Summary

S.1 INTRODUCTION

The San Francisco Bay Area Rapid Transit District (BART) has prepared this Draft Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) for enhanced transit service in eastern Contra Costa County. As shown in Figure S-1, service is proposed to follow an alignment in the State Route (SR) 4 median between the Pittsburg/Bay Point BART Station and the vicinity of the Hillcrest Avenue interchange in the City of Antioch. This 10-mile corridor includes one transit station in Pittsburg at Railroad Avenue and a terminus station in Antioch, east of the Hillcrest Avenue interchange. Both of these stations would be located within the SR 4 median. In addition, several station location options are being considered for the Hillcrest Avenue terminus station, including one location in the median and two out of the median on land north of SR 4.

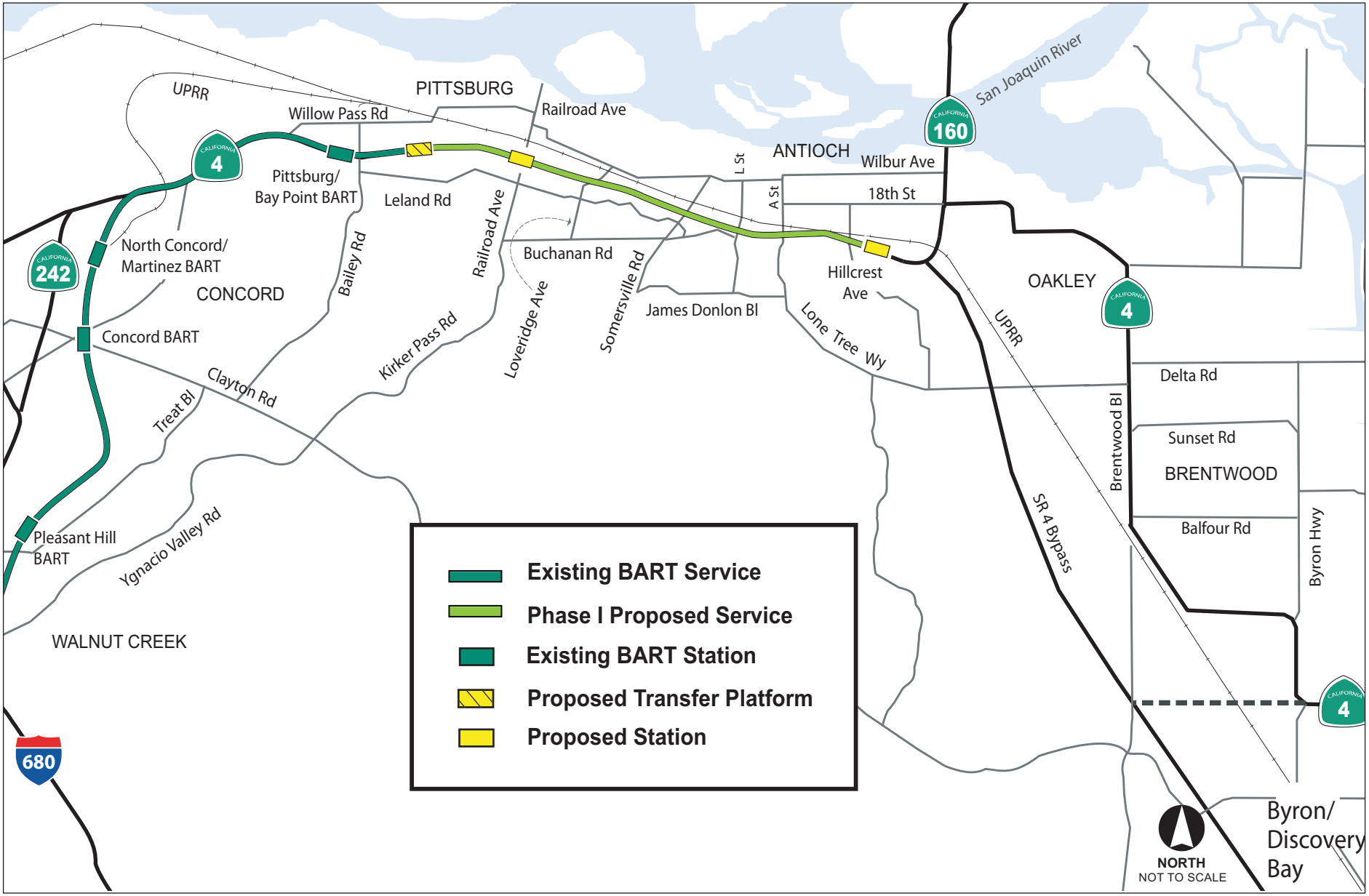
A two-vehicle Siemens Desiro Classic DMU set

The recommended rail technology is Diesel Multiple Units (DMU), which involves trains using light-weight, self-propelled rail cars. Passengers on these vehicles would transfer to BART at a new transfer platform located in the current tailtrack area of the existing Pittsburg/Bay Point BART Station platform. A train storage yard and maintenance facility would be constructed east of the terminus station in Antioch.

S.2 PROJECT DESCRIPTION

What is the Proposed Project?

The term "Proposed Project" is used in this document to refer to the East Contra Costa BART Extension (eBART) project. The Proposed Project would expand the existing BART system and extend transportation services to



Source: BART, 2008.

PROPOSED DMU ALIGNMENT
FIGURE S-1

communities in east Contra Costa County that are currently not served by rail transit. Stations within the SR 4 median would be designed to provide intermodal regional links to bus, shuttle, automobile, bicycle, and pedestrian networks. The Proposed Project would enhance the public's access to jobs, education, shopping, and social activities throughout the Bay Area.

As part of the Proposed Project, DMU trains would operate on tracks to be constructed in the median of SR 4 between the existing Pittsburg/Bay Point BART Station and the vicinity of the Hillcrest Avenue interchange in the City of Antioch. One transfer platform and two stations would be constructed along the 10-mile corridor. In addition, three optional locations for the terminus station are evaluated in this Draft EIR.

What is a Diesel Multiple Unit?

A "Diesel Multiple Unit" or DMU is the identifying name for a family of self-propelled rail cars that can be linked together. These rail cars have similar amenities and operating characteristics to BART vehicles, but generate their own power and can operate on standard gauge rail tracks. The power comes from an on-board diesel engine.

DMUs

Diesel Multiple Units or DMUs are individual transit vehicles powered by one or more on-board diesel engines that can be linked together as trains. For eBART, trains would consist of up to three DMU vehicles.

DMU technology is common in Europe and has had several successful applications in the United States. DMU service was initiated in New Jersey between Trenton and Camden in March 2004, and DMU service began in January 2008 on a 22-mile-long line linking the North San Diego County communities of Oceanside and Escondido.

What kind of fuel powers a DMU train?

DMUs can be configured to use diesel engines to generate electricity, which, in turn, power electric propulsion motors. For eBART, the diesel engines would burn ultra-low sulfur diesel (ULSD) fuel that would meet state and federal air quality standards. These diesel engines belong to a newer generation of engines known as "clean diesel."

ULSD

eBART would use ultra-low sulfur diesel (ULSD) fuel, which is much cleaner than the diesel fuel allowed previously.

How many stations are proposed in the project corridor?

A new eBART DMU station is proposed at Railroad Avenue in the City of Pittsburg and a second station at Hillcrest Avenue in the City of Antioch that would be the eastern terminus (see Figure S-1). Passenger transfers between BART and the DMU would occur at the existing Pittsburg/Bay Point BART Station on a new platform in the current tailtrack area.

How do passengers transfer between the DMU and the BART trains?

Simulated view of the transfer platform in SR 4 median looking east

Passengers would transfer between the DMU and BART trains via the proposed Pittsburg/Bay Point Transfer Platform. This transfer platform would be constructed in the SR 4 median within the current tailtrack area of the existing Pittsburg/Bay Point BART Station platform. Passengers on eBART seeking to board BART would ride the DMU train and get off at the transfer platform, walk across the platform, and board BART. There would be emergency ingress and egress at the west end of the platform.

How will passengers access the Transfer Platform?

Use of the transfer platform at the Pittsburg/Bay Point Station would be limited to passengers transferring between BART and the DMU trains so that there would be no pedestrian access from the existing BART station platform or from either side of SR 4. The transfer platform would not need to be equipped with stairs, escalators, parking, or a concourse area for public use. However, there would be emergency ingress and egress at the west end of the platform.

How will the passengers access eBART stations in the SR 4 median?

Access to the Railroad Avenue Station platform would be from the sidewalks on the west and east sides of the Railroad Avenue overpass, where one stairway and one elevator on each side of the overpass would descend to the DMU platform below. A pedestrian bridge from the east end of the station platform to the south side of the freeway over the eastbound lanes of SR 4 is also being planned, although it may not be constructed as part of the initial construction.

Access to the Hillcrest Avenue Station platform would be via a pedestrian overcrossing from the parking area that would be on the north side of SR 4. The pedestrian concourse linking the parking area and station platform over the westbound lanes of SR 4 would be elevated over the traffic lanes. The station's parking area would be accessible by pedestrians, bicycles, and buses.

What will the stations be like?

The eBART stations would consist of a platform with sheltered areas for passengers, informational signage, and benches. Parking would be available near eBART stations, and the stations would be accessible by pedestrians, bicyclists, and patrons transferring from the Eastern Contra Costa Transit Authority (Tri Delta Transit). The stations would be integrated visually and functionally with the surrounding land uses and circulation network as part of the Ridership Development Plans being prepared by the cities of Pittsburg and Antioch.

How many passengers will use the system?

How will eBART help reduce congestion?

An eBART train would carry as many people as 250 cars, greatly reducing the number of cars on the road. During the peak period, the number of vehicles taken off the road because of eBART would be equivalent to one lane of traffic.

The Proposed Project is expected to open for service in the year 2015. By the year 2030, the Proposed Project from Pittsburg/Bay Point BART Station to Hillcrest Avenue is expected to attract 10,100 daily, one-way passenger trips (entrances and exits). Of these trips, 5,400 would be made by new transit riders. Table S-1 provides a breakdown of projected daily DMU ridership for the years 2015 and 2030.

Table S-1
Projected Daily DMU Ridership, 2015 and 2030

Year	Weekday Proposed Project Trips	Trips by New Transit Riders[a]
2015	3,900	2,050
2030	10,100	5,400

Source: Wilbur Smith Associates, 2008.

Note:

a. New transit riders are those who were not previous BART or Tri Delta Transit users in the SR 4 corridor.

Will parking be available at the stations?

Parking would be provided at the Railroad Avenue Station at the existing BART park-and-ride lot located on the south side of SR 4, between SR 4 and Bliss Avenue, approximately 1,000 feet east of Railroad Avenue. This parking lot would provide up to 300 parking spaces for DMU passengers; however, no additional parking would be provided as part of the Proposed Project, and no improvements to the existing parking lot are planned.

Approximately 2,600 parking spaces ultimately would be constructed at the Hillcrest Avenue Station. Construction of the parking lot would take place in

two phases; approximately 1,000 spaces would be constructed by year 2015 and the remainder by 2030. Included in the 1,000 parking spaces would be 20 spaces designed to be accessible for persons with disabilities, in compliance with the Americans with Disabilities Act.

How long will it take to ride from the Hillcrest Avenue Station to the Pittsburg/Bay Point BART Station?

The DMU running time would be a total of 13 minutes from the Hillcrest Avenue Station to the existing Pittsburg/Bay Point BART Station platform. This time includes the short trip on BART from the Pittsburg/Bay Point BART Station transfer platform, the three-minute transfer period at the transfer platform, and a 1-minute stop at the Railroad Avenue Station.

How much will it cost to ride the DMU?

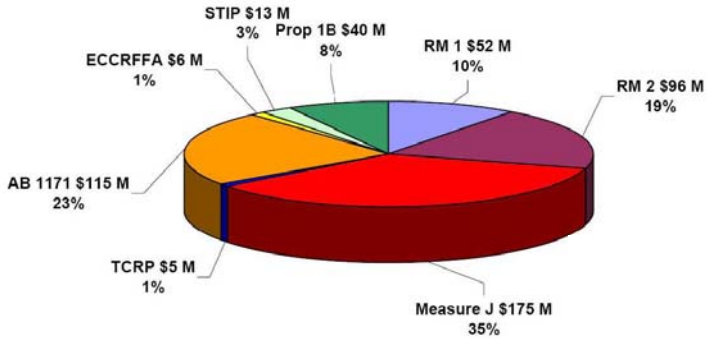
Fares for eBART would be consistent with BART's current distance-based fare policy. Fare collection on eBART would be much like the BART smart card system. Stored-value fare cards would be purchased in advance or from ticket machines on the platform. Advanced technology fare collection techniques would be used similar to the Translink fare system that would allow a single fare collection system to be used for the combined BART and DMU system.

How much will it cost to build and operate eBART? Who will pay for the system?

The total estimated capital cost for the Proposed Project is approximately $486 million (in 2009 dollars). At the midpoint of construction, the cost is estimated to be $509 million. With the help of east Contra Costa County voters, the eBART project has secured a total of $502 million of funding from state, regional, and local sources. BART is confident that the project can be implemented with the resources available. Figure S-2 presents a chart illustrating the distribution of funding sources for the Proposed Project.

Annual operating costs for the DMU system are estimated to be $8.3 million (in 2009 dollars).

Figure S-2 Proposed Project Funding Plan — $502 Million



Source: BART, 2008.

RM 1	Regional Measure 1 (Bridge Tolls)
RM 2	Regional Measure 2 (Bridge Tolls)
AB 1171	Assembly Bill 1171 (Bridge Tolls)
Prop 1B	Proposition 1B (State Funds)
STIP	State Transportation Improvement Program (State Funds)
TCRP	Traffic Congestion Relief Program (State Funds)
Measure J	Measure J (Regional)
ECCRFFA	East Contra Costa Regional Fee and Financing Authority (Regional)

Are other station locations or options being considered?

