered separately, using established 'Guideline' methods. Temporary increases are defined as those that occur only during the construction phase and last five years or less at any individual site." Because project construction would occur for 18 months, the construction impact would be short term, and implementation of a construction traffic control plan, as described in **Mitigation Measure TR-1** (see Section 16, *Transportation and Traffic*), would minimize the disruption of traffic flow and disturbances to road users. Implementation of **Mitigation Measure TR-1** would reduce impacts related to local CO emissions, and no CO hot spots would form during construction of the Proposed Project.

The BAAQMD (2011) *CEQA Guidelines* consider dust impacts to be less than significant through the application of best management practices (BMPs), which BART would implement as part of the Proposed Project. Therefore, implementation of **Mitigation Measure AQ-1** would reduce construction-related fugitive dust emissions, and implementation of **Mitigation Measure TR-1** would minimize the disruption of traffic flow and disturbance to road users, thereby ensuring that this impact would be less than significant.

Mitigation Measure AQ-1: Implement BAAQMD Basic Construction Mitigation Measures

BART will require all construction contractors to implement the basic construction mitigation measures recommended by BAAQMD. Emission reduction measures will include, at a minimum, the following measures.

- 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 off site 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.
- All construction equipment will be maintained and property tuned in accordance with manufacture's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five 5 minutes (as required by the California airborne toxics control measure).
- Publicly visible signs will be posted with the telephone number and person to contact at the lead agency regarding dust complaints. This person will respond and take corrective action within 48 hours. BAAQMD's phone number will also be visible to ensure compliance with applicable regulations.

c) Criteria Pollutants

Less than Significant with Mitigation Incorporated. BAAQMD has identified project-level thresholds to evaluate criteria pollutant impacts (see **Table AQ-1**). In developing these thresholds, BAAQMD considered levels at which project emissions would be cumulatively considerable. As noted in its *CEQA Guidelines* (2011):

> "In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary."

The criteria pollutant thresholds presented in **Table AQ-2**, therefore, represent the maximum emissions the Proposed Project may generate before contributing to a cumulative impact on regional air quality. Exceedances of the project-level thresholds would be cumulatively considerable. As discussed above, criteria pollutant emissions associated with implementation of the project are not expected to exceed BAAQMD's quantitative thresholds (see **Table AQ-1**). Pursuant to BAAQMD regulations, **Mitigation Measure AQ-1** is required to ensure construction-related fugitive dust emissions would be less than significant.

d) Sensitive Receptors Exposure

Less than Significant with Mitigation Incorporated. Sensitive receptors are typically defined as facilities that attract children, the elderly, people with illnesses, or other sensitive to the effects of air pollution. Examples of sensitive receptors include residences, hospitals, schools, parks, and places of worship. The Proposed Project area is predominantly mixed-use with several sensitive receptors scattered through the immediate Proposed Project vicinity. In particular, the University of California, Berkeley, and Berkeley High School are approximately 650 feet east and 830 feet southwest of the Proposed Project site, respectively. Several churches and public libraries are also within 1,000 feet of the Proposed Project site.

Diesel Particulate Matter

Diesel-fueled engines, which generate diesel particulate matter (DPM), would be used during Proposed Project construction. BAAQMD considers ultra-fine particle (PM2.5) emissions to be the DPM of greatest health concern. BAAQMD has determined that construction activities less than 1,000 feet from a sensitive receptor may pose a significant health risk. However, BAAQMD recognizes that other variables, such as duration of the construction period, types of construction equipment, and the amount of onsite diesel-generated PM2.5 exhaust, can influence DPM concentrations and the potential for a project to result in increased health risk. Accordingly, the BAAQMD's (2011) *CEQA Guidelines* recommend that projects with construction activities within 1,000 feet of sensitive receptors disclose and consider all potential variables that may affect DPM concentrations and exposure of receptors to those concentrations.

As shown in the PM10 and PM2.5 Exhaust columns of **Table AQ-2**, construction-related DPM emissions are expected to be minor and not exceed 2 pounds per day. These emissions would dissipate as a function of distance and would be lower at the nearest sensitive receptor. Moreover, implementation of **Mitigation Measure AQ-1** would reduce DPM emissions by limiting vehicle idling times and requiring regular maintenance of construction equipment. Estimated construction emissions would also be short-term and occur on 270 working days over a 2 year period. This is significantly lower than the 70-year exposure period typically associated with chronic cancer health risks.

Given the magnitude of DPM emissions and the short-duration of construction activities, the Proposed Project is not anticipated to result in an elevated cancer risk to exposed sensitive receptors. Consequently, emissions of DPM are not expected to exceed the BAAQMD's health risk thresholds. This impact would be less than significant.

Asbestos

Asbestos is a naturally occurring mineral that was previously used in building construction because of its heat resistance and strong insulating properties. Exposure to asbestos, however, has been shown to cause a number of disabling and fatal diseases, including lung cancer, mesothelioma, and pleural plaques. Demolition of the rotunda and other Proposed Project features may expose workers to asbestos if the mineral were used during original building construction. Compliance with **Mitigation Measure AQ-2**, pursuant to BAAQMD Regulation 11, Rule 2, is required to reduce minimize asbestos exposure and reduce impacts to a less-than-significant level.

> **Mitigation Measure AQ-2: Comply with BAAQMD Regulation 11, Rule 2, *Asbestos, Demolition, Renovation, and Manufacturing*.**
>
> BART will comply with BAAQMD Regulation 11, Rule 2, *Asbestos, Demolition, Renovation, and Manufacturing.* The purpose of this of the rule is to control emissions of asbestos to the atmosphere during demolition and building renovation.

e) Objectionable Odors

Less-than-Significant Impact. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and air districts. Proposed Project-related odor emissions would be limited to construction activities when emissions from equipment may be evident in the

immediately surrounding area. These activities would be intermittent and temporary in duration and, therefore, are not likely to result in nuisance odors. Impacts would be less than significant.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
4. Biological Resources				
Would the Proposed Project:				
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, or 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 pools, coastal wetlands, 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?	☐	☐	☐	☒

Biological Resources

Environmental Setting

The Proposed Project site is located within a densely populated urban area in the City of Berkeley and is entirely developed. The developed land cover includes some landscaped shrubs and street trees along sidewalks and medians.

Discussion

a) Candidate, Sensitive, or Special-Status Species

Less than Significant with Mitigation Incorporated. Biological resources were evaluated for their potential to occur within the Proposed Project area after an examination of the U.S. Geological Survey 7.5-minute Oakland West and Richmond quadrangles and aerial photographs. Lists of special-status species were obtained from the U.S. Fish and Wildlife Service (USFWS) list of endangered and threatened species, the California Department of Fish and Wildlife California Natural Diversity Database (CNDDB), and the California Native Plant Society (CNPS) inventory of rare and endangered plants (U.S. Fish and Wildlife Service 2014, California Department of Fish and Wildlife 2013, and California Native Plant Society 2014). Please refer to **Appendix B** for the lists of special-status species.

Because of the urban character of the Proposed Project site, only active migratory bird nests have the potential to be affected by the Proposed Project. Migratory birds with the potential to nest at the Proposed Project site include small common species such as Lawrence's goldfinch, Anna's hummingbird, and house finch. No other special-status species are expected to occur within the Proposed Project site because suitable habitat does not exist. The Proposed Project could potentially impact active migratory bird nests during construction. However, such impacts would be avoided and the level of effect reduced to a less-than-significant level with the implementation of **Mitigation Measure BIO-1.**

Mitigation Measure BIO-1: Conduct Pre-construction Migratory Nesting Bird Surveys

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 will be required.

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.

b) Riparian Habitats and Sensitive Natural Communities

No Impact. As discussed above, the Proposed Project site is an urban area that is entirely developed. No sensitive natural communities occur within the Proposed Project site and none would be affected by the construction or operation of the Proposed Project. The Proposed Project would have no impact.

c) Federally Protected Wetlands

No Impact. As discussed above, the Proposed Project site is an urban area that is entirely developed. No federally protected wetlands occur within the Proposed Project site and none would be affected by the construction or operation of the Proposed Project. The Proposed Project would have no impact.

d) Native Resident or Migratory Wildlife Corridors and Nursery Sites

No Impact. As discussed above, the Proposed Project site is an urban area that is entirely developed. No native resident or migratory wildlife corridors, or nursery sites occur within the Proposed Project site and none would be affected by the construction or operation of the Proposed Project. The Proposed Project would have no impact.

e) Biological Resources Protection Policies

Less-than-Significant Impact. The City of Berkeley regulates the removal of all public street trees and any Coast live oak (*Quercus agrifolia*) with a single stem possessing a circumference of 18 inches or more or a multi-stemmed tree with an aggregate circumference of 26 inches measured at 4 feet above grade. Typically, the removal of regulated trees without prior acquisition of a tree removal permit would result in a significant impact. Pursuant to California Government Code Section 53090, BART is not required to comply with the policies or regulatory requirements of local agencies on BART owned and maintained property. Although BART is not legally required to comply with local ordinances, BART works with the local cities and municipalities to compensate for the loss of trees, when possible.

To accommodate construction equipment and new structures, 11 existing street trees within the Proposed Project site would be removed: one Chinese hackberry tree on Allston Way, as well as one flowering cherry tree, one Chinese tallow tree, and eight Victorian box trees within the plaza area. BART would coordinate with the City to obtain tree removal permits. As part of the Proposed Project, these existing trees would be replaced within the Proposed Project site with two Columbian London trees and 11 Armstrong maples, which are taller, airy, and less bushy than the existing street trees. Thus, the replacement trees would improve visibility, complement the redesigned plaza, and be compatible with LID stormwater treatments. All other existing street trees within the Proposed Project site would be protected in place. Therefore, the Proposed Project would have a less-than-significant impact.

f) Habitat Conservation Plans

No Impact. There are no habitat conservation plans or natural community conservation plans that apply to the Proposed Project site. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
5. Cultural Resources				
Would the Proposed Project:				
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. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
d. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☒	☐	☐

Cultural Resources

Environmental Setting

For a more detailed discussion of archaeological, ethnological, and historical background of the resources located in the Proposed Project area, see Chapter 7 of *Draft Cultural Resources Inventory and Evaluation Report for the Downtown Berkeley BART Plaza and Transit Improvement Project* (ICF 2014) included as **Appendix C**.

Prehistory

At the time of European contact, the Bay Area was occupied by a group of Native Americans whom ethnographers refer to as the Ohlone or Costanoan. The Proposed Project area lies within the specific Ohlone tribal group known as the Huchiun. The Huchiun appear to have had extensive land along the East Bay shore, from Temescal Creek opposite the Golden Gate north to at least the lower San Pablo and Wildcat Creek drainages in the present area of Richmond. During the Early Holocene/Lower Archaic time period (about 8000–3500 B.C.), the archaeological record displays artifacts such as wide-stemmed point types, and milling implements such as handstones and milling slabs were becoming more prevalent, signifying the increased use of, and reliance on, plant resources. The mortar and pestle were first documented in the Bay Area during what is termed the Middle Period, shortly after 4000 B.C., and by 1500 B.C., cobble mortars and pestles, and not millingslabs and handstones, were used at sites throughout the Bay Area, including ALA-307 (West Berkeley). The Late or Terminal Period (A.D. 1500–1650) is represented by changes in artifact types and mortuary objects. The signature Olivella beads of the central California abruptly disappeared, and toggle harpoons, hopper mortars, and plain corner-notched arrow-sized projectile points dominated the assemblage. Seven Spanish missions were founded in Ohlone territory between 1776 and 1797. It has been estimated that in 1776, when the first mission was established in Ohlone territory, the Ohlone population numbered around 10,000. By 1832, the Ohlones numbered less

than 2,000 as a result of introduced disease, harsh living conditions, and reduced birth rates (Cook 1943, 1943a in Levy 1978:486). The Ohlone are becoming increasingly organized as a political unit. They have developed an active interest in preserving their ancestral heritage and language and are active in the city of Berkeley.

Historical Background

Two important themes represent the historical context within which potentially affected resources of this Project are best understood: the development of Berkeley and its commercial architecture, and transportation development within Berkeley. A condensed version of these themes is included below, and is in large part summarized from *Historic Property Inventory and Evaluation: AC Transit East Bay Bus Rapid Transit Project, Volume 1* (JRP Historical Consulting 2005). Parenthetical citations indicate information from additional sources.

Berkeley's Architectural Development

Berkeley had its origins in two separate communities: Ocean View (West Berkeley) was settled in the early 1850s along the waterfront, becoming an industrial and commercial center for the area. Further inland and east of Ocean View, another community developed around the University of California campus. The two communities incorporated under the name of Berkeley in 1878.

Architects and engineers designing commercial and civic buildings in this period often adopted a Neo-Classical architectural style, and the buildings constructed are generally substantial and impressive in design. The façades typically feature stylistic classic elements such as decorative cornices, stone or terra cotta ornamentations, elaborate entries with arched openings, and classic pillars, or can contain few decorative elements. Some examples of this style still extant within the Proposed Project area include 2276 Shattuck (the Morse Block, dating to 1906), the Masonic Temple at 2105 Bancroft Way (built in 1905), 2151-2165 Shattuck (the Wright Block, constructed in 1906) and 2225 Shattuck Avenue (the Alko Office Supply building, constructed in 1913). The Mission Revival style is also present in some of Berkeley's commercial architecture from this period, as can be seen in the Shattuck Hotel. This hotel has dominated the intersection of Allston Way and Shattuck Avenue since it opened in 1910.

Commercial construction flourished in the 1920s as well, especially in the downtown area and along Telegraph Avenue. In 1925, construction of the 12-story American Trust Building at the corner of Center and Shattuck avenues (2144 Shattuck Avenue, now known as the Wells Fargo Building) gave Berkeley its first high-rise building. Commercial expansion raised real estate values along Shattuck Avenue and adjacent streets, prompting the Southern Pacific Railroad to sell its Berkeley Station to developer Roy Long in 1925. The station block was subsequently bisected by a newly-extended Addison Street and converted to commercial use as Shattuck Square. Other buildings constructed during this period within the Proposed Project area include the one-story Mediterranean-influenced building at 2323 Shattuck Avenue (constructed in 1921), the Tupper Reed Building located at 2271-2275 Shattuck Avenue (dating to 1925 and constructed in the Normandy style), and the theater at 2274 Shattuck, constructed in Art Deco style.

