

FINAL ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT
(EIS/EIR)



Van Ness Avenue Bus Rapid Transit Project



SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY

IN PARTNERSHIP WITH



July 2013

VAN NESS AVENUE BUS RAPID TRANSIT PROJECT
City and County of San Francisco, California

**FINAL ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT**

PREPARED PURSUANT TO:


National Environmental Policy Act of 1969, §102 (42 U.S.C. §4432); and Federal Transit Law (49 U.S.C. Chapter 53); 49 U.S.C. §303 (formally Department of Transportation Act of 1966, §4(f)); National Historic Preservation Act of 1966, §106 (16 U.S.C. §470f); Executive Order 11990 (Protection of Wetlands); Executive Order 11988 (Floodplain Management); and Executive Order 12898 (Environmental Justice).

By the

FEDERAL TRANSIT ADMINISTRATION
U.S. DEPARTMENT OF TRANSPORTATION

and the

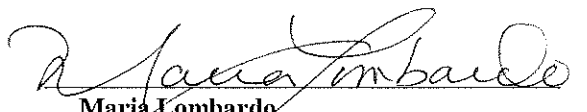
SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY



Leslie T. Rogers
Region IX Administrator
Federal Transit Administration

JUN 27 2013

Date of Approval



Maria Lombardo
Interim Executive Director
San Francisco County Transportation Authority

6/21/13

Date of Approval

Preface

Introduction

The San Francisco County Transportation Authority (SFCTA or Authority) proposes, in cooperation with the Federal Transit Administration (FTA) and the San Francisco Municipal Transportation Agency (SFMTA), to implement bus rapid transit (BRT) improvements along a 2-mile stretch of Van Ness Avenue in San Francisco, California.

This Final Environmental Impact Statement/Environmental Impact Report (EIS/EIR) has been prepared pursuant to the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Both laws require that projects with a potential for significant adverse environmental effects be reviewed in an EIS and EIR, respectively. This Final EIS/EIR identifies three build alternatives for the Van Ness Avenue BRT Project that would meet the project's purpose and need, as well as the Locally Preferred Alternative (LPA), which is the project design selected by the project proponents to be carried forward for approval and subsequent construction. This document evaluates the environmental effects that would result from each project alternative, including the LPA. This document also identifies measures to avoid, minimize, and mitigate impacts.

Who is leading the environmental review of this project?

The Van Ness Avenue BRT Project is a collaborative effort. In cooperation with FTA, the Authority initiated this project and has led the effort to complete the environmental review and preliminary engineering (approximately 30 percent design completion). The Authority has partnered closely with SFMTA, which will take the subsequent lead in all major steps of project delivery following completion of the environmental review process, including final design, construction, operation, and maintenance. The Authority has also partnered closely with the California Department of Transportation (Caltrans), which owns the portion of Van Ness Avenue within the project limits, designated as U.S. Highway 101.

FTA is the Lead Agency under NEPA, and the Authority is the Lead Agency under CEQA. Caltrans and SFMTA participate as Cooperating Agencies under NEPA and as Responsible Agencies under CEQA in environmental review. Other participating agencies include Golden Gate Bridge Highway & Transportation District, Metropolitan Transportation Commission, San Francisco Department of Public Works, San Francisco Planning Department, San Francisco Public Utilities Commission, and the San Francisco Mayor's Office on Disability.

What is the purpose of this document?

As required by NEPA and CEQA, this document informs the public and governmental decision makers of potential environmental effects associated with the project and describes the measures that would be implemented to mitigate or lessen those effects (Chapters 3, 4, 5, 6, and 7). This document will be used by federal, state, regional, and local agencies to assess the environmental impacts of the project on resources under their jurisdiction, to make discretionary decisions regarding the project, and to exercise their review and permit authority over the project. This document also includes information on the cost to construct and operate this project (Chapter 9), and provides an evaluation of important considerations such as environmental impacts, need, feasibility, funding, cost for each project alternative, and selection of the LPA (Chapter 10). This process provides decision-makers and the public information so they may consider the likely effects of the project on the environment, together with other important factors such as feasibility, cost, and meeting the identified project purpose and needs.

The Draft EIS/EIR was made available for public review and comment from November 4 through December 23, 2011; it was the subject of a public hearing on November 30, 2011, and an online webinar on December 5, 2011. After considering public and agency comments on the Draft EIS/EIR and identifying the LPA, the SFCTA

prepared this Final EIS/EIR that includes the responses to comments received on the Draft EIS/EIR, which are included as Appendix I of this document, and documentation on the LPA.

What is the difference between the Draft EIS/EIR and this Final EIS/EIR?

In this Final EIS/EIR, SFCTA and SFMTA recommend a preferred alternative, the LPA, to be carried forward. At the completion of this environmental process, FTA, SFCTA, and SFMTA expect to be able to approve and certify this Final EIS/EIR and make a determination on whether to implement the project LPA. An additional northbound station at the intersection of Van Ness Avenue and Vallejo Street, called the Vallejo Northbound Station Variant, is under consideration as a design variant under the LPA. The decision on whether to include the variant will be made at the time of project approval.

Material that is new or has been substantially revised since publication of the Draft EIS/EIR is indicated by a vertical bar in the margin. Changes between the Draft EIS/EIR and the Final EIS/EIR primarily reflect documentation of the LPA, as well as responses to comments received on the Draft EIS/EIR and staff-initiated changes to correct minor errors or improve/update presentation of information. These changes are delineated with the vertical margin bar.

Appendix I contains all comments received on the Draft EIS/EIR during the public comment period, as well as responses to those comments. Technical reports are available on request by contacting the SFCTA (project contact information provided below). In this Final EIS/EIR, SFCTA and SFMTA recommend a preferred alternative, the LPA, to be carried forward. At the completion of this environmental process, FTA, SFCTA, and SFMTA expect to be able to approve and certify this Final EIS/EIR and make a determination whether to implement the project LPA.

How can I be involved?

The project proponents encourage members of the public to remain involved with the project by reviewing the Final EIS/EIR and attending the SFCTA Board certification hearing, the SFMTA project approval meeting, and other project meetings such as Citizen Advisory Committee (CAC) meetings. Members of the public may also attend neighborhood and other stakeholder meetings in which the Van Ness Avenue BRT is discussed during the final design and construction phases of the project. If the project is approved, the SFMTA will distribute information about the formation of a Final Design and Construction Period CAC via the project Web site, direct mailings, and electronic newsletters. Requests to be added to the project mailing list to receive periodic updates on the project can be made by contacting:

Attn: Michael Schwartz, Senior Transportation Planner
San Francisco County Transportation Authority
1455 Market St., 22nd Floor
San Francisco, CA 94103
vannessbrt@sfcta.org

EXECUTIVE SUMMARY

Executive Summary

S.1 | Introduction

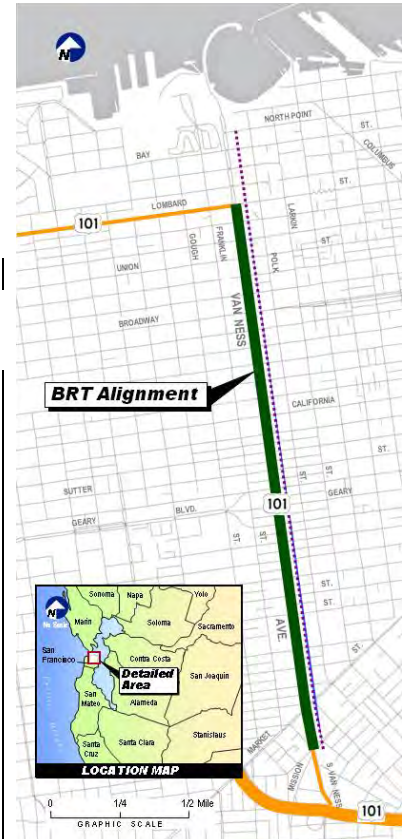
The San Francisco County Transportation Authority (SFCTA or Authority) proposes, in cooperation with the Federal Transit Administration (FTA) and the San Francisco Municipal Transportation Agency (SFMTA), to implement bus rapid transit (BRT) improvements along a 2-mile stretch of Van Ness Avenue in San Francisco,¹ from Van Ness Avenue at Lombard Street in the north to South Van Ness Avenue at Mission Street in the south. This chapter provides a brief summary of the purpose of and need for the proposed project, the project alternatives, project performance, a summary of potential environmental impacts, and proposed mitigation measures. This summary should not be relied upon for a thorough understanding of these topics; references to sections of this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) with complete information are provided below.

Substantive text changes between the Draft EIS/EIR circulated November 4 through December 23, 2011, and this Final EIS/EIR are demarcated by a vertical bar in the margin. Text changes primarily reflect documentation of the LPA, as well as responses to comments received on the Draft EIS/EIR and staff-initiated changes to correct minor errors or improve/update presentation of information..

S.2 | Agencies and Approvals

The Van Ness Avenue BRT Project is a collaborative effort. In cooperation with FTA, the Authority initiated this project and has led the effort to complete the environmental review and conceptual engineering. The Authority has partnered closely with SFMTA, which will take the subsequent lead in all major steps of project delivery following completion of the environmental review process, including preliminary and final design, construction, operation, and maintenance. The Authority has also coordinated project development with the California Department of Transportation (Caltrans).

FTA is the Lead Agency under NEPA, and the Authority is the Lead Agency under CEQA. Caltrans and SFMTA participate in the environmental review as Cooperating Agencies under NEPA and as Responsible Agencies under CEQA. Other participating agencies include Golden Gate Bridge Highway & Transportation District, Metropolitan Transportation Commission, San Francisco Department of Public Works, San Francisco Planning Department, San Francisco Public Utilities Commission, and the San Francisco Mayor's Office on Disability. The FTA and the Authority are responsible for approving/certifying this Final EIS/EIR, and subsequently the Authority and SFMTA are responsible for approving this project. The SFCTA Board and the SFMTA would each approve the project through formal selection of a preferred alternative as the project definition. If the project is approved, the SFMTA would implement project design, construction, operation, and maintenance. The Authority would provide funding and ensure compliance with the Mitigation Monitoring and Reporting Program (MMRP - see Appendix J) and would also provide review and concurrence on deliverables for the project during the design phase. In addition, the Authority would be actively involved in the project through its oversight role as part of the significant Prop K funding programmed for the project (see Chapter 9). Caltrans, as the owner of the facility (Van Ness Avenue is US 101 in the project study area), would provide various approvals of permits and documents as part of project development and construction. See Chapter 2 on next steps, permits, and approvals for more details on agency roles and responsibilities.



¹ The City and County of San Francisco operate as a joint government body within the same geographical boundaries. Throughout this document, this governmental body and geographic area may be referred to as the "City of San Francisco," "San Francisco," "City," or "County."

EXECUTIVE SUMMARY

S.3 | Project Location

Van Ness Avenue BRT is proposed in the northeastern quadrant of the City and County of San Francisco, California. Van Ness Avenue serves as U.S. Highway 101 (US 101) through the central part of the city and is owned by Caltrans. The BRT alignment follows Van Ness Avenue/South Van Ness Avenue, a primary north-south arterial and transit spine, and extends approximately 2 miles from Mission Street to Lombard Street. Replacement of the overhead contact system (OCS) support pole/streetlight network, as part of the project, would extend from Mission Street to North Point Street.

S.4 | Project History

Van Ness Avenue has been identified as a high-priority transit improvement corridor in a number of planning studies and funding actions by the City, including the Authority's Four Corridors Plan (1995), Muni's Short-Range Transit Plan (since 1996), and Muni's Vision Plan and Vision for Rapid Transit (2000). The Authority's Countywide Transportation Plan (2004) called for BRT on Van Ness Avenue as part of a citywide BRT Network (defined initially by a core BRT network encompassing Van Ness Avenue, Geary Boulevard, and Potrero Avenue). The Authority conducted the Van Ness Avenue BRT Feasibility Study in partnership with SFMTA, comparing four BRT alternatives with a no project scenario. In 2006, the Authority and SFMTA Boards unanimously approved the study and called for continued project development. In 2007, the Authority entered into a formal partnership with SFMTA through a Memorandum of Agreement to develop the project. That year, the Authority initiated joint state and federal environmental review of Van Ness Avenue BRT. The same year, the Bay Area region designated Van Ness Avenue BRT as a regional priority, and the Authority requested entry for the project into FTA's Small Starts Program. FTA gave Van Ness Avenue BRT a "High" rating for cost effectiveness ("one of the Small Starts project justification criteria)," one of only two Small Starts projects in the nation at that time to receive such a designation, and has received the same rating for that criterion each year since. In 2009, SFMTA adopted the Transit Effectiveness Project (TEP), which included Van Ness Avenue in the Muni rapid network and identified it as a high-priority route for rapid transit and BRT treatments.

S.5 | Project Purpose and Need

S.5.1 | PROJECT PURPOSE

Van Ness Avenue is a major north to south corridor for the eastern part of San Francisco. It functions as a major transit corridor, with more than 16,000 daily boardings on Muni Routes 47 and 49 between Mission and Lombard streets and more than 38,000 total daily boardings on those two routes overall. The Muni bus routes that travel along Van Ness Avenue provide regional transit connections to Bay Area Rapid Transit (BART), AC Transit, Caltrain, and SamTrans. Golden Gate Transit (GGT) also provides service along Van Ness Avenue.

