



# Geary Corridor Bus Rapid Transit Project

FINAL ENVIRONMENTAL  
IMPACT REPORT  
(EIR)



SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY  
IN PARTNERSHIP WITH



November 2016

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# GEARY CORRIDOR BUS RAPID TRANSIT PROJECT

City and County of San Francisco, California

## FINAL ENVIRONMENTAL IMPACT REPORT

### PREPARED PURSUANT TO:

Federal Transit Law (49 U.S.C. Chapter 53); Council on Environmental Quality 40 CFR 1500/1508; 49 U.S.C. § 303 (formally Department of Transportation Act of 1966, §4(f)); National Historic Preservation Act of 1966, §106(54 U.S.C. §300101); Executive Order 11990 (Protection of Wetlands); Executive Order 11988 as amended (Floodplain Management); Executive Order 13690 (Federal Flood Risk Management Standard); Executive Order 12898 (Environmental Justice); and California Environmental Quality Act Title 24 CCR, California Public Resource Code 21000 et seq.

By the

**SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY**

and the

**SAN FRANCISCO MUNICIPAL TRANSPORTATION AGENCY**



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Appendix D	Plan Drawings of the Build Alternatives

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## CHAPTER 1 INTRODUCTION

This Final Environmental Impact Report (Final EIR) presents comments on the Draft EIS/EIR for the proposed Geary Corridor Bus Rapid Transit (BRT) Project (Project), responds in writing to comments on environmental issues, and revises the Draft EIS/EIR as necessary to provide additional clarity, address minor project modifications in response to comments, and address changes in the project since publication of the Draft EIS/EIR.

Pursuant to the California Environmental Quality Act (CEQA) requirements included in California Public Resources Code Sections 21091(d)(2)(A) and 21091(d)(2)(B), the San Francisco County Transportation Authority (SFCTA) and San Francisco Municipal Transportation Agency (SFMTA) have considered the comments received on the Draft EIS/EIR and evaluated the issues raised. SFCTA is providing in this document written responses to the issues raised by commenters.

The Draft EIS/EIR was prepared as a joint document to meet all pertinent requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA).

However, following publication of the Draft EIS/EIR, the federal and local agencies have agreed to prepare this Final EIR separate from a Final EIS.

SFCTA is the lead agency under CEQA, and prepared this Final EIR in cooperation with SFMTA. SFCTA and SFMTA will in turn collaborate with FTA in the subsequent preparation of a Final EIS and Record of Decision (ROD) for the Project in compliance with NEPA. The Final EIS and Record of Decision are expected to be published in early 2017.

### 1.1 Organization of the Final EIR

This Final EIR provides a streamlined and summarized approach to identifying changes to the Hybrid Alternative/SRA identified after public circulation of the Draft EIS/EIR, summarizing environmental effects of these changes, documenting public outreach efforts since publication of the Draft EIS/EIR, and updating financial analysis for the Project.

To meet the requirements of CEQA and relevant implementing regulations, subsequent chapters of this Final EIS/EIR are structured as detailed below.

**Chapter 2: Alternatives** discusses the history of Geary BRT planning efforts, identifies and summarizes all alternatives considered in the Draft EIS/EIR, and describes the minor changes proposed to one of these alternatives (the Hybrid Alternative/SRA) made in response to public comments on the Draft EIS/EIR.

**Chapter 3: Transportation** summarizes the potential transportation-related consequences of the alternatives as set forth more fully in the Draft EIS/EIR. Chapter 3 also presents updated/changed text (deletions are shown in ~~strikethrough~~ and additions in underline) associated with modifications to the Hybrid Alternative/SRA following publication of the Draft EIS/EIR, as

well as other text changes made in response to changes in regulations, or to correct typographical errors.

**Chapter 4: Affected Environment, Environmental Consequences, and Avoidance, Minimization, and/or Mitigation Measures** summarizes potential consequences of the alternatives as set forth more fully in the Draft EIS/EIR in all other environmental topic areas required by NEPA and CEQA except for transportation (which is found in Chapter 3). Chapter 4 also presents updated/changed text (deletions are shown in ~~striketrough~~ and additions in underline) associated with modifications to the Hybrid Alternative/SRA following publication of the Draft EIS/EIR, as well as other text changes made in response to changes in regulations, or to correct typographical errors.

**Chapter 5: Public Participation** describes communications and outreach efforts prior to publication of the Draft EIS/EIR, during the subsequent circulation and public comment period, and after the close of the comment period. Chapter 5 also provides updates to the Draft EIS/EIR's extensive summary of public outreach efforts (Draft EIS/EIR Chapter 8) since Project inception.

**Chapter 6: Financial Analysis** provides updated and refined financial information to supplement Chapter 9 of the Draft EIS/EIR. This chapter is included in this Final EIR for informational purposes.

This Final EIR also includes the following appendices:

**Appendix A, Errata Summary**, includes other minor text changes to chapters 5, 6, 7, and 10 of the Draft EIS/EIR.

**Appendix B, Comments and Responses**, includes all written and oral comments received on the Draft EIS/EIR during the 59-day public comment period (October 2, 2015 through November 30, 2015), plus SFCTA/SFMTA's collective responses to these comments.

**Appendix C, Mitigation Monitoring and Reporting Program**, summarizes all avoidance, minimization, and mitigation measures from the Draft EIS/EIR and identifies parties responsible to carry out and oversee all such measures.

**Appendix D, Revised Project Plans**, includes detailed drawings of the Hybrid Alternative/SRA to update similar drawings provided in Appendix A of the Draft EIS/EIR.

Together with the Draft EIS/EIR, including its appendices and supporting technical reports, this document constitutes the Final EIR on the Project.

## 1.2 Project Background

Section 2.2 of this Final EIR provides a detailed history of planning efforts leading to the Geary BRT Project.

As established in Section 7.2 of the Draft EIS/EIR, SFCTA's objectives for the Project were to:

- Improve transit performance on the corridor as a key link in the City's rapid transit network to improve the passenger experience and promote high transit use.

- Improve pedestrian conditions and pedestrian access to transit.
- Enhance transit access and the overall passenger experience, while maintaining general vehicular access circulation.

The Draft EIS/EIR evaluated four build alternatives to implement BRT service along the Geary corridor, consistent with the established NEPA need and purpose and CEQA objectives for the Project. The Draft EIS/EIR also evaluated a no-build alternative, assuming no implementation of BRT service but eventual implementation of several previously and separately planned and approved roadway enhancements. **Chapter 2** of this Final EIR provides further detail on the alternatives evaluated.

The Draft EIS/EIR identified one of these alternatives (the Hybrid Alternative) as the Staff-Recommended Alternative (SRA). The Hybrid Alternative/SRA is the alternative that SFCTA and SFMTA staffs propose their governing boards select as the federally required “Locally Preferred Alternative” (LPA) and duly carry forward for design, construction, and operation.

## 1.3 Publication of Draft EIS/EIR and Public Comments

SFCTA distributed the Draft EIS/EIR on October 2, 2015, in accordance with both CEQA and NEPA, to applicable federal, state, and local agencies, elected officials, neighborhood groups, and other interested parties who had expressed interest in the proposed project and those who requested a copy of the Draft EIS/EIR. The public comment period for the Draft EIS/EIR was originally scheduled to terminate on November 16, 2015. However, in response to several comments from the public, SFCTA extended the comment period for two weeks, ending on November 30, 2015. **Chapter 5** of this Final EIR includes further details on how SFCTA and SFMTA publicized the release of the Draft EIS/EIR.

SFCTA received nearly 300 separate communications containing a total of several hundred comments. All of these comments and SFCTA’s responses to comments are contained in **Appendix B** of this Final EIR.