Berkeley's Transportation Development

The San Francisco & Oakland Railroad Company made the first successful attempt at establishing mass transit in the East Bay in 1863 when it offered the first trans-bay train-ferry service between Oakland and San Francisco. Horse trolleys and street cars were replaced by electric street railways

during the 1890s, and the electric interurbans expanded during the early twentieth century as Francis Marion formed the San Francisco, Oakland & San Jose Railway in 1903. Known as the Key Route or Key System, the service provided trans-bay travel to the commuters of the East Bay.

The increasing popularity of the automobile resulted in a movement for better roads. In 1902, the State Constitution was amended to empower the state government to establish a state highway system, pass laws for highway construction, and provide aid to counties for improving and construction their road systems. One of the most important developments in East Bay transportation in the twentieth century was the construction of the San Francisco-Oakland Bay Bridge in the 1930s. Completed in 1936, this bridge provided East Bay residents with a direct connection to San Francisco for the first time. Patronage of the rail lines dropped drastically in the 1930s, caused by the slow economy of the Great Depression, reduced population growth, and the increasing popularity of the automobile. The Southern Pacific ceased electric passenger operations in 1941. In 1956, East Bay citizens voted to establish AC Transit, a public, tax- supported agency; in 1959, voters authorized a $16.5-million bond issue allowing AC Transit to purchase the Key System. Mass rail transit disappeared from the East Bay until BART began operations in 1972.

The BART system's origins can be traced as far back as the mid-1940s at a point when increased post-war migration and automobile traffic had begun to inundate communities and transportation facilities on both sides of the Bay. A joint Army-Navy review board recommended in 1947 that installation of an underwater transbay tube reserved solely for passage of high-speed electric trains would be the ultimate remedy for further congestion. To that end, the State Legislature in 1951 established the San Francisco Bay Area Rapid Transit Commission to conduct a study of transportation in the Bay Area. As a result, the Commission recommended the Legislature form the San Francisco Bay Area Rapid Transit District, which, at the time of formation, included Alameda, Contra Costa, Marin, San Francisco, and San Mateo counties. The District was charged with the task of overseeing the construction and operation of a high-speed rapid network connecting major commercial centers with outlying suburban sub-centers. Project engineers proposed running electric trains on grade-separated rights-of-way, reaching maximum speeds of 80 miles per hour (ARG 2007).

Citizens of Berkeley were influential in the creation of BART through the City. The community had initially agreed to the combination of a street-level and subway route through the City, but these sentiments later evolved into a consensus for a subway line only that ran underneath Shattuck Avenue. Berkeley residents ultimately agreed to be taxed an additional $20 million to guarantee BART would run completely underground. The Downtown Berkeley BART station and associated plaza—the focal point of this IS/MND—opened to the public in January 1973 as part of the extension line between the MacArthur and Richmond stations.

The historical record indicates a largely collaborative effort among many parties in the design and construction of the station plaza at Shattuck Avenue and Center Street. As-built drawings for the station indicate Henry Martens of Maher & Martens was the project architect, and Parsons Brinckerhoff-Tudor-Bechtel was positioned as the engineering consultant during the 1970 construction phase. The Downtown Berkeley station rotunda structure consists of a 24-sided polygon shape, or icosikaitera, and is the focal piece of the plaza (ARG 2007; BART As-Builts 1970).

Methods

Thresholds of Significance

The threshold of significance under CEQA is generally a resource's eligibility for the California Register of Historic Resources (CRHR) or the National Register of Historic Places (NRHP), or listing on a local survey of record (Public Resource Code Section 21083.2).

To be eligible for listing on the NRHP/CRHR under Evaluation Criteria A/1, B/2, or C/3, an architectural resource must be associated with important events, important persons, or an exemplary example of a type, period, or method of construction. Similarly, an archaeological site must contain artifact assemblages, features, or stratigraphic relationships associated with important events, or important persons, or be exemplary of a type, period, or method of construction to be eligible under Evaluation Criteria A/1, B/2, or C/3 (36 CFR 60.4, State CEQA Guidelines Section 15064.5(a)(1) and (3) and (c)(1) and (2)).

To be eligible under Criterion D/4, a historic resource need only show the potential to yield important information (U. S. Department of the Interior 1998). Rarely are architectural resources eligible under Criterion 4/D. An archaeological resource that qualifies as a "historical resource" under CEQA or as an historic property under Section 106 of the National Historic Preservation Act, generally, qualifies for listing under Criterion "4" of the CRHR (State CEQA Guidelines Section15064.5 (a)(3)(D)). An archaeological resource may qualify for listing under Criterion D/4 when it can be demonstrated that the resource has the potential to contribute significantly to the study of questions of scientific and/or historical importance.

Description of Archaeological Resources

Bibliographic references, previous survey reports, historic maps, and archaeological site records pertaining to the Proposed Project area were compiled through a records search of the California Historical Resources Information System to identify prior studies and known cultural resources within a 0.25 mile radius of the Proposed Project site.

This records search was conducted at the Northwest Information Center (NWIC), Sonoma State University, Rohnert Park, on November 25, 2013. The records search involved a review of the following information.

- Site records for previously recorded sites.
- All previous studies conducted within, or within 0.25 mile of, the Archaeological Area of Potential Effect (APE).
- The NRHP.
- The California Historical Resources Inventory.
- The Office of Historic Preservation Historic Properties Directory.
- Chapter 4E, Cultural Resources, *Draft Environmental Impact Report, Berkeley Downtown Area Plan* (Lamphier-Gregory 2009).

The NWIC records search identified four prehistoric resources within 0.25 mile of the Proposed Project site. None of these resources is in or adjacent to the Proposed Project site. All of the site records note that buildings and paved city streets have covered up the locations where these resources were originally identified.

- P-01-000029 (CA-ALA-8): a single burial, recorded in 1949. The site record noted that the burial had been removed by the present land owner (Pilling 1949); no additional information was provided.
- P-0005427 (CA-ALA-618/H): a single burial, identified and removed in 1955; and a two-story Colonial Revival house, originally constructed in 1904.
- P-01-010496: small shell scatter with 2 bone fragments
- P-01-010538 (CA-ALA-607): a single burial, excavated/studied by Albert Elsasser in the mid-1950s.

The NWIC records search also identified 22 built environment resources within 0.25 mile of the Proposed Project site. Two of these resources are adjacent to the Proposed Project site.

Two studies have been conducted within or adjacent to the Proposed Project site.

- S-24284, Billat, L. and C. Jensen. *Proposed Cellular Facility (Nextel Site #CA-067G/South Berkeley) in Downtown Berkeley, CA* (letter report). No new resources were identified during this study, which noted that the proposed cellular facility site, 2140 Shattuck Avenue, also known as the Chamber of Commerce Building, is listed in the NRHP and is a City of Berkeley landmark.
- S-29683, Billat, L. 2005. *Roof Mounted Antennas, and Lease Area Inside Building, Downtown Berkeley/CA-2521, 2054 University Avenue, Berkeley, CA*. A primary record was prepared for this building, which was determined eligible for the National Register in 2001 and listed in the CRHR.

An additional 12 studies have been conducted within 0.25 mile of the Proposed Project site. These studies include cultural resources assessments for large-scale utilities projects, studies for the development of parks in Berkeley, studies for transportation and freeway improvements, studies for building alterations and improvements, studies for additional telecommunications facilities in Berkeley, and several historic property survey reports for properties in downtown Berkeley.

Description of Architectural Resources

As indicated in **Table CUL-1**, review of previous studies, background research, and field survey resulted in the identification of 20 architectural resources within the Proposed Project area. Sixteen of the properties have previously been evaluated for NRHP eligibility in conjunction with AC Transit's Bus Rapid Transit Project (State Historic Preservation Office concurred with the findings in 2004). One building within the Proposed Project area is of recent construction; as such, it is not included in this IS/MND. Three properties, including the Downtown Berkeley BART station plaza and rotunda were evaluated for their potential historical significance as part of this IS/MND. Properties of local significant that have been designated under a local preservation ordinance (local landmarks or landmark districts) are presumed to be significant resources for purposes of CEQA unless a preponderance of evidence indicates otherwise (Public Resources Code Section 5024.1, 14 CCR Section 4850). The seven City of Berkeley Landmarks identified in **Table CUL-1** were also evaluated for their potential historical significance as part of this IS/MND.

Table CUL-1. Architectural Resources Located within the Proposed Project Area.

Property Address	Property Name	Previous Designation Status	Designation Status as part of This Study
2150 Shattuck Avenue	Great Western Building	Determined eligible for listing in the NRHP and CRHR	Evaluation updated—determined eligible for NRHP/CRHR under Criteria Consideration G [a]
2168-2180 Shattuck Avenue	Constitution Square	Determined not eligible for listing in the NRHP	No change from previous designation
2190 Shattuck Avenue	N/A	Determined not eligible for listing in the NRHP	No change from previous designation
2200 Shattuck Avenue	Shattuck Hotel	Determined eligible for listing in the NRHP and CRHR; City of Berkeley Designated Landmark	Evaluation updated—no change from previous designation [a]
2201-2217 Shattuck Avenue	Hinkel/Havens Blocks/Edys KPFA Radio Station	Determined eligible for listing in the NRHP and CRHR; City of Berkeley Designated Landmark	Evaluation updated—no change from previous designation [a]
2187 Shattuck	Samson Market/Central Bank/Walgreens	Determined not eligible for listing in the NRHP	No change from previous designation
2177-2183 Shattuck Avenue	F. W. Foss Co./Martino's Restaurant	Determined eligible for listing in the NRHP and CRHR	Evaluation updated—no change from previous designation
2169-2175 Shattuck Avenue	N/A	Determined not eligible for listing in the NRHP	No change from previous designation
2151-2165 Shattuck Avenue	Wright Block/Blums Flower Shop/Games of Berkeley	Determined not eligible for listing in the NRHP; City of Berkeley Landmark (2003)	No change from previous designation
150 Berkeley Square	Kaplan Building	Constructed in 2000—not a historic resource	N/A
133 Berkeley Square	Southern Pacific Offices	Determined not eligible for listing in the NRHP	No change from previous designation
124-131 Berkeley Square	Southern Pacific Offices/Fox Photo/Square Fountain	Determined eligible for listing in the NRHP	Evaluation updated—no change from previous designation
100-115 Berkeley Square	Greyhound	Determined not eligible for listing in NRHP	No change from previous designation
82 Shattuck Square	Shattuck Square Building	City of Berkeley Landmark	Determined not eligible for listing in NRHP/CRHR [a]
2036 Shattuck Avenue	S. H. Kress & Co.	City of Berkeley Landmark	Determined eligible for listing in NRHP/CRHR [a]
2100-2114 Shattuck Avenue	Francis Shattuck Building	Determined not eligible for listing in the NRHP; City of Berkeley Landmark	No change from previous designation

Property Address	Property Name	Previous Designation Status	Designation Status as part of This Study
2116-2118 Shattuck Avenue	N/A	Determined not eligible for listing in the NRHP	No change from previous designation
2120-2122 Shattuck Avenue	Roy O. Long Co./Morse-Brock Building	Determined eligible for listing in the NRHP and CRHR	No change from previous designation
2140-2144 Shattuck Avenue	Chamber of Commerce	Listed in the NRHP; City of Berkeley Landmark	Evaluation updated—no change from previous designation
Downtown Berkeley BART Station Plaza	N/A	N/A	Determined not eligible for listing in NRHP/CRHR [a]

[a] The State Historic Preservation Officer concurred with these determinations in a letter dated August 18, 2014.
CRHR = California Register of Historic Resources
N/A = not applicable
NRHP = National Register of Historic Place

Tasks carried out to complete the inventory and evaluation of architectural resources within the Proposed Project area consisted of pre-field research and literature review, a field survey, and historical research on the identified architectural resources. The evaluation process included preparation of six updates to previously determined eligible properties and three original property evaluations, including the Downtown Berkeley BART station plaza. The historic inventory and evaluation provided the following results

- There are no changes to the seven previously determined eligible properties. These area 2150 Shattuck Avenue, 2200 Shattuck Avenue, 2201–2217 Shattuck Avenue, 2177–2183 Shattuck Avenue, 124–131 Berkeley Square, 2120–2122 Shattuck Avenue, and 2140–2144 Shattuck Avenue.
- One of the newly evaluated properties appears to meet the criteria for listing in the NRHP and CRHR (2036 Shattuck Avenue) and, consequently, appears to be historical resource for purposes of CEQA.
- The two remaining newly evaluated properties (82 Shattuck Square and the Downtown Berkeley BART station plaza) do not appear to meet the criteria for listing in the NRHP and CRHR and as such appear not to be historical resources for purposes of CEQA.

The Downtown Berkeley BART station plaza was evaluated as a potential historic resource in accordance with Section 15064.5 (a)(2)-(3) of the CEQA Guidelines and using the criteria outlined in Public Resources Code Section 5024.1. Based on this evaluation, the property is not a historical resource for the purposes of CEQA and does not qualify for listing in the NRHP under any of the applicable criteria. Neither the plaza nor the rotunda, as a stand-alone structure, qualifies for listing in the NRHP under Criterion G for a property that has achieved significance within the last 50 years. Under Criterion A, the plaza and rotunda do not appear to be associated with events that have made a significant contribution to patterns in history, such as late twentieth-century transportation development in the City of Berkeley. They are not associated with known persons of historical significance at the local, state, or national level (Criterion B). The rotunda itself does not convey notable attributes of an architectural style or possess high artistic value. Therefore, it does not appear to represent a significant example of a type, period, or method of construction under Criterion C. In rare instances, transportation features can serve as sources of important information

about historic construction materials or technologies, as defined in NRHP Criterion D; however, the rotunda is otherwise documented and is not a source of important information in this regard. Although similar in design to the materials and window configuration to the NRHP-eligible Great Western building, the rotunda is not considered to be a historical resource based upon its visual similarities to that building.

On August 18, 2014, the State Historic Preservation Officer (SHPO) concurred with all findings presented in the survey and evaluation document, including that the Downtown Berkeley BART station plaza and rotunda structure, as well as 82 Shattuck Square, are not eligible for listing in the NRHP and CRHR and that 2036 Shattuck Avenue is eligible for listing in the NRHP and CRHR. On May 11, 2015, SHPO concurred with the Finding of Effect (**Appendix D**) determination that the Project would have no adverse effect to historic properties.