As described in the previous section, rapid transit on Van Ness Avenue has been included as part of numerous local and regional plans. One purpose of the Van Ness Avenue BRT Project is to serve a critical function in the City's rapid transit network and help meet the following goals of the network as defined in the 2004 Countywide Transportation Plan:

- Improve transit levels of service for existing users quickly and cost effectively;
- Strengthen the citywide network of rapid transit services;
- Raise the cost effectiveness of Muni services and operational efficiency of the city's Transit Preferential Streets (TPS) roadway network; and
- Contribute to the urban design, identity, and livability of the BRT corridors as signature TPS streets.

The 2006 Van Ness Avenue BRT Feasibility Study identified specific needs for the corridor (see Section 1.3.2) and established the purpose of the Van Ness Avenue BRT project: to

For more on the history and context of the project, see Chapter 1.



Van Ness Avenue functions as a major north to south transit corridor for the eastern part of San Francisco, with more than 16,000 daily boardings on Muni Routes 47 and 49.

For further discussion of the project's purpose and need, see Chapter 1.3.

EXECUTIVE SUMMARY

improve the safety and operational efficiency of Van Ness Avenue. With the development of BRT on Van Ness Avenue, the City hopes to:

- Significantly improve transit reliability, speed, connectivity, and comfort;
- Improve pedestrian comfort, amenities, and safety;
- Enhance the urban design and identity of Van Ness Avenue;
- Create a more livable and attractive street for local residential, commercial, and other activities; and
- Accommodate safe multimodal circulation and access within the corridor.

S.5.2 | PROJECT NEED

Van Ness Avenue BRT is intended to address numerous citywide needs, including reversing trends towards declining transit mode share, lowering transit productivity, and escalating operating costs. In addition, BRT improvements were identified to address the corridor-specific purpose described above and to meet the following corridor-specific needs:

- **Separate Transit from Auto Traffic to Improve Travel Time and Service Reliability.** Transit speeds are currently not competitive with automobiles on Van Ness Avenue. Buses now travel at half the speed of cars (only 5 miles per hour [mph]) within the project area. The longer that buses travel in mixed traffic, the more irregular the spacing becomes, causing bus bunching during peak periods.
- **Reduce Delays Associated with Loading and Unloading and Traffic Signals.** Time spent loading and unloading passengers and time spent waiting at traffic signals accounts for nearly 50 percent of total travel time on Van Ness Avenue.
- **Improve the Experience for Transit Patrons.** Existing transit service on Van Ness Avenue lacks many amenities for waiting passengers (e.g., bus shelters with seating and real time information) and for passengers onboard vehicles (e.g., poor ride quality). Improvement of these conditions would make the transit experience attractive to new riders and more comfortable for existing riders, both in and out of the vehicle.
- **Improve the Safety and Comfort of Pedestrians.** Van Ness Avenue has long street crossing distances, and most crossings do not have pedestrian infrastructure such as countdown signals, accessible pedestrian signals, corner bulbs, and nose cones. Pedestrians also experience more delay at signals than other users of Van Ness Avenue.
- **Raise the Operating Efficiency of Van Ness Avenue.** The Van Ness Avenue corridor has the potential to carry substantially more people, more efficiently, than today. Within the study area, automobile trips on Van Ness Avenue are expected to increase by up to 7.5 percent by 2015 if a BRT project is not built, while the transit mode share is expected to stay the same or decline without a BRT project. These trends would result in an increase in congestion on Van Ness Avenue.
- **Upgrade Streetscape to Support an Identity as a Rapid Transit and Pedestrian Environment.** Existing streetscape conditions are deficient, lacking in design consistency and pedestrian amenities.
- **Reduce operations costs.** If buses continue to operate in congested traffic, further degradation in transit speeds will increase the operating cost to maintain Muni's current service headways.
- **Support the Civic Destinations on the Corridor and Integrate Transit Infrastructure with Adjacent Land Uses.** Van Ness Avenue is already a strong market for transit, due largely to the existing transit-supportive land uses in the corridor; for instance, nearly half of the households in the corridor do not own automobiles. More jobs and housing are being planned along the corridor in future years.
- **Accommodate private vehicle circulation and commercial loading.** Van Ness Avenue is also designated as US 101. For this reason, attainment of transit and pedestrian improvement objectives must be balanced with the needs to accommodate mixed local and through traffic, bicycle, and goods circulation and access within the corridor.

EXECUTIVE SUMMARY

See Chapter 2 for further discussion of BRT features and a description of alternatives included for analysis, as well as alternatives considered but rejected through the scoping process.

S.6 | Project Description

S.6.1 | BRT FEATURES

BRT is a new mode of transit in San Francisco and represents a package of features that together create rapid and reliable transit service for the benefit of passengers along a given corridor, and the transit system as a whole. The Van Ness Avenue BRT Project includes:

- **Dedicated bus lanes** separated from regular (mixed-flow) traffic to reduce delays and improve reliability.
- **Level or near level boarding** that minimizes the horizontal and vertical gap between the platform edge and vehicle door threshold to decrease passenger loading time, increase service reliability, and improve access for all users.
- **Consolidated transit stops** to reduce delays due to existing stop spacing that does not meet Muni standards (stop locations and details shown in Chapter 2, Table 2-3).
- **High-quality stations**, each with an elevated platform, canopy for weather protection, comfortable seating, vehicle arrival time information, landscaping, and other amenities. Platforms would be large enough to safely and comfortably accommodate waiting passengers, long enough to load two BRT vehicles, and designed to provide Americans with Disabilities Act (ADA) accessibility.
- **Proof of Payment** allowing passengers to swipe their fare cards either on the platform before the buses arrive or on-bus once boarded, allowing for all-door loading, and reducing passenger loading time.
- **Traffic signal optimization** using technology upgrades to allow real-time traffic management and optimal signal timing.
- **Transit Signal Priority (TSP)** to recognize bus locations and provide additional green light time for buses approaching intersections and reduce delay at red lights.
- **Fewer left-turn pocket lanes** for mixed-flow traffic by eliminating left turns at certain intersections to reduce conflicts with the BRT operation.
- **Pedestrian safety enhancements**, including enhanced median refuges, nose cones, and curb bulbs to reduce crossing distances at intersections and increase safety. Accessible pedestrian signals with crossing time countdowns would be installed at all signalized intersections in the project corridor.

S.6.2 | PROJECT ALTERNATIVES

Based on the findings of the 2006 Van Ness Avenue BRT Feasibility Study and input received during the project scoping process, three build alternatives were defined and recommended for NEPA/CEQA analysis. A No Build Alternative was also defined, which considers planned and funded improvement projects within the Van Ness Avenue corridor that will be implemented by 2015 (opening year of the Van Ness Avenue BRT Project) or 2035 (the long-term horizon or “design” year). The project alternatives are described in the following subsections and further in Chapter 2, along with alternatives considered but rejected during the public scoping process.

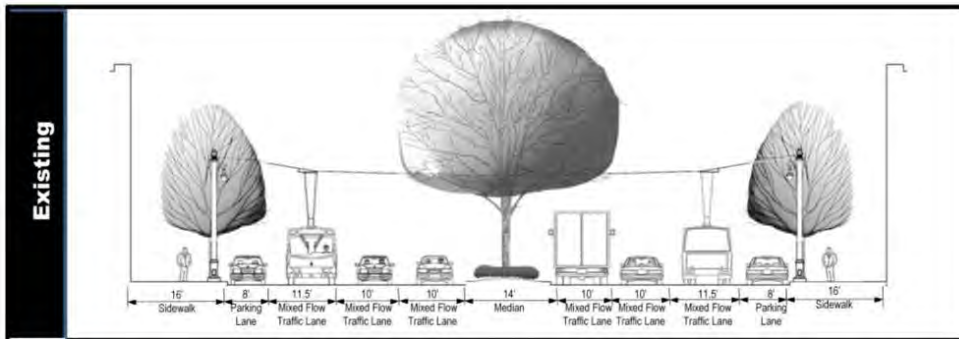
Alternative 1: No Build

Alternative 1, the No Build Alternative, would include only improvements that are planned to occur regardless of whether BRT is implemented, including pavement rehabilitation and incremental replacement of the OCS and support poles/streetlights. New, low-floor buses, on-bus proof of payment, and real-time passenger information at major bus stops would result in minor improvements to transit service. Pedestrian improvements at select locations would include curb ramp upgrades, countdown signals, and accessible signals. Figure S-1 provides a typical cross section of Van Ness Avenue as it exists today, and this would remain the same under the No Build Alternative.

The No Build Alternative would include only improvements that are planned to occur regardless of whether BRT is implemented, including pavement rehabilitation and incremental replacement of the OCS and support poles/streetlights.

EXECUTIVE SUMMARY

Figure S-1: Typical Cross Section of Existing Van Ness Avenue



Build Alternatives

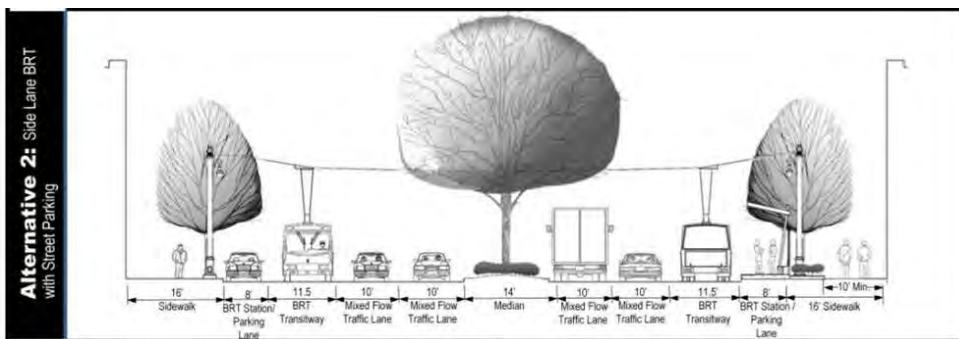
The three build alternatives would include all of the BRT features listed above in S.6.1, but with differing lane configurations and associated station placement at the intersections. The following subsections summarize the differences between the three alternatives, while Chapter 2 describes each alternative in detail. Appendix A contains detailed plan drawings for each build alternative. Under all build alternatives, GGT vehicles that currently operate on Van Ness Avenue would operate in the transitway and use select BRT stations exclusively.

The three build alternatives would include all of the BRT features but with differing lane configurations and associated station placement at the intersections.

Build Alternative 2: Side-Lane BRT with Street Parking

Build Alternative 2 (see Figure S-2) would provide a dedicated bus lane, or transitway, in the right-most lane of Van Ness Avenue located adjacent to the existing curbside street parking area. The transitway would be traversable for mixed-flow traffic that would enter the transitway to complete a right turn or to parallel park. Under Build Alternative 2, BRT stations would be located within the curbside parking area as curb extensions.

Figure S-2: Typical Cross Section of Van Ness Avenue with Build Alternative 2



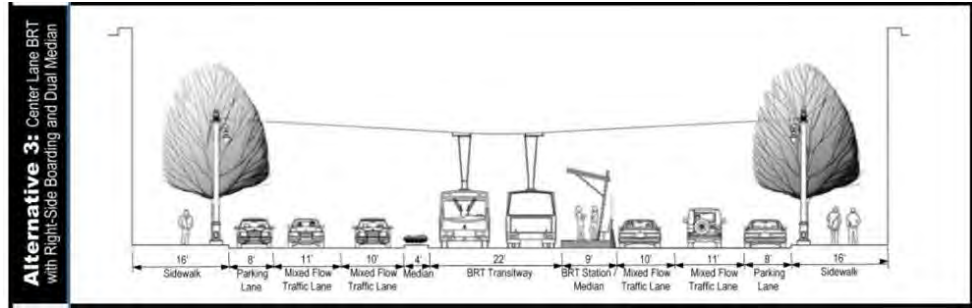
Build Alternative 3: Center-Lane BRT with Right-Side Boarding and Dual Medians

Build Alternative 3 (see Figure S-3) would provide a transitway comprised of two side-by-side, dedicated bus lanes located in the center of the roadway in between two medians. The transitway would be separated from mixed-flow traffic by a 4-foot-wide median, widening to a 9-foot-wide median at BRT stations, allowing right-side boarding.

EXECUTIVE SUMMARY

Figure S-3: Typical Cross Section of Van Ness Avenue with Build Alternative 3

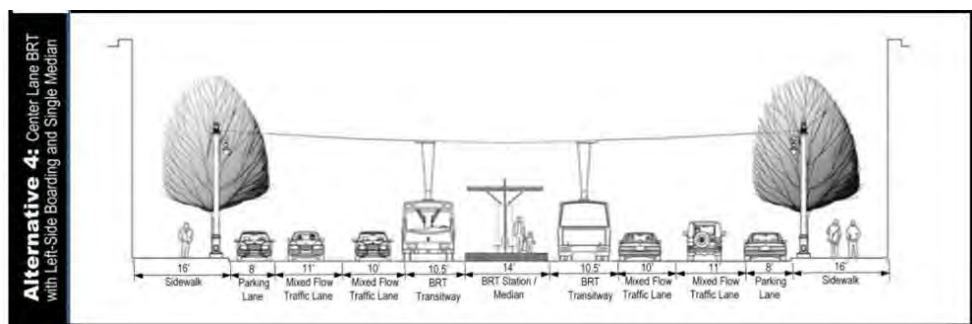
For detailed analysis of the Van Ness Avenue BRT Project performance for all transportation modes, see Chapter 3. Analysis of benefits and impacts of each alternative across all performance measures is provided in Chapter 10.