CEQA Guidelines Section 15204(a) states that the focus of public review should be “on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated.” In addition, “when responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR.” CEQA Guidelines Section 15088 specifies that the lead agency is required to respond to the comments on the major environmental issues raised in the comments received during the public review period. Therefore, this document, in particular **Appendix B**, focuses on the sufficiency of the Draft EIS/EIR regarding the significance of the environmental impacts of the proposed project. However, many commenters raised issues unrelated to the adequacy of the analysis in the Draft EIS/EIR (e.g., the merits of the project itself); although not required by CEQA, **Appendix B** provides responses on many of these other topics as well.

## 1.4 Changes to the Hybrid Alternative/SRA in Response to Public Comments on the Draft EIS/EIR

Since publication of the Draft EIS/EIR on October 2, 2015, SFCTA, and SFMTA have proposed three modifications to the Hybrid Alternative/SRA, each in response to public comments on the Draft EIS/EIR. **Chapter 2** of this Final EIR describes each of these modifications in greater detail.

### 1.4.1 Retention of Webster Street Pedestrian Bridge

Throughout the extensive outreach process the agencies undertook, local stakeholder groups have voiced concern over the proposed removal of the Webster Street pedestrian bridge, an element of the build alternatives. Many comments received during the public comment period called for the retention of the Webster Street pedestrian bridge; one of which included a petition signed by over 700 people (Comment O-6.3). After careful consideration and evaluation, SFCTA is proposing to modify the Hybrid Alternative/SRA so as to keep the Webster Street pedestrian bridge in place and open for use. New street-level crosswalks would also be implemented on both the east and west sides of the Webster/Geary intersection (described in more detail in **Chapter 2, Section 2.3.2** of this Final EIR).

### 1.4.2 Retention of Spruce-Cook Local/Express Bus Stops (No Rapid Stops)

The second proposed design change to the Hybrid Alternative/SRA is also largely a result of outreach efforts with local business stakeholder groups and comments received during the public comment period expressing concern over the proposed BRT stop and associated parking space loss on the Spruce-Cook block of Geary Boulevard. On this block, the proposed design modification is to no longer add a BRT stop; the eastbound and westbound bus stops at the Spruce-Cook segment of the Geary corridor would remain in their existing locations and continue to serve Local and Express buses (rather than create a larger BRT and Local station with new bus bulbs and shelters).

### 1.4.3 Additional Pedestrian Improvements

Several comment letters received during the public comment period expressed concern over pedestrian safety along the Geary corridor. Accordingly, the third proposed design change includes incorporating additional pedestrian crossing improvements to further enhance pedestrian safety at high priority locations along the Geary corridor. The proposed modifications would include pedestrian bulbouts, painted safety zones, and daylighting<sup>1</sup> at various intersections. These

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<sup>1</sup> “Daylighting” involves increasing the visibility of pedestrians crossing the street by removing or limiting on-street parking spaces immediately adjacent to crosswalks.

improvements would reduce pedestrian crossing distances and improve pedestrian visibility to drivers, which would help to increase the overall safety of pedestrians in the corridor.

Each of these changes is discussed in greater detail in **Chapter 2** of this Final EIR. **Chapters 3 and 4**, along with **Appendix A** (Errata Summary) identify the minor text changes resulting from these minor modifications to the Hybrid Alternative/SRA. **Chapters 3 and 4** also provide information to substantiate that these changes do not introduce any new or worsened environmental effects nor do they trigger any need for new mitigation measures not included in the Draft EIS/EIR.

## 1.5 CEQA Requirements for a Final EIR

Pursuant to CEQA Guidelines Section 15132, a Final EIR must consist of several elements. Table 1-1 below lists these requirements as well as where these requirements are satisfied.

**Table 1-1 Disposition of CEQA Final EIR Requirements**

REQUIRED CONTENTS OF FINAL EIR	WHERE THESE REQUIRED CONTENTS APPEAR
The draft EIR or a revision of the draft	The Draft EIS/EIR plus revisions to the Draft included in this document (Chapters 2-6, Appendices A and D)
Comments and recommendations received on the draft EIR either verbatim or in summary	Appendix B - Comments and Responses
A list of persons, organizations, and public agencies commenting on the draft EIR	Appendix B - Comments and Responses
The responses of the Lead Agency to significant environmental points raised in the review and consultation process	Appendix B - Comments and Responses
Any other information added by the Lead Agency	Chapters 2, 5, and 6 and Appendix A (Errata Summary)

## 1.6 Requirements for and Consideration of Recirculation

If significant new information is added to an EIR after the public review, the lead agency is required to recirculate the EIR or a portion of it for additional public review and comments. (CEQA Guidelines, Section 15088.5.) “[N]ew information to an EIR is not significant unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project’s proponents have declined to implement...[R]ecirculation is not required where the new information added to the EIR merely clarifies or amplifies...or makes insignificant modification in...an adequate EIR” (*Laurel Heights Improvement Association of San Francisco, Inc. v. Regents of the University of California* (1993) 6 Cal. 4th 1112,1129–1130).

Examples of significant new information requiring recirculation include information showing that:

- (1) A new significant environmental impact would result from the Project or from a new mitigation measure proposed to be implemented.
- (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
- (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the significant impacts of the Project, but the Project's proponents decline to adopt it.
- (4) The Draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (See CEQA Guidelines, Section 15088.5, subd. [a]).

An EIR is adequate as long as it addresses all questions about significant environmental issues, and as long as the EIR, as a whole, reflects a good faith effort at full disclosure. "Recirculation is not required where the new information added to an EIR merely clarifies or amplifies or makes insignificant modification in an adequate EIR." (CEQA Guidelines Section 15088.5(a).)

SFCTA has reviewed the comments received on the Draft EIS/EIR and determined that recirculation of the Draft EIS/EIR is not necessary.

No new significant or substantially more severe environmental impacts have been identified that would result from the project or from an alternative or a new mitigation measure proposed as part of the project. Moreover, no new feasible mitigation measures or alternatives have been identified that are considerably different from others previously analyzed and would clearly lessen the significant environmental impacts of the project that the City and the applicant have declined to implement. All of the responses to comments contained in **Appendix B** provide information that clarifies and amplifies the evaluation of impacts contained in the Draft EIS/EIR, but does not change impact conclusions.

In addition, the minor changes to the Hybrid Alternative/SRA introduced to respond to public comments on the Draft EIS/EIR do not introduce any new or worsened impacts or require any additional mitigation measures. Further documentation of these changes and SFCTA's screening for potential environmental impacts is contained in **Chapters 2, 3, and 4** of this Final EIR. Also please refer to **Appendix A**, Errata Summary, which captures other minor text changes to the Draft EIS/EIR.

## 1.7 Agency Approvals

This document has been distributed to the State Clearinghouse, as well as to the agencies, organizations, and individuals who commented on the Draft EIS/EIR.

The SFCTA Board of Directors will consider this document, together with the Draft EIS/EIR, at a noticed public hearing scheduled for December 13, 2016, and, if deemed adequate with respect to accuracy, objectiveness, and completeness, will decide whether to certify that the Final EIR has been completed in compliance with CEQA.

Subsequently, SFCTA and SFMTA are jointly responsible for approving and carrying out any project. SFMTA would be the recipient of any grant funds and would be the operator of the Project. If SFCTA certifies the EIR and approves one of the alternatives as the Project, it will adopt environmental findings and a Mitigation Monitoring and Reporting Program (MMRP) at the project decision hearing (see **Appendix C** of this Final EIR).

CEQA also requires the adoption of findings prior to approval of a project for which a certified EIR identifies significant environmental effects (CEQA Guidelines Sections 15091 and 15092). Because the Draft EIS/EIR identified significant impacts that cannot be mitigated to less-than-significant levels for the Hybrid Alternative/SRA (as well as other alternatives), the findings include a Statement of Overriding Considerations for each significant unavoidable impact. (CEQA Guidelines Section 15093[b]). The SFCTA Board must, as part of making findings on the Project, adopt a Statement of Overriding Considerations to state what factors have impelled the lead agency to approve the Project notwithstanding the significant and unavoidable environmental impacts.