The Proposed Project would include a station platform in the median of SR 4, east of Hillcrest Avenue. Three other possible station locations are examined in this report. The Northside West and Northside East Station options would be north of SR 4, adjacent to the Union Pacific Railroad right-of-way. A tunnel would connect these stations to the DMU tracks in the SR 4 median. A third option, Median Station East, would site the station in the SR 4 median, similar to the Proposed Project, but about 900 feet east of the Median Station of the Proposed Project. Each of these options has advantages and disadvantages compared to the Proposed Project, but they are all more expensive and would require additional funding to implement. Table S-2 presents a comparison of the Hillcrest Avenue Station options.

Table S-2
Features of the Hillcrest Avenue Station Options

Station Option	Location	Net Additional Daily Ridership[a,b]	Construction Cost[c]	Operational Cost[c]
Median Station	Within SR 4 Median; 1,275 ft east of Hillcrest Ave.	400	$486	$8.3
Northside West Station Option	North of SR 4; 3,500 ft east of Hillcrest Ave.	970	$548	$8.7
Northside East Station Option	North of SR 4; 6,800 ft east of Hillcrest Ave.	1,680	$568	$11.7
Median Station East Option	Within SR 4 Median; 2,175 ft east of Hillcrest Ave.	970	$530	$8.7

Source: PBS&J, 2008; BART and WSA, 2008.

Notes:

a. By year 2030.

b. Net Additional Daily Ridership = added one-way transit trips due to new housing/employment in excess of estimates from ABAG Projections 2003.

c. Estimated costs for the project with this station option, in millions (2009 dollars).

S.3 PROJECT BACKGROUND, PURPOSE, AND NEED

Is this project a new idea?

Did you know?

The BART system consists of 104 total miles, and maintains 43 stations throughout the Bay Area running from Pittsburg/Bay Point and Richmond in the north to Fremont and Millbrae in the south and to Dublin/Pleasanton in the east.

Since the BART system began service in 1972, there has been discussion about extending the rail system into east Contra Costa County. With the opening of the Pittsburg/Bay Point BART Station in 1996, BART extended its service into east County. This station offered east Contra Costa County residents a transit alternative to travel between the City of Pittsburg and the rest of the BART service area. Since opening, the station and line has witnessed heavy use, as an average of 10,000 persons enter and exit the BART system each weekday at the Pittsburg/Bay Point BART Station. BART's commitment to east Contra Costa County continues with the eBART project, which would extend the rail system 10 miles further into east Contra Costa County, with an opportunity to expand even further in the future.

Why is this project being proposed?

Vehicle Hours of Delay

Vehicle hours of delay are measured by observed drive time along the corridor, minus the drive time under non-congested conditions (i.e., at free flow speed).

As noted above, plans for a BART extension into east Contra Costa County have been planned for over 30 years. The worsening congestion on SR 4 and the local, regional, and state support for traffic relief have aligned to make eBART especially desirable. SR 4 is the primary east-west transportation corridor in the County, the only inter-regional route of significance that runs east and west in the County, and the only highway link between central and eastern Contra Costa County. The geography of the area to the north and south of SR 4 limits alternative east-west transportation routes in the area. Rapid development within east Contra Costa County has resulted in severe congestion along SR 4. Data from the California Department of Transportation (Caltrans) show that westbound SR 4 from Hillcrest Avenue to Loveridge Road rose from the 32nd worst congestion location in the Bay Area in 2000 to the sixth worst congestion location in 2007, with a daily weekday delay of 4,750 vehicle hours. Given the transportation characteristics and future travel demand in east Contra Costa County and along the project corridor, BART identified the following objectives for extension of transit service to east Contra Costa County:

- Improve overall transportation service and enhance mobility in SR 4 corridor;
- Enhance access to transit systems;
- Enhance connectivity and seamlessness of the transit system, both from home to transit and from one form of transit to another;
- Promote transit-oriented land use initiatives and policies;
- Enhance economic benefits;
- Achieve financial feasibility;
- Balance short, medium, and long-term strategies;
- Protect and enhance the environment;
- Implement the mandate of Contra Costa voters as described in Measure J (local measure to support sales tax increase to pay for transportation improvements); and
- Provide a cost effective and technology appropriate system.

What is BART's System Expansion Policy?

BART's System Expansion Policy

BART adopted a System Expansion Policy as part of its Strategic Plan in 1999. The policy identifies a uniform set of criteria to be applied to all extensions of BART service. The Proposed Project is the first application of this BART policy.

BART's System Expansion Policy, adopted in 1999, defines goals that should be met with any new expansion project. Those goals are:

- Enhance regional mobility, especially access to jobs;
- Generate new ridership on a cost-effective basis;
- Demonstrate a commitment to transit-supportive growth and development;
- Enhance multi-modal access to the BART system;
- Develop projects in partnership with communities that will be served;
- Implement and operate technology-appropriate service; and
- Assure that all projects address the needs of the District's residents.

Consistent with BART System Expansion Policy, the Proposed Project would extend transportation services to communities currently underserved by transit. Stations would be designed to provide intermodal regional links to bus, shuttle, automobile, bicycle, and pedestrian networks. The Proposed Project would enhance the public's access to jobs, schools, shopping, and social activities throughout the Bay Area.

RDPs

The cities of Pittsburg and Antioch are preparing Ridership Development Plans for an area approximately one-half mile around the proposed stations at Railroad Avenue and near Hillcrest Avenue, respectively. The RDPs by the cities are being proposed in the form of Specific Plans, which will be adopted by the local jurisdictions prior to the BART Board's consideration of the Proposed Project.

The Proposed Project is utilizing the Ridership Development Plan (RDP) process as prescribed in BART's System Expansion Policy. This project marks the first time BART has employed the policy to provide guidance to cities, staff and the BART Board of Directors, and the first time a project has supported jurisdictions in creation and adoption of RDPs.

The policy has a number of criteria that are used by the BART Board in considering whether to advance a project to construction. Project advancement criteria are:

- transit supportive land use and access;
- creation and adoption of a Ridership Development Plan;
- cost-effectiveness;
- regional network connectivity;
- system and financial capacity; and
- partnerships.

An RDP is a comprehensive station area plan that is created by a local jurisdiction where planning for a new BART station is underway. The purpose of the RDP is to evaluate and adopt changes to land use and access near a

station that can enhance ridership to the station and to the project. In the eBART corridor, both the cities of Pittsburg and Antioch are engaged in completing RDPs in the form of Specific Plans, which will be adopted prior to the BART Board's consideration of the Proposed Project.

Wasn't this project extending to Byron/Discovery Bay?

BART would like to extend transit service through Oakley and Brentwood to Byron/Discovery Bay in the future. However, funding for this full system is undefined at this time, major questions are unresolved regarding the alignment route, station locations and local plans for development, and it is highly speculative when such improvements could be implemented. As a result, expansion along the full project corridor is likely to occur over multiple phases, with this Draft EIR analyzing the environmental effects of the initial segment.

Why not conventional BART?

Conventional BART is not proposed for several reasons. First, BART wants to bring rail service to east Contra Costa County as quickly as possible. Conventional BART to Hillcrest Avenue would cost approximately two and one-half times as much as the DMU technology, and it could take years to find the funds to build the project. Secondly, the direction of the System Expansion Policy to "generate new ridership on a cost-effective basis" suggests bringing rail service to lower density and lower ridership communities at a lower capital cost. The suburban land use pattern of east Contra Costa County is expected to generate ridership that can be handled on a 200-person DMU train, and not require a 1000-person-capacity BART train. Third, conventional BART facilities are much larger than those for a DMU. Although the station could be accommodated in the median of SR 4, the 25-acre maintenance facility would need to be located north of SR 4. The land necessary for BART facilities would substantially reduce the amount of developable land that the City of Antioch is proposing for transit-oriented development.

What are the cities of Antioch and Pittsburg doing to support ridership?

In an effort to support ridership and fulfill BART's System Expansion Policy, the City of Pittsburg has prepared a Draft Railroad Avenue Specific Plan for the area within a one-half mile radius of the proposed DMU station site. The purpose of the plan is to guide future development in the area, which in turn will increase ridership. About 1,845 residential units and over one million square feet of commercial floor area are proposed in convenient walking distance of the station.

The City of Antioch also is preparing a specific plan for approximately 375 acres of undeveloped land east of Hillcrest Avenue and on both sides of the Union Pacific Railroad right-of-way (UP ROW), which parallels SR 4 approximately 450 feet to the north. The undeveloped area would be transformed into a mid- to higher-intensity mix of residential, commercial, and public uses. Antioch envisions future development in the station area between 650 and 2,500 residential units and up to approximately 2,150,000 million square feet of retail and office uses.

For both station areas, surface parking lots would be provided as part of the Proposed Project. However, it is anticipated that future development, which will be proposed and evaluated separately, may convert the surface parking lots to parking structures and develop the freed-up land.

What is Caltrans' role in the Proposed Project?

Recent Caltrans improvements to SR 4 have provided sufficient width in the median of SR 4 for a transit system from the Pittsburg/Bay Point BART Station to the Loveridge Road interchange.

Caltrans, in cooperation with the Contra Costa Transportation Authority (CCTA), is planning the expansion of the SR 4 median to accommodate a transit system from the Loveridge Road interchange to the SR 160 interchange. In the already constructed Pittsburg/Bay Point to Loveridge Road interchange segment of SR 4, Caltrans has provided a widened median, median subgrade, underdrains (in portions), and median barriers (in portions) of the SR 4 alignment.

Construction of the eBART project has been scheduled to occur concurrently with the Caltrans and CCTA widening of SR 4 between Loveridge Road and SR 160. This integration of construction schedules will allow more efficient construction of elements common to both projects, reduce overall costs of each, and minimize the construction period which would reduce inconvenience to motorists and nearby land uses.

S.4 PURPOSE OF THE EIR

What is the EIR and what is its purpose?

CEQA

The California Environmental Quality Act is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

An EIR is a document that analyzes the environmental impacts of a proposed project on the physical environment. Its main purposes are to inform governmental decision makers and the public about the potential significant

environmental effects of proposed activities; identify ways that environmental impacts can be avoided or significantly reduced; require changes in projects through the use of alternatives or mitigation measures when feasible; and disclose to the public the reasons why a project was approved if significant environmental effects are involved.

Although the EIR does not control the ultimate decision on whether to approve the Proposed Project, the BART Board of Directors must consider the information in the EIR and public comments on significant impacts identified in the EIR. The BART Board of Directors will use the Final EIR (which will include the Draft EIR and responses to public comments), along with adopted Ridership Development Plans and other information, to determine whether to approve, modify, or disapprove the Proposed Project, and to specify any applicable mitigation measures as part of project approval.

For the purposes of this EIR, BART is the designated "lead agency," and is responsible for conducting the requisite environmental review, approving, and implementing the project.

Lead Agency

A lead agency is the public agency that has the primary responsibility for carrying out or approving a project that is subject to CEQA.

S.5 PROJECT IMPACTS

What significant impacts might occur under the Proposed Project?

A summary of the impacts and mitigation measures for the Proposed Project is presented in Table S-3 at the end of this section. The "significant" and "potentially significant" impacts identified in Table S-3 include both operational and construction-related impacts of the Proposed Project.

Significance

A significant environmental effect occurs when a project causes a substantial, or potentially substantial, adverse change in the physical conditions within the area affected by the project.

Can the impacts be reduced or eliminated?

For every significant impact identified in the Draft EIR, mitigation measures are proposed to reduce or eliminate the impact. A summary of these measures is contained in Table S-3. In some instances, the proposed mitigation would not reduce the impact to a less-than-significant level. In these cases, the impact remains significant and is said to be "unavoidable."

Mitigation Measure

A mitigation measure is a requirement that is placed on a project to reduce or eliminate environmental impacts that will be caused by building the project. One example would be to build a sound wall between a housing development and a busy street to reduce the noise level.

What are the significant and unavoidable impacts of the Proposed Project?

Before the project can be adopted, BART will be required to examine each of the significant and unavoidable impacts of the Proposed Project and determine whether the benefits associated with the project outweigh those impacts. As

shown in Table S-3, and discussed in greater detail in Section 3 of this document, the significant impacts of the Proposed Project that cannot be mitigated to a less-than-significant level are identified below. Significant and unavoidable impacts associated with the Hillcrest Avenue Station options and cumulative impacts are not included in this list, but are reflected in Table S-3, as well as Section 3 of this document.

- With the Proposed Project, two intersections would operate at unacceptable levels during the peak hour in 2015 and one intersection would operate at unacceptable levels during the peak hour in 2030;
- If Slatten Ranch Road has not been completed in accordance with the Antioch General Plan by the time the Proposed Project commences operation in Year 2015, the intersections of Hillcrest Avenue and the SR 4 westbound and eastbound ramps would operate at unacceptable levels of congestion;
- In Antioch, the Hillcrest Avenue Median Station facilities would substantially degrade the existing visual character or quality of the setting north of SR 4, and introduce obtrusive elements substantially out of character with existing conditions of the setting;
- Glare from vehicles at the proposed Median Station parking lots could adversely affect daytime views; and
- Construction noise and vibration associated with the Proposed Project could significantly impact nearby sensitive noise receptors.

Are there beneficial impacts of the Proposed Project?

Beneficial impacts include effects that enhance or improve upon the existing conditions. Since the Proposed Project would remove automobiles from existing roadways, there are several beneficial impacts associated with eBART. As discussed in more detail in Section 3 of this document, the Proposed Project would have beneficial impacts:

- improved freeway operations compared to the No Project conditions in 2015 and 2030;
- support and advance implementation of the Clean Air Plan;
- net reductions to regional greenhouse gas and ozone precursor emissions;

- net reduction in regional air emissions, which would be consistent with and supportive of the goals of the Bay Area 2005 Ozone Strategy; and
- net reduction in energy and petroleum consumption.