Build Alternative 4: Center-Lane BRT with Left-Side Boarding and Single Median

Build Alternative 4 (see Figure S-4) would provide a transitway in the center of the roadway comprised of a single, 14-foot-wide median flanked by dedicated northbound (NB) and southbound (SB) bus lanes. Station platforms would be located on the single center median, requiring left-side passenger boarding and alighting, as well as left-side doors on vehicles. All stations would have this single-median design, with the exception of the BRT stations proposed at Geary/O’Farrell, which would utilize a dual-median configuration similar to that proposed under Build Alternative 3 to accommodate GGT buses that are strictly right-side boarding. All GGT stops, except Geary/O’Farrell, along the BRT corridor would be eliminated in Build Alternative 4. At the northern end of the corridor, GGT vehicles would be routed along a portion of Chestnut Street to accommodate an additional stop at the corner of Chestnut Street and Van Ness Avenue. At the southern end, GGT buses would continue to stop at the intersections of McAllister and Polk streets (NB) and Golden Gate Avenue and Polk Street (SB). A second GGT stop within the BRT runningway at Union Street is also possible.

Figure S-4: Typical Cross Section of Van Ness Avenue with Build Alternative 4



Center-Lane Alternative Design Option B

Both center-running alternatives (Build Alternatives 3 and 4) contain a design option referred to as the Center-Lane Alternative Design Option B, or Design Option B. This design option would eliminate all but one NB left turn (at Lombard Street) and all but one SB left turn (at Broadway) in the project corridor.

S.7 | Alternatives Analyzed and the LPA

As part of the alternatives analysis required by NEPA, the lead agencies are required to analyze the environmental impacts of all reasonable alternatives. Three build alternatives and a design option for center-lane Alternatives 3 and 4 were analyzed in the Draft EIS/EIR (see Chapter 2 for a description of alternatives), which was circulated for public review and comment from November 4 through December 23, 2011. As required by NEPA, an approved EIS must

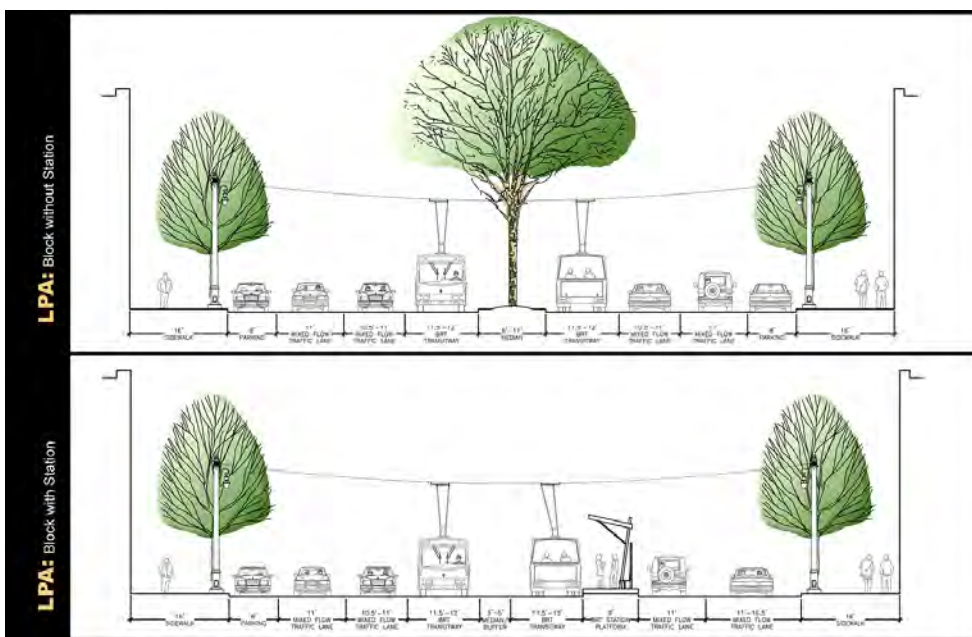
EXECUTIVE SUMMARY

include the selection of a locally preferred alternative (LPA). The three build alternatives considered consisted of one side-lane option (Alternative 2) and two center-lane options (Alternatives 3 and 4), as well as a reduced left-turn variant (Design Option B). Based on technical analyses presented in the Draft EIS/EIR, as well as agency, stakeholder, and public input received during circulation of the Draft EIS/EIR, and results of risk analyses performed by a steering committee of SFCTA and SFMTA staff, the SFMTA and SFCTA jointly recommended, and subsequently selected, the LPA as a center-lane BRT with right-side boarding/single median and limited left turns for inclusion in the Final EIS/EIR. The LPA includes features of Build Alternatives 3 and 4, as described in greater detail in the following subsection. Section 10.3 describes the process of how the LPA was selected.

S.7.1 | LPA: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING/SINGLE MEDIAN AND LIMITED LEFT TURNS

The LPA is a combination and refinement of the center-running alternatives with limited left turns (Build Alternatives 3 and 4 with Design Option B) and is referred to as Center-Lane BRT with Right-Side Boarding/Single Median and Limited Left Turns. The LPA retains the high-performance features of Build Alternatives 3 and 4 (e.g., maximum transit priority, fewest conflicts), while avoiding the need to acquire left-right door vehicles or remove the entire existing median. Under the LPA, BRT vehicles would run alongside a single median for most of the corridor, similar to Build Alternative 4; however, at station locations, BRT vehicles would transition to the center of the roadway, allowing right-side loading at station platforms as under Build Alternative 3. Figure S-5 depicts the LPA on a block without a station and a block with a station. The LPA incorporates Design Option B, the left-turn removal design option that would eliminate all left turns from Van Ness Avenue between Mission and Lombard streets with the exception of a southbound (SB) (two-lane) left turn at Broadway Street. Incorporation of Design Option B would provide the greatest transit travel time benefits, reduce the weaving associated with the transitions buses must make between station locations and blocks without stations, and aid with the flow of north-south traffic along Van Ness Avenue. The LPA also includes a design variant to be decided at the time of project approval. The design variant is a NB transit station at Vallejo Street, referred to as the Vallejo Northbound Station Variant.

Figure S-5: LPA: Center-Running BRT with Right-Side Loading/Single Median and Limited Left Turns



EXECUTIVE SUMMARY

S.8 | Project Performance in Meeting Purpose and Need

To help support decision making, this EIS/EIR documents BRT performance against a number of measures related to the Purpose and Need described in Section S-4 and Chapter 1. For more detailed analysis of Van Ness Avenue BRT Project performance for all transportation modes, see Chapter 3. Analysis of benefits and impacts of each alternative across all performance measures is provided in Chapter 10.

S.8.1 | IMPROVED TRANSIT PERFORMANCE AND RIDERSHIP

BRT would significantly improve transit travel time, reliability, passenger comfort, and ridership along Van Ness Avenue. In 2015, relative to Alternative 1 (No Build Alternative), the LPA would reduce transit travel time by 33 percent, reducing the travel time gap between autos and transit by as much as 50 percent (Source: VISSIM model).² Reliability for the LPA would also improve; the likelihood of a bus unexpectedly stopping (excluding loading and unloading passengers) would decrease by 52 percent, allowing more consistent travel times (Source: VISSIM model). Improved station facilities with level or near level boarding, additional amenities, and real-time arrival information would also improve transit passengers' comfort. With the LPA, transit boardings for Muni 47 and 49 lines throughout their routes would increase by 37 percent with BRT relative to Alternative 1, and up to half of the additional riders could be former drivers (Source: SF-CHAMP). With implementation of the LPA, Van Ness Avenue BRT would increase the street's transit mode share to 44 percent of all motorized trips, relative to 30 percent in Alternative 1 (Source: SF-CHAMP). See Section 3.2 for additional information on transit performance.

S.8.2 | ENHANCED PEDESTRIAN SAFETY AND COMFORT

The Van Ness Avenue BRT Project would incorporate features to increase pedestrian safety at intersections, including pedestrian countdown signals, enhanced median refuges, and additional curb bulbs. These features would shorten crossing distances, allowing nearly all intersections to meet local and federal standards for minimum pedestrian crossing speed, while giving pedestrians more information about when it is safe to cross. New ADA curb ramps and Accessible Pedestrian Signals (APS) along Van Ness Avenue would improve safety and access for all users. Pedestrians would also benefit from wider effective sidewalk widths in many locations, pedestrian-scale lighting, and additional median trees and landscaping and tree plantings along the sidewalk. See Section 3.4 for more information on nonmotorized transportation performance.

S.8.3 | IMPROVED OPERATIONAL EFFICIENCY AND ACCOMMODATION OF PRIVATE VEHICLES AND COMMERCIAL LOADING

By the most conservative estimates, BRT would maintain the same levels of person-throughput on Van Ness Avenue relative to Alternative 1 (No Build Alternative). The dedicated transit lane would carry more people per hour than each remaining mixed traffic lane; however, by reinvesting saved operating resources into more frequent bus service, daily person throughput on Van Ness Avenue could increase by as much as 8 percent in certain locations. If intangibles such as marketing, branding, permanence, and quality are also considered (as they are for rail projects), daily person throughput could increase by as much as 12 percent on Van Ness Avenue in certain locations (Source: SF-CHAMP).

San Francisco's grid network supports the Van Ness Avenue BRT Project in many ways. The majority of drivers who would drive on Van Ness Avenue under the No Build Alternative in 2015 would continue to drive on Van Ness Avenue under any of the build alternatives (68 to 81 percent for locations north of Hayes Street, depending on the location), including the LPA (Source: CHS, 2013). Of the remaining 19 to 32 percent, many would continue to drive on a street within two blocks of Van Ness Avenue – mostly

Relative to the No Build Alternative, the LPA would:

- **Reduce transit travel time by 33 percent, reducing the travel time gap between autos and transit by as much as 50 percent.**
- **Incorporate features to increase pedestrian safety at intersections.**
- **Carry more people per hour than each remaining mixed traffic lane, resulting in more efficient operations. Reinvestment of travel time savings into more frequent bus service could raise person throughput on Van Ness Avenue by 8 to 12 percent.**

² The proposed project is scheduled to begin service in 2016 and revenue operations are anticipated in 2018.

EXECUTIVE SUMMARY

Franklin Street (Source: CHS, 2013); approximately a third would switch modes to transit or change their travel time of day or destination; and a small portion would continue driving on other parallel streets throughout San Francisco (Source: SF-CHAMP). Due in part to the many alternative options for current drivers on Van Ness Avenue, the implementation of BRT does not increase the net number of intersections operating at level of service (LOS) E or F in 2015 when compared with the No Build Alternative in that same year (Source: CHS, 2013). See Section 3.1 for additional information on multimodal system performance. See Table S-1 at the end of this summary and Section 3.3 for details on traffic circulation and impacts. Section 3.3 also discusses how the traffic effects of converting mixed-traffic lanes to dedicated bus lanes could be managed through signal timing, driver information, improvement of alternative routes, and implementation of numerous citywide transportation improvement and system management efforts that are currently underway.

S.8.4 | UPGRADED STREETScape

A main component of the Van Ness Avenue BRT Project is to provide a consistent landscaped median treatment and pedestrian lighting, as well as establish a more unified identity for Van Ness Avenue as one of the City's most prominent arterials and a visible rapid transit service. The improved streetscape features of the LPA would enhance the amenity and urban design of Van Ness Avenue as a gateway into the city.

S.8.5 | SUPPORT OF CIVIC DESTINATIONS IN THE CORRIDOR AND INTEGRATE TRANSIT INFRASTRUCTURE WITH ADJACENT LAND USES

The improved streetscape features of the Van Ness Avenue BRT Project would enhance the amenity and urban design of Van Ness Avenue as a gateway into the city while achieving multimodal transportation goals. In addition to serving existing transit demand, the Van Ness Avenue corridor is meant to support recently approved nearby high-density mixed-use development plans. The project will also transform the street into a vibrant pedestrian promenade that supports the Civic Center and commercial uses. Rapid transit service along Van Ness Avenue would contribute to the City's transit-oriented development efforts by providing high-quality, reliable, comfortable transit that improves access to destinations within the corridor and elsewhere in the city. Placement of BRT infrastructure would demonstrate an investment in the corridor and provides a greater sense of permanence than typical bus facilities. Such facilities can support place-making and livability, while helping to stimulate further transit-oriented development.

S.8.6 | INCREASED TRANSIT OPERATIONAL EFFICIENCY AND CAPITAL COST EFFECTIVENESS

Muni operating resources in the BRT corridor could see a savings of 16 to 32 percent with BRT relative to the No Build Alternative because fewer buses could provide the same service frequency. The resulting savings could be reinvested in additional service on Van Ness Avenue or elsewhere in the Muni system. See Chapter 9 for more information on Operations Costs for each of the alternatives. As discussed in the Environmental Alternatives Screening Report prepared after scoping, the BRT alternatives provide a cost-effective way to deliver transit benefits to the Van Ness Avenue corridor. See Section S-9 and Chapter 9 for more information on Project Cost and Funding.

S.9 | Project Cost and Funding

The Van Ness Avenue BRT Project LPA is estimated to cost \$126 million. Two sources are planned to provide a significant portion of the funding for the project:

- **Small Starts (\$74,999,999 million).** This program, which is administered by FTA, provides competitive grants for new transit projects whose total capital costs do not exceed \$250 million. The maximum grant award is \$74,999,999 million. SFCTA and SFMTA have requested \$74,999,999 million in Small Starts funding for the project. In 2012, the project was one of three Small Starts potential projects in the nation to receive a High

As discussed in the Environmental Alternatives Screening Report, BRT provides a cost-effective way to deliver transit benefits to the Van Ness Avenue corridor.

EXECUTIVE SUMMARY

rating for cost effectiveness and the only Small Starts project in the nation to receive a Medium - High rating for “project justification”. (Source: Fiscal Year 2014 FTA Annual Report on Funding Recommendations)³.