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## CHAPTER 2 ALTERNATIVES

### 2.1 Introduction

This Chapter summarizes the alternatives to the Project that were fully evaluated in the Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) published in September 2015,<sup>1</sup> and describes minor changes to one of those alternatives (the Hybrid Alternative) as a result of public comments on the Draft EIS/EIR.

The Geary corridor is the City of San Francisco’s most heavily used bus transit corridor as well as a major east-west thoroughfare for vehicular traffic. Encompassing Geary Boulevard and the one-way pair of Geary and O’Farrell Streets, the Geary corridor sees more than 50,000 daily transit trips, as many as 45,000 daily automobile trips near downtown, and tens of thousands of daily pedestrian trips.

While the bus lines that serve the Geary corridor are among the most heavily used in the United States, transit operations are substantially hindered. Heavy traffic levels and other conflicts lead to unpredictable waiting times, overly crowded buses, and “bunching” of buses. Moreover, many portions of the Geary corridor streetscape offer challenging conditions for pedestrians to safely access buses.

To address these concerns, the San Francisco County Transportation Authority (SFCTA) and San Francisco Municipal Transportation Authority (SFMTA) several years ago initiated an exploration of ways to improve bus service and the overall street environment of the Geary corridor. Specifically, SFCTA and SFMTA, in cooperation with the Federal Transit Administration (FTA), studied a number of potential Geary corridor improvements. The local agencies ultimately proposed to implement a bus rapid transit (BRT) system. In many locations in the United States as well as around the world, BRT systems provide dedicated lanes for bus travel, sometimes physically separated from other traffic. When buses can operate within dedicated lanes, conflicts with vehicular traffic can be reduced, thereby reducing delays, improving reliability, and enhancing the overall passenger experience.

As discussed further below, the local agencies developed a number of alternatives to implement BRT in the Geary corridor over several years of planning. These alternatives were then fully evaluated in a Draft EIS/EIR published in September 2015.

- **Section 2.2** summarizes the alternatives development process and the alternatives analyzed in the Draft EIS/EIR.
- **Section 2.3** describes minor changes to one of these alternatives (the Hybrid Alternative) as a result of public comments on the Draft EIS/EIR.

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<sup>1</sup> For a comprehensive discussion, see Chapter 2 of the Draft EIS/EIR.

## 2.2 Planning History

For more than a decade, SFCTA and SFMTA have conducted studies of potential transit improvements to the Geary corridor. SFCTA conducted the Geary Corridor BRT Feasibility Study to evaluate the feasibility of five conceptual design alternatives for the Geary corridor. Completed in 2007, the Feasibility Study found that a BRT system would be feasible in the Geary corridor.

In November 2008, SFCTA, in cooperation with FTA, issued a federal Notice of Intent (NOI) to prepare an environmental impact statement (EIS) and a state Notice of Preparation (NOP) to prepare an environmental impact report (EIR). SFCTA undertook a comprehensive outreach effort to inform the environmental scope and alternatives development for the project, including three public scoping meetings and meetings with the project's Citizens Advisory Committee (CAC), Technical Advisory Committee (TAC), and numerous stakeholder groups. These planning efforts considered options ranging from minimal improvements, to adding striped bus-only lanes, to constructing physically separated center-running bus-only lanes over the length of the entire corridor. These studies found several options to be infeasible given the existing streetscape, excessive cost, or excessive disruption. After that scoping process, SFCTA conducted two additional screening steps in response to community feedback.

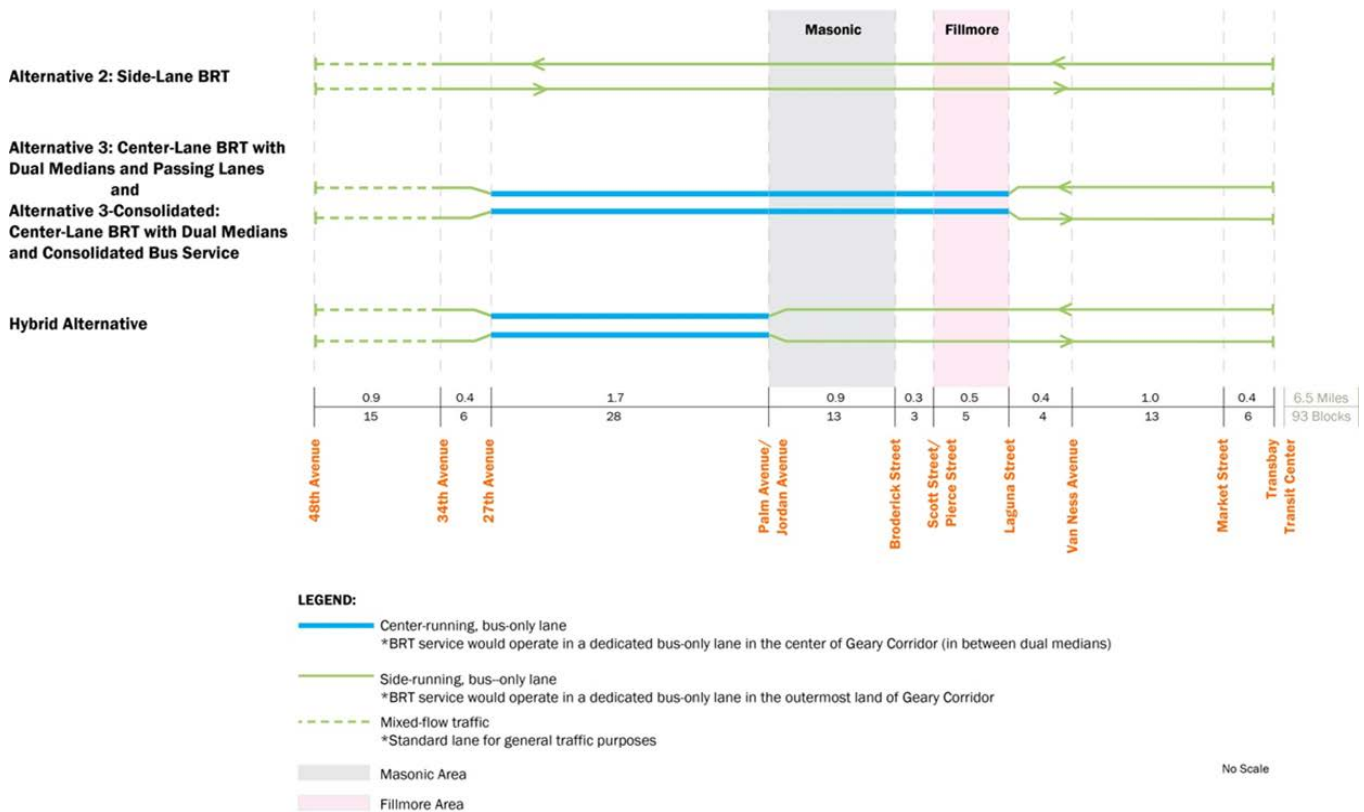
Chapter 10 of the Draft EIS/EIR more fully describes the numerous alternatives and configurations studied in these efforts and describes the factors used to screen out certain alternatives from further analysis. Consistent with the purpose and need for the project established in the Notice of Intent, these studies all focused on implementation of a bus rapid transit system in the Geary corridor. Accordingly, the planning and environmental processes did not consider potential improvements inconsistent with this purpose and need, including light rail or subway options, or improvements to other parallel corridors.

As a result of the aforementioned studies and planning efforts, the local agencies eventually selected five alternatives to carry forward into environmental analysis. The Draft EIS/EIR considered the following physical and service alternatives, as further described below. **Figure 2-1** below provides a schematic drawing of the four build alternatives (i.e., all excepting No Build).