Do the Hillcrest Avenue Station options have different impacts?

In addition to the Median Station of the Proposed Project, three other possible locations are examined in this report. The Northside West and Northside East Station options would be north of SR 4, along the Union Pacific Railroad right-of-way. The Median Station East option would keep the station in the SR 4 median but shift the station eastward about 900 feet from the Median Station. Each of these options has advantages and disadvantages compared to the Proposed Project, but they are all more expensive and would require additional funding to implement. Table S-4 compares the impacts of the Hillcrest Avenue Median Station with the three station options for those key topics where there are differences.

What will happen to Tri Delta Transit?

BART and Tri Delta Transit have cooperated closely on the planning process. Tri Delta Transit would provide local transit connections to the DMU stations. These connections would require a reconfiguration of the existing Tri Delta Transit route system. Changes to the system would involve the elimination of routes that would duplicate the proposed service and initiation of new bus service to the DMU stations.

Bus routes that currently run along SR 4 from the Pittsburg/Bay Point BART Station to the Antioch/Hillcrest Park-and-Ride Lot would be replaced by the DMU service. These include Tri Delta Transit Routes 200, 300, 391, and 393.

Feeder bus service to the Pittsburg/Bay Point BART Station, the proposed stations at Railroad Avenue, and Hillcrest Avenue include the following Tri Delta Transit routes: 201, 380, 383, 384, 385, 387, 388, 389, 390, 392, and 394.

Table S-4
Comparative Impacts of the Hillcrest Avenue Station Options

Hillcrest Avenue Station Locations	Potential Land Acquisition (parcels)[a]	Wetland Encroachment (acres)[b]	Floodplain Encroachment (acres)[c]	Significant Grading/ Earth Movement	Impacts to VELB[d]	Swainson's Hawk Foraging Habitat Loss (acres)[e]
Median Station	12	0	3.19	No	No	39.5
Northside West Station Option	15[f]/17[g]	1.42	8.55	No	No	44.6
Northside East Station Option	17	1.91	9.24	Yes	Yes	46.3
Median Station East Option	11	0.23	3.19	Moderate	No	46.3

Source: PBS&J, 2008.

Notes:

a. Includes maintenance facilities, parking lots, stations, and tracks. Excludes property already owned by BART and property that would be acquired for the train control huts.

b. Includes coastal/valley fresh water marshes, wetlands, and ponds.

c. Includes maintenance facilities, tailtracks, tracks, and parking.

d. Valley Elderberry Longhorn Beetle.

e. Acreage includes footprint of station platforms, track system, tailtrack, maintenance facilities and parking lots, including future parking.

f. Northside West Station with maintenance facility.

g. Northside West Station with remote maintenance facility option.

Are there any areas of controversy?

During BART's public outreach activities, there were several areas of concern that surfaced. These concerns were expressed by residents, local communities, groups, and organizations. These areas of concern highlight critical environmental, social, and economic implications of the proposed extension and are noted below:

- Pedestrian and bicycle access;
- Need for adequate parking at stations;
- Environmental impacts, including those related to noise, agricultural land, archaeological resources, and water; and
- Land use compatibility.

Are there any unresolved issues?

At this stage of project design and environmental review, there are still issues and questions that have not been settled. Issues to be resolved before the Proposed Project can move forward include:

- Sources of funding for station facilities;
- Coordination of construction phasing with the SR 4 widening project between Loveridge Road and SR 160; and
- Selection of a preferred Hillcrest Avenue Station option and related maintenance facility.

S.6 DESCRIPTION OF PROJECT ALTERNATIVES

How many different alternatives have been studied?

Alternative

CEQA requires an EIR to examine a "reasonable range" of alternatives to the project or its location. These must include the "no project" alternative. Alternatives must be feasible, meet most of the project objectives, and reduce one or more of the project's significant effects.

The range of alternatives required in an EIR is limited to those that would avoid or substantially lessen any of the significant effects of the project. Among the factors that may be taken into account when addressing the possibility of alternatives are suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries (projects with a regionally significant impact should consider the regional context), and whether the proponent can reasonably acquire, control, or otherwise have access to alternative sites (or the site is already owned by the proponent). No one of these factors establishes a fixed limit on the scope of reasonable alternatives. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative.

In 2004, the SR 4 East Corridor Transit Study was implemented to look at transit-related alternatives that would serve to reduce congestion in east Contra Costa County as well as provide a major link to the Bay Area's BART system and a number of other community oriented goals. Upon initial review, a number of options were presented as part of the study:

- Alternative BART extension alignments and station locations
- Express bus and local bus options
- Bus Rapid Transit concepts
- Light rail alignments

- Private shuttles, SMART shuttles, and other shuttle concepts
- Park-and-ride lots
- Intelligent Transportation Systems projects
- Traffic engineering improvements to the arterial street network
- High Occupancy Vehicle lanes
- Travel Demand Management measures
- Pedestrian, transit oriented development programs, and other land use related programs
- Conventional commuter rail and intercity rail programs
- Special applications of advanced transit technology
- Commuter rail
- Pedestrian/bicycle access improvements

How were the alternatives in the Draft EIR selected?

The transportation improvement options listed above were subjected to a screening and evaluation process that was designed to identify those options that had significant problems, flaws, or other deficiencies. The following criteria were considered in determining which options would and would not be considered further: implementation and constructability, operational issues, environmental issues, land use compatibility, ridership potential, costs, and intermodal connectivity.

What alternatives are analyzed in the Draft EIR?

Based on the criteria above, four basic alternatives are analyzed in the Draft EIR:

- No Project Alternative
- Bus Rapid Transit (BRT) Alternative
- Light Rail Vehicle (LRV) Alternative
- BART Extension Alternative

A **No Build, or No Project, Alternative** considers the consequences of not extending transit services beyond the existing Pittsburg/Bay Point BART Station. This alternative would involve continuation of the existing Tri Delta Transit District bus system and implementation of additional express bus

service from east Contra Costa County communities to BART. This alternative is required by CEQA to help understand future conditions without the Proposed Project. By comparing this scenario to future conditions with the Proposed Project, the advantages and disadvantages of the Proposed Project can be more readily understood.

A **Bus Rapid Transit (BRT) Alternative** that considers technical and operational transit improvements using buses in the same alignment as the Proposed Project. The system seeks to emulate the service levels provided by a rail system. Amenities would be provided at stations, and portions of the route could be constructed with exclusive transit lanes or other transit preferential treatments in order to bypass areas of localized traffic congestion.

An electric-powered **Light Rail Vehicle (LRV) Alternative** that would operate in the same alignment as the Proposed Project. This alternative would use vehicles similar to the DMU, but they would be powered by electricity. The LRV Alternative would require the installation of overhead lines to transmit the electricity that would power the vehicles.

A conventional **BART Extension Alternative** that would use full-length BART trains and systems in the same alignment as the proposed project. This alternative would consist of an extension of the electrically-powered, exclusive-use right-of-way BART system with one station and a maintenance yard facility at Hillcrest Avenue. This alternative would not have a station at Railroad Avenue.

S.7 NEXT STEPS

Where can others review the Draft EIR?

Check it out

For additional information about the entire eBART project, please visit www.ebartproject.org.

The Draft EIR can be reviewed at the following locations:

Metropolitan Transportation Commission –
Association of Bay Area Governments Library
101 8th Street
Oakland, CA 94607-4700

Pittsburg Public Library
80 Power Ave
Pittsburg, CA 94565

Antioch Public Library
501 West 18th Street
Antioch, CA 94509

The Draft EIR and related documents can be reviewed at the following location:

San Francisco Bay Area Rapid Transit District
Contact: Katie Balk
300 Lakeside Drive, 16th Floor
Oakland, CA 94612
(866) 596-BART

The Draft EIR can be reviewed online at BART's website, located at www.bart.gov or ebartproject.org.

How do I comment on the Draft EIR?

When Writing Comments…

Don't forget it's best to focus on the environmental issues associated with the Proposed Project.

Readers are invited to submit written comments on the adequacy of the document; i.e., does this Draft EIR identify and analyze the possible environmental impacts and recommend appropriate mitigation measures? Comments are most helpful when they are specific and targeted to the environmental assessment; for example, by identifying specific impacts that need further evaluation and what additional information is desired, or by describing alternatives or measures that would better mitigate significant environmental effects. Comments may be submitted anytime during the public review period, which extends from September 19, 2008, through 5 p.m. on November 5, 2008.

Written comments should be submitted to: Ms. Katie Balk
San Francisco Bay Area Rapid Transit District
300 Lakeside Drive, 16th Floor
Oakland, CA 94612

For more information, please call (866) 596-BART. However, comments cannot be accepted by phone.

Other ways to comment:

- website – www.ebartproject.org
- email – info@ebartproject.org
- fax – (510) 464-7673

Additionally, the public is invited to participate at the upcoming public hearing that will be held to receive comments on the Draft EIR. The purpose of the hearing will be to afford the public agencies, the public, and interested organizations an opportunity to comment on the Draft EIR verbally or to submit written comments. All hearings will be noticed and advertised in the following ways:

- Published in the six newspapers with local circulation;
- Mailed to all property owners (as said owners are shown on the latest equalized assessment role on which property taxes are collected) within 300 feet of the boundary of the project alignment; and
- Mailed to all individuals who have submitted a written request for notification concerning the proposed project.

What will happen at the public hearing?

At the public hearing, BART staff will describe the Proposed Project and potential impacts, and solicit comments from the public. Following the close of the public review and comment period, written responses will be prepared that address all substantive written and oral comments on the Draft EIR. The Final EIR will consist of the Draft EIR, the comments received during the public review period, responses to the comments, and any revisions to the Draft EIR as a result of public agency and public comments.

How will a decision be made to advance the Proposed Project?

The BART Board must certify that it has reviewed and considered the information in the EIR and that the EIR has been completed in conformity with the requirements of CEQA before any decision can be made regarding the Proposed Project. Public agencies cannot approve or carry out a project if it would result in a significant or unavoidable effect, unless the public agency makes one or more of the following findings, which would need to be supported by substantial evidence in the record:

- Changes or alterations have been required in, or incorporated into, the proposed project which avoid or substantially lessen the significant environmental effect.
- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- Specific economic, legal, social, technological, or other considerations make infeasible the mitigation measures or project alternatives identified in the Final EIR.

If the BART Board decides to approve the Proposed Project with significant effects that are identified in the Final EIR, but which are not avoided or substantially lessened, the BART Board must indicate that such unavoidable significant effects are acceptable due to overriding considerations. This is known as a "Statement of Overriding Considerations." In preparing this statement, CEQA requires the BART Board to balance the prescribed types of benefits of the proposed project against its unavoidable environmental risks. If the benefits of a proposed project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considered acceptable.

How will the mitigation measures identified in the EIR be implemented?

As part of the project approval process, the BART Board must also consider and adopt a mitigation monitoring and reporting program. This program would include all mitigation measures that BART would implement to reduce significant effects identified in the Final EIR. For each measure, the program would prescribe the party responsible for implementing the mitigation measure, the timeframe by which the measure should be implemented, and whether there are interim milestones to determine the success or effectiveness of the mitigation measure. BART would use the mitigation monitoring program as a mechanism to control project impacts during and after construction.

S.8 SUMMARY OF PROPOSED PROJECT IMPACTS

Table S-3 summarizes the environmental impacts and mitigation measures as contained in the body of the EIR. Only those impacts noted as significant and unavoidable, or significant and can be reduced to a less-than-significant level

are included in Table S-3. Beneficial and less-than-significant impacts are not included in Table S-3 for brevity. Mitigation measures are listed for reducing the identified significant impacts to less-than-significant levels.

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.2 Transportation			
TR-1. Under 2015 Proposed Project conditions, five intersections would operate at unacceptable levels during one of the peak periods, and one intersection would operate at unacceptable levels during both the AM and PM peak periods. Compared to the No Project conditions, the Proposed Project would worsen the level of service at four of these intersections, a significant effect.	S	*TR-1.1 Improve Davison Drive/Hillcrest Avenue – Deer Valley Road.* The intersection operations could be improved to a V/C ratio of 0.78 and LOS D during the AM peak hour through the coordination of the intersection, optimization of signal timing plans, and overlapping of westbound right turning movements. BART would contribute its fair share to upgrade intersection operations to acceptable levels, reducing the impacts to less than significant.	LTS
		TR-1.2 Oakley Road/Neroly Road. The intersection operations could be improved to a V/C ratio of 0.68 and LOS B during the PM peak hour through the signalization of the intersection. BART would contribute its fair share to upgrade intersection operations to acceptable levels. It should be noted that traffic volumes at this intersection are expected to decline by the Year 2030, reducing the impacts to less than significant.	LTS
	S	The CCTA and Caltrans have plans to improve the Hillcrest Avenue interchange as a part of the SR 4 widening project. These plans eliminate the intersection of SR 4 Westbound Ramps/Hillcrest Avenue by providing a new northbound to westbound loop on-ramp and improve and widen the approaches to the SR 4 Eastbound Ramps/Hillcrest Avenue intersections. These improvements would mitigate the impacts at the SR 4 Westbound Ramps/Hillcrest Avenue intersections but would not mitigate the impacts at the SR 4 Eastbound Ramps/Hillcrest Avenue intersection. These improvements are prohibitively costly and there is no identified funding that would allow this project to be completed by the Year 2015. It is expected, however, that these improvements would be funded and in place by the Year 2030. Further improvements to address the conditions at the SR 4 Eastbound Ramps/Hillcrest Avenue intersection have been studied by the City of Antioch but have been ruled to be infeasible due the potential displacement of homes and commercial property.	SU