- **Proposition K Sales Tax (\$20.5 million).** In November 2003, San Francisco voters approved Proposition K (Prop K), approving a new 30-year Expenditure Plan and extending the local half-cent transportation sales tax. The Board-adopted 2009 Proposition K Strategic Plan programs approximately \$20.5 million in sales tax funds to the Van Ness Avenue BRT Project. The Authority will examine the Prop K programming during the next Strategic Plan update to determine if more Prop K funds can be used for the Van Ness Avenue BRT project.

The annual operations and maintenance costs associated with the LPA are significantly lower than those of the No Build Alternative, with cost savings estimated at 28 percent. The savings are attributed to the travel time benefits of the BRT, requiring fewer vehicles to provide a similar amount of service. See Chapter 9 for more information on Project Cost and Funding; Section 9.1.3 includes a broader discussion of funding sources.

S.10 | Summary of Environmental Impacts

Table S-1 summarizes the environmental impacts that would result due to each project alternative, the significance of the impacts, and proposed mitigation measures. Under CEQA significance criteria, the proposed project would result in no impacts or less than significant impacts relative to the following environmental factors:

- Agricultural Resources
- Greenhouse Gas (GHG) Emissions
- Mineral Resources
- Population, Housing, and Recreation
- Wind and Shadow
- Hydrology and Water Quality
- Land Use
- Noise and Vibration

With implementation of mitigation measures, the project would result in less than significant impacts relative to the following environmental factors:

- Aesthetics/Visual Resources
- Air Quality
- Biological Resources
- Community Impacts
- Cultural Resources
- Geology and Soils
- Hazardous Waste and Materials
- Public Services
- Transit Crowding (part of Chapter 3, Transportation Analysis)
- Utilities and Service Systems

Implementation of any of the build alternatives may result in significant and unavoidable impacts in one environmental category: traffic circulation. Traffic circulation impacts would occur by 2035 at 11 intersections in the corridor for the LPA, primarily along Franklin and Gough streets. If implemented, mitigation measures could reduce traffic impacts to less than significant levels. However, the mitigation measures identified in Section 3.3.4, while reducing localized traffic delays in the short term, may ultimately be found by the Authority Board to not be feasible due to policy conflicts, specifically the need to balance traffic

Van Ness BRT would result in traffic circulation impacts at 6 to 11 intersections in the corridor, primarily along Franklin and Gough streets, but no significant impacts at other intersections, or to transit or nonmotorized transportation. If implemented, mitigation measures could reduce traffic impacts.

³ The Van Ness Avenue BRT Project received a score of “High” on all three project justification criteria where scoring measures have been defined. For the three criteria where measures have not yet been defined, all projects were assigned a rating of “medium.” In all previous annual funding recommendations since 2007 (where all measures had been defined), Van Ness Avenue BRT Project has received a score of “High” for project justification, the only Small Starts Project in the nation to receive such a designation.

EXECUTIVE SUMMARY

circulation with pedestrian and transit circulation and safety. In addition, these engineering techniques function by increasing automobile traffic capacity and are unlikely to be effective in the long term due to the risk of induced demand. Section 3.3.4 provides a more comprehensive description of those intersections that would be significantly impacted.

No unmitigable, significant impacts are projected for transit or to nonmotorized transportation. A detailed discussion of impacts, and associated improvement and mitigation measures is provided in Chapter 3, Transportation Analysis, and Chapter 4, Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures. Analysis of cumulative impacts is presented in Chapter 5.

S.11 | Areas of Controversy

Primary areas of controversy raised by the public during review of the Draft EIS/EIR consist of: traffic congestion on Van Ness Avenue and diversion onto parallel streets in the project vicinity, including how increased traffic congestion would affect air quality and noise in the project area; the project's effects on trees on Van Ness Avenue and the desire to preserve trees; the effects of relocating existing bus stops and stop consolidation (limiting of stops); and concern about how the project alternatives were defined and that there should be more consideration of less costly express bus alternatives. A more detailed discussion of areas of controversy is provided in Section 7.7.

S.12 | Locally Preferred Alternative Selection

As described in Section 10.3, the Draft EIS/EIR for the proposed project was made available to the public for review from November 4 through December 23, 2011. During the Draft EIS/EIR review period, the project team solicited further public and agency input on the alternatives analysis, including input on the selection of an LPA, through a public hearing, webinar, and stakeholder meetings. In particular, input on those performance indicators that are directly related to the project purpose were sought. Once input was gathered from all of the parties, including comments received on the Draft EIS/EIR, SFCTA and SFMTA staff proposed an LPA. An LPA Report was prepared, including a summary of public and agency input, analysis of alternatives' performance, and the recommended LPA (SFCTA, 2012). The LPA Report was presented to the SFCTA and SFMTA Boards for adoption, and in summer 2012 was unanimously approved by the Board of Commissioners, which authorized the Executive Director to analyze the Staff Recommended LPA in the Final EIS/EIR. The LPA is a refinement of the center-running alternatives with limited left turns (Build Alternatives 3 and 4 with Design Option B), and is referred to as Center-Lane BRT with Right-Side Boarding/Single Median and Limited Left Turns. The staff-recommended LPA combines features of Build Alternatives 3 and 4 in such a way that it reduces project risk associated with needing to rebuild the entire median (and associated environmental, utilities, and cost impacts) and needing to procure dual-side door vehicles (cost and operations impacts) without compromising the ability of the project to fulfill the purpose and need. Additional detail about the LPA selection process is provided in Sections 10.3.2 through 10.3.8.

S.13 | Project Timeline

This Final EIS/EIR was completed following selection of the LPA. The Final EIS/EIR includes all comments received during the public review of the Draft EIS/EIR (Appendix I), responds to those comments, documents the LPA, and proposes mitigation measures for significant impacts. The next steps include certification of this Final EIR by the SFCTA and approval of this Final EIS by the FTA, publication of a NEPA Notice of Availability of this Final EIS in the *Federal Register*, and subsequent approval of a Record of Decision (ROD) by the FTA. The Final EIS/EIR will be distributed to agencies that previously commented on the Draft EIS/EIR. FTA may sign the ROD no less than 30 days after the Notice of Availability is published in the *Federal Register*.

EXECUTIVE SUMMARY

The SFCTA Board of Commissioners and SFMTA Board of Directors would next approve the project to pursue final design and construction phases of the LPA. A Statement of Overriding Considerations is prepared, which is a CEQA findings document that includes a summary of significant and unavoidable impact findings identified in the Final EIS/EIR and explains the justification for approving the project despite these impacts. The Statement of Overriding Considerations is presented at the time of project approval as part of the CEQA Findings. Inclusion of the Vallejo Northbound Station Variant in the project design would be determined at the time of project approval and documented in the CEQA Findings and Statement of Overriding Considerations.

Construction of the proposed project is planned to begin in 2016 and last 20 months. BRT service is anticipated to begin in 2018.

S.14 | Opportunities for Public Input

The project proponents encourage members of the public to remain involved with the project by reviewing the Final EIS/EIR and attending the SFCTA Board certification hearing, attending project meetings with neighborhood groups and other stakeholders throughout the final design and construction phases of the project, visiting the project website (www.vannessbrt.org), and subscribing to the project e-mail newsletter and mailing list. Through these communication channels, the SFMTA will distribute information about the upcoming formation of the Final Design and Construction Period Citizen Advisory Committee (CAC), in addition to briefings to neighborhood and other local organizations. A list of upcoming meetings is made available on the project Web site: www.vannessbrt.org and will be publicized through the project electronic newsletter. Requests to be added to the newsletter and mailing list may be made by contacting:

Attn: Michael Schwartz
San Francisco County Transportation Authority
1455 Market St., 22nd Floor
San Francisco, CA 94103
vannessbrt@sfcta.org

EXECUTIVE SUMMARY

Table S-1: Summary of Environmental Impacts and Mitigation Measures

ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹	
Aesthetics/ Visual Resources Construction	<u>No impact.</u>	<u>Less than significant impact.</u> Less than significant impacts to aesthetics would result from temporary visual disruptions by construction activity, such as signage, soil stockpiles, and construction equipment. Nighttime construction would require artificial lighting, which would be minimized in residential areas and set up to avoid significant light and glare impacts on adjacent residential properties. <i>Improvement Measures:</i> IM-AE-C1: During project construction, SFMTA will require the contractor to maintain the site in an orderly manner, removing trash and waste, and securing equipment at the close of each day's operation. IM-AE-C2: To reduce glare and light used during nighttime construction activities, SFMTA will require the contractor to direct lighting onto the immediate area under construction only and to avoid shining lights toward residences, nighttime commercial properties, and traffic lanes.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.
Aesthetics/ Visual Resources Operation	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Mitigation measures will be implemented to address impacts to visual character and scenic resources resulting from the following project features: replacement of the existing OCS support pole/streetlight network with taller network that meets current sidewalk and roadway lighting standards and can accommodate the BRT OCS loads, introduction of BRT stations and streetscape features, and reconstruction of the Van Ness Avenue median and implementation of new BRT stations adjacent to the sidewalk, which would involve removal of approximately 14 percent of existing sidewalk and median trees. <i>Mitigation Measures:</i> M-AE-1: Design sidewalk lighting to minimize glare and nighttime light intrusion on adjacent residential properties and other properties that would be sensitive to increased sidewalk lighting. M-AE-2: Design and install a replacement OCS support pole/streetlight network that (1) retains the aesthetic function of the existing network as a consistent infrastructural element along Van Ness Avenue, (2) assures a uniform architectural style, character, and color throughout the corridor that is compatible with the existing visual setting and (3) retains the architectural style of the original OCS support pole/streetlight network. Within the Civic Center Historic District, design the OCS support pole/streetlight network to comply with the Secretary of Interior's Standards for the Treatment of Historic Properties and be compatible with the character of the historic district as described in the Civic Center Historic District designating ordinance as called for by the San Francisco Planning Code. M-AE-3: To the extent that the project alters sidewalk and median landscaping, design and implement a project landscape design plan, including tree type and planting scheme for median BRT stations and sidewalk plantings that replaces removed landscaping and re-establishes high-quality landscaped medians and a tree-lined corridor. To the extent feasible, use single-species street trees and overall design that provides a sense of identity and cohesiveness for the corridor. Place new trees close to corners, if feasible, for visibility. The project landscape design plan will require review and approval by the San Francisco Arts Commission, as well as review and approval by the SFDPW as part of their permitting of work in the street ROW, which ensures consistency with the San Francisco Better Streets Plan. The median landscape design plan within the Civic Center Historic District will be reviewed by the San Francisco HPC and the City Hall Preservation Advisory Commission. A Certificate of Appropriateness must be obtained from the HPC for the landscape plans within the Civic Center Historic District. M-AE-4: Design and install landscaped medians so that median design promotes a unified, visual concept for the Van Ness Avenue corridor consistent with policies in the Van Ness Area Plan, Civic Center Area Plan, and San Francisco Better Streets Plan. This design goal for a unified, visual concept will be balanced with the goal of preserving existing trees; thus, new tree plantings would be in-filled around preserved trees. M-AE-5: Design and install a project BRT station and transitway design plan (including station canopies, wind turbines, and other features) that is consistent with applicable City design policies in the San Francisco General Plan and San Francisco Better Streets Plan; and for project features located in the Civic Center Historic District, apply the Secretary of Interior's Standards for the Treatment of Historic Properties, Planning Code Article 10, Appendix J pertaining to the Civic Center Historic District, and other applicable guidelines, local interpretations, and bulletins concerning historic resources. Review and approval processes supporting this measure include: (1) San Francisco Art Commission	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2, except 25 percent of existing trees would be removed, all of them along the median. The same mitigation measures as Build Alternative 2 would be implemented.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2, except 15 percent of existing trees would be removed. The same mitigation measures as Build Alternative 2 would be implemented.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 4.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2, except 22 percent of existing trees would be removed. The same mitigation measures as Build Alternative 2 would be implemented.	

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.