- **No Build Alternative** (required to be considered under NEPA and CEQA)
- **Alternative 2** – Side-Lane BRT
- **Alternative 3** – Center-Lane BRT
- **Alternative 3-Consolidated:** Center-Lane BRT with Dual Medians and Consolidated Bus Service
- **Hybrid Alternative:** Elements of Alternatives 2, 3, and 3-Consolidated in different locations.

The Draft EIS/EIR identified the *Hybrid Alternative* as the Staff-Recommended Alternative (SRA).

Figure 2-1 Schematic Diagram of the Build Alternatives



Jacobs, 2014

### 2.2.1 No Build Alternative

The No Build Alternative represents the baseline scenario if none of the proposed build alternatives were implemented. Both NEPA and CEQA require consideration of a “No Build” or “No Action” alternative as a means of establishing a baseline for comparison against build alternatives.

No changes to existing median configurations, movement of existing through-traffic, or on-street parallel parking were assumed as part of the No Build Alternative.

However, the No Build Alternative assumed the continued operation of side-running bus-only lanes in the Inner Geary (the portion between Market Street and Gough Streets). These lanes were installed in 2014 under a separate SFMTA effort and have since been in continuous operation.

Under the No Build Alternative, physical infrastructure and transit service in the Geary corridor would remain unaltered except for changes associated with other City projects that are either planned or programmed to be implemented in the Geary corridor by the year 2020.<sup>2</sup> See Section 2.2.2.1 of the Draft EIS/EIR for a full discussion of such projects. These improvements are summarized below.

- Bus service improvements consistent with the Transit Effectiveness Project (TEP) in the Geary corridor and elsewhere throughout the City.
- Installation and operation of wireless Transit Signal Priority (TSP) at signalized intersections.
- Installation of new traffic signals at several currently unsignalized intersections in the Geary corridor (including Presidio Avenue, Cook Street, Beaumont/Commonwealth Avenues, Palm Avenue, 22nd Avenue, and 26th Avenue).
- Replacement of traffic signal infrastructure at various locations throughout the Geary corridor.
- Installation of pedestrian countdown signals so that by 2020 all signalized intersections along the Geary corridor include these safety features.
- Installation of 14 pedestrian crossing bulbs and curb ramps at various locations along the Geary corridor.
- Purchase and operation of new rolling stock – 60-foot, articulated diesel motorcoaches with low-floor boarding.

There has been no change to the No Build Alternative following publication of the Draft EIS/EIR.

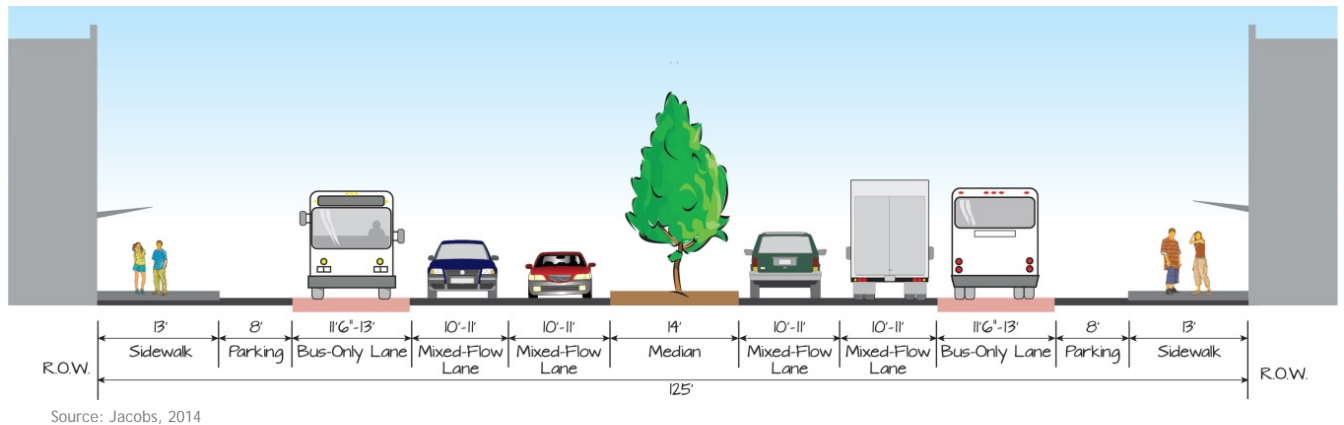
### 2.2.2 Alternative 2: Side-Lane Bus Rapid Transit

Alternative 2 proposes implementation of side-lane BRT. Under Alternative 2, all bus services would operate in side-running bus-only lanes from the Transbay Transit Center to 34th Avenue. Since side-running bus only lanes are already in operation in the Inner Geary area (Market Street to Gough Street), Alternative 2 would extend side-running bus only lanes from Gough Street to 34th Avenue. Beyond 34th Avenue, where traffic volumes are lightest, bus service would continue in mixed-flow travel lanes to 48th Avenue (see **Figure 2-1**). **Figure 2-2** illustrates a typical cross section of Alternative 2 in the area between Gough Street and 34th Avenue.

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<sup>2</sup> The year 2020 is considered the opening year for all alternatives because it is the earliest year by which any of the build alternatives could be expected to be fully operational and is thus also the most reasonable year for the no-build alternative as a basis of comparison.

Figure 2-2 Proposed Typical Cross-Section of Alternative 2



Bus service would operate 24 hours per day along three different lines: BRT, 38X Express, and 38 Local. The BRT short-line and full-length services would both operate at 5.5-minute headways during morning and evening peak periods. Some BRT service buses would short-turn, providing more frequent service in the highest-demand portions of the corridor, while others would travel the full corridor length.

Express service would operate only during peak periods: every 5.5 minutes inbound in the morning; every 6 minutes outbound in the evening.

All local buses would travel the full length of the corridor. Local service would operate at headways of 5.5 minutes during the morning peak period and at 6 minute headways during the evening peak period.

Each of the three bus services would have unique routing and stop configurations as shown in Tables 2-3 and 2-4 of the Draft EIS/EIR. In summary, BRT buses would stop only at BRT stops, while local buses would stop at all stops. At local stops, local buses would operate the same way they do today, pulling out of the bus-only lane to pick up and drop off passengers at the local curbside stop. In this way, BRT buses would be able to pass the local buses.

Alternative 2 also assumes that Golden Gate Transit buses, which currently use the Geary corridor between the Transbay Transit Center and Park Presidio Boulevard, would also operate within side-running bus lanes and make stops similar to existing service.

In addition to these basic elements, Alternative 2 was proposed to include a program of transit-related improvements and roadway/multi-modal improvements/modifications. These include:

- Installation of fiber-based TSP at all signalized intersections between Gough Street and 25th Avenue (fiber-based TSP is considered more robust than wireless TSP, which is assumed as part of the No Build Alternative).
- Installation of high-amenity BRT stations at BRT stops; amenities would include improved signage, wayfinding maps, lighting, and landscaping.
- Between Gough Street and 34th Avenue, establishment of two mixed-flow traffic lanes in each direction. Four lanes in each direction are currently present in the portion of the Geary corridor between Gough Street and Scott Street; between Scott Street and Park Presidio Boulevard, three lanes in each direction currently exist.