Discussion

a) Historical Resources

Less than Significant with Mitigation Incorporated. Seven of the eight historic properties within the Proposed Project's APE share and convey a period of historical significance (generally between 1890 and 1940) that predates the setting of a city block previously compromised by construction of the current BART plaza landscape and rotunda structure in 1972. Consequently, the setting that includes the current BART plaza and rotunda is not a character-defining feature of any of these historic buildings. Therefore, replacement of the plaza and rotunda would not adversely affect these buildings by diminishing their historic visual integrity. The replacement of the rotunda with a transparent structure at a smaller scale would open the viewshed both to and from the historic buildings. Further, this design is consistent with the City of Berkeley's procedures, policies, and programs in the *Downtown Area Plan* (Policy OS-1.2.6 "Shattuck Avenue: Constitution Square [BART Plaza] and Shattuck/Berkeley Square").

The eighth historic building within the Proposed Project's APE is the Great Western Building at 2150 Shattuck Avenue, constructed in 1969, and essentially a contemporary of the rotunda and plaza, constructed in 1972. The Great Western building has been determined eligible for NRHP listing under Criterion C because of its exceptionally innovative engineering and method of construction, and has been determined to have achieved historical significance within the last 50 years. The building is not recognized under this criterion for any perceived expression of aesthetic ideals or high artistic value. The BART rotunda shares some materials and design aesthetics with the Great Western building's façade. On August 18, 2014, the SHPO concurred with the conclusion that the Great Western Building at 2150 Shattuck Avenue is eligible for listing in the NRHP and CRHR. However, because the Great Western building is eligible for listing exclusively for its engineering type, elements of the building's visual aesthetic or setting are not considered character-defining features for which the building is deemed eligible. Therefore, the resource would not be significantly affected by the removal of the rotunda and the overall BART plaza and transit improvements.

Substantial levels of groundborne vibration generated at the Project site during Proposed Project construction could result in cosmetic impacts on nearby buildings identified as historic resources. The Proposed Project would require the use of jackhammers to remove ground-surface brick as close as a few feet from buildings determined to be eligible for listing in the NRHP or CRHR and considered to be historical resources for the purposes of CEQA, including local landmarks. At a distance of 25 feet, a jackhammer can cause a vibration rate of peak particle velocity (PPV) of 0.035

inch/second, which is less than the vibration damage potential threshold for all building and structure types. For the most vibration-sensitive structure type—extremely fragile buildings, ruins, or ancient monuments—the vibration damage potential threshold for a continuous vibration source at a distance of 25 feet is 0.08 PPV in/sec, a vibration level that is less than 50 percent of the vibration damage potential threshold. There are no buildings within the APE that are considered to be extremely fragile. However, operation of a jackhammer within a few feet of a historic building may result in some cosmetic damage such as cracks in masonry or applied architectural features. This impact is considered potentially significant but would be reduced to a less-than-significant level by implementing **Mitigation Measure CUL-1** during the Proposed Project construction period. Construction activities that generate noise and groundborne vibration would cease when construction of the Proposed Project has been completed. No other construction activities or operation of the Proposed Project could result in potential impacts on historic resources.

Mitigation Measure CUL-1: Monitor Vibration Levels at Historic Buildings during Jackhammer Usage within 10 Feet of Facades

A vibration monitoring plan will be prepared by a qualified professional with experience in determining the potential for structural damage due to building vibration and appropriate instrumentation and analysis procedures for quantifying ground and building vibration. Vibration monitors will be set up to respond to any vibration levels exceeding 0.225 PPV in/sec, which is less than the vibration level that would potentially damage historic buildings in fair condition. Should vibration reach this level, the bricks will be removed by another means that will ensure that the level of vibration remains at a safe level.

b) Archaeological Resources

Less than Significant with Mitigation Incorporated. The Cultural Resources chapter of the *Downtown Area Plan* noted that there are no archaeological resources known to exist in the downtown Berkeley area. However, it also states that "although much of the Downtown Area has already been excavated to enable previous development, it is still possible that future excavations could uncover archaeological resources that have not yet been exposed, particularly in the vicinity of the historic alignment of Strawberry Creek" (Lamphier-Gregory 2009: 4-101). The historic alignment of Strawberry Creek ran through the southern portion of the Proposed Project area, between Allston Way and Kittredge Street, and then headed west towards the Bay roughly underneath where Allston Way through downtown Berkeley is today (University of California, Berkeley 2006).

The records search revealed that there are four prehistoric archeological resources within 0.25 mile of the Proposed Project area, including three single burials. None of these resources is in or adjacent to the Proposed Project site, and all of them are located in paved or built-up areas of downtown Berkeley. All Proposed Project excavation would be of fill that was placed over the station when it was initially constructed in 1972, and no disturbance of unknown resources is anticipated. However, although unlikely, the potential may exist for previously undiscovered prehistoric or historic archaeological resources to be encountered during construction of various elements of the Proposed Project. This impact is considered potentially significant but would be reduced to a less-than-significant level by implementing **Mitigation Measure CUL-2**.

Mitigation Measure CUL-2: Stop Work if Prehistoric and/or Historic Archaeological Resources are Encountered during Ground-Disturbing Activities

If archaeological resources are uncovered during construction activities, all work within 50 feet of the discovery will be halted until a qualified archaeologist can be contacted to evaluate the situation, determine if the deposit qualifies as an archaeological resource, and provide recommendations. If the deposit does not qualify as an archaeological resource, then no further protection or study is necessary. If the deposit does qualify as an archaeological resource, then the impacts on the deposit shall be avoided if feasible. If the deposit cannot be avoided, impacts on the deposit must be mitigated utilizing methods that may include, but are not limited to, archaeological data recovery or other methods determined adequate by the qualified archaeologist and consistent with the Secretary of Interior's Standards for Archaeological Determination. Upon completion of the archaeologist's assessment, a report will be prepared documenting the methods, findings, and recommendations. The report will be submitted to BART and the Northwest Information Center.

c) Paleontological Resources and Unique Geological Features

Less than Significant with Mitigation Incorporated. The Cultural Resources chapter of the *Downtown Area Plan* noted that there are "no paleontological or unique geological resources known to exist in the downtown Berkeley area. However, it is still possible that future excavations in the downtown Berkeley area could uncover paleontological resources that have not yet been exposed" (Lamphier-Gregory 2009:4-101).

Although no paleontological resources are currently known to exist in the downtown Berkeley area, and all work is proposed to be within previously excavated soil, ground-disturbing activities associated with construction and related underground utility installation could, although unlikely, result in the destruction of unidentified subsurface paleontological resources. This impact is potentially significant but would be reduced to a less-than-significant level with implementation of **Mitigation Measure CUL-3**.

Mitigation Measure CUL-3: Stop Work if Paleontological or Unique Geologic Features are Encountered during Ground-Disturbing Activities

Should paleontological resources be encountered during construction or site preparation activities, such activities will be halted in the vicinity of the find. A qualified paleontologist will be contacted to evaluate the nature of the find and to determine if mitigation is necessary. All feasible recommendations of the paleontologist will be implemented. Measures may include, but are not limited to, in-field documentation and recovery of specimen(s), laboratory analysis, the preparation of a report detailing the methods and findings of the investigation, and curation at an appropriate paleontological collection facility.

d) Disturbance of Human Remains

Less than Significant with Mitigation Incorporated. Although no formal cemeteries or archaeological sites containing human remains were identified at or adjacent to the Proposed Project site, several single-burials were identified within 0.25 mile of the Proposed Project site during the background records search and literature review. All work is proposed to be undertaken entirely on fill that covers the existing underground station site, and no disturbance of unknown burials is anticipated. However, although unlikely, there is the potential that ground-disturbing activities associated with new construction and related underground utility installations may result in the disturbance of unidentified subsurface human remains. This impact is potentially significant

but would be reduced to a less-than-significant level with implementation of **Mitigation Measure CUL-4**.

Mitigation Measure CUL-4: Halt Work/Coroner's Evaluation/Native American Heritage Consultation/Compliance with Most Likely Descendent Recommendations

If human remains are encountered during construction activities, all work within 50 feet of the remains will be halted, and the Alameda County Coroner notified immediately. At the same time, an archaeologist will be contacted to assess the situation. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will identify a Most Likely Descendant (MLD) to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods. The archaeologist will recover scientifically valuable information, as appropriate and in accordance with the recommendations of the MLD. Upon completion of the archaeologist's assessment, a report will be prepared documenting methods and results, as well as recommendations regarding the treatment of the human remains and any associated archaeological materials. The report will be submitted to BART and the Northwest Information Center.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
6. Geology and Soils				
Would the Proposed Project:				
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. 1. 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. 2. Strong seismic ground shaking?	☐	☐	☒	☐
iii. 3. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. 4. 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 an onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

Geology and Soils

Environmental Setting

The Proposed Project site is located in the fully developed area of downtown Berkeley in relatively flat terrain at an elevation of approximately 150 feet above sea level. The Proposed Project site is not located within a delineated earthquake fault zone; however it is located in a seismically active region with the Hayward Fault approximately 1 mile to the east. The Proposed Project site is

underlain primarily by fill placed during construction of the Downtown Berkeley BART station in 1970.

Discussion

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Earthquake Fault Rupture

No Impact. The California Geological Survey publishes maps of the active faults in the Bay Area that reach the surface as part of its work to implement the requirements of the Alquist-Priolo Earthquake Fault Zone Act (California Geological Survey 2001). These maps show not only the most comprehensive depiction of fault traces that can rupture the surface, but also the zones in which cities and counties must require special geologic studies to prevent the building of structures intended for human occupancy. The Proposed Project is not located within a delineated earthquake fault zone. No impact from ground rupture would result from implementation of the Proposed Project.

ii. Strong Seismic Ground Shaking

Less-than-Significant Impact. The Hayward Fault lies approximately 1 mile east of the Proposed Project site. Studies by the U.S. Geological Survey and other agencies indicate that there is a 63 percent probability that there will be a magnitude 6.7 or greater earthquake in the Greater Bay Area within the next 30 years (U.S. Geological Survey 2008). In particular, the probability for a major earthquake in the Bay Area is highest on the Hayward Fault, which has a 31 percent probability of producing a major earthquake (U.S. Geological Survey 2008).

Although there is the potential for strong seismic ground shaking at the Proposed Project site, the risk of excessive permanent damage would be reduced because the Proposed Project involves improvements to an existing BART facility to meet heightened seismic design requirements pursuant to BART Facilities Standards. The general design policy of BART Facilities Standards Structural Criteria for Seismic Design incorporates the relevant seismic safety provisions of the California Building Code (CBC) and the California Department of Transportation (Caltrans) Bridge Design Specifications, along with other professional industry standards. BART Design Criteria require that all operating facilities be designed to withstand the effects of the Maximum Credible Earthquake without significant degradation of structural integrity.

Although the Proposed Project site would be potentially subject to strong seismic ground shaking, the Proposed Project and standard engineering design and adherence to BART and industry standards (e.g., CBC) would ensure that this impact would be less than significant.

iii. Seismic - Related Ground Failure

Less-than-Significant Impact. The Proposed Project site is located in a seismically active region with potential for strong shaking that could cause liquefaction (California Geological Survey 2011a). Liquefaction occurs when loosely packed sandy or silty materials saturated with water are shaken hard enough to lose strength and stiffness. Liquefied soils behave like a liquid and are responsible for tremendous damage in an earthquake, causing pipes to leak, roads and airport runways to buckle, and damage to building foundations. Please see the discussion

related to strong seismic ground-shaking in item (a)(ii) above. Although the Proposed Project site would be potentially subject to seismic-related ground failure and liquefaction, the proposed retrofits and standard engineering design and adherence to BART and industry standards (e.g., CBC) would ensure that the impact of seismic-related ground failure would be less than significant.

iv. Landslides

No Impact. The Proposed Project site is located on flat terrain and would not be susceptible to landslides (California Geological Survey 2011b). The Proposed Project would have no impact.

b) Soil Erosion and Topsoil Loss

Less-than-Significant Impact. Proposed Project activities would be in areas of previously developed flat terrain that are not susceptible to erosion or topsoil loss. However, the Proposed Project would temporary disturb soil, which would be subject to potential wind or water erosion. As discussed in Section 9, *Hydrology and Water Quality*, BART's Standard Specifications (Section 01-57-00, Temporary Controls) Section 1.08 (Erosion and Sediment Control) identifies specific practices to prevent erosion within the construction zone. To minimize erosion potential and to protect construction workers from potential excavation hazards, Section 31-50-00 (Excavation Support and Protection) requires that excavated areas be shored. Any salvaged topsoil from excavated areas would be stockpiled at appropriate locations onsite and would be secured to prevent contamination by other materials pursuant to Section 31-00-00 (Earthwork). Stockpiled topsoil would be used for any landscaping needs on site. Upon completion of the Proposed Project, the site would be restored to pre-construction conditions, with a net increase in pervious surfaces due to inclusion of new landscaping and LID measures, thereby eliminating the potential for permanent soil erosion or loss of topsoil. Impacts would be less than significant.

c) Unstable Geological Unit

Less-than-Significant Impact. Please see the discussion related to strong seismic ground-shaking in item (a)(ii) above. While the Proposed Project site would be potentially subject to seismic-related ground failure and liquefaction, the proposed retrofits and standard engineering design and adherence to BART and industry standards (e.g., CBC) would ensure that impacts related to unstable geologic units would be less than significant.

d) Expansive Soils

Less-than-Significant Impact. The Proposed Project site is not located in an area known to contain expansive soils. In addition, compliance with the BART Facilities Standards (Bay Area Rapid Transit 2004) would ensure that appropriate measures be taken to ensure that any risks associated with expansive soils would be minimized. This impact would be less than significant.

e) Waste Water Disposal Systems

No Impact. The Proposed Project does not include the use of septic tanks or alternative wastewater disposal systems. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
7. Greenhouse Gas Emissions				
Would the Proposed Project:				
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?	☐	☐	☒	☐

Greenhouse Gas Emissions

Environmental Setting

Climate change is a complex phenomenon that has the potential to alter local climatic patterns and meteorology. Increases in anthropogenic GHG emissions have been unequivocally linked to recent warming and climate shifts (Intergovernmental Panel on Climate Change 2007). Although modeling indicates that climate change will result globally and regionally, there remains uncertainty with regard to characterizing the precise *local* climate characteristics and predicting precisely how various ecological and social systems will react to any changes in the existing climate at the local level. Regardless of this uncertainty in precise predictions, it is widely understood that some degree of climate change is expected as a result of past and future GHG emissions.