EXECUTIVE SUMMARY

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ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
		<p>approval of the station and transitway design plan as part of its review of public structures; (2) SFDPW approval of the station and transitway design plan as part of its permitting of work in the street ROW, which it will include review for consistency with the San Francisco Better Streets Plan; (3) HPC approval of the portion of the station and transitway design plan located within the Civic Center Historic District as part of granting a Certificate of Appropriateness; and (4) City Hall Preservation Advisory Commission and City Planning Department advisement on design to HPC.</p> <p>M-AE-6: Context-sensitive design of BRT station features will be balanced with the project objective to provide a branded, cohesive identity for the proposed BRT service. The following design objectives that support planning policies described in Section 4.4.1 will be considered in BRT station design and landscaping:</p> <ul style="list-style-type: none"> Architectural integration of BRT stations with adjacent Significant and Contributory Buildings through station canopy placement, materials, color, lighting, and texture, as well as the presence of modern solar paneling and wind turbine features to harmonize project features with adjacent Significant and Contributory Buildings. Integration of BRT stations and landscaping with existing and proposed streetscape design themes within the Civic Center Historic District in conformance with the Secretary of Interior's Standards for the Treatment of Historic Properties and compatible with the character of the historic district as described in the Civic Center Historic District designating ordinance as called for by the San Francisco Planning Code. Marking the intersection of Van Ness Avenue and Market Street as a visual landmark and gateway to the city in design of the Market Street BRT station. 					
Aesthetics/ Visual Resources Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>
Air Quality Construction	<u>No impact.</u>	<p><u>Less than significant impact with mitigation.</u></p> <p>Construction activity would result in a less than significant impact under CEQA due to exceedances of nitrogen oxide (NOx) emissions. Implementation of Bay Area Air Quality Management District (BAAQMD) control measures would reduce this impact to a less than significant level.</p> <p><i>Mitigation Measures:</i></p> <p>M-AQ-C1: Construction contractors shall implement the BAAQMD <i>Basic Construction Mitigation Measures</i> listed in Table 4.15-4 and the applicable measures in the <i>Additional Construction Mitigation Measures</i>. This includes Measure 10 in the <i>Additional Construction Mitigation Measures</i>.</p> <p>M-AQ-C2: Construction contractors shall comply with BAAQMD Regulation 11 (Hazardous Pollutants) Rule 2 (Asbestos Demolition, Renovation, and Manufacturing). The requirements for demolition activities include removal standards, reporting requirements, and mandatory monitoring and record keeping.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>
Air Quality Operation	<u>Less than significant impact.</u>	<p><u>Less than significant impact.</u></p> <p>Localized carbon monoxide (CO) concentrations would result in less-than-significant impacts. An analysis of emissions from idling vehicles during peak congestion period at the most congested intersection showed idle emissions would be well below the State standards after implementation of the BRT in year 2035 traffic conditions. Toxic air contaminant (TAC) emissions would result in a less-than-significant impact under CEQA. The project would not increase TAC emissions. The proposed BRT would reduce regional operational emissions, resulting in a beneficial impact. Localized CO concentrations associated with each of the alternatives would not exceed State ambient air quality standards, and all alternatives would be consistent with the BAAQMD regional air quality plans. The project would reduce the volume of cars by providing the public with alternative means of transportation, which results in lower citywide vehicle miles traveled (VMT), reducing regional operational emissions.</p>	<p><u>Less than significant impact.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact.</u></p> <p>Same as Build Alternative 2.</p>
Air Quality Cumulative	<u>No cumulative impacts.</u>	<p><u>Less than significant impact with mitigation.</u></p> <p>Mitigation Measures M-AQ-C1 and M-AQ-C2 would avoid significant, cumulative air quality impacts during construction of the proposed project and other planned projects in the vicinity.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.

EXECUTIVE SUMMARY

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Greenhouse Gas Emissions Operation	<u>No impact.</u>	<u>No impact.</u> The proposed project would decrease automobile VMT and associated greenhouse gas emissions compared to baseline conditions, and it would cause a beneficial global warming impact.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Greenhouse Gas Emissions Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u> Transit projects, like the proposed project, reduce the volume of cars resulting in overall reduction in greenhouse gas emissions.	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>
Biological Environment Construction	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Less than significant impacts to trees and nesting birds would result from temporary construction activity the disturbance of bird nests during breeding season. Mitigation measures will avoid disturbance of protected bird nests during breeding season, and require measures to preserve tree health during construction. Mitigation measures are required to address potential impacts to trees and nesting birds during project construction. <i>Mitigation Measures:</i> M-BI-C1: Best Management Practices (BMPs) identified in tree protection plans and tree removal permits resulting from the preconstruction tree survey will be implemented to preserve the health of trees during project construction. M-BI-C2: Disturbance of protected bird nests during the breeding season will be avoided. Tree and shrub removal will be scheduled during the non-breeding season (i.e., September 1 through January 31), as feasible. If tree and shrub removal are required to occur during the breeding season (i.e., February 1 through August 31), then the following measures will be implemented to avoid potential adverse effects to nesting birds: A qualified wildlife biologist will conduct preconstruction surveys of all potential nesting habitats within 500 feet of construction activities where access is available. Exclusionary structures (e.g., netting or plastic sheeting) may be used to discourage the construction of nests by birds within the project construction zone. A preconstruction survey of all accessible nesting habitats within 500 feet of construction activities is required to occur no more than 2 weeks prior to construction. If preconstruction surveys conducted no more than 2 weeks prior to construction identify that protected nests are inactive or potential habitat is unoccupied during the construction period, then no further mitigation is required. Trees and shrubs within the construction footprint that have been determined to be unoccupied by protected birds or that are located outside the no-disturbance buffer for active nests may be removed. If active protected nests are found during preconstruction surveys, then the project proponent will create a no-disturbance buffer (acceptable in size to the California Department of Fish and Wildlife [CDFW]) around active protected bird and/or raptor nests during the breeding season, or until it is determined that all young have fledged. Typical buffers include 500 feet for raptors and 50 feet for passerine nesting birds. The size of these buffer zones and types of construction activities restricted in these areas may be further modified during consultation with CDFW, and it will be based on existing noise and human disturbance levels at the project site. Nests initiated during construction are presumed to be unaffected, and no buffer will be necessary; however the “take” (e.g., mortality, severe disturbance to) of any individual protected birds will be prohibited. Monitoring of active nests when construction activities encroach upon established buffers may be required by CDFW.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Biological Environment Operation	<u>No impact.</u>	<u>Less than significant impact.</u> Less than significant impacts would result from removal of existing trees and landscaping. Build Alternative 2 would result in the removal of some median and sidewalk trees within the project limits. Replacement trees would be planted. Benefits of mature tree canopies would be reduced until new plantings mature, and replacement trees would not offer the same width canopy of many existing trees due to the OCS clearance requirements. The project would offset these impacts by planting more trees in the Van Ness corridor than currently present, resulting in less than significant impacts. <i>Improvement Measures:</i> Potential disturbance to migratory birds during project construction and tree removal is discussed in Section 4.15.11, Construction Impacts. To minimize impacts from removal of existing trees and	<u>Less than significant impact.</u> Same as Build Alternative 2. Replacement trees would be planted in the median. Sidewalk trees would not be affected under this alternative. Benefits of mature tree canopies would be reduced until new plantings mature, and replacement trees would not offer the same width canopy of many existing trees due	<u>Less than significant impact.</u> Same as Build Alternative 3.	<u>Less than significant impact.</u> Build Alternative 4 would result in the removal of approximately 64 median trees, or 15 percent of median trees within the project limits. Sidewalk trees would not be affected.	<u>Less than significant impact.</u> Same as Build Alternative 4.	<u>Less than significant impact.</u> The LPA would result in the removal of approximately 90 median trees, or 82 percent of median trees within the project limits. Approximately 95 new median trees

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EXECUTIVE SUMMARY

Table S-1: Summary of Environmental Impacts and Mitigation Measures

ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
		<p>landscaping, the following improvement measures and permit requirements would be incorporated into project design for each build alternative, including Design Option B:</p> <p>IM-BI-1: In compliance with local tree protection policies, mature trees shall be preserved and incorporated into the project landscape plan as feasible. Planting of replacement trees and landscaping will be incorporated into the landscape plan as feasible (also refer to mitigation measure M-AE-3, addressing aesthetic/visual impacts).</p> <p>IM-BI-2: A certified arborist will complete a preconstruction tree survey to identify protected trees that will be potentially impacted by the proposed project, and to determine the need for tree removal permits and tree protection plans under San Francisco Public Works Code requirements.</p> <p>IM-BI-3: In compliance with the Executive Order on Invasive Species, E.O. 13112, the landscaping included in the proposed project would not use species listed as noxious weeds.</p>	<p>to the OCS clearance requirements. The project would offset these impacts by planting more trees in the Van Ness corridor than currently present, and implementation of Improvement Measures IM-BI-1, IM-BI-2 and IM-BI-3 listed under Build Alternative 2, resulting in less than significant impacts.</p>		<p>Replacement trees would be planted. Benefits of mature tree canopies would be reduced until new plantings mature, and replacement trees would not offer the same width canopy of many existing trees due to the OCS clearance requirements. The project would offset these impacts by planting more trees in the Van Ness corridor than currently present, and implementation of Improvement Measures IM-BI-1, IM-BI-2 and IM-BI-3 listed under Build Alternative 2, resulting in less than significant impacts.</p>		<p>would be planted. Sidewalk trees would not be affected. Benefits of mature tree canopies would be reduced until new plantings mature, and replacement trees would not offer the same width canopy of many existing trees due to the OCS clearance requirements. The project would offset these impacts by planting more trees in the Van Ness corridor than currently present, and implementation of Improvement Measures IM-BI-1, IM-BI-2 and IM-BI-3 listed under Build Alternative 2, resulting in less than significant impacts.</p>
Biological Environment Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>
Cultural Resources Construction	<u>No impact.</u>	<p><u>Less than significant impact with mitigation.</u></p> <p>Less than significant impacts would occur to significant historic and architectural properties. Excavation work would occur within the Van Ness Avenue ROW, where there is a low probability of uncovering significant archaeological deposits. Implementation of mitigation measures is required to address potential impacts to archaeological resources and human remains that may be encountered during project construction.</p> <p><i>Mitigation Measures:</i></p> <p>M-CP-C1: Focused archival research will identify specific areas within the APE that are likely to contain potentially significant remains. Methods and findings will be documented as an addendum to the 2009 survey and sensitivity assessment (Byrd <i>et al.</i>, 2013). Research will be initiated once the project's APE map is finalized identifying the major Areas of Direct Impact (i.e., the stations and sewer relocation). Many documents, maps, and drawings cover long stretches of Van Ness Avenue, while other locations may be researched if documents indicate potential sensitivity in adjacent areas.</p> <p>The Addendum Survey Report will include the following:</p> <ul style="list-style-type: none"> • A contextual section that addresses the development of urban infrastructure along Van Ness Avenue, as well as widening and grading activities along the thoroughfare. This overview will provide a basis for evaluating potential resources as they relate to the history of San Francisco and to its infrastructure. • Documentary research that identifies the types of documents available for the identified station locations: street profiles for grading, street widening maps showing demolished building sites, utility work plans, and others as appropriate. This will include researching various archives and records of public agencies in both San Francisco and Oakland (Caltrans). 	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2.</p>

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EXECUTIVE SUMMARY

Table S-1: Summary of Environmental Impacts and Mitigation Measures

ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
		<ul style="list-style-type: none"> Locations apt to have historic remains present within select areas of the APE (i.e., not removed by later grading or construction). A cut-and-fill reconstruction of the entire APE corridor, comparing the modern versus mid-1800s ground surface elevations, to fine-tune the initial prehistoric sensitivity assessment, and refine the location of high-sensitivity locations where prehistoric remains may be preserved. Relevant profiles and plan views of specific blocks to illustrate the methods used in analyzing available documentation. Summary and conclusions to provide detailed information on locations that have the potential to contain extant prehistoric archaeological and historic-era remains that might be evaluated as significant resources, if any. <p>Two results are possible based on documentary research:</p> <ul style="list-style-type: none"> No or Low Potential for Sensitive Locations – Major Areas of Direct Impact have no potential to retain extant archaeological remains that could be evaluated as significant resources. No further work would be recommended, beyond adherence to the Inadvertent Discovery Plan (M-CP-3). Potentially Sensitive Locations – If the major Areas of Direct Impact contain locations with a moderate to high potential to retain extant historic or prehistoric archaeological remains that could be evaluated as significant resources, further work would be carried out, detailed in a Testing and Treatment Plan (see M-CP-2). <p>The Phase I addendum report will be submitted to the SHPO for review and concurrence prior to initiation of construction.</p> <p>M-CP-C2: The Testing/Treatment plan, if required, would provide archaeological protocols to be employed immediately prior to project construction to test areas identified as potentially significant or having the potential to contain buried cultural resources. If such areas might be unavoidable, mitigation measures would be proposed.</p> <p>For historic-era resources, work would initially entail detailed, focused documentary research to evaluate the potential significance of any archaeological material identified during initial research that might be preserved. Significance would be based on the data-potential of possible remains applied to accepted research designs. Two results could ensue:</p> <ul style="list-style-type: none"> No Potentially Significant Remains. If no locations demonstrate the potential for significant remains, no further archaeological testing would be recommended. Potentially Significant Remains. If any locations have the potential to contain significant remains, then appropriate field methods will be proposed, including compressed testing and data-recovery efforts. Testing will be initiated immediately prior to construction, when there is access to historic ground levels. Should a site or site feature be found and evaluated as potentially significant, mitigation in the form of data recovery will take place immediately upon discovery should avoidance of the site not be possible. <p>If required for prehistoric resources, a Treatment Plan would identify relevant research issues for resource evaluation, and pragmatic field methods to identify, evaluate, and conduct data recovery if needed. This could include a pre-construction geoarchaeological coring program or a compressed three-phase field effort occurring prior to construction, when the ground surface is accessible.</p> <p>The procedures detailed in the Treatment Plan would be finalized in consultation with the SHPO.</p> <p>A Phase 2 Test/Phase 3 Mitigation report will document all testing and data-recovery excavation methods and findings.</p> <p>M-CP-C3: If buried cultural resources are encountered during construction activities, pursuant to 36 CFR 800.13, construction would be halted and the discovery area isolated and secured until a qualified professional archaeologist assesses the nature and significance of the find. Unusual, rare, or unique finds—particularly artifacts or features not found during data recovery—could require additional study. Examples of these would include the following:</p> <ul style="list-style-type: none"> Any bone that cannot immediately be identified as non-human Any types of intact features (e.g., hearths, house floors, cache pits, structural foundations) Artifact caches or concentrations 					