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
TR-2. With the Proposed Project in Year 2030, eight intersections would operate at unacceptable levels during one of the peak periods, and three intersections would operate at unacceptable levels during both the AM and PM peak periods. Compared to the No Project conditions, the Proposed Project would worsen the level of service at three of these intersections, a significant effect.	S	*TR-2.1 Improve Hillcrest Avenue/E. 18th Street*. The intersection operations could be improved to a V/C ratio of 0.87 and LOS D during the PM peak hour through the provision of an exclusive right turn lane along the eastbound approach. BART would contribute its fair share to upgrade intersection operations to acceptable levels.	LTS
		TR-2.2 Improve Sunset Drive/Hillcrest Avenue. The intersection operations could be improved to a V/C ratio of 0.81 and LOS D during the PM peak hour through the provision of an exclusive right turn lane at the northbound approach and an additional exclusive left turn lane at the westbound approach. BART would contribute its fair share to upgrade intersection operations to acceptable levels.	LTS
	S	For the reasons identified in the mitigation discussion for Impact TR-1, improvements to reduce impacts at the intersection of SR 4 Eastbound Ramps/Hillcrest Avenue are considered infeasible. As a result, the impact at this intersection would remain significant and unavoidable.	SU
TR-7. Under Proposed Project conditions, a parking shortfall of 65 spaces at the Railroad Avenue Station in Year 2030 would result in a significant impact.	S	*TR-7.1 Implement parking monitoring program and institute appropriate parking controls if necessary*. BART shall institute an annual monitoring program on streets adjacent to the Railroad Avenue Station. A baseline survey of parking conditions in the vicinity of the station will be conducted prior to commencement of Proposed Project operations. The baseline survey will establish parking conditions in the vicinity of the station during the first six months of operation to verify if spillover parking is occurring. Such monitoring will be based on field surveys and any complaints received by BART and local parking authorities. A follow-up survey will occur once a year. BART Community Relations staff will respond to parking complaints and BART would investigate such complaints to verify parking concerns. If a parking spillover problem is confirmed by this monitoring program, BART staff will assist the City of Pittsburg in implementing a parking management program. The program would incorporate appropriate parking control measures based on BART's Parking Management Toolkit, which is included as Appendix C to this EIR. This toolkit identifies a detailed process for understanding local parking issues, evaluating parking conflicts, and implementing specific parking control measures. These measures could include time limits and time-based restrictions, increased enforcement, or parking fees, all of which have proven effective at existing BART stations. The residents of the area could also utilize the process that is already in place in the City to request implementation of a Residential Permit Parking Zone. The parking management program would be implemented by the City of Pittsburg. BART staff will assist to ensure	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		that the parking control measures, adapted as appropriate for site-specific conditions, are implemented and are achieving the necessary effect. BART staff would also continue discussions as necessary with the City to help adjust any parking control measures in response to issues that may arise during implementation of such measures.	
TR-8. The Proposed Project would generally not affect existing or planned pedestrian or bicycle circulation or accessibility in the project corridor; however, sidewalks and bicycle lanes at the Hillcrest Avenue/Sunset Drive intersection could be impacted. Accordingly, the Proposed Project would have a potentially significant effect on pedestrians and bicyclists.	PS	*TR-8.1 Construct sidewalks and bicycle lanes along Hillcrest Avenue and Slatten Ranch Road.* For the Hillcrest Avenue Station, the Hillcrest Avenue/Sunset Drive intersection will be improved as required in Mitigation Measure TR-2.2. In addition to the improvements required by TR 2.2, improvements shall include a sidewalk along the east side of Hillcrest Avenue and a southbound bicycle lane in the areas affected by the construction of the other required intersection improvements. The portion of Slatten Ranch Road to be constructed by BART shall include sidewalks and bicycle lanes.	LTS
TR-9. Construction of the Proposed Project would potentially result in significant temporary impacts on SR 4, local streets, and circulation around the proposed station areas.	S	*TR-9.1 Develop and implement a Construction Phasing and Traffic Management Plan.* BART will ensure that a Construction Phasing and Traffic Management Plan is developed and implemented by the contractor. The plan shall define how traffic operations, including construction equipment and worker traffic, are managed and maintained during each phase of construction. The plan shall be developed in consultation with the cities of Pittsburg and Antioch, BART, Caltrans, CCTA, and local transit providers, including Tri Delta Transit. The contractor shall also consult with Caltrans and the highway patrol in the development of the plan in order to address any issues and minimize disruption to the flow of traffic along SR 4. This plan shall also be coordinated with plans to maintain access and parking for adjacent businesses and residences that may be affected. To the maximum practical extent, the plan shall include the following measures: a) Specify predetermined haul routes from staging areas to construction sites and disposal areas by agreement with the cities of Pittsburg and Antioch prior to construction. The routes shall follow streets and highways that provide the safest route and have the least possible impact on traffic. b) Identify construction activities that, due to concerns regarding traffic safety or congestion, must take place during off-peak hours.	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		c) Provide a plan for lane closures along Railroad Avenue, Hillcrest Avenue, and SR 4, and require information be provided to the public on lane closures using signs, press releases, and other media tools. d) Identify a telephone number that the public can call for information on construction scheduling, phasing, and duration, as well as for complaints. Such information shall also be posted on BART's website. e) Provide safe access and circulation routes for vehicles, bicycles, pedestrians, and emergency response vehicles during construction of the Pittsburg/Bay Point Transfer Platform and the Railroad Avenue and Hillcrest Avenue Stations. f) Provide parking replacement where construction results in temporary displacement of parking.	
TR-10. Construction of the Proposed Project would potentially result in significant impacts on Tri Delta Transit services around the proposed station areas.	S	*TR-10.1 Plan, schedule, and coordinate construction activities to reduce effects on local transit bus lines.* BART shall ensure that the Construction Phasing and Traffic Management Plan, developed under Mitigation Measure TR-9.1, includes consultation with Tri Delta Transit. The Plan shall include specific measures to minimize possible detour and other impacts on Tri Delta Transit service resulting from Proposed Project construction-related activities. These measures shall limit, to the maximum extent possible, rerouting of bus routes and changes to bus stops. Any proposed changes to routes, service, and other operations shall be announced to the public using signs, press releases, on-bus posters, and other media tools.	LTS
TR-12. The Northside West, Northside East, and Median Station East options would substantially worsen operations at two intersections in the vicinity of the station compared to the Proposed Project.	S	While the impact at the Hillcrest Avenue/Sunset Drive intersection could be mitigated with implementation of Mitigation Measure TR-2.2 to less than significant, no feasible mitigation has been identified for the Hillcrest Avenue/SR 4 Eastbound Ramps.	LTS/SU
TR-13. If Slatten Ranch Road has not been completed in accordance with the Antioch General Plan by the time the Proposed Project commences operation	S	As noted under Impact TR-2, no feasible mitigation has been identified for the SR 4 Eastbound Ramps/Hillcrest Avenue intersection.	SU

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
in Year 2015, the intersections of Hillcrest Avenue and the SR 4 westbound and eastbound ramps would operate at unacceptable levels of congestion.			
TR-14. The resumption of freight traffic on the Mococo Line at the level of frequency indicated by the Union Pacific Railroad would cause significant new traffic impacts beyond those anticipated in either the No Project or the Proposed Project Conditions.	S	While the precise extent of the increase of UP train operations and the magnitude of the impact is speculative at this time, the potential cumulative traffic impact that would result is nevertheless being conservatively identified here as significant and unavoidable. In order to avoid this cumulative impact, a grade separation could be constructed at Hillcrest Avenue (e.g., the train tracks could be elevated over the road or lowered under the road, or Hillcrest Avenue could be elevated over the train tracks or lowered to pass under) to eliminate the projected traffic queuing that would result if the tracks and Hillcrest Avenue continued to cross one another. However, UP would be the primary source of such a cumulative impact, to which the Proposed Project would add only a minor contribution. Therefore, construction of a grade separation is not included as part of the Proposed Project or as a mitigation measure. Since no grade separation is now proposed, and the implementation of a grade separation by others at some future date is uncertain, the cumulative impact to traffic remains significant and unavoidable.	SU
3.4 Population and Housing			
PH-2. The Proposed Project would require the acquisition of various properties for use as stations, rights-of-way, ancillary facilities, parking areas, and a maintenance facility. For affected privately-owned property and business owners, these impacts could be significant and would require mitigation in accordance with applicable state laws.	PS	*PH-2.1 Acquire property and relocate affected residents and businesses*. BART's Real Estate Department shall implement an acquisition and relocation program that meets the requirements of applicable state acquisition and relocation law. Acquisition will involve compensation at fair market value for properties, and relocation assistance would include, but is not limited to, down payments or rental supplements, moving costs, business reestablishment reimbursement, and goodwill offers as appropriate. All benefits will be provided in accordance with the California Relocation Assistance and Real Property Acquisition Guidelines.	LTS
PH-3. The Hillcrest Avenue Station options would require the acquisition of	S	Mitigation Measure PH-2.1, which calls for BART to carry out an acquisition and relocation program in accordance with applicable state law, would reduce acquisition impacts of the Hillcrest Avenue Station	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
various properties for use as stations, rights-of-way, parking areas, and a maintenance facility. For affected privately-owned property and business owners, these impacts could be significant and would require mitigation in accordance with applicable state law.		options to a less-than-significant level.	
3.5 Visual Quality			
VQ-3. Within Antioch, the Hillcrest Avenue Median Station parking lots would substantially degrade the existing visual character or quality of the setting, and introduce obtrusive elements substantially out of character with existing conditions of the setting.	S	There are no measures available to mitigate the loss of rural character of the Median Station parking lots, short of leaving portions of the area undeveloped.	SU
VQ-6 Project lighting of the station platforms and tailtrack areas could form point sources of light interfering with nighttime views from off-site locations, including SR 4 near the project corridor. This would be a potentially significant impact.	PS	*VQ-6.1 Design lighting fixtures to minimize spillover beyond the facilities and to avoid noticeable contrast.* New lighting levels shall be compatible with general illumination levels in existing areas and consistent with the need to provide for safety and security. The overall objective is to establish area lighting that is adequate for safety and surveillance, but minimizes the potential effects on nighttime views from locations around and within the project corridor along the SR 4 median. Night lighting within all station platform and tailtrack areas shall be focused downward and shielded to avoid glare and point sources of light interfering with the vision of SR 4 motorists. Lighting elements shall be recessed within their fixtures to prevent glare or point sources of light radiating outward. A specialist in lighting design shall be consulted during project design to determine light source locations, light intensities, and type of light source.	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
VQ-7. Glare from vehicles at the proposed Median Station parking lots could adversely affect daytime views. This would be a potentially significant impact.	PS	*VQ-7.1 Visually screen parking lots with landscaping*. BART shall ensure the contractor includes landscaping within and around the parking areas consistent with BART's own sustainability principles and the City of Antioch's landscaping guidelines for parking areas.	SU
VQ-8. Project construction would require construction materials stockpiling and storage and the use of construction equipment as the various portions of the Proposed Project are built. As a change from current site conditions during periods of construction, and with the presence of adjacent commercial and residential communities, this is a potentially significant visual impact.	PS	*VQ-8.1 Visually screen construction yards and staging areas*. Views of stockpiled and stored construction materials and equipment shall be minimized to the extent practicable. Staging areas shall be located internal to the designated area to the extent practicable, but away from local residential and commercial areas, as close to or within the areas of construction as possible, yet out of the way of community traffic, pedestrian use, and local views.	LTS
VQ-CU-10. The Proposed Project in combination with other foreseeable development, particularly around the Hillcrest Avenue Station, would have a significant cumulative visual impact.	S	As discussed under Impact VQ-3, there are no measures available to mitigate the loss of rural character of the Proposed Project, short of leaving portions of the area undeveloped.	SU
3.6 Cultural Resources			
CR-2. Construction of the Proposed Project would have the potential for disturbance of previously unknown cultural deposits or human remains during ground-disturbing activities.	PS	*CR-2.1 Follow protocol and procedures if archaeological resources are encountered*. BART shall incorporate the following provisions into grading and construction contracts for portions of the Proposed Project outside the SR 4 median to address the potential to encounter currently unknown cultural resources: a) Prior to the initiation of construction or ground-disturbing activities, BART will ensure that all	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		construction personnel involved in ground-disturbing activities shall receive environmental training from a qualified archaeologist that will include discussion of what constitutes cultural resources, the possibility of buried cultural resources, how to recognize such possible buried cultural resources, as well as the procedure to follow if such cultural resources are encountered. b) If unknown potential historical or unique archaeological resources are discovered during construction of the Proposed Project, BART will ensure that all work in the immediate vicinity shall be suspended and alteration of the materials and their context shall be avoided pending site investigation by a qualified archaeologist. Work shall be suspended within approximately 50 feet from the discovery or within an appropriate distance to be determined by the archaeologist. Construction work shall not commence again until the archaeologist has been given an opportunity to examine the findings, assess their significance, and offer proposals for any additional exploratory measures deemed necessary for the further evaluation of and/or mitigation of adverse impacts to any potential historical resources or unique archaeological resources that have been encountered. c) If the find is determined to be a historical or unique archaeological resource, and if avoidance of the resource would not be feasible, the archaeologist shall prepare a plan for the methodical excavation of those portions of the site that would be adversely affected. The plan shall be designed to result in the extraction of sufficient volumes of non-redundant archaeological data to address important regional research considerations. The work shall be performed by a qualified archaeological consulting firm, and shall result in detailed technical reports. Such reports shall be submitted to the California Historical Resources Information System. Construction in the vicinity of the find shall be accomplished in accordance with current professional standards and shall not recommence until this work is completed. d) BART shall ensure that project personnel involved in ground-disturbing activities are informed that collecting significant historical or unique archaeological resources discovered during development of the project is prohibited by law. Prehistoric or Native American resources can include chert or obsidian flakes, projectile points, mortars and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic resources can include nails, bottles, ceramics or other items often found in refuse deposits and buried features, such as privy pits and foundations.	