The most common GHGs resulting from human activity are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). State CEQA Guidelines also define GHGs to include perfluorinated carbons (PFCs), sulfur hexafluoride (SF_6), and hydrofluorocarbons (HFCs). Unlike criteria air pollutants, which occur locally or regionally, the long atmospheric lifetimes of these GHGs allow them to be well-mixed in the atmosphere and transported over distances. Within California, transportation is the largest source of GHG emissions (38 percent of emissions in 2011), followed by industrial sources (21 percent) (California Air Resources Board 2013c).

Although there is currently no federal law specifically related to climate change or the reduction of GHGs, the EPA has adopted regulations and proposed performance standards for electric power plants under the Clean Air Act. California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. Of particular importance is Assembly Bill 32 (AB 32), which establishes a statewide goal to reduce GHG emissions back to 1990 levels by 2020. The governor has also issued several executive orders related to the state's evolving climate change policy. At the local level, the City of Berkeley adopted a CAP in 2009 to reduce community-wide GHG emissions 33 percent below 2000 levels by 2020.

As disused in Section 3, *Air Quality*, the BAAQMD has the primary responsibility for air quality management within Alameda County. BAAQMD directs lead agencies to quantify and disclose GHG emissions and make a determination on the significance of GHG impacts in relation to meeting AB 32

GHG reduction goals. The BAAQMD's (2011) *CEQA Guidelines* outline advisory thresholds for stationary source and land use development projects. The mass emissions threshold for stationary source projects is 10,000 metric tons per year of carbon dioxide equivalent (CO_2e). For land use development projects, the guidelines establish three potential analysis criteria for determining project significance: compliance with a qualified CAP, a mass emissions threshold of 1,100 metric tons per year of CO_2e, and a GHG efficiency threshold of 4.6 metric tons CO_2e per service population (project jobs + projected residents). The BAAQMD's *CEQA Guidelines* do not identify a GHG emission threshold for construction-related emissions, but they recommend that GHG emissions from construction be quantified and disclosed.

Discussion

As discussed in Section 3, *Air Quality*, the Proposed Project would not increase operational and maintenance activities or generate a significant number of new vehicles trips in the Proposed Project area, relative to existing conditions. The following assessment, therefore, focuses exclusively on construction-related emissions because there would be no impact as a result of Proposed Project operation.

a) Generation of Greenhouse Gas Emissions

Less-than-Significant Impact. Construction of the Proposed Project would generate emissions of CO_2, CH_4, and N_2O from mobile and stationary construction equipment exhaust and employee and haul truck vehicle exhaust. Estimated construction emissions associated with the Proposed Project are summarized in **Table GHG-1**. Please refer to **Appendix A** for modeling assumptions and calculations.

Table GHG-1. Estimated Greenhouse Gas Emissions from Project Construction (metric tons per year)

Construction Year	CO_2	CH_4	N_2O	Other[a]	CO_2e[b]
2016	107	0.02	0.00	0.46	109
2017	129	0.03	0.00	0.55	132
Total Emissions	*236*	*0.05*	*0.01*	*1.01*	*240*

[a] From construction worker commutes (mix of fuels). Other GHGs include CH_4, N_2O, and HFCs, which represent 5% of total GHG emissions from on-road sources (calculated by diving CO_2 emissions by 0.95 and multiplying the resulting number by 0.05).

[b] Refers to carbon dioxide equivalent, which includes the relative warming capacity (i.e., global warming potential) of each GHG.

CO_2 = carbon dioxide

CO_2e = carbon dioxide equivalent

CH_4 = methane

N_2O = nitrous oxide

As shown in **Table GHG-1**, Proposed Project construction would generate 240 metric tons of CO_2e. This is equivalent to adding 48 typical passenger vehicles per year to the road during the construction period (U.S. Environmental Protection Agency 2011). The construction emissions would primarily result from use of diesel-powered construction equipment (e.g., cranes). Because construction emissions would cease once construction is complete, they are considered short-term.

As discussed in the *Environmental Setting* section, BAAQMD's *CEQA Guidelines* do not identify a GHG emission threshold for construction-related emissions. Although there is no established threshold,

construction-related emissions associated with the Proposed Project would be less than BAAQMD's 1,100 metric ton CO_2e operational threshold. Because construction emissions are temporary, as opposed to annual, comparing construction emissions to BAAQMD's operational threshold represents a conservative assessment of potential impacts. Implementation of **Mitigation Measure AQ-1** (described in Section 3, *Air Quality*) would also reduce construction-related GHG emissions by limiting vehicle idling times and requiring regular maintenance of construction equipment. Impacts would be less than significant.

b) Conflict with Applicable Plans, Policies, or Regulations

Less-than-Significant Impact. At the state level, AB 32 establishes a statewide goal to reduce GHG emissions to 1990 levels by 2020. The ARB adopted the AB 32 Scoping Plan as a framework for achieving AB 32 goals. The Scoping Plan outlines a series of technologically feasible and cost-effective measures to reduce statewide GHG emissions. Alternative transportation and public transit are key strategies for the transportation sector. The Proposed Project would support implementation of these measures through enhancements to the accessibility of the Downtown Berkeley BART station.

The City of Berkeley adopted a CAP in 2009 to reduce community-wide GHG emissions 33 percent below 2000 levels by 2020. Although BART is not subject to Berkeley's CAP, consistency with the CAP is discussed below for informational purposes.

Berkeley's CAP outlines strategies to reduce GHG emissions from transportation, building energy use, and waste generation. Within the transportation sector, the CAP seeks to reduce vehicle miles traveled and promote alternative modes of transportation. Specifically, Goal 6 strives to increase the safety, reliability, and frequency of public transit. By improving multi-modal transit access, the Proposed Project supports attainment of this goal. Enhanced transit access may also increase ridership, which would contribute to long-term reductions in mobile source and facilitate attainment of the CAP's 2020 GHG reduction goal.

Based on the above discussion, the Proposed Project is consistent with the Berkeley CAP and AB 32. Although emissions would be generated during construction (see **Table GHG-1**), they are expected to be minor and well below the BAAQMD's operational threshold of 1,100 metric tons CO_2e.[3] Because the Proposed Project would not conflict with any applicable plan, policy, or regulation for GHG reduction or managing global climate change, this impact would be less than significant.

[3] In establishing its GHG significance thresholds, BAAQMD identified the emissions level that would not be expected to substantially conflict with AB 32 GHG reductions or to contribute substantially to a cumulative impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
8. Hazards and Hazardous Materials				
Would the Proposed Project:				
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 involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
d. Be located on a site that 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?	☐	☐	☐	☒

Hazards and Hazardous Materials

Environmental Setting

Hazardous Materials

The major sources of hazardous material contamination in the Proposed Project area are associated with non-residential activity. Sources of contaminants include the following.

- Chemical contamination from businesses such as dry cleaning establishments.
- Gasoline and waste oil contamination from automobile repair and service facilities whose underground storage tanks (USTs) may have leaked.
- Fuel oil contamination from underground heating oil storage tanks.

Automobile sales and service facilities form the largest category of past land uses in the downtown area that may have generated, used, stored, and disposed of hazardous materials (largely petroleum-based products). In the past, many more gasoline stations and repair shops were located in the downtown Berkeley area than is the case today. Other businesses that routinely handle hazardous materials (primarily solvents used as cleaning agents) in the downtown Berkeley area include paint stores, dry cleaning establishments, and book-binding and printing establishments. The major concern with leaking USTs is the migration of the contaminants in the soil into the groundwater.

Based on a search of the State of California Environmental Protection Agency's Cortese List and the State Water Resources Control Board's GeoTracker database, seven property sites located within 0.25 mile of the Proposed Project site have been identified as having leaking USTs and have open or active cases.

- 2400 Shattuck Avenue.
- 2176 Kittredge Street.
- 1917 Addison Street.
- 1894 University Avenue.
- 1950 Martin Luther King Jr. Way.
- 15345 Avendale Avenue.
- 1929 University Avenue.

Although these sites are in the general area of the Proposed Project site, they are not located adjacent to or within the Proposed Project site, and there is no known subsurface contamination at the Proposed Project site resulting from the facilities listed above or from any other source.

Discussion

a) Routine Transport, or Disposal of Hazardous Materials; and

b) Upset and/or Accident Conditions

Less-than-Significant Impact. Proposed Project construction activities would involve the use of heavy equipment and vehicles containing fuel, oil, and grease, as well as materials such as concrete, asphalt, paints, and solvents. Fluids such as oil or grease could leak from construction vehicles or be inadvertently released in the event of an accident. Such accidental spills could adversely affect the health and safety of individuals working at or utilizing the Proposed Project site and individuals at adjacent land uses.

The project contractor specifications will stipulate that the contractor will implement a safety program and safety practices. In the event of an accidental release or spill, BART's contractor would also follow the BART Facilities Standards 01 35 24 for hazardous materials encountered during construction. In compliance with this specification, if unidentified contaminated materials are encountered during construction or an accident results in the release of hazardous materials, work would be stopped and the area evacuated and secured. The construction contractor would immediately notify the project engineer, and, if necessary, the construction contractor would take precautions to limit the contamination to the jobsite. Disposal of chemicals and any hazardous materials used in construction would adhere to federal, state, and local regulations.

Following construction of the Proposed Project, BART operations at the Proposed Project site would remain the same as under existing conditions and would not involve the routine transport of hazardous materials. The risk of upset or accidental release of hazardous materials into the environment as a result of operation following construction would not change from existing conditions in the proximity of the Proposed Project site. Therefore, this impact would be less than significant.

c) Hazardous Emissions and Materials near Schools

Less-than-Significant Impact. Three schools are located within 0.25 mile of the Proposed Project site.

- Berkeley City College, 2050 Center Street (0.05 mile west of the Proposed Project site).
- Berkeley High School, 1980 Allston Way (0.15 mile southwest of the Proposed Project site).
- University of California, Berkeley, (0.15 mile east of the Proposed Project site).

Proposed Project construction activities would involve the use of heavy equipment and vehicles containing fuel, oil, and grease, as well as materials such as concrete, asphalt, paints, and solvents. Fluids such as oil or grease could leak from construction vehicles or be inadvertently released in the event of an accident. Such accidental spills could adversely affect the health and safety of students and staff at nearby schools. However, as discussed in items (a) and (b), adherence with applicable federal, state, and local regulations as well as BART's Health and Safety Plan would minimize potential impacts. Operation of the Proposed Project would not involve the routine transport of hazardous materials. Disposal of chemicals and hazardous materials used in construction would adhere to federal, state, and local regulations. Therefore, this impact would be less than significant.

d) Hazardous Materials Sites

No Impact. As discussed in the *Environmental Setting* section, the Proposed Project site is not located on any property identified on the Cortese List and there is no known subsurface contamination that may be disturbed by the Proposed Project. The Proposed Project would have no impact.

e) Airport Land Use Plans; and

f) Private Airstrips

No Impact. There are no airports or airstrips in the vicinity of the Proposed Project, and the Proposed Project would not expose persons to any hazards associated with aviation operations. The Proposed Project would have no impact.

g) Emergency Response Plans

Less than Significant with Mitigation Incorporated. Construction of the Proposed Project would require temporary closure of one southbound lane on Shattuck Avenue for a period of up to eight (8) weeks total throughout the duration of construction, temporarily altering traffic patterns within and near the Proposed Project site. With implementation of **Mitigation Measure TR-1** (see Section 16, *Transportation and Traffic*), BART would develop and implement a traffic control plan and would coordinate with emergency agencies ensuring that emergency access would be maintained at all times. Impacts related to emergency access and response would be less than significant with incorporation of mitigation.

h) Wildland Fires

No Impact. No portion of the downtown Berkeley area is located within an area formally identified as subject to wildland fire hazards. However, it should be noted that in September 1923, a major wildfire that began in the Wildcat Canyon area, ultimately destroyed homes within a few blocks of downtown Berkeley. An uncontrolled wildfire originating in the Berkeley Hills today could still pose a threat to people and property in the downtown Berkeley area, given conditions favorable to the rapid spread of such a fire. Although there is a remote possibility that areas near downtown Berkeley may be exposed to a severe, uncontrolled wildfire, the Proposed Project would not change or increase the exposure of persons or property to an increased risk compared with the existing condition. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
9. Hydrology and Water Quality				
Would the Proposed Project:				
a. Violate any water quality standards or waste discharge requirements?	☐	☒	☐	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in 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 that 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 that would result in substantial erosion or siltation onsite or offsite?	☐	☐	☒	☐
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 that would result in flooding onsite or offsite?	☐	☐	☒	☐
e. Create or contribute runoff water that 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 that 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. Contribute to inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☒

Hydrology and Water Quality

Environmental Setting

The Proposed Project would be located in a highly urbanized area within the Strawberry Creek drainage basin of the San Pablo Bay watershed. There are no surface drainage features located within the Proposed Project site, and surface runoff is directed into the City of Berkeley's storm drainage infrastructure. Strawberry Creek runs through an underground culvert approximately 800 feet east of the Proposed Project site (City of Berkeley 2012c). The Proposed Project site is not located within a 100-year flood hazard zone or within a reservoir inundation hazard zone (City of Berkeley 2012b).

Berkeley is part of the East Bay Plain groundwater basin. Berkeley has groundwater conditions that are typical of shallow, unconfined, or partially confined aquifers that do not have laterally continuous low permeability layers between the water table and the ground surface. Depths to groundwater range from near the surface at the waterfront to greater than 30 feet below the ground surface in the Berkeley Hills (City of Berkeley 2001). The Berkeley Sub-Area of the East Bay Plain basin contains a series of alluvial fans deposited on a west-sloping bedrock surface, indicating groundwater flow is generally to the west, toward San Francisco Bay. The aquifer ranges from 10 to 300 feet deep, averaging 100 to 200 feet deep (San Francisco Regional Water Quality Control Board 2014). There is no historical evidence that groundwater supplies are sufficient for municipal use, primarily because of low recharge rates (San Francisco Regional Water Quality Control Board 2014).