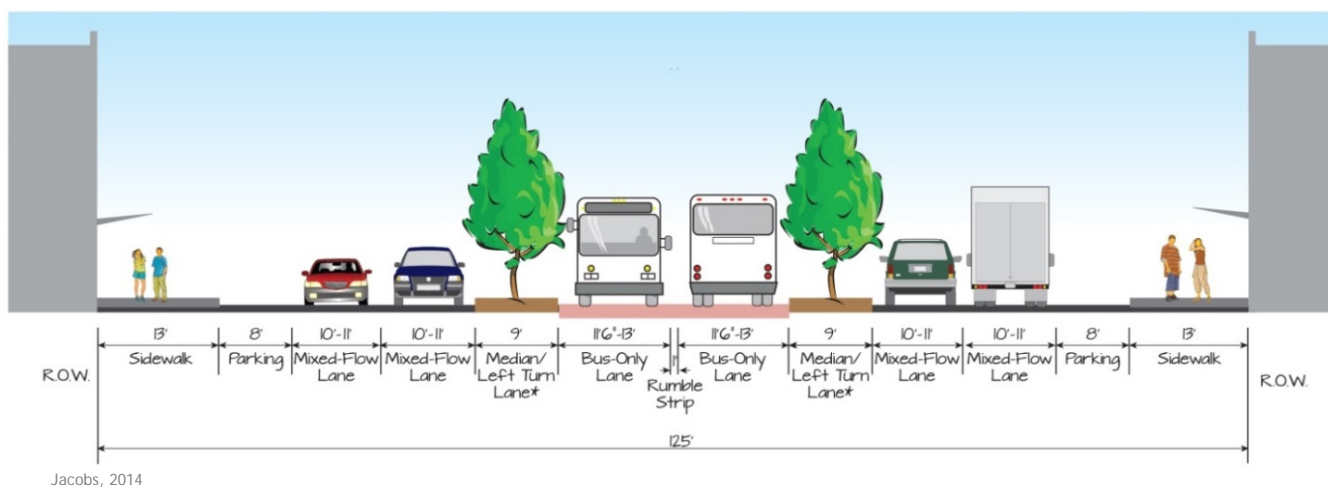
- Pedestrian improvements, including 65 pedestrian crossing bulbs, bus bulbs to facilitate boarding in select locations, high-visibility crosswalk striping, additional pedestrian countdown signals over those proposed as part of the No Build Alternative, and new signalized pedestrian crossings at Buchanan and Broderick Streets.
- Removal of the existing pedestrian bridges at Steiner Street and Webster Street; construction and/or improvement of street-level crossings.
- Construction of a new Class II (on-street) bicycle lane on Geary in the block between Masonic Avenue and Presidio Avenue to close an existing gap in the City’s bicycle network.

There has been no change to Alternative 2 following publication of the Draft EIS/EIR and responses to comments.

### 2.2.3 Alternative 3: Center-Lane Bus Rapid Transit with Dual Medians and Passing Lanes

Alternative 3 proposes implementation of center-running bus-only lanes for substantial portions of the Geary corridor. As shown in **Figure 2-1**, Alternative 3 features side-running bus lanes from the Transbay Transit Center and Inner Geary, transitioning to center running lanes at Gough Street. Center running bus lanes would continue west from Gough Street about 50 blocks to 27th Avenue. At 27th Avenue, center running bus lanes would transition to side-running, continuing west to 34th Avenue. As in Alternative 2, bus service would then continue west in mixed-flow travel lanes from 34th Avenue to 48th Avenue. As shown in **Figure 2-3**, Alternative 3’s center-running lanes would be flanked by new landscaped medians. At bus stations, these dual medians would serve as passenger loading platforms, to be accessed by crossing from the sidewalk at the nearest intersection.

**Figure 2-3 Proposed Typical Cross-Section of Alternative 3**



Alternative 3 would have bus service patterns and headways similar to those of Alternative 2. Alternative 3 would replace the existing 38 Limited service with the new BRT service, retain the existing 38 Local service, and provide 38X Express service. Local service would operate at headways of 5.5 minutes during the morning peak period and at 6 minute headways during the



evening peak period. BRT short line and full-length services would both operate at 5.5-minute headways in both peak periods. Express service would operate every 5.5 minutes inbound in the morning peak and outbound every 6 minutes in the evening peak.

Each of the three bus services would have unique routing and stop configurations as shown in Tables 2-3 and 2-4 of the Draft EIS/EIR. At local bus stops, the 38 Local bus would pull into bus bays to pick up and drop off passengers. The bus-only lane would be located adjacent to bus bays, providing a passing zone for BRT buses to bypass stopped buses. Bus operations for side-running locations would be similar to those described for Alternative 2.

Alternative 3 assumes that Golden Gate Transit would use new bus-only lanes and serve certain BRT stops on Geary Boulevard between Park Presidio Boulevard and Webster Street.

In addition to these basic elements, Alternative 3 would include the same program of transit-related improvements and roadway/multi-modal improvements/modifications proposed for Alternative 2 (see **Section 2.2.2** above).

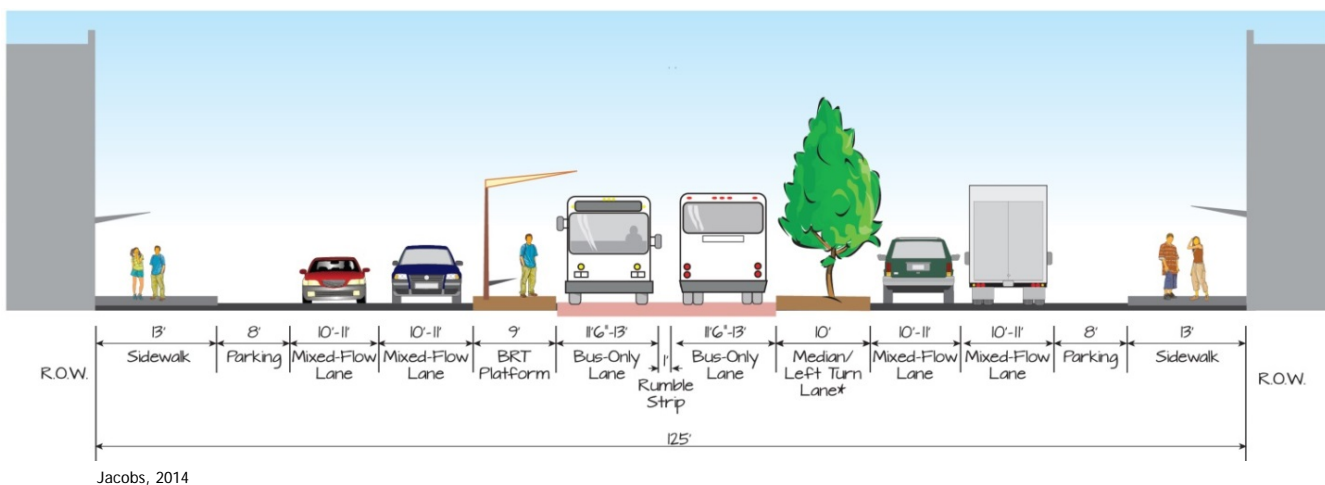
There has been no change to Alternative 3 following publication of the Draft EIS/EIR and responses to comments.

### 2.2.4 Alternative 3-Consolidated: Center Lane Bus Rapid Transit with Dual Medians and Consolidated Bus Service

Alternative 3-Consolidated would create a bus-only lane configuration similar to Alternative 3, but would have different transit operations.

Unlike Alternative 3, Alternative 3-Consolidated would not include bus bays at local stops for BRT buses to pass stopped local buses. Elimination of the bus passing zones would provide space to retain more of the existing on-street parking. **Figure 2-4** depicts a typical cross section of Alternative 3-Consolidated in the portion of the Geary corridor west of Gough Street.

**Figure 2-4 Proposed Typical Cross-Section of Alternative 3-Consolidated**



Alternative 3-Consolidated would consolidate existing 38 Limited and 38 Local lines into one BRT line. The buses would utilize the bus-only lanes similar to Alternative 3. However, all buses would stop at the same stops (e.g., no local-only stops), eliminating the need for bus passing. Some BRT buses would short-turn, providing more frequent service in the highest-demand portions of the corridor, while others would travel the full corridor length. The short-turn and full-length services would both operate at 4-minute headways in the morning peak period. In the evening peak period, full-length buses would operate at 4.5-minute headways, with the short-turn buses operating every 4 minutes. Express service (38X) would operate every 4.5 minutes inbound in the morning peak and outbound every 4.5 minutes in the evening peak.

Alternative 3-Consolidated assumes that Golden Gate Transit would use bus-only lanes and make similar stops on Geary Boulevard between Park Presidio Boulevard and Webster Street as under current service.