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EXECUTIVE SUMMARY

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		<ul style="list-style-type: none"> Rare or unique items (i.e., engraved or incised stone or bone, beads or ornaments, mission-era artifacts) Archaeological remains that are redundant with materials collected during testing or data recovery and that have minimal data potential need not be formally investigated. This could include debitage; most flaked or ground tools, with the exception of diagnostic or unique items (e.g., projectile points, crescents); shell; non-human bone; charcoal; and other plant remains. Diagnostic and unique artifacts unearthed during construction would be collected and their origins noted. Artifact concentrations and other features would be photographed, flotation/soils/radiocarbon samples taken (as appropriate), and locations mapped using a GPS device. <p>Upon discovery of deposits that may constitute a site, the agency official shall notify the State Historic Preservation Officer (SHPO) and any Indian tribe that might attach religious and cultural significance to the affected property. The notification shall describe the agency official's assessment of National Register eligibility of the property and proposed actions to resolve the adverse effects (if any). The SHPO, Indian tribe, and Advisory Council on Historic Preservation (the Council) shall respond within 48 hours of the notification. The agency official shall take into account their recommendations regarding National Register eligibility and proposed actions, and then carry out appropriate actions. The agency official shall provide the SHPO, Indian tribe, and the Council a report of the actions when they are completed.</p> <p>The above activities could be carried out quickly and efficiently, with as little delay as possible to construction work.</p> <p>The methods and results of any excavations would be documented, with photographs, in an Addendum Report. Any artifacts collected would be curated along with the main collection. Samples would be processed in a lab and analyzed, or curated with the collection for future studies, at the discretion of the project proponent.</p> <p>If major adjustments are made to the final project design, a qualified professional archaeologist should be consulted before work begins, to determine whether additional survey, research, and/or geoarchaeological assessments are needed.</p> <p>M-CP-C4: If human remains are discovered during project construction, the stipulations provided under Section 7050.5 of the State Health and Safety Code will be followed. The San Francisco County coroner would be notified as soon as is reasonably possible (CEQA Section 15064.5). There would be no further site disturbance where the remains were found, and all construction work would be halted within 100 feet of the discovery. If the remains are determined to be Native American, the coroner is responsible for contacting the California Native American Heritage Commission within 24 hours. The Commission, pursuant to California Public Resources Code Section 5097.98 would notify those persons it believes to be the most likely descendants (MLD). Treatment of the remains would be dependent on the views of the MLD. [LP1]</p>					
Cultural Resources Operation	<u>No impact.</u>	<u>Less than significant impact.</u> Less than significant impacts would occur to significant historic and architectural properties. No impacts to archaeological resources would result during project operation. Mitigation measures M-AE-2, M-AE-3, M-AE-5, and M-AE-6, presented in Section 4.4.4 and in this table under Aesthetics/Visual Resources, ensure compatibility of the BRT project with historic elements such as the Civic Center Historic District.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.
Cultural Resources Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.
Section 4(f) Resources Construction	<u>No direct or constructive use.</u>	<u>No direct or temporary use.</u> Project construction would not result in direct or constructive use of Section 4(f) resources.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.
Section 4(f) Resources Operation	<u>No direct or constructive use.</u>	<u>No direct or constructive use.</u> The proposed project would not result in direct use or constructive use of Section 4(f) resources.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.	<u>No direct or constructive use.</u> Same as Build Alternative 2.

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EXECUTIVE SUMMARY

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Section 4(f) Resources Cumulative	<u>No impact.</u>	<u>No impact.</u>	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Geology/Soils/ Seismicity/ Topography Construction	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Mitigation measures are required to avoid slope instability impacts during project construction. <i>Mitigation Measures:</i> M-GE-C1: All cuts deeper than 5 feet must be shored (AGS, 2009a). Shoring design of open excavations must be completed in consideration of the surcharge load from nearby structures, including an examination of the potential for lateral movement of the excavation walls as a result. The following construction BMPs related to shoring and slope stability will be implemented: <ul style="list-style-type: none"> • Heavy construction equipment, building materials, excavated soil, and vehicle traffic shall be kept away from the edge of excavations, generally a distance equal to or greater than the depth of the excavation. • During wet weather, storm runoff shall be prevented from entering the excavation. Excavation sidewalls can be covered with plastic sheeting, and berms can be placed around the perimeter of the excavated areas. • Sidewalks, slabs, pavement, and utilities adjacent to proposed excavations shall be adequately supported during construction. 	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Geology/Soils/ Seismicity/ Topography Operation	<u>No impact.</u>	<u>No impact.</u> The project would not result in soil erosion, and project design would avoid potential seismic hazards. There are no substantial geologic hazard impacts that would not be fully addressed by design requirements. <i>Improvement Measures:</i> IM-GE-1: Localized soil modification treatments will be performed as needed at locations where station platforms would be located in areas of fill or areas mapped as a liquefaction area. Such soil modification may include soil vibro-compaction or permeation grouting. IM-GE-2: Fill soils will be overexcavated and replaced with engineered fill as needed in areas where proposed project structures would be located in areas of fill or in liquefaction zones. IM-GE-3: Deeper foundations will be designed for station platforms and canopies located in areas of fill or areas mapped as a liquefaction area, as needed.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Geology/Soils/ Seismicity/ Topography Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.	<u>No cumulative impacts.</u> Same as Build Alternative 2.
Hazardous Waste/ Materials Construction	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Mitigation measures are required to avoid and minimize hazardous materials exposure during project construction. <i>Mitigation Measures:</i> M-HZ-C1: A Worker Site Health and Safety Plan will be created with the following components, in response to potential recognized environmental conditions (RECs) identified in the Phase II review or other follow-up investigations, and results from preconstruction lead-based paint LBP and aerially deposited lead (ADL) surveys specified in Sections 4.8.3 and 4.8.4: <ul style="list-style-type: none"> • A safety and health risk/hazards analysis for each site task and operation in the work plan; • Employee training assignments; • Personal protective equipment requirements; • Medical surveillance requirements; • Air monitoring, environmental sampling techniques, and instrumentation; • Safe storage and disposal measures for encountered contaminated soil, groundwater, or debris, including temporary storage locations, labeling, and containment procedures. • Emergency response plan; and 	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.

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		<ul style="list-style-type: none"> Spill containment program. <p>M-HZ-C2: Procedures will be included in the project Storm Water Pollution Prevention Plan (SWPPP) to contain any possible contamination, including protection of storm drains, and to prevent any contaminated runoff or leakage either into or onto exposed ground surfaces, as specified in Section 4.15.8, Hydrology and Water Quality Construction Impacts.</p> <p>M-HZ-C3: Necessary public health and safety measures will be implemented during construction.</p>					
Hazardous Waste/ Materials Operation	<u>No impact.</u>	<p><u>Less than significant impact with mitigation.</u></p> <p>Mitigation measures are required to reduce or eliminate hazardous materials-related impacts from ADL, LBP and nearby database listed, hazardous materials sites.</p> <p><i>Mitigation Measures:</i></p> <p>M-HZ-1: Phase II review, or follow-up investigation, for identified recognized environmental conditions (RECs) will be conducted prior to construction, including:</p> <ul style="list-style-type: none"> Field surveys of identified RECs to verify the physical locations of the REC sites with respect to the preferred build alternative project components and proposed construction earthwork, and observe the current conditions of the sites. A regulatory file review for each identified REC to determine the current status of the sites and, if possible, the extent of the contamination. <p>If the aforementioned field survey and file review reveal a likelihood of encountering contaminated soil or groundwater during project construction, then a subsurface exploration will be conducted within the areas proposed for construction earthwork activities. The subsurface investigation will be conducted within the project limits, adjacent to, or downgradient from the REC sites. If soil profiling reveals contaminant concentrations that meet the definition of hazardous materials, then the project contractor will be required to address the management of various hazardous materials and wastes in the Construction Implementation Plan, consistent with the federal and state of California requirements pertaining to hazardous materials and wastes management.</p> <p>M-HZ-2: Soils in landscaped medians that will be disturbed by project activities will be tested for ADL according to applicable hazardous material testing guidelines. If the soil contains extractible lead concentrations that meet the definition of hazardous materials, then a Lead Compliance Plan to be approved by Caltrans will be required prior to the start of construction or soil-disturbance activities. If lead levels present in surface soils reach concentrations in excess of the hazardous waste threshold, then onsite stabilization or disposal at a Class 1 landfill may be required, which will be specified in the Lead Compliance Plan.</p> <p>M-HZ-3: Paint used for traffic lane striping and on streetscape features, including the OCS support poles/streetlights, will be tested for LBP prior to demolition/removal to determine proper handling and disposal methods during project construction. If lead is detected, then appropriate procedures will be included in the Construction Implementation Plan to avoid contact with these materials or generation of dust or vapors.</p>	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Hazardous Waste/ Materials Cumulative	<u>No cumulative impacts.</u>	<p><u>Less than significant impact with mitigation.</u></p> <p>Mitigation Measures M-HZ-C1 through M-HZ-C3 would avoid significant, cumulative impacts from hazardous materials exposure during construction of the proposed project and other planned projects in the vicinity.</p>	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Water Quality and Hydrology Construction	<u>No impact.</u>	<p><u>Less than significant impacts.</u></p> <p>Compliance with permit requirements and standard best practices would avoid significant impacts to water quality during construction.</p> <p><i>Improvement Measures:</i></p> <p>IM-HY-C1: Preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) during project construction will minimize or avoid significant impacts to water quality. Completion of an SWPPP for the National Pollutant Discharge Elimination System (NPDES) General Permit will be required for construction of each build alternative and for earthwork activities under the No Build Alternative, such as the OCS support pole/streetlight replacement and repaving activities. The SWPPP will address water quality impacts associated with construction activities, including identification of all drainage facilities</p>	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.

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		<p>onsite, placement of appropriate stormwater and non-stormwater pollution controls and best management practices (BMPs), erosion and sediment control, spill response and containment plans, inspection scheduling, maintenance, and training of all construction personnel onsite.</p> <p>The SWPPP will specify how construction-related stormwater impacts can be mitigated throughout the project site through practices such as:</p> <ul style="list-style-type: none"> • The appropriate treatment of overflow stormwater during construction, including inlet protection devices, temporary silt fencing, soil stabilization measures, street sweeping, stabilized construction entrances, and temporary check dams. • Lining storage areas. • Proper and expeditious disposal of items to be removed, such as landscaping, curb bulb waste, existing bus stop shelters, and demolished OCS support poles/streetlights and signal poles. <p>IM-HY-C2: Any construction work that impacts the combined sewer system (CSS) will require coordination with the San Francisco Public Utilities Commission (SFPUC), and construction-related activities shall conform to the “Keep it on Site” guide (SFPUC, 2009).</p> <p>IM-HY-C3: If groundwater is encountered during project excavation activities, the water will be pumped from the excavated area and contained and treated in accordance with all applicable State and federal regulations before being discharged to the existing local CSS. A batch discharge permit from SFPUC will be required prior to commencement of discharge to the CSS.</p>					
Water Quality and Hydrology Operation	<u>No impact.</u>	<p><u>No impact.</u></p> <p>The project would slightly increase pervious surface area and improve drainage and runoff water quality.</p> <p><i>Improvement Measures:</i></p> <p>IM-HY-1: Landscape areas provided by the project will be designed to minimize and reduce total runoff. The overuse of water and/or fertilizers on landscaped areas will be avoided.</p> <p>IM-HY-2: Opportunities to incorporate stormwater management tools set forth in the <i>San Francisco Better Streets Plan</i> will be investigated for implementation as project design progresses. Streetscape geometry, topography, soil type and compaction, groundwater depth, subsurface utility locations, building laterals, maintenance costs and safety, and pedestrian accessibility will be major considerations in determining the feasibility of implementing stormwater management tools. Permeable paving, infiltration planters, swales, and rain gardens will be considered.</p> <p>IM-HY-3: In compliance with the City Integrated Pest Management Policy (City Municipal Code, Section 300), prevention and non-chemical control methods will be employed in maintaining landscaping in the Van Ness Avenue corridor, including monitoring for pests before treating, and using the least-hazardous chemical pesticides, herbicides, and fertilizers only when needed and as a last resort.</p> <p>IM-HY-4: Proposed BRT stations will be equipped with trash receptacles to minimize the miscellaneous waste that may enter the storm drain system and clog storm drains or release pollutants.</p>	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Water Quality and Hydrology Cumulative	<u>No cumulative impacts.</u>	<p><u>Less than significant impact.</u></p> <p>Compliance with permit requirements and standard best practices would avoid significant cumulative impacts to water quality during construction of the proposed project and other planned projects in the vicinity.</p>	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.
Land Use Construction	<u>No impact.</u>	<p><u>Less than significant impact.</u></p> <p>Construction would not change land uses or displace properties. Construction planning would minimize nighttime construction in residential areas and daytime construction in retail and commercial areas, as part of the Traffic Management Plan (TMP) implementation. The temporary removal of colored parking spaces during project construction is discussed under Community Impacts – Construction, below.</p>	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.
Land Use Operation	<u>No impacts</u>	<u>No impacts</u>	<u>No impacts</u>	<u>No impacts</u>	<u>No impacts</u>	<u>No impacts</u>	<u>No impacts</u>
Land Use Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>