Regulatory Setting

The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) is the state agency with primary responsibility for designating the beneficial uses of the San Francisco Bay watershed and setting the water quality objectives required to ensure that those uses are protected. The State Water Resources Control Board (State Water Board) identifies waters failing to meet standards for specific pollutants, which are then state-listed in accordance with Clean Water Act Section 303(d). Strawberry Creek is listed as Section 303(d) impaired[4] for trash from urban runoff/storm sewers and illegal dumping (State Water Resources Control Board 2008). In addition, the State Water Board regulates the discharge of stormwater through the National Pollutant Discharge Elimination System (NPDES) permit program. Stormwater runoff from construction sites disturbing 1 acre or more must comply with the State's General Construction Activity Stormwater Permit (Order No. 2009 0009 DWQ, NPDES No. CAS000002) (Construction General Permit) and must be managed by a Storm Water Pollution Prevention Plan (SWPPP). The Proposed Project site is approximately 26,250 square foot (sf) (approximately 0.6 acre) and would not be required to comply with the General Permit or managed by a SWPPP (State Water Resources Control Board 2013).

BART is a Permittee under State Water Board NPDES General Permit No. CAS0000004, Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s) (Phase II Small MS4 Permit) (Order No. 2013-0001-DWQ), which went into effect

[4] These are waters that are too polluted or otherwise degraded to meet the water quality standards set by states, territories, or authorized tribes.

July 2013. This permit applies to non-traditional small MS4 permittees, including transit agencies such as BART. The order identifies specific provisions that BART and other non-traditional permittees must comply with over a phased period of time to manage their stormwater program. Under this permit, discharges must not cause exceedances of water quality objectives, create a nuisance, or impair water quality in receiving waters. The State Water Board is advancing LID measures as means of complying with municipal stormwater permits. LID measures, such as the use of vegetated swales/retention basins and minimizing impermeable surfaces, are incorporated into site design to manage stormwater and to maintain a site's predevelopment runoff rates and volumes. The Phase II Small MS4 Permit requires the implementation of site design measures for all projects that create or replace 2,500 square feet to 5,000 square feet of impervious surface (including projects with no net increase in impervious footprint). Site design measures include stream setbacks and buffers, soil quality improvement and maintenance, tree planting and preservation, rooftop and impervious area disconnection, porous pavement, green roofs, vegetated swales, rain barrels, and cisterns. In addition, Post-Construction Standards are required for applicable new and redevelopment Regulated Projects (projects that create or replace 5,000 square feet or more of impervious surface). Measures for site design, source control, runoff reduction, storm water treatment, and baseline hydromodification management are required for Regulated Projects.

In addition to the Phase II Small MS4 Permit, Alameda County is a covered under the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit No. CAS029718 (Order No. R2-2009-0074-DWQ) (SF Bay MS4 Permit), which the San Francisco Bay Water Board most recently issued on October 14, 2009 (State Water Resources Control Board 2009). The Alameda Countywide Clean Water Program (ACCWP) maintains compliance with the NPDES permit requirements by requiring local agencies to address stormwater quality during development review, the utilization of water quality BMPs during project construction, and the reduction of long-term water quality impacts using site design and source control measures. The ACCWP has developed C.3 Stormwater Technical Guidance (Version 4.0, May 2013) to assist developers and engineers in complying with treatment and hydromodification requirements. The Municipal Regional Permit (MRP) provides provisions and requirements for permanent stormwater treatment. Stormwater treatment measures are required to reduce the sediment and pollutant load resulting from the loss of pervious area and creation of impervious area. A project is required to implement permanent stormwater treatment measures when 10,000 square feet or more of impervious roadway area is created or replaced. If a project creates or replaces impervious area equal to more than 50 percent of the existing impervious area not previously requiring treatment, then the project must provide treatment for all existing and newly created impervious area. In addition to addressing permanent stormwater treatment requirements, the MRP provides provisions and requirements for hydromodification measures if the project creates and replaces 1 acre or more of impervious surface, increases impervious surface over pre-project conditions, and is located in a susceptible area as shown on the Hydromodification Management Applicability Map.

Discussion

a) Water Quality Standards

Less than Significant Impact with Mitigation Incorporated. The Proposed Project could result in a temporary increase in surface water pollutants such as sediment, oil and grease, and miscellaneous wastes from construction activities. Water quality would be temporarily affected if

disturbed sediments were discharged via existing stormwater collection systems. Increased turbidity resulting from construction-related sediment discharge can introduce compounds toxic to aquatic organisms, increase water temperature, and stimulate the growth of algae. Construction of the Proposed Project would take place within a highly urban environment primarily on existing paved surfaces; thus, substantial soil erosion would not result. Daily and total area of land disturbance from activities, such as pavement demolition, grading, and excavation, would be approximately 500 sf per day for a total of 20,000 sf (approximately 0.5 acre). Because the total area of land disturbance would be less than 1 acre, a Construction General Permit would not be required. However, the Phase II Small MS4 permit and BART Facilities Standards Section 1.08, Erosion and Sediment Control require BART contractors to develop an Erosion and Sediment Control Plan to prevent erosion and sedimentation impacts during construction activities. Section 1.08 also requires the contractors to comply with all applicable federal, state, and local laws, orders, and regulations concerning the prevention, control, and abatement of water pollution.

Strawberry Creek is listed as 303(d) impaired for trash from urban runoff/storm sewers and illegal dumping. The Proposed Project construction activities would generate debris and miscellaneous trash that could further impair this water body. With implementation of **Mitigation Measure HYD-1**, the potential for construction trash and debris to enter the creek through the storm drain system would be minimized.

The Proposed Project would result in a net decrease in impervious footprint due to the replacement of existing brick-covered areas with pervious paving materials and the inclusion of new landscaping and LID measures. Therefore, the Proposed Project is not required to comply with site design measures/post-construction stormwater requirements specified in the Phase II Small MS4 Permit or ACCWP C.3 requirements. Although the Proposed Project is exempt from these requirements, BART would incorporate treatment measures into the design of the Proposed Project design, where feasible. The Proposed Project would replace existing brick-covered impervious surfaces with pervious paving materials and with large planters, tree areas, and landscaping designed to manage stormwater runoff. These provisions would allow for infiltration of stormwater into the ground and, by filtering out potential contaminants from runoff, reduce the potential for polluted runoff discharging into Strawberry Creek. Pervious pavement may also include slot drains and under drains to direct infiltrated water to the storm drain system. Drought tolerant plants would also be installed throughout the Proposed Project site to reduce the need for water use for landscaping. Operation of the Proposed Project may result in a slight increase in ridership, which could also result in a small increase in trash and contaminants entering the storm drain system. The location, number, and size of trash receptacles, recycling bins, and cigarette butt receptacles would be based on the expected needs of the Proposed Project.

Currently, the roof drain of the rotunda discharges directly into the City's stormwater system. Although the Proposed Project would result in a decrease in the net impervious surface area, it may result in changes to drainage patterns because the roof of the new main entrance structure would discharge stormwater to the onsite LID stormwater treatments rather than directly into the City's stormwater system. The proposed canopies at the five secondary BART entrances would not result in changes to drainage patterns because no additional stormwater would be discharged to the sidewalk, which is an impervious surface. The overhang portion at the five secondary entrances would not contribute additional rainwater discharge to the sidewalk relative to the existing condition, because this area is currently impervious and would contain pervious paving materials with implementation of the Proposed Project.

With implementation of **Mitigation Measures HYD-1**, BMPs, erosion control measures under BART Facilities Standards Section 1.08, and compliance with applicable water quality requirements, impacts from the Proposed Project on water quality during construction and operation activities would be reduced to a less-than-significant level.

Mitigation Measure HYD-1: Implement Construction Best Management Practices

BART will require the construction contractor to implement good housekeeping practices during construction, such as daily site cleanup and proper containment and disposal of construction debris, to ensure adequate containment and to prevent trash or construction debris being discharged into storm drains leading to Strawberry Creek. The construction contractor will also be required to implement the BART Best Management Practices to protect storm drains.

b) Groundwater

Less-than-Significant Impact. The Proposed Project is not expected to affect groundwater recharge because the site is surrounded by urban development and almost entirely covered by impermeable surfaces. Implementation of LID measures such as pervious pavement, as described in item (a) above, would improve groundwater recharge for the site. Although groundwater dewatering is not anticipated as part of the Proposed Project, if it is determined to be necessary during construction, BART would be required to comply with San Francisco Bay Water Board's dewatering requirements if discharging into storm drains or with East Bay Municipal Utility District (the local wastewater and sewage treatment service provider) if discharging into the sanitary sewer system. Additionally, the Proposed Project would not increase demand for water. Impacts would be less than significant.

c) Altering Drainage Pattern Resulting in Offsite Erosion or Siltation

Less-than-Significant Impact. As discussed in item (a) above, construction-related impacts would be minimized with implementation of erosion control measures under BART Facilities Standards Section 1.08 and other applicable regulations. Upon completion of the Proposed Project, the site would be restored to pre-construction conditions, with a net increase in pervious surfaces as a result of inclusion of new landscaping and LID measures. With implementation of erosion control measures and compliance with application regulations, impacts related to offsite erosion and siltation would be less than significant.

d) Altering Drainage Pattern Resulting in Onsite or Offsite Flooding

Less-than-Significant Impact. As discussed in item (a) above, the Proposed Project would result in a net decrease in impervious surface because of inclusion of new landscaping and LID measures. The Proposed Project would not alter the course of a stream or river, nor would it result in significant flooding onsite or offsite. Impacts would be less than significant.

e) Stormwater Drainage Systems

Less-than-Significant Impact. As discussed in item (a) above, the Proposed Project would result in a net decrease in impervious surface because of inclusion of new landscaping and LID measures. Thus, the project would not cause the exceedance of the existing stormwater conveyance system compared with existing conditions. Because of the relatively small area of soil that would be disturbed during the construction, the Proposed Project would not provide a substantial additional source of polluted runoff. Impacts would be less than significant.

f) Other Substantial Degradation of Water Quality

No Impact. The Proposed Project would not have water quality impacts other than those described above. The Proposed Project would have no impact.

g) Housing within 100-Year Flood Hazard Area; and

h) Structures within 100-Year Flood Hazard Area

No Impact. The Proposed Project site is not located within a 100-year flood hazard area. Further, the Proposed Project would not include housing. The Proposed Project would have no impact.

No Impact. The Proposed Project is not located within 100-year flood hazard zone. The Proposed Project would have no impact.

i) Levee or Dam Failure

No Impact. The Proposed Project is not located within a reservoir inundation hazard zone. The Proposed Project would have no impact.

j) Inundation by Seiches, Tsunamis, or Mudflows

No Impact. The Proposed Project is outside the tsunami hazard zone. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
10. Land Use and Planning				
Would the Proposed Project:				
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, a 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?	☐	☐	☐	☒

Land Use and Planning

Environmental Setting

The Proposed Project is within a highly urban environment area containing multi-family residential and commercial land uses in the City of Berkeley in Alameda County.

Discussion

a) Division of Established Community

No Impact. The Proposed Project would involve improvements to the existing Downtown Berkeley BART station, as well as to the surrounding plaza. It would occur primarily within existing BART ROW and would not physically divide any established communities. The Proposed Project would have no impact.

b) Conflict with Land Use Plans, Policies, and Regulations

No Impact. California Government Code Section 53090 exempts rapid transit districts like BART from complying with local land use plans, policies, and zoning ordinances. Accordingly, any inconsistency with such plans, ordinances, and regulations is not considered an impact that is subject to mitigation. Nevertheless, BART intends to inform the public and local jurisdictions of the extent to which the Proposed Project is consistent with local requirements.

The Proposed Project passes through the downtown Berkeley area identified as C-DMU (Commercial Downtown Mixed-Use District) under the local general plan of the City of Berkeley. Because the Proposed Project would take place primarily within the existing BART ROW and would not change the land uses at the Proposed Project site, it would be consistent with current land use and zoning designations.

To minimize disturbance to adjacent land uses and to the public throughout construction of the Proposed Project, construction would occur between 7:00 a.m. and 6:00 p.m. Monday through Friday, with construction on Saturdays, Sundays, holidays as needed and coordinated with the City. In addition, construction activities would comply with the BART noise and vibration standards. Access to the station would be preserved throughout the duration of construction. No permanent changes affecting adjacent land uses would occur. The disturbances to the public from implementation of the Proposed Project would be temporary. The Proposed Project would have no impact.

c) Conflict with Conservation Plans

No Impact. The Proposed Project site is not included in either a habitat conservation plan or natural community conservation plan. There would be no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
11. Mineral Resources				
Would the Proposed Project:				
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?	☐	☐	☐	☒

Mineral Resources

Environmental Setting

The State of California requires local jurisdictions with economically significant mineral resources to protect such areas from incompatible development. The California Geological Survey, under the authority of the Surface Mines and Reclamation Action of 1975, has classified aggregate mineral zones throughout the state. The Proposed Project site is not located in any identified significant mineral resource areas.

Discussion

a) Loss of Known Mineral Resources; and

b) Locally Important Mineral Resources

No Impact. The Proposed Project is located in a densely developed urban area of the City of Berkeley and is not located in an area identified as containing significant mineral resources, and, therefore, it would not affect any mineral resource recovery sites. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
12. Noise				
Would the Proposed Project:				
a. Expose persons to or generate noise levels in excess of standards established in a local general plan or noise ordinance or applicable standards of other agencies?	☐	☒	☐	☐
b. Expose persons to or generate 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?	☐	☐	☐	☒

Noise

Noise and Vibration Concepts

Noise is commonly defined as unwanted sound that potentially causes an adverse psychological or physiological effect on human health. Because noise is an environmental pollutant that can interfere with human activities, evaluation of noise is necessary when considering the environmental impacts of a project.

Sound is mechanical energy (vibration) transmitted by pressure waves over a medium such as air or water. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient (existing) sound level. The decibel (dB) scale, a logarithmic scale, is used to quantify sound intensity. Because the human ear is not equally sensitive to all frequencies in the entire spectrum, the A-weighted decibel scale (dBA) has been devised to relate noise to human sensitivity by discriminating against frequencies in a manner approximating the sensitivity of the

human ear. **Table N-1** provides definitions of sound measurements and other terminology used in this chapter, and **Table N-2** summarizes typical A-weighted sound levels for different noise sources.

In general, human sound perception is such that a change in sound level of 1 dB cannot typically be perceived by the human ear, a change of 3 dB is just noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level.

For a point source such as a stationary compressor or construction equipment, sound attenuates based on geometry at rate of 6 dB per doubling of distance. For a line source such as free flowing traffic on a freeway, sound attenuates at a rate of 3 dB per doubling of distance (California Department of Transportation 2013). Atmospheric conditions including wind, temperature gradients, and humidity can change how sound propagates over distance and can affect the level of sound received at a given location. The degree to which the ground surface absorbs acoustical energy also affects sound propagation. Sound that travels over an acoustically absorptive surface such as grass attenuates at a greater rate than sound that travels over a hard surface such as pavement. The increased attenuation is typically in the range of 1 to 2 dB per doubling of distance. Barriers such as buildings and topography that block the line of sight between a source and receiver also increase the attenuation of sound over distance.