In addition to these basic elements, Alternative 3-Consolidated would include the same program of transit-related improvements and roadway/multi-modal improvements/modifications proposed for Alternative 2 (see **Section 2.2.2** above).

There has been no change to Alternative 3-Consolidated following publication of the Draft EIS/EIR and responses to comments.

### **2.2.5 Hybrid Alternative (Staff-Recommended Alternative)**

The Hybrid Alternative combines different physical and operational attributes of Alternatives 2 and 3-Consolidated in different segments throughout the corridor to produce a build alternative that provides the bus lane configurations best suited to each segment's constraints and opportunities while meeting the project's need and purpose and minimizing environmental impacts.

As shown in Figure 2-1, the Hybrid Alternative would operate BRT service in side running lanes from the Transbay Transit Center to Palm/Jordan Avenues. At Palm/Jordan, the side running lanes would transition to center-running and continue west to 27th Avenue. At 27th Avenue, the bus-only lanes would transition back to side-running, and would continue west to 34th Avenue. Like all build alternatives, BRT buses would operate in mixed-flow lanes from 34th Avenue to 48th Avenue.

Bus operations would be similar to those described for Alternative 2, with bus service 24 hours per day along three different lines: BRT, 38X Express, and 38 Local.

In locations with side-running bus-only lanes, bus service would consist of a local line and BRT line, with the local line serving all stops and the BRT line serving only BRT stops. In the segment with center-running bus-only lanes, both local and BRT lines would serve all stops, eliminating the need for passing lanes. Local service would operate at headways of 5.5 minutes during the morning peak period and at 6 minute headways during the evening peak period. BRT short line and full-length services would each operate at 5.5-minute headways in both peak periods. The 38X would operate every 5.5 minutes inbound in the morning peak and outbound every 6 minutes in the evening peak.



The Hybrid Alternative assumes that Golden Gate Transit would use new bus only lanes and serve similar stops on Geary Boulevard between Park Presidio Boulevard and Webster Street as under current service.

In addition to these basic elements, the Hybrid Alternative would include the same program of transit-related improvements and roadway/multi-modal improvements/modifications as proposed under Alternative 2 (see **Section 2.2.2**).

As previously noted, the Draft EIS/EIR identified the Hybrid Alternative as the SRA (hereinafter the Hybrid Alternative/SRA). The SRA is the alternative that SFCTA and SFMTA staff proposes its governing boards select as the Locally Preferred Alternative (LPA) and duly carry forward for design, construction, and operation. It is anticipated that these governing boards will formally identify the LPA as part of the project approval and CEQA document certification processes.

## 2.3 Changes to the Staff-Recommended Alternative

As recounted above, the Draft EIS/EIR identified the Hybrid Alternative as the SRA. In response to public comments on the Draft EIS/EIR, the local agencies have proposed minor changes to the Hybrid Alternative/SRA. These modifications address key local concerns within the context of the established need and purpose for the project and do not (as demonstrated in **Chapters 3 and 4** of this Final EIR) worsen or introduce any new environmental impacts.

The three modifications to the Hybrid Alternative/SRA are detailed below. **Figure 2-5** depicts detail of the Hybrid Alternative/SRA, inclusive of these three modifications.

### 2.3.1 Remove BRT Stops at Spruce/Cook; Retain Local and Express Stops

The Hybrid Alternative/SRA proposed to add BRT stops on the north and south sides of the block of Geary Boulevard between Spruce and Cook Streets. See Tables 2-3 and 2-4 in the Draft EIS/EIR.

Several commenters expressed opposition to the proposed BRT stops, citing concerns over the loss of all the on-street parking spaces on this particular block. Numerous commenters cited such parking loss as detrimental to businesses.

Following publication of the Draft EIS/EIR, SFCTA and SFMTA consulted extensively with stakeholders in this area to contemplate potential project changes. The local agencies ultimately proposed to modify the Hybrid Alternative/SRA to drop the two BRT stops proposed for this area. Instead, the Hybrid Alternative/SRA would incorporate the current bus stops (westbound, on the near side of Spruce; eastbound, also on the near side of Spruce) as local and express stops. In other words, these two stops would retain their existing physical configurations and services under the Hybrid Alternative/SRA.

**Table 2-1** excerpts from Draft EIS/EIR Tables 2-3 and 2-4 to show changes in Hybrid Alternative/SRA bus stops/service. Additions are shown in underlined text; deletions in ~~strikethrough~~.

**Table 2-1 Changes to the Hybrid Alternative/SRA: Spruce/Cook Bus Stops/Service**

DIRECTION	NO BUILD ALTERNATIVE (EXISTING STOPS)	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3- CONSOLIDATED	HYBRID ALTERNATIVE
Eastbound	38, 38L, 38BX (N)	38 (N)	38 (F)	BRT, 38X (FB)	<u>38, 38X (N)</u> <del>BRT (FB)</del>
Westbound	38, 38L, 38BX (N)	38 (N)	38 (F)	BRT, 38X (NB)	<u>38, 38X (N)</u> <del>BRT, (NB)</del>

Notes: 38 = 38 Local bus service and stop; 38L = 38 Limited bus service and stop; BRT = BRT service and stop; 38X = proposed new 38 Express service; N = near side stop; F = far side stop; NB = near side full block stop; FB = far side full block stop

As detailed further in **Chapters 3** and **4** of this Final EIR, the above change would alter bus service, alter the distance between BRT stations, retain about 10 on-street parking spaces that would have been removed under the previous Hybrid Alternative/SRA configuration, and would shorten the expected duration of construction activities in the immediate area. As shown in **Chapters 3** and **4**, these changes would not change any of the impact conclusions or mitigation measures identified in the Draft EIS/EIR for the Hybrid Alternative/SRA.

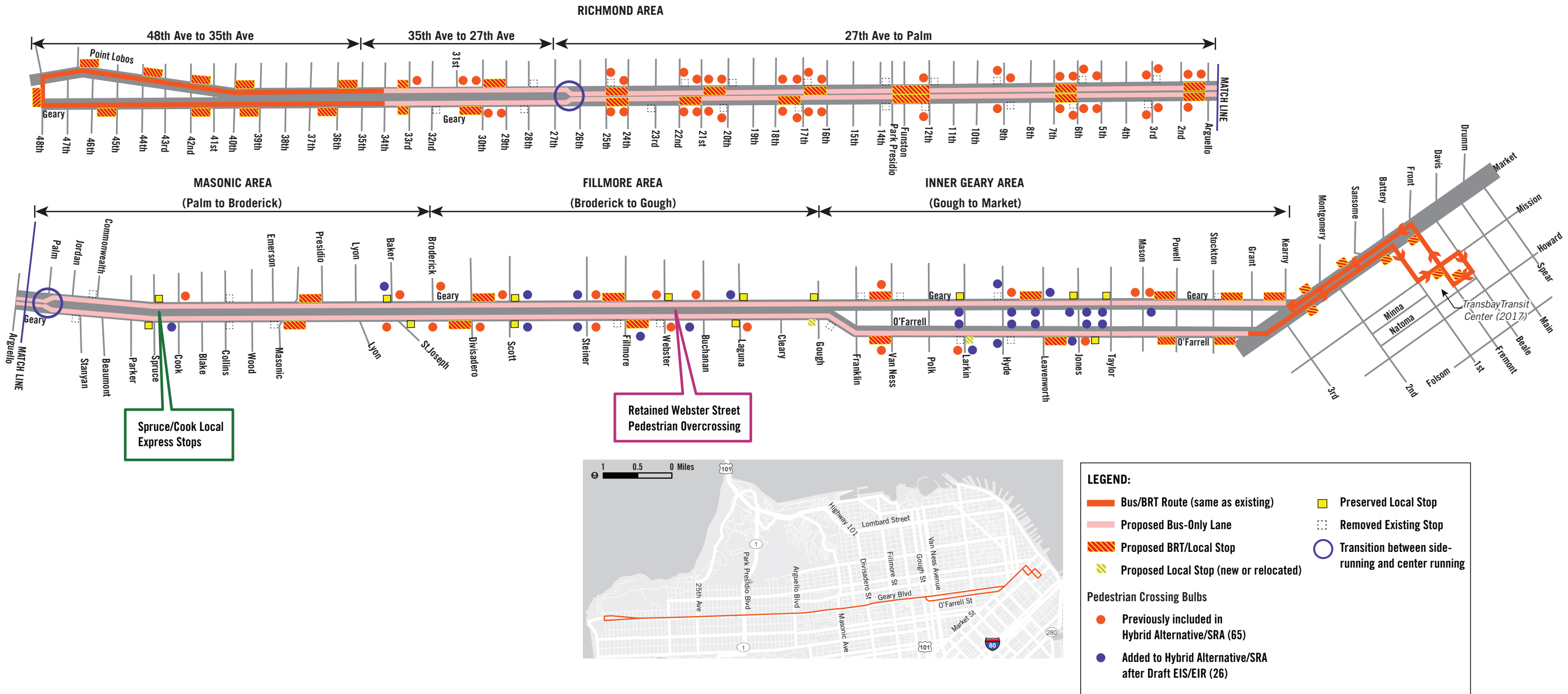
### 2.3.2 Retain Webster Street Pedestrian Bridge