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EXECUTIVE SUMMARY

Table S-1: Summary of Environmental Impacts and Mitigation Measures

ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
Noise and Vibration Construction	<u>No impact.</u>	<u>Less than significant impacts.</u> Increases in noise and vibration at some locations would be temporary and are thus considered a less than significant impact. Project construction would comply with the City Noise Ordinance. <i>Improvement Measures:</i> Mitigation measure M-CI-C6 presented in Section 4.15 and in this table under Community Impacts provides a program for accepting and addressing noise and other complaints during project construction. To further reduce noise and vibration impacts during construction, the following best practices, identified as improvement measures, would be implemented: IM-NO-C1: Project construction will implement best practices in equipment noise and vibration control as feasible, including the following: <ul style="list-style-type: none"> • Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All construction equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding). • Perform all construction in a manner that minimizes noise and vibration. Utilize construction methods or equipment that will provide the lowest level of noise and ground vibration impact. • Turn off idling equipment. • When possible, limit the use of construction equipment that creates high vibration levels, such as vibratory rollers and hammers. When such equipment must be used within 25 feet of any existing building, select equipment models that generate lower vibration levels. • Restrict the hours of vibration-intensive equipment or activities, such as vibratory rollers, so that annoyance to residents is minimal (e.g., limit to daytime hours as defined in the noise ordinance). IM-NO-C2: Project construction will conduct truck loading, unloading, and hauling operations so that noise and vibration are kept to a minimum by carefully selecting routes to avoid passing through residential neighborhoods to the greatest possible extent. IM-NO-C3: Perform independent noise and vibration monitoring in sensitive areas as needed to demonstrate compliance with applicable noise limits. Require contractors to modify and/or reschedule their construction activities if monitoring determines that maximum limits are exceeded at residential land uses per the City Noise Ordinance. IM-NO-C4: The construction contractor will be required by contract specification to comply with the City noise ordinances and obtain all necessary permits, particularly in relation to nighttime construction work.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.	<u>Less than significant impacts.</u> Same as Build Alternative 2.
Noise and Vibration Operation	<u>No impact.</u>	<u>No impact.</u> BRT operation would not increase noise and vibration; it would operate a less noisy fleet of diesel-electric hybrid and electric-powered vehicles than exists today. Noise levels along Van Ness Avenue and the parallel Franklin and Gough streets would remain below FTA and Caltrans impact criteria. <i>Improvement Measure:</i> IM-NO-1: Upkeep of roadway surface will be maintained throughout project operation to avoid increases in BRT noise and vibration levels.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Noise and Vibration Cumulative	<u>No cumulative impacts.</u>	<u>Less than significant impact.</u> Control measures IM-NO-C1 through IM-NO-C4 would be implemented to minimize noise and vibration disturbances at sensitive areas during construction. Project construction would comply with the City Noise Ordinance to avoid significant impacts during construction of the proposed project and other planned projects in the vicinity. Construction phasing would be coordinated with these projects to minimize construction-related impacts to sensitive receptors.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.
Population and Housing/Growth Construction	<u>No impact.</u>	<u>No impact.</u> Project construction would not lead to unplanned growth in the Van Ness Avenue corridor or the larger region, nor would it displace housing.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.

EXECUTIVE SUMMARY

Table S-1: Summary of Environmental Impacts and Mitigation Measures

ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
Population and Housing/Growth Operation	<u>No impact.</u>	<u>No impact.</u> The project would not lead to unplanned growth in the Van Ness Avenue corridor or larger region, nor would it displace housing.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Population and Housing/Growth Cumulative	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>	<u>No cumulative impacts.</u>
Public Services Construction	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Less than significant impacts to public services would result from construction activities, such as temporary rerouting and loss of on-street parking. No sidewalk closures would be required. These impacts would cause temporary inconvenience to area residents, businesses, and people traveling through the corridor. Mitigation measures M-CI-C1 through M-CI-C7, described in this table under Community Impacts, would minimize impacts to Civic Center facilities and other public services during project construction.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Public Services Operation	<u>No impact.</u>	<u>No impact.</u> The BRT would not result in the need for new or physically altered governmental facilities and would not hinder service rations and response times. The project would benefit community facilities with improved transit access.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Public Services Cumulative	<u>No cumulative impacts.</u>	<u>Less than significant impact with mitigation.</u> Mitigation Measures M-CI-C1 through M-CI-C7, described in this table under Community Impacts, would lessen potentially significant, cumulative impacts to community facilities and government services during construction of the proposed project and other planned projects in the vicinity.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Transportation and Circulation Construction	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Circulation impacts during construction due to lane closures, short-term detours, and reduced speeds would be temporary and are considered a less than significant impact with implementation of mitigation measures. All construction activity will be carried out in compliance and accordance with the California Manual on Uniform Traffic Control Devices (MUTCD), and applicable regulations of the SFPUC and San Francisco Department of Public Works (SFPD) Bureau of Street Use and Mapping (BSM), and SFMTA Regulations for Working in San Francisco Streets Blue Book. <i>Mitigation Measures:</i> M-TR-C1: Temporary conversion of parking lanes to mixed-flow traffic lanes will be implemented to generally maintain two open traffic lanes in each direction and minimize traffic impacts. M-TR-C2: A contraflow lane system, including elimination of left turns in either direction along Van Ness Avenue, will be implemented during daytime construction under Build Alternative 2 to enable two lanes of mixed-flow traffic to generally remain open in each direction during construction and minimize traffic congestion on Van Ness Avenue. Appropriate signage and temporary traffic signals will be used to guide drivers, augmented by flagmen as needed. M-TR-C3: Plan required closures of a second mixed-flow traffic lane and detours for nighttime or off-peak traffic hours as feasible, and as in conformance with approved noise requirements. M-TR-C4: Maintain one east-west and north-south crosswalk leg open at all times at all intersections. M-TR-C5: Install sufficient barricading, signage, and temporary walkways as needed to minimize impacts to pedestrians and bicyclists. M-TR-C6: SFMTA will coordinate with GGT as part of the Transportation Management Plan (TMP) to plan temporarily relocated transit stops as needed, and minimize impacts to GGT service. M-TR-C7: Implement a TMP to minimize delay and inconvenience to the traveling public, including a public information program and wayfinding to provide local businesses and residents with information related to the construction activities and durations, temporary traffic closures and detours, parking restrictions, and bus stop relocations.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2, except a contraflow lane system would not be required for Build Alternative 3; therefore, Mitigation Measure M-TR-C2 would not apply.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3 without Design Option B.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3 with Design Option B.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3.

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EXECUTIVE SUMMARY

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Transportation and Circulation Operation	<u>No impact.</u>	<p><u>Significant impact (to traffic).</u>²</p> <p>The project would not significantly impact traffic conditions on Van Ness Avenue. Traffic congestion on streets parallel to Van Ness Avenue would receive increased traffic that has diverted from Van Ness Avenue. Traffic impact significance findings for the near-term and horizon years follow.</p> <p><u>Less than significant impact (to traffic).</u></p> <p>Less than significant vehicular traffic circulation impacts would result in Year 2015 at the following intersection:</p> <ul style="list-style-type: none"> Gough/Green South Van Ness/Mission/Otis and Duboce/Mission/Otis/US 101 Off-Ramp <p>Less than significant vehicular traffic circulation impacts would result in Year 2035 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Green Gough/Clay Mission/South Van Ness/Otis Mission/Duboce/Otis/US 101 Off-Ramps Van Ness/Pine <p><u>Significant impact (to traffic).</u>²</p> <p>Significant impacts that may not be mitigated would result in Year 2015 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Hayes Franklin/O'Farrell <p>Significant impacts that may not be mitigated would result in Year 2035 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Hayes Franklin/Pine Franklin/O'Farrell Franklin/Eddy Franklin/ McAllister <p><u>Mitigation Measures</u></p> <p>M-Traffic Management Toolbox</p> <p><u>Develop and implement a traffic management toolbox to raise public awareness of circulation changes; advise drivers of alternate routes; and pedestrian improvements. Toolbox actions will include:</u></p> <ul style="list-style-type: none"> <u>Provide driver wayfinding and signage,</u> especially to assist infrequent drivers of the corridor who may not be aware of alternate routes, such as along the Larkin/Hyde and Franklin/Gough corridors. Coordinate with Caltrans to develop the driver wayfinding and signage strategy as part of mitigation measure M-TR-C5. Continue to monitor traffic after construction and during project operation. <u>Public Awareness Campaign and Transportation Management Plan (TMP) during and after Project Construction.</u> As discussed as part of mitigation measure M-TR-C7, the TMP will implement a public awareness program of wayfinding during construction and will coordinate the public information program with regional agencies, including Caltrans and GGT. Continue to monitor traffic after construction and during project operation. <u>Pedestrian Amenities at Additional Corridor Locations.</u> After construction, during project operation, monitor travel in the corridor to identify additional locations for pedestrian improvements based on a combination of pedestrian and vehicle volumes, infrastructure capabilities, and collision history. <p><u>Less than significant impact (to transit).</u></p> <p>No significant impacts to transit would result. While one transit line that cross Van Ness Avenue would experience increased delay, this delay would not result in significant impacts to service reliability and travel time. BRT service would substantially improve transit service on Van Ness Avenue.</p> <p><u>Less than significant impact (to nonmotorized transportation).</u></p> <p>No significant impacts to nonmotorized travel would result. While transit stop consolidation would</p>	<p><u>Significant impact (to traffic).</u>²</p> <p>The project would not significantly impact traffic conditions on Van Ness Avenue. Traffic congestion on streets parallel to Van Ness Avenue would receive increased traffic that has diverted from Van Ness Avenue. Traffic impact significance findings for the near-term and horizon years follow, including those impacts that are less than significant and those that are significant. Mitigation Measure M-Traffic Management Toolbox under Build Alternative 2 also applies.</p> <p><u>Less than significant impact (to traffic).</u></p> <p>Less than significant vehicular traffic circulation impacts would result in Year 2015 at the following intersection:</p> <ul style="list-style-type: none"> Gough/Green Duboce/Mission/Otis/US 101 off-ramp <p>Less than significant vehicular traffic circulation impacts would result in Year 2035 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Green Franklin/Pine Van Ness/Pine Mission/Duboce/Otis/US 101 Off-Ramps <p><u>Significant impact (to traffic).</u>²</p> <p>Significant impacts that may not be mitigated to a less than significant level would result in Year 2015 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Hayes Franklin/O'Farrell Mission/South Van Ness/Otis <p>Significant impacts that may not be mitigated to a less than significant level would result in Year 2035 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Sacramento Gough/ Eddy 	<p><u>Significant impact (to traffic).</u>²</p> <p>The project would not significantly impact traffic conditions on Van Ness Avenue. Traffic congestion on streets parallel to Van Ness Avenue would receive increased traffic that has diverted from Van Ness Avenue. Also, the elimination of all but two left turn opportunities off of Van Ness Avenue will result in an increase in drivers making multiple right turns in the project vicinity, causing some additional traffic on these adjacent collector streets. Traffic impact significance findings for the near-term and horizon years follow, including those impacts that are less than significant and those that are significant. Mitigation Measure M-Traffic Management Toolbox under Build Alternative 2 also applies.</p> <p><u>Less than significant impact (to traffic).</u></p> <p>Less than significant vehicular traffic circulation impacts would result in Year 2015 at the following intersection:</p> <ul style="list-style-type: none"> Gough/Green South Van Ness/Mission/Otis Duboce/ Mission/ Otis/US 101 Off-Ramp <p>Less than significant vehicular traffic circulation impacts would result in Year 2035 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Green Gough/Clay Franklin/Pine Mission/Duboce/Otis/US 101 Off-Ramps <p><u>Significant impact (to traffic).</u>²</p> <p>Significant impacts that may not be mitigated to a less than significant level will</p>	<p><u>Significant impact (to traffic).</u>²Same as Build Alternative 3 without Design Option B. Mitigation Measure M-Traffic Management Toolbox under Build Alternative 2 also applies.</p> <p><u>Less than Significant Impact (to traffic).</u></p> <p>Same as Build Alternative 3.</p> <p><u>Significant impact.</u>²</p> <p>Same as Build Alternative 3.</p> <p><u>Less than significant impact with mitigation (to transit).</u></p> <p>Same as Build Alternative 3 without Design Option B.</p> <p>Same as Build Alternative 3 without Design Option B.</p> <p><u>Less than significant impact (to nonmotorized transportation).</u></p> <p>Same as Build Alternative 3 without Design Option B, in addition to the following improvement measures:</p> <p>IM-NMT-2: For Build Alternative 4, bus vehicle design should incorporate an intuitive seating space for users requiring level boarding that is easily accessible to both the front door on the right side and the door behind the operator on the left side.</p> <p>IM-NMT-3: For Build Alternative 4, bus vehicle design should incorporate audible cues, such as stop</p>	<p><u>Significant impact (to traffic).</u>²</p> <p>The project would not significantly impact traffic conditions on Van Ness Avenue. Traffic congestion on streets parallel to Van Ness Avenue would receive increased traffic that has diverted from Van Ness Avenue. Also, the elimination of all but two left turn opportunities off of Van Ness Avenue will result in an increase in drivers making multiple right turns in the project vicinity, causing some additional traffic on these adjacent collector streets. Traffic impact significance findings for the near-term and horizon years follow, including those impacts that are less than significant and those that are significant. Mitigation Measure M-Traffic Management Toolbox under Build Alternative 2 also applies.</p> <p><u>Less than Significant Impact (to traffic).</u></p> <p>Same as Build Alternative 3 with Design Option B.</p> <p><u>Significant impact (to traffic).</u>²</p> <p>Same as Build Alternatives 3 with Design Option B.</p> <p><u>Less than significant impact with mitigation (to transit).</u></p> <p>Same as Build</p>	<p><u>Significant impact (to traffic).</u>²</p> <p>Same as Build Alternative 3 without Design Option B. Mitigation Measure M-Traffic Management Toolbox under Build Alternative 2 also applies.</p> <p><u>Less than Significant Impact (to traffic).</u></p> <p>Same as Build Alternative 3 with Design Option B.</p> <p><u>Significant impact (to traffic).</u>²</p> <p>Same as Build Alternative 3 with Design Option B.</p> <p><u>Less than significant impact with mitigation (to transit).</u></p> <p>Same as Build Alternative 3 without Design Option B.</p> <p><u>Less than significant impact (to parking).</u></p> <p>Same as Build Alternative 2, except 105 parking spaces would be removed along Van Ness Avenue. The same improvement measure as Build Alternative 2 would be implemented.</p>

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.
² These types of mitigation measures, while reducing localized traffic delays in the short term, may ultimately be found by the Authority Board to not be feasible due to policy conflicts, specifically the need to balance traffic circulation with pedestrian and transit circulation and safety. In addition, these engineering techniques function by increasing automobile traffic capacity and are unlikely to be effective in the long term due to the risk of induced demand. Thus, a conservative worst-case finding of significant and unavoidable impact under CEQA is assumed (see Section 3.3.4).