Different types of measurements are used to characterize the time-varying nature of sound. These measurements include the equivalent sound level (L_{eq}), the minimum and maximum sound levels (L_{min} and L_{max}), percentile-exceeded sound levels (such as L_{10}, L_{20}), the day-night sound level (L_{dn}), and the community noise equivalent level (CNEL). L_{dn} and CNEL values differ by less than 1 dB. As a matter of practice, L_{dn} and CNEL values are considered to be equivalent and are treated as such in this assessment.

Table N-1. Definition of Sound Measurements

Sound Measurements	Definition
Decibel (dB)	A unitless measure of sound on a logarithmic scale, which indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.
A-Weighted Decibel (dBA)	An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
Maximum Sound Level (L_{max})	The maximum sound level measured during the measurement period.
Minimum Sound Level (L_{min})	The minimum sound level measured during the measurement period.
Equivalent Sound Level (L_{eq})	The equivalent steady state sound level that in a stated period of time would contain the same acoustical energy.
Percentile-Exceeded Sound Level (L_{xx})	The sound level exceeded "x" percent of a specific time period. L_{10} is the sound level exceeded 10 percent of the time.
Day-Night Level (L_{dn})	The energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.

Sound Measurements	Definition
Community Noise Equivalent Level (CNEL)	The energy average of the A-weighted sound levels occurring during a 24-hour period with 5 dB added to the A-weighted sound levels occurring during the period from 7:00 p.m. to 10:00 p.m. and 10 dB added to the A-weighted sound levels occurring during the period from 10:00 p.m. to 7:00 a.m.
Peak Particle Velocity (Peak Velocity or PPV)	A measurement of ground vibration defined as the maximum speed (measured in inches per second) at which a particle in the ground is moving relative to its inactive state. PPV is usually expressed in inches/sec.
Frequency: Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure.

Table N-2. Typical A-weighted Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet flyover at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawnmower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher in next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
	0	

Source: California Department of Transportation 2013.

Vibration

Operation of heavy construction equipment, particularly pile driving and other impacts devices such as pavement breakers create seismic waves that radiate along the surface of the earth and downward into the earth. These surface waves can be felt as ground vibration. Vibration from operation of this equipment can result in effects ranging from annoyance of people to damage of structures. Varying geology and distance result in different vibration levels containing different frequencies and displacements. In all cases, vibration amplitudes decrease with increasing distance.

Perceptible ground-borne vibration is generally limited to areas within a few hundred feet of construction activities. As seismic waves travel outward from a vibration source, they excite the particles of rock and soil through which they pass and cause them to oscillate. The distance that these particles move is usually only a few ten-thousandths to a few thousandths of an inch. The rate or velocity (in inches per second) at which these particles move is referred to as the peak particle velocity (PPV).

Table N-3 summarizes typical vibration levels generated by construction equipment (Federal Transit Administration 2006).

Table N-3. Vibration Source Levels for Construction Equipment

Equipment	Peak Particle Velocity at 25 feet
Pile driver (impact)	0.644 to 1.518
Pile drive (sonic/vibratory)	0.170 to 0.734
Vibratory roller	0.210
Hoe ram	0.089
Large bulldozer	0.089
Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Federal Transit Administration 2006.

Vibration amplitude attenuates over distance and is a complex function of how energy is imparted into the ground and the soil conditions through which the vibration is traveling. The following equation can be used to estimate the vibration level at a given distance for typical soil conditions (Federal Transit Administration 2006). PPV_{ref} is the reference PPV from **Table N-3**:

$$PPV = PPV_{ref} \times (25/Distance)^{1.5}$$

Tables N-4 and **N-5** summarize guidelines developed by Caltrans for damage and annoyance potential from transient and continuous vibration that is usually associated with construction activity. Equipment or activities typical of continuous vibration include: excavation equipment, static compaction equipment, tracked vehicles, traffic on a highway, vibratory pile drivers, pile-extraction equipment, and vibratory compaction equipment. Equipment or activities typical of single-impact (transient) or low-rate repeated impact vibration include: impact pile drivers, blasting, drop balls, “pogo stick” compactors, and crack-and-seat equipment (California Department of Transportation 2004).

Table N-4. Guideline Vibration Damage Potential Threshold Criteria

	Maximum PPV at 25 feet (in/sec)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: California Department of Transportation 2004

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

in/sec = inches per second

PPV = peak particle velocity.

Table N-5. Guideline Vibration Annoyance Potential Criteria

	Maximum PPV (in/sec)	
Structure and Condition	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Source: California Department of Transportation 2004

Note: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

in/sec = inches per second

PPV = peak particle velocity.

Environmental Setting

Noise Sensitive Land Uses

Sensitive land uses are generally defined as locations where people reside or where the presence of noise could adversely affect the use of the land such as schools, hotels, and libraries. There are several noise sensitive land uses in the vicinity of the Proposed Project. These sensitive land uses include the Kaplan Educational Facility (150 Berkeley Square, approximately 90 feet from the Proposed Project site), Hotel Shattuck (2060 Allston Way, approximately 50 feet from the Proposed Project site), and the Berkeley Hearing Center (2116 Shattuck Avenue, approximately 50 feet from the Proposed Project site).

Existing Noise Environment

The Proposed Project area is located in a dense, urban setting with primarily commercial land uses. Ambient noise levels in the downtown area are presented in the Downtown Area Plan EIR. Noise levels were measured at several sites in the downtown area for short- and long-term periods. The nearest long term measurement site to the Proposed Project site is on the 2200 block of Shattuck Avenue. The measurement recorded sound levels in the range of 65 to 73 dBA L_{eq}, which is likely a representative characterization for the Proposed Project site because of the close proximity and the similarity of land uses (including vehicular traffic on Shattuck Avenue) (City of Berkeley 2009).

Regulatory Setting

BART Noise Criteria

BART has adopted the FTA's noise and vibration impact thresholds as part of its facilities standards. Although, the FTA does not establish criteria for construction noise impacts, BART's Noise Criteria limit the generation of continuous and intermittent noise levels from construction equipment and construction activities. These standards apply to all BART construction activities, including the Proposed Project. The construction noise criteria used by BART are generally consistent with, and in some circumstances are more restrictive than, those recommended by the State of California Office of Noise Control in its Model Noise Control Ordinance.

The BART construction noise standards are specified in terms of the temporal nature of the noise (i.e., continuous or intermittent), the time of day, and the sensitivity of the affected receptor. These standards are summarized in **Tables N-6** and **N-7**. Continuous noise standards are applied to prevent noise from stationary sources, parked mobile sources, or any source or combination of sources producing repetitive or long-term noise lasting more than a few hours. Intermittent noise standards are applied to prevent noises from non-stationary mobile equipment operated by a driver or from any source of non-scheduled intermittent, non-repetitive, short-term noises not lasting more than a few hours from exceeding the prescribed limits.

Table N-6. Limits for Continuous Construction Noise

	Maximum Allowable Continuous Hourly Noise Level, dBA	
	Daytime	Nighttime
Residential		
Single-family Residential	60	50
Along an Arterial or Multi-family Residential Area, including Hospitals	65	55
Semi-residential/Commercial Areas, including Hotels	70	60
	At All Times	
Commercial		
Semi-residential/Commercial Areas, including Schools	65	
Pile Driving	70	

	Maximum Allowable Continuous Hourly Noise Level, dBA	
	Daytime	Nighttime
Industrial		
All Locations	80	

Note: Noise limits apply at 200 feet from the construction limits or at the nearest affected building, whichever is closer.
Source: BART 2004

Table N-7. Limits for Intermittent Construction Noise

	Maximum Allowable Continuous Hourly Noise Level, dBA	
	Daytime	Nighttime
Residential		
Single-family Residential	75	60
Along an Arterial or Multi-family Residential Area, including Hospitals	75	65
Semi-residential/Commercial Areas, including Hotels	80	70
	At All Times	
Commercial		
Semi-residential/Commercial Areas, including Schools	80	
Pile Driving	85	
Industrial		
All Locations	90	

Note: Noise limits apply at 200 feet from the construction limits or at the nearest affected building, whichever is closer.
Source: BART 2004

Discussion

a) Exceed Noise Standards

Less than Significant with Mitigation Incorporated. Construction of the Proposed Project would result in temporary noise generated by the operation of heavy-duty construction equipment. Construction of the Proposed Project would occur between 7:00 a.m. and 6:00 p.m. Monday through Friday, with construction on Saturdays, Sundays, holidays as needed and coordinated with the City.

There are commercial buildings directly adjacent to the Proposed Project site, and the nearest sensitive land uses are located approximately 50 feet from the Proposed Project site. As discussed in the Regulatory Setting, commercial exterior noise limits would apply to the Proposed Project during construction. Thus, if continuous construction noise (such as noise from a generator) exceeds 65 dBA or intermittent construction noise (such as noise from mobile construction equipment) exceeds 80 dBA, there could be a potentially significant impact. For this analysis, it was assumed that construction equipment would typically operate at a distance of 25 feet from commercial buildings. Calculated equivalent sound levels for each piece of equipment at 25 feet and 50 feet are shown in **Table N-8** along with the associated noise limit.

Table N-8 lists the construction equipment expected to be used and shows the typical noise levels produced by each piece of equipment. L_{max} sound levels at 50 feet are shown along with the typical acoustic use factor. The acoustic use factor is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its noisiest condition) during construction operation and is used to estimate L_{eq} values from L_{max} values. For example, the L_{eq} value for a piece of equipment that operates at full power 50 percent of the time (acoustical use factor of 50) is 3 dB less than the L_{max} value.

Table N-8. Typical Construction Noise Emission Levels

Equipment	Typical Maximum Noise Level 25 feet from Source (dBA)	Typical Maximum Noise Level 50 feet from Source (dBA)	Usage Factor	Equivalent Sound Level (L_{eq}) at 50 feet (dBA)	Daytime Continuous Limit (dBA, One-Hour L_{eq})	Daytime Intermittent Limit (dBA, One-hour L_{eq})
Backhoe	84	78	40	74	NA	80
Compressor	84	78	40	74	65	NA
Concrete Mixer Truck	85	79	40	75	NA	80
Crane	87	81	16	73	NA	80
Excavator	87	81	40	77	NA	80
Generator	87	81	50	78	65	NA
Jackhammer	87	89	20	82	NA	80
Truck	80	74	40	70	NA	80
Welder	80	74	40	70	NA	80

Source: Federal Highway Administration 2006.

Continuous noise equipment (generator and compressor) and intermittent construction noise equipment (jackhammer) are anticipated to exceed the commercial continuous and intermittent noise limits, respectively, at 25 feet from the noise source. Implementation of **Mitigation Measure NOI-1** would reduce potential noise impacts on sensitive land uses to less than significant.

Mitigation Measure NOI-1: Employ Noise-Reducing Construction Practices

BART will require all construction contractors to implement noise-reducing construction practices such that construction noise does not exceed limits for continuous and intermittent construction noise specified in the BART Facilities Standards/Standard Specifications, Section 01 57 00 Temporary Controls, 1.12 Noise Control at nearby land uses. BART will implement the following construction practices into construction documents to be implemented by the construction contractor. Measures that may be employed include but are not limited to the following:

- All construction equipment shall be properly maintained and equipped with all feasible noise control, such as mufflers, in accordance with manufacturers' specifications.
- Noise-reducing enclosures or shielding shall be used around stationary noise-generating equipment (e.g., compressors and generators) where needed to comply with noise limits.

- Hours of operation for project-related trucking activities will be limited to 7:00 a.m. to 6:00 p.m. Monday through Friday.
- BART will coordinate with and provide advanced notification of construction activities to sensitive receptors within 50 feet of jackhammering activities. Hours of operation for jackhammering activities will be limited to 7:00 a.m. to 9:30 a.m. Monday through Friday, and 7:00 a.m. to 11:00 a.m. as well as 2:00 p.m. to 6:00 p.m. on Saturdays.
- Use alternative demolition methods such as low-energy demolition devices and hand demolition if necessary to comply with noise limits.
- Stationary construction equipment, including compressors and generators, will be located as far as feasibly possible from residential properties and other sensitive land uses.
- All construction equipment powered by gasoline or diesel engines will have sound control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.
- A disturbance coordinator shall be designated and the person's telephone number shall be posted in a noticeable location around the Proposed Project site and supplied to nearby sensitive receptors. The disturbance coordinator shall receive all public complaints and be responsible for determining the cause of the complaint and implementing any feasible measures to alleviate the problem.

b) Excessive Groundborne Vibration and Groundborne Noise

Less-than-Significant Impact. Proposed Project construction would require the use of jackhammers as close as 25 feet from nearby commercial buildings. Construction of the Proposed Project would not require any other heavy impact equipment, such as pile drivers, impact hammers, or blasting equipment, which can cause substantial ground vibration. As shown in **Table N-3**, a jackhammer can cause a PPV of 0.035 in/sec at 25 feet. For the most vibration-sensitive structure type, extremely fragile historic buildings, ruins or ancient monuments, the vibration damage potential threshold for a continuous vibration source is 0.08 in/sec. A jackhammer would result in a vibration level at 25 feet that is less than 50 percent of this threshold. Therefore, the use of jackhammers at greater than 25 feet would not have the potential to damage structures surrounding the Proposed Project site. Although structural damage is not anticipated, operation of a jackhammer within a few feet of historic buildings may result in potential cosmetic damage such as cracks in masonry or applied architectural features. With implementation of **Mitigation Measure CUL-1** (see Section 5, *Cultural Resources*), impacts would be less than significant.

A vibration level of 0.035 in/sec would result in vibration that is distinctly perceptible. However, it is reasonable to conclude that distinctly perceptible vibration is less severe than excessive vibration. Furthermore, there are no sensitive land uses within 25 feet of the Proposed Project site. The closest sensitive land use, the Berkeley Hearing Center, is approximately 50 feet from the Proposed Project site. Using the PPV equation presented above, jackhammer use would generate a vibration level that would be categorized as barely perceptible at 50 feet. Thus, the use of jackhammers would not have the potential to cause excessive groundborne vibration or ground-borne noise to persons near the Proposed Project site. Vibration from the use of non-impact construction equipment, such as a small bulldozer, would be minimal, as shown in **Table N-3**. Consequently, the Proposed Project would not result in excessive groundborne vibration or noise. This impact would be less than significant.

c) Permanent Ambient Noise Increase

Less-than-Significant Impact. Construction activities, and the resulting noise, would be temporary and would cease once construction is finished. Noise associated with operation of the Proposed Project is expected to be the same as the existing condition because the Proposed Project would not substantially change the existing character or uses of the Proposed Project site. No new operational noise sources would be added as a result of the Proposed Project, and a substantial permanent increase in existing ambient noise would not occur.