In the Draft EIS/EIR, the Hybrid Alternative/SRA included demolition of the pedestrian bridge at Webster Street to allow for uninterrupted side-running bus only lanes through this intersection. The Draft EIS/EIR noted that the existing pedestrian bridge did not conform to requirements of the Americans with Disabilities Act (ADA) due to the steep grade of the access ramps.

In the Draft EIS/EIR, new ground-level crosswalks on the west and east sides of the intersection were proposed.

Substantial concern regarding removal of this bridge was expressed through comments on the Draft EIS/EIR by agencies, organizations, and individuals. Many commenters questioned the safety of proposed new ground-level crossings, particularly for groups of children attending nearby schools. For more information, see **Appendix B**.

Following publication of the Draft EIS/EIR, SFCTA and SFMTA met with stakeholder groups, including several who submitted comments on this particular issue. In studying the issue more closely, SFCTA and SFMTA found that retaining the Webster Street bridge would result in minor impacts to bus service of several seconds that would not substantially affect travel times throughout the corridor, and therefore the bridge could be retained without substantial negative impact on bus rapid transit service.



(not to scale)

Source: Geary BRT, 2016

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Therefore, SFCTA and SFMTA have modified the Hybrid Alternative/SRA to retain the Webster Street pedestrian bridge. In addition, the Hybrid Alternative/SRA has been modified to add two pedestrian surface crossings on either side of the bridge:

- 1) A straight crossing on the west side of the intersection incorporating pedestrian refuge areas, and
- 2) A staggered crossing on the east side. The staggered crossing would improve pedestrian sight distance at the westbound frontage road, as pedestrians would cross in front of the existing bridge piers so they would not be obstructed behind the pier when crossing. Signal timing would be designed to allow pedestrians to cross in one cycle, with multiple wide medians providing pedestrian refuge areas across Geary. A pedestrian barrier would be installed on the center median of the staggered crossing to guide pedestrians to the second crossing.

In the westbound direction, no dedicated bus lane would exist at the Webster Street approach. Buses could either share the outside lane with right-turning vehicles, or share the through lane with frontage road traffic. A westbound side-running bus-only lane would reinitiate after crossing the Geary/Webster Street intersection.

As detailed further in **Chapters 3** and **4** of this Final EIS/EIR, the above change would have a minor impact on bus service, expand pedestrian crossing opportunities (retaining the pedestrian bridge but still adding two surface crosswalks), and reduce the extent of needed demolition/excavation activities. As shown in **Chapters 3** and **4**, these changes would not change any of the impact conclusions or mitigation measures identified in the Draft EIS/EIR for the Hybrid Alternative/SRA.

### 2.3.3 Additional Pedestrian Improvements

In the Draft EIS/EIR, the Hybrid Alternative/SRA proposed a total of 65 new pedestrian crossing bulbs along the Geary corridor. This total was comprised of 14 that were associated with the No Build Alternative (i.e. being constructed as part of other approved projects) plus 51 more associated with the Hybrid Alternative/SRA (as well as all other build alternatives). These features were closely related to a key aspect of the established need for the project, namely improving unfavorable pedestrian conditions in the Geary corridor.

In response to comments on the Draft EIS/EIR regarding pedestrian safety, SFCTA and SFMTA have added several similar pedestrian realm enhancements to the Hybrid Alternative/SRA. These are: 26 additional pedestrian bulbs (for a total of 91), a painted safety zone at Taylor and O'Farrell Streets, and daylighting at strategic intersection locations along the Geary corridor.<sup>3</sup> **Figure 2-5** shows these added features in detail, including the 65 locations for pedestrian crossing bulbs originally proposed plus the 26 additional ones added to the Hybrid Alternative/SRA.<sup>4</sup> The additional bulb locations were added to improve safe pedestrian travel to transit stops as well as to address areas where pedestrian injury rates are high.

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<sup>3</sup> "Daylighting" means improving visibility of and by pedestrians attempting to cross a street, typically by reducing visual obstructions, such as on-street parking, immediately adjacent to intersections.

<sup>4</sup> **Figure 2-5** does not show proposed daylighting locations.

The complete list of additional pedestrian improvements added to the Hybrid Alternative/SRA follows below.

- **Bulbouts:** 26 additional pedestrian bulbs as described below:
  - **Mason/Geary intersection:** a pedestrian bulb along Mason Street at the southeast corner in addition to the proposed bulbs along Geary at the northeast and northwest corners of the intersection.
  - **Taylor/Geary intersection:** a pedestrian bulb along Taylor Street at the southwest corner in addition to the proposed sidewalk improvements at the Local stop at the northwest corner of the intersection.
  - **Jones/Geary intersection:** pedestrian bulbs along Jones Street at the southwest and southeast corners in addition to the proposed sidewalk improvements at the Local stop at the northwest corner of the intersection.
  - **Jones/O'Farrell intersection:** pedestrian bulbs along Jones Street at the northeast and southwest corners in addition to the proposed bulb along Geary at the southeast corner of the intersection.
  - **Leavenworth/Geary intersection:** pedestrian bulbs along Leavenworth Street at the northeast and southwest corners in addition to the proposed sidewalk improvements at the Local stop at the northwest corner of the intersection.
  - **Leavenworth/O'Farrell intersection:** a pedestrian bulb along Leavenworth Street at the northwest corner in addition to the proposed transit bulb along O'Farrell at the southeast corner of the intersection.
  - **Hyde/Geary intersection:** pedestrian bulbs along Hyde and Geary at the northwest corner, and a pedestrian bulb along Hyde at the southeast corner in addition to the proposed bulb along Geary at the northeast corner.
  - **Hyde/O'Farrell intersection:** pedestrian bulbs along Hyde Street at the northeast and southwest corners.
  - **Larkin/Geary intersection:** a pedestrian bulb along Larkin Street at the southwest corner in addition to the proposed sidewalk improvements at the Local stop at the northwest corner of the intersection.
  - **Larkin/O'Farrell intersection:** pedestrian bulbs along Larkin Street at the northwest and southeast corners in addition to the proposed sidewalk improvements at the relocated Local stop on the southeast corner and the pedestrian bulb along Geary at the southwest corner.
  - **Laguna/Geary intersection:** a pedestrian bulb along Laguna Street at the northwest corner in addition to the proposed bulbs along Geary at the northwest and southeast corners of the intersection, the proposed transit bulb at the northeast corner, and sidewalk improvements at the Local stop at the southwest corner.
  - **Buchanan/Geary intersection:** a mid-block pedestrian bulb along the south side in addition to the proposed mid-block pedestrian bulb along Geary on the north side.