EXECUTIVE SUMMARY

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		<p>increase the physical effort required to reach transit for some patrons relative to existing conditions, the average distances between stops are consistent with applicable Muni guidelines for rapid bus and light rail, and the project would offer pedestrian accessibility and safety benefits. The proposed project would not substantially change or degrade bicycle conditions.</p> <p><i>Improvement Measures:</i></p> <p>IM-NMT-1: Include comprehensive wayfinding, allowing all users to navigate to and from the correct platform.</p> <p>IM-NMT-4: Provide sufficient information to educate less-ambulatory passengers that board at BRT stations that they would need to exit through the front, right doors for stops outside the Van Ness Avenue corridor.</p> <p><u>Less than significant impact (to parking).</u></p> <p>The project would not have a significant impact on the transportation system from changes in parking supply. Build Alternative 2 would remove 33 parking spaces along Van Ness Avenue.</p> <p><i>Improvement Measures:</i></p> <p>IM-TR-1: On-street parking will be created where bus stops are consolidated or moved to the center of the street.</p> <p>IM-TR-2: Additional on-street parking will be provided where feasible by lane striping.</p> <p>IM-TR-3: Infill on-street parking spaces will be provided where they do not exist today as feasible.</p> <p>IM-TR-4: SFMTA will give priority to retaining color-painted on-street parking spaces, such as yellow freight zones white passenger loading zones, green short-term parking, and blue disabled parking.</p> <p>IM-TR-5: Blue handicapped parking spaces will be designed to provide a curb ramp behind each space.</p>	<ul style="list-style-type: none"> Gough/Hayes Franklin/O'Farrell Franklin/Eddy Franklin/McAllister Van Ness/Hayes South Van Ness/Mission/Otis <p><u>Less than significant impact with mitigation (to transit).</u></p> <p>A potentially significant impact to transit service could occur in year 2035 due to vehicle crowding. The following mitigation measure is required to reduce this impact to less than significant:</p> <p>M-TR-1: An additional vehicle will be added to the fleet as needed to provide additional service and reduce station vehicle crowding impacts.</p> <p><u>Less than significant impact (to transit)</u></p> <p>While some transit lines that cross Van Ness Avenue would experience some increased delay, this delay would not result in significant impacts to service reliability and travel time. BRT service would substantially improve transit service on Van Ness Avenue.</p> <p><u>Less than significant impact (to nonmotorized transportation).</u></p> <p>Same as Build Alternative 2.</p> <p><u>Less than significant impact (to parking).</u></p> <p>Same as Build Alternative 2, except 68 parking spaces would be removed along Van Ness Avenue. The same improvement measure as Build Alternative 2 would be implemented.</p>	<p>result in Year 2015 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Hayes Franklin/O'Farrell Franklin/Market/Page <p>Significant impacts that may not be mitigated to a less than significant level would result in Year 2035 at the following intersections:</p> <ul style="list-style-type: none"> Gough/Sacramento Gough/Eddy Gough/Hayes Franklin/O'Farrell Franklin/Eddy Franklin/McAllister Franklin/Market/Page Mission/South Van Ness/Otis <p><u>Less than significant impact with mitigation (to transit).</u></p> <p>Same as Build Alternative 3 without Design Option B.</p> <p><u>Less than significant impact (to nonmotorized transportation).</u></p> <p>Same as Build Alternative 3 without Design Option B.</p> <p><u>Less than significant impact (to parking).</u></p> <p>Same as Build Alternative 2, except 31 parking spaces would be removed along Van Ness Avenue. The same improvement measure as Build Alternative 2 would be implemented.</p>	<p>announcements, of which door will open to avoid any confusion for passengers.</p> <p><u>Less than significant impact (to parking).</u></p> <p>Same as Build Alternative 2, except 45 parking spaces would be removed along Van Ness Avenue. The same improvement measure as Build Alternative 2 would be implemented.</p>	<p>Alternative 3 without Design Option B.</p> <p><u>Less than significant impact (to nonmotorized transportation).</u></p> <p>Same as Build Alternative 4 without Design Option B.</p> <p><u>Less than significant impact (to parking).</u></p> <p>Same as Build Alternative 2, except 13 parking spaces would be removed along Van Ness Avenue. The same improvement measure as Build Alternative 2 would be implemented.</p>	
<p>Transportation and Circulation</p> <p>Cumulative</p>	<p><u>No cumulative impacts.</u></p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Mitigation Measures M-TR-C1 through M-TR-C7 would lessen significant, cumulative circulation impacts during construction of the proposed project and other planned projects in the vicinity. These impacts would be temporary and are thus considered less than significant with mitigation. Cumulative circulation impacts during operation of the proposed project and other planned projects in the vicinity are accounted for in the Operations section.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 2, except a contraflow lane system would not be required for Build Alternative 3; therefore, Mitigation Measure M-TR-C2 would not apply.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 3 without Design Option B.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 3.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 3 with Design Option B.</p>	<p><u>Less than significant impact with mitigation.</u></p> <p>Same as Build Alternative 3 with Design Option B.</p>

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.
² These types of mitigation measures, while reducing localized traffic delays in the short term, may ultimately be found by the Authority Board to not be feasible due to policy conflicts, specifically the need to balance traffic circulation with pedestrian and transit circulation and safety. In addition, these engineering techniques function by increasing automobile traffic capacity and are unlikely to be effective in the long term due to the risk of induced demand. Thus, a conservative worst-case finding of significant and unavoidable impact under CEQA is assumed (see Section 3.3.4).³

EXECUTIVE SUMMARY

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ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
Utilities and Service Systems Construction	<u>No impact.</u>	<u>Less than significant impact.</u> Compliance with standard procedures will minimize the potential for damage to utilities, injury to construction workers, and proper completion of construction work. <i>Improvement Measures:</i> IM-UT-C1: Construction work involving utilities will be conducted in accordance with contract specifications, including the following requirements: <ul style="list-style-type: none"> • Obtain authorization from utility provider before initiating work • Contact Underground Service Alert in advance of excavation work to mark-out underground utilities • Conduct investigations, including exploratory borings if needed, to confirm the location and type of underground utilities and service connections • Prepare a support plan for each utility crossing detailing the intended support method • Take appropriate precautions for the protection of unforeseen utility lines encountered during construction • Restore or replace each utility as close as planned and work with providers to ensure its location is as good or better than found prior to removal 	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.	<u>Less than significant impact.</u> Same as Build Alternative 2.
Utilities and Service Systems Operation	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Operation would not result in changes to utility demand and capacity. Some utilities would require relocation or modification for construction and to maintain access for utility providers to conduct maintenance, repair, and upgrade/replacement activities. These would result in less than significant impacts to utilities and service systems. Mitigation measures are required to avoid adverse impacts to utility systems and services. <i>Mitigation Measures:</i> M-UT-1: BRT construction will be closely coordinated with concurrent utility projects planned within the Van Ness Avenue corridor. M-UT-3: During planning and design, consideration must be given to ensure that the proposed BRT transitway and station facilities do not prevent access to the underground auxiliary water supply service (AWSS) lines. There must be adequate access for specialized trucks to park next to gate valves for maintenance. The gate valves must not be located beneath medians or station platforms. M-UT-4: In situations where utility facilities cannot be relocated, SFMTA will create a plan to accommodate temporary closure of the transitway and/or stations in coordination with utility providers to allow utility providers to perform maintenance, emergency repair, and upgrade/replacement of underground facilities that may be located beneath project features such as the BRT transitway, station platforms, or curb bulbs. Signage for BRT patrons and safety protocols for Muni operators and utility providers will be integrated into this plan.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2, except the following additional mitigation measure would also be required: M-UT-2: An inspection and evaluation of the sewer pipeline within the project limits will be undertaken to assess the condition of the pipeline and need for replacement. Coordination with SFPUC and SFDPW will continue and be tracked by Committee for Utility Liaison on Construction and Other Projects (CULCOP).	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3 without Design Option B.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3 with Design Option B.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 3.
Utilities and Service Systems Cumulative	<u>No cumulative impacts.</u>	<u>Less than significant impact with mitigation.</u> Mitigation Measure M-UT-C1 would avoid significant cumulative impacts to utilities during construction of the proposed project and other planned projects in the vicinity.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Community Impacts Construction	<u>No impact.</u>	<u>Less than significant impact with mitigation.</u> Less than significant impacts on the community would result from construction activities, such as temporary rerouting and loss of parking; these impacts would cause temporary inconvenience to area residents, businesses, and people traveling through the corridor. Construction phase impacts to the community will be mitigated with special provisions to control rerouting, noise and fugitive dust. The temporary removal of colored parking spaces during project construction would be addressed by M-CI-IM-1 (see Community Impacts Operation). <i>Mitigation Measures:</i> M-CI-C1: A TMP that includes traffic rerouting, a detour plan, and public information procedures will be developed during the design phase with participation from local agencies, other major project proponents in the area (e.g., CPMC Cathedral Hill, Hayes Two-Way Conversion, and the Geary Corridor BRT projects), local communities, business associations, and affected drivers. Early and well-publicized announcements	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.

EXECUTIVE SUMMARY

Table S-1: Summary of Environmental Impacts and Mitigation Measures

ENVIRONMENTAL AREA/ IMPACTS	NO-BUILD ALTERNATIVE	BUILD ALTERNATIVE 2: SIDE-LANE BRT WITH STREET PARKING	BUILD ALTERNATIVE 3: CENTER-LANE BRT WITH RIGHT-SIDE BOARDING AND DUAL MEDIANS	BUILD ALTERNATIVE 3 WITH DESIGN OPTION B	BUILD ALTERNATIVE 4: CENTER-LANE BRT WITH LEFT- SIDE BOARDING AND SINGLE MEDIAN	BUILD ALTERNATIVE 4 WITH DESIGN OPTION B	LPA (COMBINES ALTERNATIVES 3 AND 4) ¹
		<p>and other public information measures will be implemented prior to and during construction to minimize confusion, inconvenience, and traffic congestion.</p> <p>M-CI-C2: As part of the TMP, construction planning will minimize nighttime construction in residential areas and minimize daytime construction impacts on retail and commercial areas.</p> <p>M-CI-C3: As part of the TMP, construction scheduling and planning in the Civic Center area will take into consideration major civic and performing arts events.</p> <p>M-CI-C4: As part of the TMP public information program, SFMTA will coordinate with adjacent properties along Van Ness Avenue to determine the need for colored parking spaces and work to identify locations for replacement spaces or plan construction activities to minimize impacts from the loss of these spaces.</p> <p>M-CI-C5: As part of the TMP public information program, SFMTA will coordinate with adjacent properties along Van Ness Avenue to ensure that pedestrian access to these properties is maintained at all times.</p> <p>M-CI-C6: As part of the TMP, SFMTA's process for accepting and addressing complaints would be implemented. This includes provision of contact information for the Project Manager, Resident Engineer, and Contractor on project signage with direction to call if there are any concerns. Complaints are logged and tracked to ensure they are addressed.</p> <p>M-CI-C7: As part of the TMP, adequate passenger and truck loading zones will be maintained for adjacent land uses, including maintaining access to driveways and providing adequate loading zones on the same or adjoining street block face.</p>					
Community Impacts Operation	<u>No impact.</u>	<p><u>Less than significant impact with mitigation.</u></p> <p>Mitigation measures are required to minimize economic impacts on properties along Van Ness Avenue from parking removal.</p> <p><i>Mitigation Measures:</i></p> <p>M-CI-IM-1³: SFMTA will coordinate with all businesses that would be affected by removal of colored parking spaces, including short-term parking, to confirm the need for truck and/or passenger loading spaces and to identify appropriate replacement parking locations to minimize the impacts to these businesses.</p> <p>M-CI-IM-2³: SFMTA will apply parking management tools as needed to offset any substantial impacts from the loss of on-street parking, including adjustment of residential parking permits in the residential community north of Broadway, or SFpark, which is a package of real-time tools to manage parking occupancy and turnover through pricing (appropriate in areas of high-density commercial uses that rely on high parking turnover).</p>	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.	<u>Less than significant impact with mitigation.</u> Same as Build Alternative 2.
Community Impacts Cumulative	<u>No cumulative impact.</u>	Cumulative impacts on community related and business activities from the loss of colored on-street parking spaces would be mitigated through the implementation of M-CI-IM-1 and M-CI-IM-2.	Same as Build Alternative 2.	Same as Build Alternative 2.	Same as Build Alternative 2.	Same as Build Alternative 2.	Same as Build Alternative 2.
Environmental Justice Construction	<u>No impact.</u>	<u>No impact.</u> Project construction would not disproportionately affect low income and minority populations.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Environmental Justice Operation	<u>No impact.</u>	<u>No impact.</u> The proposed project would not disproportionately affect low income and minority populations.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.
Environmental Justice Cumulative	<u>No impact.</u>	<u>No impact.</u>	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.	<u>No impact.</u> Same as Build Alternative 2.

¹ The summary of impacts and mitigation for the LPA includes all impacts and mitigation that would pertain to the LPA with or without incorporation of the Vallejo Northbound Station Variant into the project design.

³ M-CI-IM-1 and M-CI-IM-2 constitute mitigation measures under NEPA and improvement measures under CEQA

EXECUTIVE SUMMARY

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