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		CR-2.2 Follow protocol and procedures if human remains are encountered. If human remains are discovered, there shall be no further excavation or disturbance of the discovery site or any nearby area reasonably suspected to overlie adjacent human remains until BART has complied with the provisions of State CEQA Guidelines Section 15064.5(e). In general, these provisions require that the County Coroner be notified immediately. If the remains are found to be Native American, the County Coroner shall notify the Native American Heritage Commission within 24 hours. The most likely descendant of the deceased Native American shall be notified by the Commission and given the chance to make recommendations for the remains. If the Commission is unable to identify the most likely descendent, or if no recommendations are made within 24 hours, the remains may be re-interred with appropriate dignity elsewhere on the property in a location not subject to further subsurface disturbance. If recommendations are made and not accepted, the Native American Heritage Commission will mediate the issue.	
CR-CU-3. The Proposed Project in combination with other foreseeable development could result in potentially significant cumulative impacts to archaeological resources, including possibly human remains.	PS	Mitigation Measures CR-2.1 and CR-2.2, which call for the adherence to standard procedures established to address encountering archaeological resources and human remains, respectively, would reduce the potentially significant impacts on cultural resources from the Proposed Project to less than significant. These same mitigation measures or equivalent measures are commonly incorporated into EIRs for development projects that have the potential to significantly affect cultural resources. Implementation of similar measures would therefore be expected of the other reasonably foreseeable development that might encounter archaeological resources or human remains.	LTS
3.7 Geology, Soils, and Seismicity			
GEO-7. Construction of the Proposed Project could result in soil erosion impacts as a result of excavation and grading activities.	PS	*GEO-7.1 Implement SWPPP and erosion control BMPs.* BART shall require the construction contractor to develop and implement the SWPPP and BMPs to control stormwater and erosion during the construction period, consistent with the requirements of coverage under the NPDES general permit for stormwater associated with construction activities. BMPs shall include, but are not limited to, erosion control measures, such as slope stabilizers, dust suppression, construction of berms and ditches, and sediment barriers. In addition, other BMPs may include: • Construction scheduling, such as phasing and season avoidance, to minimize erosion and sediment; • Perimeter protection such as straw wattles or silt fences;	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Check dams to prevent gully erosion and/or slow runoff flow rates to allow sediment to settle out; • Gravel bag berm/barriers to prevent runoff or run-on of surface water flows; • Street sweeping and vacuuming to remove vehicle-tracked soil and sediment; • Storm Drain Inlet Protection such as filter bags and perimeter protection; • Stabilized Construction Entrance to prevent vehicle tracking of sediment and debris on roadways; and • Wind Erosion Control BMPs such wetting down of dry sediment or covering exposed surfaces.	
GEO-8. Construction of the Northside East Station and the Median Station East option would require substantially greater earthwork, resulting in potentially greater soil erosion impacts compared to the other Hillcrest Avenue Station options.	PS	As with the proposed project, Mitigation Measure GEO-7.1, requiring erosion control BMPs such as slope stabilizers, dust suppression, construction of berms and ditches, and sediment barriers, would reduce this impact to less than significant.	LTS
3.8 Hydrology and Water Quality			
HY-1. The Proposed Project would not substantially increase impervious areas, except in the vicinity of the Hillcrest Avenue Median Station where the parking, access improvements, and maintenance annex would introduce considerably more impervious acreage, contribute to additional runoff, and potentially create a flood hazard.	PS	*HY-1.1 Implement BMPs to control surface water runoff.* BART shall ensure that its contractor complies with the Contra Costa County Water Program Phase I NPDES Permit C.3 Provisions to detain and treat the additional surface water runoff generated by the Proposed Project. The permit requires the completion and implementation of a Stormwater Control Plan (SCP), which will contain design measures to minimize surface runoff and amounts of pollutants that enter the storm drain system and/or the natural landscape. BMPs include, but are not limited to, construction of additional basins and/or swales to capture and treat runoff or allow it to infiltrate to groundwater; building roofs and berms over work or storage areas and providing connections to sanitary sewers rather than storm drains; installing flow-through planters or in-ground planters; and construction of bioretention areas and infiltration trenches, among others. BART shall ensure that the contractor incorporates these and/or other BMPs into the Proposed Project with the goal of reducing stormwater runoff volumes and pollutants loading to comply with the C.3 provisions.	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
HY-5. Operation of the Proposed Project would increase the pollutant load of stormwaters that could affect water quality in local water bodies	PS	*HY-5.1 Implement stormwater management BMPs*. BART shall ensure that its contractor implements stormwater BMPs in accordance with the NPDES General Industrial Permit. As required by the permit, a SWPPP shall be prepared in order to document and identify pollutants and describe BMPs to reduce stormwater pollution. Through the SWPPP, the permit regulates stormwater discharges associated with equipment fueling, maintenance, and waste disposal. BMPs that could be included in the SWPPP and implemented for the Proposed Project include: • strip retention system to treat runoff prior to discharge; • oil/water separators to prevent contaminated stormwater from entering drainage system; • construction of additional detention basins and/or use of pervious pavement in order to allow infiltration of stormwater into the soil where runoff could be filtered naturally and pollutants removed; and • installation of rain *barrels near the roofs at the median station and/or maintenance facilities*.	LTS
HY-6. Construction of the Proposed Project would involve ground-disturbing activities, which could result in soil erosion and siltation that could exacerbate and/or cause flooding.	PS	*HY-6.1 Develop and implement a SWPPP outlining specific erosion and sediment BMPs*. BART shall ensure that the contractor obtains an NPDES permit and prepares a SWPPP prior to construction. The SWPPP shall identify specific erosion and sediment BMPs to be implemented during construction to control and minimize erosion impacts. Measures that could be implemented include, but are not limited to: • Use of erosion blankets and silt fences and sedimentation ponds to remove suspended fine material from runoff; • Temporary and permanent seeding of disturbed areas and soil stockpiles; • Stabilization of construction area entrances and exits; • Use of straw rolls, sediment fences, straw bales, and/or sediment traps to prevent sediment-laden runoff from leaving the construction area; • Use of temporary dikes to re-direct or control runoff; • Construction scheduling, such as phasing and season avoidance, to minimize erosion and sediment; • Perimeter protection such as straw wattles or silt fences; • Check dams to prevent gully erosion and/or slow runoff flow rates to allow sediment to settle out;	LTS

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Gravel bag berm/barriers to prevent runoff or run-on of surface water flows; • Street sweeping and vacuuming to remove vehicle-tracked soil and sediment; • Storm drain inlet protection such as filter bags and perimeter protection; • Stabilized construction entrances to prevent vehicle tracking of sediment and debris on roadways; and • Wind erosion control BMP such as soil stabilizers (would require more water quality modeling), wetting down of dry *sediment, or covering exposed surfaces*.	
HY-8. Construction activities for the Proposed Project could violate water quality standards.	PS	In addition to implementing Mitigation Measure GEO-7.1 and Mitigation Measure HY-6.1, which require adoption and implementation of BMPs, the following measures would further reduce water quality impacts from construction to less-than-significant levels. *HY-8.1 Develop and implement a SWPPP outlining specific stormwater discharge BMPs*. BART shall ensure that its contractor complies with the NPDES Construction General Permit including preparation of the SWPPP for construction activities. The SWPPP may include, but would not be limited to, BMPs listed below: a) Vehicle and Equipment Operation BMPs • Construction equipment to be brought to the site no sooner than it is needed and removed from the site as soon as practical. Major equipment overhaul will take place off site. • Vehicle and equipment maintenance to occur off-site to prevent discharges of fuel and other vehicle fluids. • Vehicle and equipment fueling to take place in a contained staging area to prevent discharges of fuel and other vehicle fluids. b) Waste Management and Materials Management BMPs • Materials to be stored either off-site or under cover. Hazardous materials to be stored in contained areas. *HY-8.2 Develop and implement a SWPPP outlining specific measures to prevent and control hazardous materials releases during construction*. BART shall ensure that the contractor prepares a SWPPP that	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		includes a Spill Prevention Plan outlining measures to control hazardous materials storage. This plan would include, at a minimum, the following measures: • Periodic inspection of hazardous materials storage area to ensure containers are properly labeled, containers are securely covered, containers are stored on secondary containment, and each site is equipped with spill kits; • Employee hazardous materials training and awareness; • Spill reporting procedure; and • Storage of hazardous materials at a considerable distance from the site of the tunnel.	
HY-9. Operation of the remote maintenance facility would substantially increase impervious acreage in the East Antioch Watershed, further increasing runoff to local storm drains.	PS	The following measures, in combination with Mitigation Measure HY-1.1, would reduce runoff impacts of the remote maintenance facility to less than significant. *HY-9.1 Prepare and implement drainage plan.* BART shall ensure that the contractor prepares a drainage plan for the Hillcrest Avenue Station option, for review by the City of Antioch and the CCCFCWCD. The purpose of the drainage plan is to help control the additional surface water runoff expected from the project in accordance with the NPDES C.3 provisions and input from the local agencies. BART will then ensure that the contractor implements the drainage plan to safely and efficiently convey stormwaters from the remote maintenance facility. *HY-9.2 Implement permanent vegetated swales at the remote maintenance facility*. To minimize storm and flood capacity impacts, BART shall ensure that its contractor diverts and controls stormwater runoff by using permanent swales. Vegetated swales would have multiple functions as they would allow infiltration of the stormwater runoff from parking areas and the rooftop of the maintenance facilities to the maximum extent practicable, reduce post-construction storm flow rate, and contribute towards groundwater recharge. The vegetated swales shall be frequently monitored at least bi-annually or as frequently as needed to maintain their effectiveness. Frequency and recommended monitoring activities are outlined below: • Inspect grass along side slopes for erosion and formation of rills or gullies and correct; • Remove accumulated trash and debris;	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Inspect and correct erosion problems in the sand/soil bed of dry swales; • If original grass cover has not been successfully established, plant alternative grass species; • Replant wetland species (for wet swale) if not sufficiently established; • Remove sediment build-up within the bottom of the swale once it has accumulated to 25 percent of the original design volume; and • Mow grass to maintain a height of 3 - 4 inches.	
HY-10. The tracks associated with the proposed remote maintenance facility for the Northside East and Northside West options would encroach into a 100-year floodplain.	PS	*HY-10.1Elevate structures above the flood zone*. The tracks shall be elevated above the flood elevation to minimize flood hazards.	LTS
HY-11. Construction of the Northside East Station option, and to a lesser degree the Median Station East option, would involve extensive ground-disturbing activities that could cause siltation into East Antioch Creek and the unnamed creek. Siltation could also affect the recreated wetland at the site of the remote maintenance facility and reduce the flood storage capacity.	PS	Implementation of Mitigation Measures HY-8.1, HY-8.2, and HY-9.1 would reduce erosion, siltation, and flooding construction impacts of the Northside East Station and Median Station East options to less than significant. Mitigation Measure HY-8.1 proposes development and implementation of a SWPPP outlining stormwater discharge BMPs, Mitigation Measure HY-8.2 proposes development and implementation of a SWPPP outlining measures to prevent and control hazardous material releases during construction, and Mitigation Measure HY-9.1 recommends the preparation and implementation of a drainage plan.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
HY-CU-12. Construction of the Proposed Project in combination with other cumulative development and the SR 4 projects would require substantial grading and excavation that could expose soil to erosion and cause siltation of receiving water bodies and storm drains, thus potentially causing flooding.	PS	Implementation of Mitigation Measures HY-1.1, HY-6.1, HY-8.1, and HY-9.1 which recommend the implementation of a SWPPP to reduce erosion, siltation, and stormwater discharges, would reduce potential flooding construction impacts of the Proposed Project. Other projects would also be required to implement similar mitigation measures under the NPDES Stormwater General Permits. The measures implemented by the Proposed Project and by the other projects would be expected to reduce cumulative runoff impacts to less than significant.	LTS
HY-CU-13. The Proposed Project in combination with the SR 4 widening project, and foreseeable development projects, could result in water quality impacts to Kirker Creek, West Antioch and East Antioch Creeks, and other local water bodies.	PS	In addition to local measures and requirements, implementation of Mitigation Measure HY-5.1 would reduce the Proposed Project's water quality impacts to less than cumulatively considerable. Other projects would also be required to implement similar mitigation measures under the Stormwater General Permits. This measure implemented by the Proposed Project would reduce the project's contribution to cumulative impacts to less than cumulatively considerable.	LTS
HY-CU-14. The Proposed Project in combination with other foreseeable development and the SR 4 widening project would substantially increase impervious surfaces and create additional increase runoff to local water bodies and storm drain facilities and exceed storm drain capacity.	PS	Implementation of Mitigation Measure HY-1.1 would reduce operational impacts of the Proposed Project related to stormwater runoff to less than cumulatively considerable. Mitigation Measure HY-1.1 calls for the implementation of BMPs to control surface water runoff such as construction of additional basins and/or swales, flow-through planters, in-ground planters, bioretention areas, among others. Other projects would also be required to implement similar mitigation measures under the Stormwater General Permits.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.9 Biological Resources			
BIO-2. Construction and operation of the Proposed Project may result in the filling or adverse modification of jurisdictional wetlands, other "waters of the U.S.," or "waters of the State."	PS	*BIO-2.1a Verify that final locations of train control huts do not affect wetlands, "waters of the U.S.," or "waters of the State."* Prior to approval of the final design and location of the train control huts, BART shall ensure that the huts would not be located on wetlands, "waters of the U.S." and "waters of the State." BART or its contractor shall retain a biologist qualified in wetland delineations to verify that the proposed sites do not have these features. If the biologist determines that a train hut location could directly or indirectly affect a wetland, water of the U.S., or water of the state, BART shall identify an alternative location that avoids affecting the resource. *BIO-2.1b Comply with permit requirements of the U.S. Army Corps of Engineers and/or state agencies*. If an alternative location is not feasible, BART shall ensure that the Corps' Section 404 permit requirements or requirements of state agencies, as applicable, are followed, as described later in Mitigation Measure BIO-8.1.	LTS
BIO-3. Construction and operation of the Proposed Project would result in the loss of foraging habitat for the Swainson's hawk.	PS	BART would be required to comply with either Mitigation Measure BIO-3.1 *or* Mitigation Measure BIO-3.2, which would effectively reduce potential impacts on foraging habitat to less than significant. *BIO-3.1 Compensate for loss of Swainson's hawk foraging habitat*. BART shall ensure that an appropriate number of acres (as approved by CDFG) of agricultural land, annual grasslands, or other suitable raptor foraging habitat are preserved off site within Contra Costa, Sacramento and/or Solano counties at a 1 to 0.75 (habitat lost to preserved) ratio. Given the proximity of the nest site to Sacramento and Solano counties, it is acceptable to have this off site preservation outside of Contra Costa County. Preserve areas should be established prior to project construction, if feasible, and may occur through at least one of the following options: a) Purchase of mitigation credits at an approved CDFG mitigation bank that is within east Contra Costa County, lower Sacramento County, or Solano County. The service area of the mitigation bank must include the project corridor.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		b) Payment of a mitigation fee to a habitat development and management company, through a negotiated agreement between said company, BART, and CDFG. The lands must be within 10 miles of the nearest Swainson's hawk nest, unless otherwise approved by CDFG (consistent with CDFG guidelines). c) Purchase of conservation easements or fee title in east Contra Costa County, Lower Sacramento County, or Solano County. This mitigation must occur within 10 miles of the nearest Swainson's hawk nest, unless otherwise approved by CDFG (consistent with CDFG Guidelines). *BIO-3.2 Participate in the ECCC HCP/NCCP*. If BART chooses to participate as a Participating Special Entity in the ECCC HCP/NCCP, it will pay a development fee, based on the acreage of land that is permanently lost. This fee would offset any impacts to foraging habitat.	
BIO-4. Construction and operation of the Proposed Project could result in the disturbance of special-status nesting birds.	PS	BART would be required to comply with either Mitigation Measures BIO-4.1 through BIO-4.4 *or* Mitigation Measure BIO-4.5. *BIO-4.1 Protect Swainson's hawk nests*. Pre-construction surveys for Swainson's hawk shall be conducted no more than 30 days prior to the initiation of any ground-disturbing or vegetation-clearing activities that occur between February 15 and September 15. Surveys for nesting Swainson's hawk shall be conducted within one-half mile of any construction activities for the proposed construction yard/staging area and the Hillcrest Avenue Station. If no active Swainson's hawk nests are identified on or within one-half mile of construction activities, a letter report summarizing the survey results shall be sent to the CDFG and no further mitigation is required. If active nests are found, measures consistent with the CDFG Staff Report Regarding Mitigation for impacts to Swainson's hawks in the Central Valley of California shall be implemented as follows: a) Nest trees shall not be removed, unless there is no feasible way of avoiding their removal.	LTS