The Proposed Project may result in a slight increase in transit ridership as well as slightly improved traffic operations on Shattuck Avenue and nearby cross streets as a result of fewer pedestrians crossing Shattuck Avenue, assuming that wayfinding signage appropriately directs pedestrians to the BART station exit and entrances nearest to the desired destination (see Section 16, *Transportation and Traffic*). If this slight improvement to traffic operations on Shattuck Avenue is realized, there would be a slight decrease in the noise generated by idling buses. Impacts would be less than significant.

d) Temporary Ambient Noise Increase

Less than Significant with Mitigation Incorporated. As discussed above, construction of the Proposed Project would result in a temporary increase in ambient noise levels, and construction of the Proposed Project has the potential to exceed BART's standards for commercial land uses. This could result in a significant impact. Implementation of noise reducing practices as part of **Mitigation Measure NOI-1** as described above would prevent noise levels from exceeding BART's Noise Criteria. Impacts would be less than significant with mitigation incorporated.

e) Project Located within Airport Land Use Plan or Near Public Airport

No Impact. The Proposed Project site is not located within an airport land use plan or within two (2) miles of an airport and would not expose people to excessive airport noise. The Proposed Project would have no impact.

f) Project Located within Vicinity of Private Airstrip

No Impact. The Proposed Project site is not located within 2 miles of a private airstrip and would not expose people to excessive airport noise. There would be no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
13. Population and Housing				
Would the Proposed Project:				
a. Induce substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace a substantial number of existing housing units, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace a substantial number of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Population and Housing

Environmental Setting

The Proposed Project area is characterized by dense urban development, including some nearby multi-family residential structures.

Discussion

a) Population Growth Inducement

No Impact. The Proposed Project does not include a residential component or elements that would induce growth or employment in the area. The Proposed Project would not require any additional infrastructure (e.g., water, sewer, or power lines) during construction or operation. The Proposed Project would have no impact.

b) Housing Displacement

No Impact. The Proposed Project involves improvements to the existing Downtown Berkeley BART station, including replacement of the surrounding sidewalk and plaza surface materials, improving pedestrian-oriented lighting, and landscaping. The Proposed Project would not require any land acquisitions and would not result in the direct or indirect displacement of existing housing or people. The Proposed Project would have no impact.

c) Population Displacement

No Impact. The Proposed Project does not include any elements that would displace a substantial number of people, which would necessitate the construction of replacement housing. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
14. Public Services				
Would the Proposed Project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or a 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:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

Public Services

Environmental Setting

The Proposed Project is located in a highly developed urban environment that is adequately served by existing public services.

Discussion

a) Impact Public Services

No Impact. The Proposed Project involves improvements to the existing Downtown Berkeley BART station, including replacement of the surrounding sidewalk and plaza surface materials, improving pedestrian-oriented lighting, and landscaping. The Proposed Project would not result in an increase in population and, therefore, would not require alterations or new governmental facilities or increase demand for public services beyond what currently exists without the Proposed Project. The Proposed Project would have no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
15. Recreation				
Would the Proposed Project:				
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 that might have an adverse physical effect on the environment?	☐	☐	☐	☒

Recreation

Environmental Setting

The Proposed Project is located in a highly developed urban environment that is served by existing parks and urban space areas. The closest parks and recreational areas to the Proposed Project site include Martin Luther King Jr. Civic Center Park (0.15 west of the Proposed Project site) and Ohlone Park (0.4 mile northwest of the Proposed Project site). The Proposed Project does not include and would not be not adjacent to any recreational area, nor would it encroach on or traverse recreational resources.

Discussion

a) Increase Use of Existing Parks or Recreational Facilities; and

b) Require Construction of Recreational Facilities

No Impact. The Proposed Project does not include a residential component, would not directly or indirectly contribute to population increases, and would not contribute to increase in demand for or use of recreational facilities. Thus, the Proposed Project would not affect the use of existing recreational facilities nor require the construction or expansion of recreational facilities. There would be no impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
16. Transportation and Traffic				
Would the Proposed Project:				
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 not 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 because of 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?	☐	☐	☒	☐

Transportation and Traffic

Environmental Setting

Roadway Network and Operation

The Proposed Project site is generally bounded by Shattuck Avenue to the east, Center Street to the north, and Allston Way to the south. Shattuck Avenue is a four-lane divided major street in the Proposed Project area, except between University Avenue and Center Street, where Shattuck Avenue branches into two separate three-lane one-way streets. Center Street and Allston Way are local streets with one lane in each direction. In front of the Proposed Project site, Shattuck Avenue

consists of one bus pad zone, two through lanes, and one left-turn lane in the southbound direction and three through lanes in northbound direction, with traffic signals at Center Street and Allston Way intersections.

Based on the traffic impact analysis prepared for the Downtown Area Plan EIR (City of Berkeley 2009), the Shattuck Avenue/Addison Street, Shattuck Avenue/Center Street, and Shattuck Avenue/Allston Way intersections were operating at level of service (LOS)[5] B during peak hours, which is better than the City's minimum acceptable level of LOS D.

Transit Service

The Proposed Project site is served by BART, local and regional bus service provided by AC Transit along Shattuck Avenue, and two campus shuttles provided by University of California Shuttle and Lawrence Berkeley Lab Shuttle.

An AC Transit bus stop is located in front of the Proposed Project site with a bus pad zone on the west side of Shattuck Avenue. AC Transit routes 1, 1R, 18, 49, 51B, 800, 851, and F stop at this location.

Non-Motorized Transportation

The Proposed Project site is heavily used by bicyclists and pedestrians to access the Proposed Project site and surrounding areas in downtown Berkeley. The Shattuck Avenue/Center Street intersection is one of the top intersections for high peak hour bike and pedestrian volumes in the downtown area. The Shattuck Avenue/Allston Way intersection is also one of the top intersections for high peak hour pedestrian volumes in the downtown area.

Center Street has a Class II bike lane[6] from Milvia Street to Shattuck Avenue. Sidewalks are provided on both sides of the streets surrounding the Proposed Project site.

Discussion

Construction of the Proposed Project has the potential to result in short-term disruptions to the existing transportation system, including the movement of pedestrians, cyclists, and emergency vehicles. Because of the nature of the improvements associated with the Proposed Project would largely replicate the existing conditions at the Proposed Project site, the majority of the discussion in this section is dedicated to the temporary effects of construction.

Operation of the Proposed Project would not generate a measurable number of new vehicles trips, it would not alter the existing street network and configuration, and it would not add additional capacity to area roadways. However, one of the Project objectives is to expand BART and AC Transit ridership by increasing and improving accessibility for pedestrian and bicyclists, improving public safety, and reorganizing the public space to better accommodate transit users. One of the mechanisms through which this may be realized is through the improvement of wayfinding signage both at the surface and within the BART station itself (below ground). Wayfinding signage is intended to direct pedestrians to the BART station exit and entrances nearest to the desired destination. Improved wayfinding signage could decrease vehicle/pedestrian conflicts, because improved wayfinding signage has the potential to reduce the number of times that some pedestrians

[5] Level of service (LOS) is a measure of traffic operating conditions, which varies from LOS A, which represents free flow conditions with little or no delay, to LOS F, which represents congested conditions with extremely long delays.
[6] A Class II bike lane is a striped lane on either side of a roadway for exclusive bike travel.

use at-grade street crossings over Shattuck Avenue and other cross streets in the vicinity of the Downtown Berkeley BART station. Therefore, with the improvement of the AC Transit bus stop and wayfinding signage, implementation of the Proposed Project has the potential to result in a slight increase in transit ridership as well as a decrease in vehicle/pedestrian conflicts, which could result in a corresponding slight improvement in traffic operations on Shattuck Avenue and nearby cross streets. Although the effects of the proposed wayfinding improvements associated with the Proposed Project cannot be quantitatively expressed because the response of passengers to the new signage is untested, the proposed wayfinding improvements are expected to result in an improvement compared with the existing condition by more effectively directing passengers to their desired destinations. The potential effects of this change are discussed qualitatively below.

a) Conflict with Plans, Ordinances, or Policies Related to Circulation Systems

Less than Significant with Mitigation Incorporated. Construction of the Proposed Project would occur in three phases over a period of 18 months beginning in early 2016 and ending by mid-2017. All the construction activities, including equipment staging, would be contained within the footprint of the Proposed Project (Figure 2). Although construction would temporarily increase the number of trucks and employee vehicles on public roadways accessing the Proposed Project site, the impact from increased trips on roadway traffic operation would be minimal.

During the construction of Phase A and Phase B, temporary closure of the bus pad zone and one southbound travel lane on Shattuck Avenue between Center Street and Allston Way would be partially closed for up to 8 weeks. Shattuck Avenue is a major street in the downtown area and the closure of one of the two southbound through lanes would reduce the vehicle capacity and potentially increase the vehicle delay for vehicles traveling through the Proposed Project area. It is anticipated that surrounding streets may also experience the increase in traffic volumes and travel time because of the change in travel patterns to avoid the potential congestion on Shattuck Avenue in the Proposed Project area, especially during the peak commute hours.

Although the change in traffic circulation is expected to be localized and would mostly affect streets adjacent the Proposed Project site, the temporary closure of one of two southbound through lanes on Shattuck Avenue for up to 8 weeks could substantially reduce the vehicle capacity during this period, disrupt the traffic flow on surrounding streets, and degrade the traffic operation at Shattuck Avenue/Addison Street and Shattuck Avenue/Center Street intersections during peak commute hours. Therefore, the impact of construction of the Proposed Project on vehicle circulation would be potentially significant. The construction impact would be short-term and implementation of a construction traffic control plan as describe in **Mitigation Measure TR-1,** coupled with good existing LOS along Shattuck Avenue, would minimize the disruption of traffic flow, disturbance to road users, and reduce the potential impact from construction activities to a less-than-significant level.

As discussed above, operation of the Proposed Project could increase transit ridership as well as a decrease vehicle/bicyclist/pedestrian conflicts in the vicinity of the Downtown Berkeley BART station. These effects would generally result in improved local traffic circulation as well as reduced hazards for pedestrians, and, therefore, would not result in conflicts with applicable transportation plans, ordinances, or policies.

Mitigation Measure TR-1: Implement a Traffic Control Plan

BART and the construction contractor will coordinate with the City of Berkeley, transit providers, and emergency service providers to develop a Traffic Control Plan to mitigate construction impacts on transit service, roadway operations, emergency responses, pedestrian and bicycle facilities, and public safety. Measures that will be implemented throughout the course of Proposed Project construction, will include, but not limited to, the following:

- Provide advance notice of lane and sidewalk closures, durations, and alternative routes to emergency service providers, motorists, bicyclists and pedestrians.
- Implement traffic control measures to minimize vehicle travel delays on Shattuck Avenue through the construction zone.
- Maintain acceptable response times and performance objectives for emergency response services.
- Provide safety measures for bicyclists and pedestrians traveling to and from the Berkeley BART station.
- Limit sidewalk, bicycle, and pedestrian walkway closures to one location within each vicinity at a time.
- Provide designated areas for construction worker parking wherever feasible to minimize use of parking on streets or in business areas.

b) Conflict with Congestion Management Program

Less than Significant with Mitigation Incorporated. As described above, although construction would result in a temporary increase in the number of trucks and employee vehicles on public roadways accessing the Proposed Project site, the increased vehicle trips would be a small fraction of existing traffic on the regional roadways and highways in the Proposed Project area. During the period when lanes are closure on Shattuck Avenue, the change in traffic circulation is expected to be localized and would mostly affect streets adjacent to the Proposed Project site. Therefore, Proposed Project construction traffic and lane closures are not expected to affect the traffic operation of regional roadways and highways that are monitored by the Alameda County Congestion Management Plan in the Proposed Project area. Implementation of **Mitigation Measure TR-1** would further ensure impacts would be less than significant.

c) Change in Air Traffic Patterns

No Impact. The Proposed Project would not change the height of existing buildings or other features that may result in a change in air traffic patterns or otherwise result in a safety risk. There would be no impact.

d) Increase Hazards due to Design Features Hazards

Less than Significant with Mitigation Incorporated. Proposed Project construction would require the temporary closures of the bus pad zone and one southbound travel lane on Shattuck Avenue between Center Street and Allston Way. These closures would potentially increase conflicts among buses and vehicles merging and diverging through the construction zone, and among vehicles, bicyclists, and pedestrians. The safety impact would be potentially significant. Implementation of a construction traffic control plan as describe in **Mitigation Measure TR-1** would reduce the impact to a less-than-significant level.

Operation of the Proposed Project has the potential to increase transit ridership and decrease vehicle/bicyclist/pedestrian conflicts in the vicinity of the Downtown Berkeley BART station. These effects would generally result in improved local traffic circulation as well as reduced hazards for pedestrians; therefore, there would be no permanent impact.

e) Inadequate Emergency Access

Less than Significant with Mitigation Incorporated. Proposed Project construction could have a temporary impact on emergency vehicle access because the Proposed Project would require the temporary closures of one southbound travel lane on Shattuck Avenue. The lane closure and would potentially increase vehicle travel time through the Proposed Project area for the duration of the lane closure. The impact on emergency access would be potentially significant. Implementation of a construction traffic control plan as describe in **Mitigation Measure TR-1** would reduce the impact to a less-than-significant level.