[1] California Department of Fish and Game. Staff Report on Burrowing Owl Mitigation. 1995 Online at http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf. May 2008.

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		b) If there is no feasible alternative to removing a nest tree, a Management Authorization (including conditions to offset the loss of the nest tree) shall be obtained from CDFG with the tree removal period (generally between October 1 and February 1) to be specified in the Management Authorization. c) No intensive disturbances (e.g., heavy equipment operation associated with construction or use of cranes) or other project-related activities that could cause nest abandonment or forced fledging shall be initiated within 1,320 feet (0.25 miles) (buffer zone as defined in the CDFG Staff Report) of an active nest between February 15 and September 15 or until August 15 if a Management Authorization is obtained from CDFG for the project. The 1,320-foot buffer zone could be adjusted in consultation with CDFG. d) If construction activities are unavoidable within the buffer zone, BART shall retain a qualified biologist to monitor the nest to determine if abandonment occurs. If the nest is abandoned and the nestlings are still alive, BART shall retain the services of a qualified biologist to reintroduce the nestling(s) (recovery and hacking). Prior to implementing, any hacking plan shall be reviewed and approved by the Environmental Services Division and Wildlife Management Division of the CDFG. *BIO-4.2 Protect burrowing owl nests*. No more than 30 days prior to project-related grading a qualified biologist shall conduct focused surveys for burrowing owls in areas of suitable habitat on and within 500 feet of the project corridor. Surveys shall be conducted in accordance with prevailing CDFG protocol.[1] If no occupied burrows are found in the survey area, a letter report documenting survey methods and findings shall be submitted to CDFG, and no further mitigation is necessary. If occupied burrows are found in the survey area, BART shall take the following steps: a) Impacts to the burrowing owl shall be avoided, if feasible, by establishing a buffer of 165 feet during the non-breeding season (September 1 through January 31) or 300 feet during the breeding season (February 1 through August 31). The size of the buffer area may be adjusted if a qualified biologist and CDFG determine that construction activities would not adversely affect the owl(s). No project activity shall commence within the buffer area until a qualified biologist confirms that the burrow is no longer occupied. If the burrow is occupied by a nesting pair, a minimum of 6.5 acres of foraging habitat contiguous to the burrow shall be preserved and no disturbance or construction activities shall occur within the buffer until the breeding season is over.	

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		b) If impacts to occupied burrows are unavoidable, on-site passive relocation techniques shall be used if approved by CDFG to encourage owls to move to alternative burrows outside of the impact area. However, no occupied burrows shall be disturbed during the nesting season unless a qualified biologist verifies through non-invasive methods that the birds are not nesting. c) If relocation of the owls is approved for the project by CDFG, BART shall hire a qualified biologist to prepare a plan for relocating the owls to a suitable site. The relocation plan must include: (1) the location of the nest and owls proposed for relocation; (2) the location of the proposed relocation site; (3) the number of owls involved and the time of year when the relocation is proposed to take place; (4) the name and credentials of the biologist who will be retained to supervise the relocation; (5) the proposed method of capture and transport for the owls to the new site; (6) a description of the site preparations at the relocation site (e.g., enhancement of existing burrows, creation of artificial burrows, one-time or long-term vegetation control, etc.); and (7) a description of efforts and funding support proposed to monitor the relocation. Relocation options may include passive relocation to another area of the site not subject to disturbance through one-way doors on burrow openings, or construction of artificial burrows in accordance CDFG guidelines. *BIO-4.3 Protect tri-colored blackbird nests*. If initiation of site grading is proposed during the tri-colored blackbird's nesting season (April 1 – July 1), BART shall retain a qualified biologist to conduct focused surveys for nesting tri-colored blackbirds in areas of suitable habitat on and within 300 feet of the Hillcrest Avenue Station and related construction footprint. The survey shall be conducted no more than 30 days prior to the start of grading, if grading is to occur during the nesting season. If surveys identify an active tri-colored blackbird nest in the survey area, BART shall installed brightly colored construction fencing that establishes a boundary 200 feet (as defined by CDFG) from the active nest. No disturbance associated with the Proposed Project shall occur within the 200-foot fenced area during the nesting season of April 1 through July 1 or until a qualified biologist has determine that the young have fledged or that the nest is no longer occupied prior to disturbance of the nest site. *BIO-4.4 Protect birds covered by the Migratory Bird Treaty Act (including white-tailed kite, loggerhead shrike and other special-status species)*. Between March 1 and September 15, BART shall have a qualified biologist conduct nest surveys no more than 30 days prior any demolition/construction or ground-disturbing activities that are within 500 feet of potential nest trees or suitable nesting habitat (i.e., trees,	

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		tule, cattails, grassland). A pre-construction survey shall be submitted to CDFG that includes, at a minimum: (1) a description of the methodology including dates of field visits, the names of survey personnel with resumes, and a list of references cited and persons contacted; and (2) a map showing the location(s) of any bird nests observed on the project site. If no active nests of MBTA covered species are identified, then no further mitigation is required. If active nests of protected bird species are identified in the focused nest surveys, BART shall take the following steps: a) BART, in consultation with CDFG, shall delay construction in the vicinity of active nest sites during the breeding season (March 1 through September 15) while the nest is occupied with adults and/or young. A qualified biologist shall monitor any occupied nest to determine when the nest is no longer used. If the construction cannot be delayed, avoidance measures shall include the establishment of a non-disturbance buffer zone around the nest site. The size of the buffer zone shall be determined in consultation with the CDFG, but will be a minimum of 100 feet. The buffer zone shall be delineated with highly visible temporary construction fencing. b) No intensive disturbance (e.g., heavy equipment operation associated with construction, or use of cranes) or other project-related activities that could cause nest abandonment or forced fledging shall be initiated within the established buffer zone of an active nest between March 1 and September 15. c) If construction activities are unavoidable within the buffer zone, BART shall retain a qualified biologist to monitor the nest site to determine if construction activities are disturbing the adult or young birds. If abandonment occurs, the biologist shall consult with CDFG or USFWS (who monitor compliance with the MBTA) for the appropriate salvage measures. BART will be required to fund the full costs of the salvage measures. d) If fully protected species are found to be nesting in the project corridor, their nests shall be completely avoided until the birds fledge. Avoidance will include the established line of a non-disturbance buffer zone of 250 feet, or as determined in consultation with the CDFG. *BIO-4.5 Comply with appropriate provisions of the ECCC HCP/NCCP to protect nesting birds*. If BART chooses to participate as a Participating Special Entity, it will pay a development fee, based on the acreage of land that is permanently lost. Additionally, to offset impacts on burrowing owl and Swainson's hawk, it	

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		shall comply with the measures described in Section 6.4.3 of the ECCC HCP/NCCP, as summarized below. For impacts to fully protected bird species, Conservation Measures 1.11 of the ECCC HCP/NCCP shall be followed as summarized below. **Western Burrowing Owl.** Prior to initiating covered activities, BART shall conduct surveys for burrowing owl as described in the ECC HCP/NCCP and in accordance with the guidelines from CDFG's Staff Report on Burrowing Owl Mitigation. The measures in the ECC HCP/NCCP call for planning surveys (in Section 6.3.1), preconstruction survey, avoidance and minimization actions, and construction monitoring. **Swainson's Hawk.** Prior to initiating covered activities, BART shall conduct surveys for Swainson's hawk nest sites as described in the ECC HCP/NCCP. In particular, planning surveys and preconstruction surveys shall be performed, avoidance and minimization actions shall be followed, and construction monitoring shall be undertaken following the guidelines in the ECC HCP/NCCP. In addition, mitigation requirements are defined for the loss of nest trees. **Fully Protected Species.** For fully protected species and species protected under the Migratory Bird Treaty Act, BART shall comply with Conservation Measure 1.11 of the ECCC HCP/NCCP, which refers to surveys with provisions from the Migratory Bird Treaty Act.	
BIO-6. Construction and operation of the Proposed Project would include removal of trees that could be protected by a local tree preservation policy or ordinance.	PS	*BIO-6.1 Conduct tree survey and replace trees at suitable ratios*. BART shall retain a certified arborist to survey trees along the project corridor, including potential construction yard/staging areas, to identify and evaluate trees that shall be removed. A report shall be prepared and submitted to BART to document the trees that are to be removed. Mitigation shall be required for impacts to trees designated as "street trees" in the City of Pittsburg and indigenous established, mature, or landmark trees in the City of Antioch. Replacement trees will be a native tree species. At a minimum, each removed tree meeting the above classifications will be replaced either with one replacement tree of 24-inch box size, or three replacement trees of 15-gallon size. Trees will be planted in locations suitable for the replacement species. Selection of the replacement sites and installation of replacement plantings will be supervised by a qualified botanist. A qualified botanist will monitor newly planted trees at least once a year for 5 years. Each year during that period, any trees that do not survive will be replaced. Any trees planted as remediation for failed plantings will be planted as stipulated here for original plantings, and will be monitored for a period of 5	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		years following installation. Tree replacement will occur after project construction.	
BIO-8. Construction and operation of the Northside West Station, Northside East Station and Median Station East options could result in the filling or adverse modification of jurisdictional wetlands, other "waters of the U.S.," and "waters of the State."	S	If BART chooses to participate in the ECCC HCP/NCCP, compliance with Mitigation Measures BIO-8.1 and BIO-8.2 would be required; if not, then compliance with Mitigation Measure BIO-8.1 would be required. *BIO-8.1 Comply with permit requirements of the US Army Corps of Engineers and/or state agencies*. For wetland habitats where the Corps takes jurisdiction, an accurate estimate of the acres of fill shall be identified and submitted to the Corps along with concept plans for mitigation, as outlined below. a) BART shall, where feasible, avoid the maximum amount of existing wetlands and establish a minimum 75-foot buffer around all sides of these features. The buffer will help prevent indirect and temporary impacts to the wetland features. In addition, the final project design shall not cause significant changes (i.e., alter the hydrology such that the wetland areas no longer function as wetlands) to the pre-project hydrology, water quality, or water quantity in any wetland that is to be avoided. This shall be accomplished by avoiding or repairing any disturbance to the hydrologic conditions supporting these wetlands, as verified through wetland protection plans that will be required during the permitting process. b) Where avoidance of existing wetlands and drainages is not feasible based on the project design, BART shall identify mitigation measures such that there is no net loss of wetland acreage or habitat value. Wetland mitigation shall be developed as a part of the Section 404 CWA permitting process, or for non-jurisdictional wetlands, during permitting through the CVRWQCB and/or CDFG. Mitigation is to be provided prior to construction-related impacts on the existing wetlands. The exact mitigation ratio is variable, based on the type and value of the wetlands affected by the project, but agency standards typically require a minimum of 1:1 (impacted acreage: mitigation acreage) for preservation and 1:1 for construction of new wetlands; impacts to the created wetland could require higher ratios. In addition, a wetland mitigation and monitoring plan shall be developed that includes the following: • Description of the wetland types, and their expected functions and values; • Performance standards and monitoring protocol to ensure the success of the mitigation wetlands over a period of five to ten years;	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		• Engineering plans showing the location, size, and configuration of wetlands to be created or restored; • An implementation schedule showing when construction of mitigation areas shall occur; and • A description of legal protection measures for the preserved wetlands (i.e., dedication of fee title, conservation easement, and/or an endowment held by an approved conservation organization, government agency, or mitigation bank). This plan shall be prepared and submitted to the Corps, for wetlands under their jurisdiction and the CVRWQCB for non-jurisdictional wetlands. Additionally, CDFG will review plans as part of the Streambed Alteration Agreement. This plan will be prepared as part of the permitting process. c) Prior to ground disturbance for project construction in the Hillcrest Avenue Station options area, BART shall acquire all applicable wetland permits. These permits could include, but would not be limited to, a Section 404 Wetlands Fill Permit from the Corps, or a Report of Waste Discharge from the CVRWQCB; a Section 401 Water Quality Certification from the RWQCB; and a Section 1602 Streambed Alteration Agreement from the California Department of Fish and Game. *BIO-8.2 Comply with ECCC HCP/NCCP*. If BART chooses to participate in the ECCC HCP/NCCP as a Participating Special Entity, a fee shall be paid to offset impacts to wetland features (per Table 3.9-3 in Section 3.9 of this report), in addition to the development fee. Additionally, BART shall comply with Conservation Measures 1.7, 1.10, and 2.12 of the ECCC HCP/NCCP.	
BIO-9. Construction and operation of the Northside West Station, the Northside East Station, and the Median Station East options would result in the loss of potential foraging habitat for the Swainson's hawk.	PS	Mitigation Measure BIO-3.1 or BIO-3.2 identified for the Median Station is also applicable to the station options and would reduce the loss of Swainson's hawk foraging habitat from the construction of the Hillcrest Avenue Station options to a less-than-significant level.	LTS

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Table S-3
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Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
BIO-10. Construction and operation of the Northside West Station and Median Station East options would not result in the loss of habitat or potential disturbance of the valley elderberry longhorn beetle; however, construction and operation of the Northside East Station option could affect the valley elderberry longhorn beetle.	PS	Either of the following measures would ensure the Northside East Station option facilities are designed to avoid the elderberry shrubs or would occur pursuant to a VELB Mitigation Plan. *BIO-10.1 Avoid VELB habitat or prepare a VELB Mitigation Plan.* The Northside East Station option shall be designed to avoid ground disturbance within 100 feet of the dripline of elderberry shrubs having stems greater than or equal to one inch in diameter. The 100-foot buffer can be adjusted in consultation with the USFWS. If avoidance is achieved, a letter report confirming avoidance shall be sent to the USFWS and no further mitigation would be required. If disturbance within 100 feet of the dripline of the elderberry shrubs with stems greater than or equal to one inch in diameter is unavoidable, then BART shall retain the services of a qualified biologist to develop a formal VELB mitigation plan in accordance with the most current USFWS mitigation guidelines for unavoidable take of VELB habitat pursuant to either Section 7 or Section 10(a) of the Federal Endangered Species Act. Prior to construction in the Northside East Station option area, the mitigation plan shall be reviewed and approved by the USFWS. *BIO-10.2 Comply with USFWS provisions for VELB if delisted.* If the VELB is delisted by the USFWS prior to the initiation of any ground disturbing, demolition, or construction activities associated with the Proposed Project, BART shall proceed with construction in a manner consistent with any requirements that accompany the VELB delisting notice.	LTS
BIO-CU-11. The Proposed Project in combination with other foreseeable development in east Contra Costa County could result in the loss of jurisdictional wetlands, other "waters of the U.S.," and "waters of the State."	S	Implementation of Mitigation Measures BIO-8.1 and BIO-8.2 (should BART choose to participate in the ECCC HCP/NCCP) would ensure that the impact on wetlands and jurisdictional waters from the Northside West Station, Northside East Station, or Median Station East options are fully mitigated. As a result, the project's contribution to this cumulative impact would be less than considerable. Moreover, the same state and federal policies and regulations governing wetland protection and mitigation apply to all of the foreseeable development projects that are considered in this cumulative assessment.	LTS
BIO-CU-12. The Proposed Project in combination with other foreseeable development in east Contra Costa County would contribute to the loss of	S	The project-specific analysis identified significant impacts to special-status species due to construction and operation of the Proposed Project. Implementation of Mitigation Measures BIO-3.1, BIO-4.1, BIO-4.2, BIO-4.3, BIO-4.4, and BIO-6.1 would minimize the Proposed Project's incremental contribution to the loss of special-status wildlife and the loss or fragmentation of their habitat through the regulatory process.	LTS

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Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
special-status wildlife and their habitat.		Implementation of these measures would reduce the project's contribution to the cumulative impacts to less than cumulatively considerable. Moreover, the mitigation measures identified for the Proposed Project regarding Swainson's hawks, burrowing owl, tri-colored blackbirds, and other protected bird species are applicable to other development projects that may affect these species. Compliance with permit conditions of the USFWS and CDFG are anticipated for future growth in east Contra Cost County, since Clayton, Pittsburg, Oakley, Brentwood, Contra Costa County and Contra Costa County Flood Control and Water Conservation District are all participants in the ECCC HCP/NCCP. Jurisdictions not participating in the HCP would still be subject to the provisions of the state and federal Endangered Species Acts.	
3.10 Noise and Vibration			
NO-6. Noise from construction equipment could significantly impact sensitive noise receptors along the project corridor.	PS	*NO-6.1 Employ noise-reducing construction practices*. BART shall ensure that the construction contractor implements noise-reducing practices. The construction supervisor or other entity appointed by BART shall measure noise levels at nearest sensitive receptors before beginning construction and periodically thereafter to ensure these noise levels are not exceeded. Measurements shall be taken during periods when noisy, heavy equipment is operating. Noise-reducing measures that could be implemented to attain the noise levels include: • Minimize nighttime construction in residential areas. Restrict high noise-generating equipment such as drills (which produce 98 dBA at 50 feet) and scrapers (which produce 89 dBA at 50 feet) to daytime hours (7:00 a.m. to 6:00 p.m.); • Use quieter methods of pile driving including sonic pile drivers where feasible; • Use equipment with enclosures and high-performance mufflers; • Locate equipment as far as possible from residential areas; • Install noise barriers between equipment and residential areas; and • Select haul truck routes to minimize impact to residential areas. *NO-6.2 Designate a noise-disturbance coordinator, disseminate information to residences and businesses, and implement a response/tracking program.* BART shall ensure that a noise-disturbance coordinator is identified and be responsible for receiving noise complaints, determining the cause of the complaints, and ensuring reasonable measures are taken to address the complaints. Residences and businesses within at	SU

Legend: (S) Significant (PS) Potentially Significant (LTS) Less Than significant (SU) Significant and Unavoidable

Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		least 500 feet and 50 feet of construction area, respectively, shall be notified in writing prior to construction. In addition, contact information for the coordinator shall be posted at the construction site and provided to the residences and businesses located within 500 feet and 50 feet, respectively.	
NO-7. Vibration from construction equipment could significantly impact sensitive receptors along the project corridor.	PS	*NO-7.1 Employ vibration-reducing construction practices*. BART shall ensure that the construction contractor implements vibration-reducing practices including but not limited to those listed below: • minimize nighttime construction in residential areas; • restrict high vibration-generating equipment such as rollers, drills, and tracked equipment to daytime hours (7:00 a.m. to 6:00 p.m.); • use sonic pile drivers where feasible; • locate vibration-generating equipment as far as possible from sensitive receptors including homes, schools, churches, and dental offices; and • select haul truck routes so that trucks do not come within 20 feet of sensitive receptors.	SU
NO-11. Traffic associated with the Northside West Station or Median Station East operations would have a less-than-significant noise impact on sensitive receptors along their access routes. However, because of additional residential development associated with the Northside East Station option, traffic may result in significant noise impact on sensitive receptors along its access routes.	PS	Feasible mitigation measures are not available to ensure traffic-related noise impacts are reduced to less-than-significant levels.	SU
NO-12. Noise from construction equipment could significantly impact sensitive noise receptors along the project corridor for the all station	PS	Mitigation Measure NO-6.1 and NO-6.2, identified for the Proposed Project, would also reduce the potentially significant, although temporary, construction noise impact for the Northside West, Northside East, and Median Station East options. However, given the uncertainty in the equipment to be used at the same time and the potential proximity to sensitive receptors, temporary impacts may be significant and	SU

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
options.		unavoidable even with these mitigation measures.	
NO-CU-13. Cumulative noise, which includes the Proposed Project's contribution from the DMU vehicles operating at grade far from railroad switches in combination with traffic from station operations, future development in the vicinity of the stations and other foreseeable future development in the project corridor, would have a potentially significant impact on sensitive receptors in the project corridor.	PS	Sound walls are already planned for installation along the SR 4 right-of-way as part of the SR 4 widening project. Additional feasible mitigation measures may become available as project plans evolve to further reduce DMU noise to the point where its effects would not be considered cumulatively considerable. In addition, sound walls could be constructed along those segments of SR 4 near residential receptors where such features are not included as part of the SR 4 widening project. However, SR 4 vehicular traffic would be the primary source of cumulative traffic noise, to which the Proposed Project would add only a minor contribution. Accordingly, additional sound walls are not included as part of the Project or as a mitigation measure, especially since Impacts NO-1 and NO-2 identified less-than-significant impacts for the DMU operations. Since there is no conclusive evidence at this time that less-than-cumulatively-considerable project noise increments would be achieved at all locations far from railroad switches, noise impacts are conservatively considered cumulatively significant and unavoidable.	SU
NO-CU-14. Cumulative noise, which includes the Proposed Project's contribution from the DMU vehicles operating near railroad switches in combination with traffic from station operations, future development in the vicinity of the stations and other foreseeable future development in the project corridor, would have a potentially significant impact on sensitive receptors in the project corridor.	PS	For the same reasons cited for Impact NO-CU-13, it is not clear that mitigation measures would be sufficient to reduce cumulative noise increases in the vicinity of switches for the Proposed Project operations. As a result, cumulative noise impacts in the vicinity of the switches from DMU operations and traffic-related noise associated with the proposed Ridership Development Plans could remain significant and unavoidable.	SU