Operation of the Proposed Project has the potential to increase transit ridership and decrease vehicle/ bicyclist/pedestrian conflicts in the vicinity of the Downtown Berkeley BART station. These effects would generally result in improved local traffic circulation as well as reduced hazards for pedestrians, potentially increasing the ability of emergency service providers to access or pass through the Proposed Project site.

f) Conflict with Alternative Transportation Policies, Plans, and Programs

Less-than-Significant Impact. Proposed Project construction would require the temporary closures of the bus pad zone on Shattuck Avenue between Center Street and Allston Way. Buses that currently stop at this bus pad zone would be relocated to a temporary bus stop at a nearby location coordinated between BART, AC Transit and the City of Berkeley. Although individual entrances to the Downtown Berkeley BART station would be periodically closed to implement the improvements as part of the Proposed Project, temporary wayfinding signage would direct pedestrians and cyclists to station entrances that are open. Similarly, portions of the sidewalks would be temporarily impacted, requiring detours for pedestrians during certain phases of construction. Detours with clear signage would direct pedestrians across the street to allow for safe passage during the periods in which the sidewalks are closed. Therefore, the disruption to transit service and pedestrian and bicycle access are expected to be minor and limited to the duration of construction. Impacts would be less than significant.

Operation of the Proposed Project has the potential to increase transit ridership and decrease vehicle/bicyclists/pedestrian conflicts in the vicinity of the Downtown Berkeley BART station. These effects would generally result in reduced conflicts with alternative transportation policies, plans, and programs. There would be no permanent impact.

Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
17. Utilities and Service Systems				
Would the Proposed Project:				
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 that 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?	☐	☐	☐	☒

Utilities and Service Systems

Environmental Setting

The BART system uses the various public service and utility systems in its service area. Those services include water, wastewater, storm drainage systems, electrical services, and landfills.

Discussion

a) Exceed Wastewater Treatment Requirements

No Impact. Implementation of the Proposed Project would not result in facilities that would generate a new source of wastewater, and it would not result in the discharge of wastewater that

would exceed the treatment requirements of the San Francisco Bay Water Board (see Section 9, *Hydrology and Water Quality*). The Proposed Project would have no impact.

b) New/Expanded Water or Wastewater Treatment Facilities

No Impact. The Proposed Project would require the limited use of onsite watering trucks during construction to control fugitive dust produced during construction activities. Construction activities would not increase the amount of wastewater generated at the Proposed Project site. Operation of the Proposed Project would not alter the amount of water currently used at the Downtown Berkeley BART station, and it would not alter the amount of wastewater generated by this facility compared with the existing condition. Because any increase in water used by the Proposed Project would be minor and limited to the duration of construction, the Proposed Project would have no impact related to water and wastewater treatment facilities.

c) New/Expanded Stormwater Drainage Facilities

No Impact. As discussed in Section 9, *Hydrology and Water Quality*, the Proposed Project would provide new landscaping that includes LID treatment of stormwater, and would also include an increase in pervious surfaces compared with the existing condition. With improved landscaping, new stormwater infrastructure, and an increase in pervious surfaces, the Proposed Project would provide a net benefit by slightly increasing the amount of groundwater recharge and decreasing the amount and rate of stormwater discharged from the Proposed Project site. There would be no impact.

d) Sufficient Water Supply

Less-than-Significant Impact. As discussed above, construction of the Proposed Project would require minor amounts of water for fugitive dust control. The Proposed Project site would be designed with landscaping consisting of native vegetation that requires minimal irrigation, and the amount of vegetation would be the same as the existing condition, therefore there would be no additional water supplies needed for this purpose. No other element of the Proposed Project would require water beyond that which is already required for operation of the Downtown Berkeley BART station. Impacts would be less than significant.

e) Wastewater Treatment Capacity

No Impact. Implementation of the Proposed Project would not increase the generation of wastewater from the Proposed Project site, so there would be no increase in demand on wastewater treatment facilities compared with the existing condition. The Proposed Project would have no impact.

f) Landfill Capacity

Less-than-Significant Impact. The City of Berkeley provides refuse collection service in the downtown area, where the Proposed Project site is located. Collected refuse is first taken to the City of Berkeley's Transfer Station (located on Second Street near Gilman Street), where additional portions of the waste is diverted. The remaining waste is taken to either the Vasco Road Landfill near Livermore or the West Contra Costa Sanitary Landfill in Richmond. "The Vasco Road Landfill has remaining capacity to last until 2024, based on annual growth rate of three percent in the communities that dispose of solid waste there. However, this landfill retains ownership of 102 acres

of adjacent land that has been set aside for future expansion of the existing landfill, if necessary[7]." However, in March 2005 the Berkeley City Council formally adopted a goal to achieve Zero Waste by diverting 100 percent of municipal waste to recycling, reuse, and composting by 2020. There is remaining capacity at the Vasco Road Landfill with or without the Proposed Project, and if the City of Berkeley attains its goal of reducing to zero the amount of solid waste sent to the landfill, solid waste capacity would no longer be a relevant issue.

Proposed Project construction activities would produce excavated soils, debris, and construction-related materials, generating small quantities of solid waste, some of which would be transported to these local landfills. Operation of the Proposed Project may result in a negligible increase in trash generated at the Proposed Project site in the event that slight increases in transit ridership are achieved; however, this waste would be disposed of through the City of Berkeley, and therefore would be completely diverted through the City's Zero Waste program by 2020. The contribution of the Proposed Project to the waste stream would be relatively minor. Impacts would be less than significant.

g) Federal, State, and Local Solid Waste Statutes and Regulations

No Impact. As discussed in item (f), the Proposed Project would generate small quantities of solid waste, and all solid waste generated by construction and operation of the Proposed Project would be recycled, composted, or disposed of at an offsite facility in accordance with applicable federal, state, and local statutes and regulations. The Proposed Project would have no impact.

[7] Berkeley Downtown Area Plan Final Environmental Impact Report, 2010.

	Environmental Issues	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
18.	**Mandatory Findings of Significance**				
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, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b.	Does the project have impacts that are individually limited but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☒	☐	☐
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Mandatory Findings of Significance

Discussion

a) Potential to Degrade Quality of Environment

Less than Significant with Mitigation Incorporated. As discussed in Section 4, *Biological Resources*, BART would be required to implement **Mitigation Measure BIO-1** to reduce potential impacts on active migratory bird nests in trees near the Proposed Project site. The Proposed Project would not have the potential to affect other biological resources, habitat of a fish or wildlife species, result in a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of a rare or endangered plant or animal. As discussed in Section 5*, Cultural Resources*, BART would be required to implement **Mitigation Measure CUL-1** to reduce the impact of potential structural damage to historic buildings near the Proposed Project site from construction activities. Furthermore, **Mitigation Measures CUL-2**, **CUL-3**, and **CUL-4** would ensure the appropriate protocols are observed should there be any unknown or unrecorded archeological, paleontological, or Native American resources discovered on the Proposed Project site. Implementation of these mitigation measures would reduce potential impacts on these resources to a less-than-significant level.

b) Potential for Cumulatively Considerable Impacts

Less-than-Significant Impact with Mitigation Incorporated. The cumulative discussion determines whether the Proposed Project in combination with other approved or foreseeable projects would result in a significant cumulative impact, and, if so, whether the Proposed Project's contribution to the significant cumulative impact would be cumulatively considerable. **Appendix E** presents the list of approved or reasonably foreseeable projects considered in this cumulative impact analysis for the Proposed Project.

The Proposed Project is located in a developed urban environment with existing commercial and educational uses surrounding the Proposed Project site. The majority of the projects in the Proposed Project area are infill, redevelopment, and local roadway transportation projects. The majority of the Proposed Project's impacts would be temporary and short-term because they would be result from construction rather than from operation of the Proposed Project; such impacts from the Proposed Project would cease once Project construction is complete. Thus, the potential for the majority of cumulative impacts would result where the Proposed Project's construction period would overlap with the construction of other projects. The potential long-term impacts associated with the Proposed Project, specifically related to aesthetics and visual resources, were determined to be beneficial; therefore, the Proposed Project would not have the potential to contribute to cumulative long-term aesthetic impacts in combination with other projects.

The Proposed Project would not result in impacts on agricultural and forestry resources, land use and planning, mineral resources, population and housing, public services, and recreation; therefore, the Proposed Project would not have the potential to contribute to cumulative impacts on these resources in combination with other projects. Although the Proposed Project could result in less-than-significant construction-period impacts on other resource areas, cumulative impacts to these resource areas could occur in combination with those from other projects, as described below.

Based on the construction schedules of other projects that are known at this time, some of these projects will likely be constructed concurrent with the Proposed Project; however, there is considerable uncertainty in the construction schedules of these project overall due to funding considerations, permit requirements, and other potential regulatory issues that will likely result in their construction activities being staggered with respect to each other and the Proposed Project. The Center Street Garage (approximately 400 feet from the Proposed Project site) and the Berkeley Way Project (approximately 1,000 feet from the Proposed Project site) are most likely to be constructed concurrently with the Proposed Project.

Based on these two projects that are most likely to be constructed concurrently with the Proposed Project, it is anticipated that impacts on air quality, greenhouse gas emissions, hazardous materials, hydrology and water quality, noise, transportation and traffic, and utilities and service systems have the greatest potential to be cumulatively considerable during construction. Impacts on aesthetics, biological resources, cultural resources, and geology and soils would be site-specific, highly localized, and limited to the duration of construction; therefore, the Proposed Project does not have the potential to result in a considerable contribution to cumulative impacts.

As discussed in the Section 3, *Air Quality*, the Proposed Project's emissions would not exceed the significance thresholds identified by BAAQMD; BAAQMD has determined that emissions below the significance thresholds in the BAAQMD *CEQA Guidelines* would not result in a considerable contribution to a significant cumulative impact. The Proposed Project would have less than significant impacts on air quality with implementation of **Mitigation Measure AQ-1;** therefore,

pursuant to BAAQMD's CEQA Guidelines, the Proposed Project would not have the potential to result in a considerable contribution to cumulative impacts.

As discussed in the Section 7, *Greenhouse Gas Emissions*, construction of the Proposed Project would result in a temporary and minor increase in the emission of greenhouse gases; however, these emissions would be far below BAAQMD's operational threshold, and the Proposed Project would be consistent with Berkeley CAP and AB 32, ensuring that the Proposed Project would not result in a considerable contribution to a significant cumulative impact.

As discussed in the Section 8, *Hazards and Hazardous Materials*, potential impacts from construction and implementation of the Proposed Project relate to construction activities, specifically the potential accidental release of hazardous materials, emissions near schools, and potential interference with emergency response plans. With the adherence to applicable federal, state, and local regulations as well as BART's Health and Safety Plan, any such release or emissions of hazardous materials would be minimized. Other projects would also be required to comply with applicable federal, state and local regulations. The potential for interference with emergency response plans relates to the temporary closure of a single lane on Shattuck Avenue. Given the good operation of traffic in this area, the implementation of **Mitigation Measure TR-1**, and the temporary nature of potential lane closures, the Proposed Project would not result in a significant impact. Furthermore, any other project construction activities in the vicinity would be required to coordinate with the City and emergency service providers to ensure that if there is overlap in construction activities with the Proposed Project, any potential disruptions do not interfere with emergency response. Because of the highly localized nature of the potential impacts, temporary nature of potential impacts, the effectiveness of federal, state, and local regulations and BART's Health and Safety Plan, and the implementation of **Mitigation Measure TR-1**, the Proposed Project would not result in a considerable contribution to a significant cumulative impact.

As discussed in Section 9, *Hydrology and Water Quality*, Proposed Project construction activities could result in impacts on water quality in Strawberry Creek. However, adherence to the construction SWPPP and BMPs and the implementation of **Mitigation Measure HYD-1** would limit erosion and the discharge of trash into Strawberry Creek and reduce these potential impacts on water quality to a level of less than significant. The Proposed Project would also incorporate LID measures, increasing groundwater infiltration and reducing stormwater flow, resulting in an improvement relative to the existing condition. Other projects would also be required to prepare and comply with SWPPPs and BMPs during construction. Compliance with these measures would ensure that the Proposed Project in combination with other projects would not result in a considerable contribution to a significant cumulative impact.

As discussed in the Section 12, *Noise*, the Proposed Project could result in temporary noise and vibration impacts. However, the nature of such impacts would be localized and limited to the duration of construction. Construction activities associated with other projects in the vicinity of the Proposed Project would be required to comply with the City's noise standards. Given the temporary nature of the potential noise and vibration impacts, the expected effectiveness of the proposed mitigation measures, and the requirement of other projects to comply with the City's noise standards, the Proposed Project would not result in a considerable contribution to a significant cumulative impact.

As discussed in Section 16, *Transportation and Traffic*, the Proposed Project would require a temporary lane closure on southbound Shattuck Avenue during construction for up to 8 weeks. This

closure could have a localized impact on traffic on surrounding streets, particularly if combined with traffic caused by construction of other nearby projects. However, implementation of **Mitigation Measure TR-1** would result in preparation and implementation of a traffic control plan that would take into account the potential impacts resulting from other cumulative projects nearby. Other projects could result in transportation and traffic impacts during the construction of the Proposed Project, however any project with the potential to result in transportation and traffic impacts would be required to coordinate construction schedules with the City and other agencies, including BART, as appropriate. Similarly, construction of the Proposed Project would be required to be staged in a way to avoid or minimize conflicts with the concurrent construction of other projects in the Proposed Project area. Because of the temporary nature of potential impacts, coordination of construction activities with the City and other agencies, and the implementation of **Mitigation Measure TR-1**, the Proposed Project would not result in a considerable contribution to a significant cumulative impact.

As discussed in the Section 17, *Utilities and Service Systems*, potential impacts from construction and implementation of the Proposed Project relate to construction activities, specifically the potential use of existing water supplies, and the use of landfill capacity for construction debris. As described, the Proposed Project would require minimal amounts of water, which would be limited to the duration of construction. Similarly, construction would generate some amount of construction debris that would either be recycled or disposed of at a local landfill; however, this waste generation would be limited to the duration of construction. Although other projects in the vicinity of the Proposed Project may require some amount of water and may have solid waste needs, they would be subject to the same requirements as the Proposed Project. Combined with the fact that the water use and solid waste disposal requirements of the Proposed Project would be limited to the duration of construction, the Proposed Project would not result in a considerable contribution to a significant cumulative impact.

c) Potential for Direct or Indirect Effects on Human Beings

Less than Significant with Mitigation Incorporated. As described throughout the environmental checklist, the Proposed Project would not result in substantial environmental effects on human beings either during construction or Project operation. Mitigation measures are identified in this IS/MND to reduce potentially significant impacts related to air quality, noise, and transportation and traffic. Implementation of **Mitigation Measures AQ-1** and **AQ-2**; **NOI-1**; and **TR-1** would ensure that the Proposed Project would not result in impacts that would cause substantial adverse effects on human beings, either directly or indirectly.. No other direct or indirect adverse effects on human beings have been identified.

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