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
NO-CU-16. Cumulative noise from the proposed maintenance facility to support the Proposed Project operations combined with noise from foreseeable development may be cumulatively significant.	PS	The following mitigation measure would reduce the potential, cumulatively significant noise impact from the maintenance facility located at the site east of SR 160. However, given the uncertainty of the location and design of future development, the necessary reduction to project-related noise could not be assured and the impacts would remain cumulatively significant and unavoidable. *NO-CU-16.1 Install sound walls around the remote maintenance facility adjacent to sensitive receptors*. Sound walls placed along the maintenance facility periphery facing the residential development to the east could reduce the noise contribution from the remote maintenance facility to less than cumulatively considerable if they could reduce noise levels at the closest residential area by 5 dBA.	SU
NO-CU-18. Cumulative noise from construction equipment associated with the Proposed Project in combination with other foreseeable development could significantly impact nearly sensitive receptors.	PS	Mitigation Measures NO-6.1 and NO-6.2, which call for the Proposed Project contractors to employ noise-reducing construction practices or other equivalent measures and designate a noise-disturbance coordinator, would minimize noise associated with the project, but not to less-than-significant levels. Nearby construction projects would also apply similar mitigation measures to reduce their impacts. Non-BART development near the Railroad Avenue and Hillcrest Avenue Stations would be required to comply with local ordinances to limit noise during construction. However, even with the mitigation measures in place, the Proposed Project together with nearby projects is expected to remain cumulatively significant and unavoidable.	SU
NO-CU-19. Cumulative vibration from construction equipment associated with the Proposed Project in combination with other foreseeable development could have a significant impact on nearby sensitive receptors.	PS	With Mitigation Measure NO-7.1, which calls for the Proposed Project contractors to employ vibration-reducing construction practices, and similar mitigation measures for other projects that are expected to be in place, the short-term, cumulative vibration impacts would be reduced. However, the short-term cumulative impacts, particularly where pile driving is involved, may not be reduced to less-than-significant levels. As a result, construction related cumulative vibration impacts would remain significant and unavoidable.	SU
3.11 Air Quality			
AQ-8. Construction activities would emit exhaust pollutants (CO, ROG, NO_x, and PM_{10}) in the engine exhaust from heavy construction equipment and PM_{10}, as a component of the fugitive	PS	*AQ-8.1 Incorporate control measures and best management construction practices into the construction contracts*. BART shall ensure that the contractor implements the control measures identified in Table 3.11 6 during construction of the Proposed Project. *AQ-8.2 Implement a construction emissions reduction plan for heavy equipment exhaust*. BART shall ensure that the contractor designs and implements a construction emissions reduction plan that incorporates	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
dust from grading and earthmoving activities.		specific measures to reduce heavy equipment exhaust during the Proposed Project's construction. The measures shall include, but not be limited to: • limit idling to five minutes or less; • prohibit engine tampering to increase power; • install oxidation catalysts, particulate traps, or other suitable particulate matter control devices; • use low sulfur or other, suitable alternative diesel fuel; • tune equipment regularly; • place truck staging areas away from sensitive receptors; • route trucks away from sensitive receptors; and • minimize truck trips.	
AQ-9. Odors from the equipment exhaust during the construction of the Proposed Project would affect residences and businesses near the SR 4 mainline.	PS	Odors from construction equipment would be reduced to less-than-significant levels through the measures identified in Mitigation Measure AQ-8.2, which calls for implementation of a construction emissions reduction plan for heavy equipment exhaust.	LTS
AQ-10. Construction of the Proposed Project would expose individuals to diesel particulate matter exhaust, which is carcinogenic, from heavy construction equipment during the construction period.	PS	Implementation of the Mitigation Measure AQ-8.2, which calls for implementation of a diesel particulate matter emissions reduction plan, would reduce construction period emissions and any associated cancer risk to less-than-significant levels.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.12 Public Health and Safety			
HS-4. The Proposed Project could result in an accidental release of hazardous materials.	PS	*HS-4.1 Develop and implement a Spill Prevention Plan.* BART shall prepare and implement a Spill Prevention Plan outlining measures that would be in place to control hazardous materials use and storage. This plan would include, at a minimum, the following measures: • Periodic inspection of hazardous materials storage and use areas to ensure containers and equipment are securely covered, containers are properly labeled and stored on secondary containment, and each site is equipped with spill kits; • Employee hazardous materials training and awareness; and • Spill reporting procedures.	LTS
HS-8. Construction of the Proposed Project may expose construction workers to hazardous materials in contaminated soil and groundwater.	PS	*HS-8.1 Conduct additional file review and a Phase I ESA prior to project construction.* BART shall ensure that additional research, including a file review with Contra Costa County Health Services and the RWQCB, and a Phase I ESA for the project footprint is performed during the final design phase of the project to ensure that the identified LUST, UST, and County Crossings sites, as well as other potential sites, do not have an adverse impact on the Proposed Project. If the file review reveals no potential impact from environmental contamination, no further action to remedy soil or groundwater contamination would be necessary. *HS-8.2 Conduct further soil and groundwater investigations prior to any construction activities*. If the file review under Mitigation Measure HS-8.1, above, reveals potential environmental contamination along or beneath the project alignment or other facilities from the LUST, UST, and County Crossings sites, BART shall evaluate the sites to determine the level of investigation appropriate to evaluate the possible presence of hazardous chemicals in soil and groundwater. In the event soil and/or groundwater testing is deemed appropriate, BART shall ensure that a Phase II soil and groundwater investigation is conducted in the affected areas of the project corridor, including field sampling and laboratory analysis, to evaluate conditions where excavation and grading will take place. In addition, a Phase II soil and groundwater investigation shall be completed for other areas outside of the SR 4 median (such as station parking areas) where excavation and grading will take place. The Phase II investigation shall be completed prior to any construction or excavation work, and a schedule shall be developed in the pre-design phase of the project	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		to ensure that a sufficient amount of time is allotted prior to site development to identify and implement actions to investigate the presence of hazardous substances in soil and groundwater, and to identify design and contingency measures in the event that the results of the investigation indicate the need for further testing, site controls, or remediation. The number, location of field samples, and constituents tested for would depend on the size of the impacted site, site activities, and possible transport or migration routes. Field samples may include soil, soil gas, or groundwater, depending on the nature of the contaminants suspected to be present. The sampling plan shall specify that all soil and groundwater chemical analyses shall be performed by a California-certified laboratory, using standard EPA and California chemical testing methods. The investigation results shall, if necessary, lead to preparation of (1) a Remedial Action Plan for soil and groundwater treatment and disposal, (2) a Health and Safety Risk Assessment, and (3) a soil management plan with criteria for ADL-impacted soils, in consultation with DTSC and RWQCB. If necessary, a Remedial Action Plan shall be developed to determine the selection of the remedy for a contaminated site. If the proposed remedial approach does not involve complete source removal, a Health and Safety Risk Assessment shall be completed. Work in impacted areas will be conducted in accordance with applicable Cal OSHA requirements. *HS-8.3 Remediate the contaminated sites prior to construction activities as recommended by the soil and groundwater investigations*. If hazardous materials are identified in soil and groundwater at levels that present a risk to the public, to construction workers, or to the environment, based on the investigations described in Mitigation Measure HS-8.2 above, BART shall ensure that remediation is conducted at contaminated sites pursuant to applicable laws and regulations. A Remedial Action Plan may be developed if warranted to address potential air and health impacts from soil excavation activities, potential transportation impacts from the removal of remedial activities, and potential risks of public upset should there be an accident at excavation sites. During excavation activities, construction workers or the public may be exposed to contaminants in the soil through incidental ingestion, dermal contact, inhalation of fugitive dust, and inhalation of volatile emissions. The Site-Specific Health and Safety Plan will include measures to mitigate these potential impacts, such as cordoning off excavation sites to prevent public access, water misting to control dust during removal activities, perimeter air monitoring for dust along the site boundaries both upwind and immediately downwind of site excavation	

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
		and stockpiling activities, and air monitoring of volatile organic compounds (VOCs). All exposed contaminated materials shall be covered at the end of each day. Excavation work shall be performed in compliance with all OSHA rules and regulations. In addition, a Health and Safety Plan shall be prepared to address worker health and safety, including physical and chemical hazards at excavation sites and requirements for worker personal protective equipment (PPE), criteria for upgrades to PPE, minimum training requirements for site workers, emergency information such as directions to the nearest hospital and emergency telephone numbers, and specific administrative requirements such as documentation and training and daily health and safety tail gate meetings.	
HS-9. Construction activities involving demolition or upgrading of existing SR 4 structures may potentially expose workers to asbestos-containing materials.	PS	*HS-9.1 Conduct an asbestos-containing materials (ACM) survey prior to demolition work, or upgrading or reconstruction of existing structures*. If construction of the Proposed Project requires the demolition of existing SR 4 structures that were not demolished as part of the SR 4 widening project, BART shall ensure that the contractor conducts an ACM survey prior to demolition, upgrading, or reconstruction of existing SR 4 structures. The ACM survey shall be performed by an inspector who is Asbestos Hazardous Emergency Response Act-certified under Toxic Substances Control Act (TSCA) Title II and California Occupational Safety & Health Administration (Cal OSHA)-certified under Section 1529 of the California Code of Regulations. If asbestos-containing material (that may become airborne) is found, subsequent demolition, renovation, or asbestos removal activities must be performed in accordance with the proper notification and emission control requirements. Prior to demolition, the permitting process with the Bay Area Air Quality Management District shall be initiated through the submittal of the ACM survey results. This mitigation measure shall be performed in conjunction with Caltrans.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
HS-11. The construction of the Proposed Project could impact access for emergency response vehicles.	PS	Mitigation Measure TR-9.1 presented in Section 3.2, Transportation, of this EIR calls for the preparation and implementation of a construction phasing and traffic management plan to define how traffic operations and circulation will be handled during each phase of construction. The plan would provide information on road closures and detours, and would be coordinated with the cities of Pittsburg and Antioch, and Caltrans. The plan would also specify measures to allow access and alternate transportation routes for maintenance and emergency response vehicles in the event of roadway blockages and closures.	LTS
HS-12. Construction of the Northside West, Northside East, and Median Station East options may expose construction workers to hazardous materials in contaminated soil and groundwater.	PS	Implementation of Mitigation Measures HS-8.1 through HS-8.3 would ensure that potential exposure to environmental contamination in the vicinity of the Northside West, Northside East, and Median Station East options during construction would be less than significant.	LTS
HS-CU-15. Construction of the Proposed Project in combination with other foreseeable projects may expose construction workers and the public to hazardous materials in contaminated soil and groundwater.	PS	Mitigation Measures HS-8.1 through HS-8.3, proposed for the Proposed Project, would require additional investigation of hazardous materials sites and appropriate remediation if necessary. These same measures would apply to the SR 4 widening project and would be implemented by Caltrans; they would also apply to future development in the station areas and be required of development applicants. The application of federal, state, and local regulations governing exposure to hazardous sites and construction worker and public safety would reduce this potentially significant cumulative impact.	LTS
HS-CU-16. Construction of the Proposed Project and the SR 4 widening project, involving demolition or upgrading of existing SR 4 structures, may potentially expose workers, the public, and the environment to asbestos-containing materials.	PS	Mitigation Measure HS-9.1 requires that BART ensure that an ACM survey be undertaken prior to demolition work, or upgrading or reconstruction of existing structures, to ensure that potential impacts from the Proposed Project are less than significant. Since Caltrans would address asbestos-containing materials as part of its SR 4 widening project, the cumulative safety impacts to construction workers, the public, and the environment from asbestos releases would be less than significant.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.13 Community Services			
CS-3. During the construction phase, the Proposed Project would require road detours, lane closures, and temporary freeway ramp closures, leading to a potentially significant short-term impact on emergency response times for police and fire departments.	PS	*CS-3.1 Prepare and implement Traffic Management Plan (TMP).* BART shall require its contractor to prepare a TMP prior to construction, and to implement the TMP during construction of the Proposed Project. The TMP shall be consistent with City and Caltrans roadway construction guidelines and identify the locations of temporary detours and signage to facilitate local traffic patterns and through-traffic requirements. If any ramp closures are necessary, they shall comply with the Caltrans ramp closure chart. The TMP shall be reviewed by Caltrans and the local jurisdictions to ensure that appropriate measures have been included. Emergency service providers shall be notified two weeks in advance of any lane or roadway closures so that alternate emergency response routes can be identified for use during the affected time period. This mitigation could be implemented as a part of Mitigation Measure TR-9.1, which stipulates that BART will ensure that a Construction Phasing and Traffic Management Plan is developed and implemented by the contractor, in consultation with the cities of Pittsburg and Antioch, BART, Caltrans, CCTA, and local transit providers including Tri Delta Transit.	LTS
3.14 Utilities			
UT-3. In the segment of the Proposed Project within the SR 4 median, construction of the Proposed Project may have significant impacts on utility service.	PS	*UT-3.1 Restrict service interruptions to off-peak periods.* BART shall ensure that the contractor schedules utility work to be performed during periods of off-peak service demand, when the least number of people demand the service. Low demand periods occur during late evening and early morning hours. *UT-3.2 Arrange temporary backup service.* If it is not possible to schedule service interruption to avoid inconveniencing customers, BART shall ensure that the contractor coordinates with the responsible utility provider to arrange alternate means of providing service. *UT-3.3 Notify customers of service interruptions.* Residential and business notifications to commercial and residential customers shall be delivered/mailed at least two weeks in advance of service interruption and shall contain information on the Proposed Project, anticipated schedule for service interruption, likely duration of service interruption, and individuals to contact regarding utility service or other construction-related issues.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
UT-4. The proposed facilities that could occur outside of the SR 4 median would require ground disturbance and excavation that would potentially result in utility service interruptions.	PS	In addition to compliance with California Government Code (Sections 4216–4216.9), Mitigation Measures UT-3.1, UT-3.2, and UT-3.3 would ensure that potential impacts to utilities are reduced to less than significant.	LTS
UT-6. The proposed facilities that could occur outside of the SR 4 median (for the Hillcrest Avenue Station Options) would require ground disturbance and excavation that would potentially result in utility service interruptions.	PS	In addition to compliance with California Government Code (Sections 4216-4216.9), Mitigation Measures UT-3.1, UT-3.2, and UT-3.3 would ensure that potential impacts to utilities are reduced to a less-than-significant level.	LTS
UT-7. Construction activities for the Northside West, the Northside East, and the Median Stations East options may lead to rupture of undiscovered oil and gas pipelines.	PS	*UT-7.1 Confirm the location of underground utilities prior to ground-disturbing activities associated with project construction.* Prior to ground-disturbing activities, construction personnel shall contact the Underground Service Alert (USA) to obtain information on the existence of underground utilities where ground-disturbing activities will take place along the project corridor. USA will notify PG&E and other utilities so they can identify whether they have underground facilities at the excavation sites. Potential hazards associated with the rupture of pipelines or the discovery of hazardous materials releases from pipelines, as well as emergency procedures to respond effectively to a potential release, shall be included in the Health and Safety Plan for the Proposed Project.	LTS
UT-CU-8. Construction of the Proposed Project in combination with foreseeable development projects, the SR 4 widening and the SR 4 Bypass projects, and the increased use of the UP ROW by freight trains could have significant impacts on utility service interruptions.	PS	The cumulative projects would be subject to similar California Government Code (Sections 4216–4216.9) as would the Proposed Project, and would be required to notify and coordinate with affected utility provider prior to ground-disturbing construction activities. These measures would minimize the impacts of the Proposed Project and the cumulative projects on utility service. Furthermore, implementation of Mitigation Measures UT-3.1, UT-3.2 and UT-3.3, which seek to reduce the duration and timing of service interruptions, would reduce the impact of the Proposed Project on utility service disruption to a less-than-significant level. As such, implementation of these mitigation measures, in combination with Government Code (Sections 4216–4216.9) would reduce the Proposed Project's contribution to this cumulative impact.	LTS

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Table S-3
Summary of Significant and Potentially Significant Impacts and Mitigation Measures

Impacts	Impact Significance Without Mitigation	Mitigation Measures	Impact Significance With Mitigation
3.15 Energy			
EN-4. Construction of the Proposed Project may consume nonrenewable energy resources in a wasteful, inefficient, and unnecessary manner.	PS	*EN-4.1 Develop and implement a construction energy conservation plan.* Prior to project construction, BART shall ensure all contractors prepare and implement a construction energy conservation plan, subject to BART approval, that includes measures such as, but not limited to: • Use energy-efficient equipment and incorporate energy-saving techniques during construction; • Minimize idling of construction equipment to 5 minutes unless absolutely necessary for construction; • Reduce the number of vehicle/truck trips by consolidating material deliveries (90 percent of deliveries shall consist of fully loaded vehicle/trucks) and encourage construction worker carpooling (e.g., provide at least two incentives such as set aside parking spaces and/or provide free lunch for carpooling construction workers); • Schedule delivery of materials during non-rush hours to minimize time vehicles/trucks are idling on the roads; and • Maintain equipment in good working condition as recommended by manufacturers.	LTS
EN-CU-5. Construction of the Proposed Project in combination with other foreseeable development may cumulatively consume nonrenewable energy resources in a wasteful, inefficient, and unnecessary manner.	PS	Implementation of Mitigation Measure EN-4.1 (develop and implement a construction energy conservation plan) would reduce the potentially significant construction energy impact of the Proposed Project to less than significant. In addition, other projects would also need to apply similar mitigation measures as part of their environmental review. Because construction of the Proposed Project would occur over a relatively short time frame, be staged to occur concurrently with the SR 4 widening project, and would require the implementation of energy conservation measures, the Proposed Project's contribution combined with the contribution from other projects would have a less-than-significant cumulative impact.	LTS

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