- **Fillmore/Geary intersection:** a pedestrian bulb along Fillmore Street at the southeast corner in addition to the proposed transit bulbs on the northwest and southeast corners.
- **Steiner/Geary intersection:** pedestrian bulbs along Steiner Street at the northwest and southwest corners in addition to the proposed pedestrian crossing improvements at this intersection.
- **Scott/Geary intersection:** pedestrian bulbs along Scott Street at the northeast and southeast corners in addition to the proposed pedestrian bulb along Geary at the northwest corner of the intersection, and proposed transit bulbs on the northeast and southeast corners.
- **Baker/Geary intersection:** a pedestrian bulb along Baker at the northwest corner in addition to previously approved southwest and northeast corner bulbs.
- **Cook/Geary intersection:** a pedestrian bulb along Geary at the southwest corner in addition to the proposed pedestrian bulb along Geary at the northeast corner.
- **Painted safety zone**
  - **Taylor/O'Farrell intersection:** a painted safety zone along Taylor Street at the northwest corner in addition to the proposed sidewalk improvements at the Local stop at the southwest corner.
- **Daylighting**
  - All approaches on Geary would have advanced limit lines painted and between 10 to 30 feet of daylighting to increase visibility of pedestrians by drivers.
  - All side streets intersecting with Geary within the project site would have advanced limit lines painted and five to 20 feet of daylighting to increase visibility of pedestrians by drivers.

As shown in **Chapters 3** and **4** of this Final EIR, the above changes would provide further pedestrian realm enhancements, but would be constructed within the public right-of-way, potentially affecting traffic and turning movements and reducing the number of on-street parking spaces (requiring removal of about 10 more parking spaces on the corridor and 15 more parking spaces on side streets than under the previous Hybrid Alternative/SRA definition). As shown in **Chapters 3** and **4**, however, none of these changes would change any of the impact conclusions or mitigation measures identified in the Draft EIS/EIR for the Hybrid Alternative/SRA.

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## CHAPTER 3 TRANSPORTATION

### 3.1 Introduction

Chapter 3 of the Draft EIS/EIR presented the process and findings of the transportation analysis conducted for the Project alternatives, and is summarized here. Assessments of existing Geary corridor transportation conditions, both in terms of facilities and performance, were presented for public transit, vehicular traffic, non-motorized transportation, and vehicle parking/loading. Existing and future conditions were assessed within the regulatory framework(s) applicable to each travel mode.

Data from a variety of sources was used for the transportation analysis. The analysis was based on a detailed multimodal evaluation consisting of several key steps, including:

- **Existing Conditions:** Through an extensive data collection process, a detailed understanding of existing travel patterns on the corridor was developed. This served as the basis for the analytical tools used to evaluate how the project would affect future travel patterns. Unless specified otherwise, all data represents existing transportation conditions in 2012, when the bulk of the transportation data was collected.
- **Future Travel Forecasting:** Analysis of travel patterns in the Draft EIS/EIR were estimated using transportation forecasting models, including the San Francisco Chained Activity Modeling Process (SF-CHAMP). SF-CHAMP is a regional travel demand model used to assess the impacts of socioeconomic, land use, and transportation system changes on the performance of the local transportation system. Year 2020 No Build conditions were used as the environmental baseline against which future conditions were compared. Year 2020 was used as the baseline so as to more accurately compare the build alternatives taking into account future traffic conditions given the length of time between issuing the Notice of Preparation (2008), existing conditions (2012), and the anticipated opening year of the project (2020).
- **Transportation Operations:** Projections of future conditions for the project opening year (2020) and the project horizon year (2035) for all No Build and build alternatives were then modeled using a mix of specialized transportation analysis tools, including multimodal simulation software, traffic analysis software, and assessments of pedestrian and bicycle safety.

Multiple traffic counts were conducted along the Geary corridor to determine when the maximum use of the transportation system occurs. The results indicated that the Geary corridor experiences the highest volumes during the PM peak period. Accordingly, the analysis in Draft EIS/EIR focused on the PM peak period. This is consistent with the approach suggested in the San Francisco Planning Department's *Transportation Impact Analysis Guidelines*, the document which guides CEQA-level analysis in the City of San Francisco.

No changes to the text of Draft EIS/EIR Section 3.1, Introduction, are needed with regard to the changes to the Hybrid Alternative/SRA or in response to a comment on the Draft EIS/EIR.

## 3.2 Corridor Travel Patterns

The Draft EIS/EIR provided an overview of existing and future travel patterns on the Geary corridor, as well as in surrounding neighborhoods. The Geary corridor functions as an east-west transit spine in the northern portion of San Francisco, connecting residents and businesses to numerous neighborhoods and employment centers. It is comprised of Geary Boulevard and the one-way pair of Geary and O'Farrell Streets. The Geary corridor is one of the busiest transit corridors in San Francisco, with buses carrying over 50,000 passengers per weekday. Slightly less than one quarter of weekday trips are currently made by transit. The greatest traffic volumes on the corridor occur directly east of the Masonic tunnel while transit demand traveling east peaks at Van Ness Avenue. The corridor is wide compared to other streets in San Francisco, with a right-of-way of about 125 feet primarily with three travel lanes in each direction, and intersects almost 90 roadways between 48th Avenue and Market Street.

Future conditions were evaluated for horizon years 2020 and 2035 and include assumptions for planned transportation improvements and land use projections. Population, for example, is projected to be 2 percent greater and jobs 7 percent greater in 2020 than 2012; similarly, population is expected to be 20 percent higher and jobs 40 percent higher in 2035 compared to 2012. By neighborhood in the study area, it is expected that Japantown will have the greatest increase in trips (excluding Downtown).

No changes to the text of Draft EIS/EIR Section 3.2, Corridor Travel Patterns, are needed with regard to the changes to the Hybrid Alternative/SRA or in response to a comment on the Draft EIS/EIR.

## 3.3 Transit Conditions

### Summary of Draft EIS/EIR Findings

Section 3.3 of the Draft EIS/EIR analyzed the potential for the alternatives to result in adverse impacts to transit conditions, including travel times/reliability and crowding. The analysis in the Draft EIS/EIR was based on future year (2020 and 2035) transit forecasts and future transit performance of the five alternatives (No Build and four build alternatives) as modeled by the multimodal transportation simulation software package VISSIM. The Draft EIS/EIR examined the performance of each alternative in terms of bus travel times, bus reliability, and system-wide multi-modal delay.

In terms of future ridership,<sup>1</sup> weekday Geary corridor boardings would increase by approximately 21 percent from over 50,000 in 2012 to about 64,000 in the year 2020. Ridership is projected to increase by an additional 19 percent to about 77,000 in 2035 under the No Build Alternative; this ridership increase is related directly to the expected increases in study area population. In 2020,

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<sup>1</sup> Please note that these ridership numbers differ from those originally published in Section 3.3.4 of the Draft EIS/EIR because they have since been updated to correct typographical errors. These changes are shown below in the text changes for page 3.3-18 and changes to Figure 3.3-10 from the Draft EIS/EIR.

the Hybrid Alternative/SRA would result in about 78,000 daily transit boardings, a 21 percent increase from the No Build Alternative. In 2035, the Hybrid Alternative/SRA would serve about 94,000 daily transit riders, 23 percent higher than in the No Build Alternative.

In terms of future bus travel times, Section 3.3.4 of the Draft EIS/EIR noted that, in the 2020 scenario, the Hybrid Alternative/SRA would reduce travel times by 10 to 20 percent for the entire Geary corridor and by 15 to 30 percent between Van Ness Avenue and 25th Avenue. Travel time reliability would improve with the Hybrid Alternative/SRA compared to the No Build Alternative in 2020 and in 2035. The Hybrid Alternative/SRA would have travel times that are 15 to 25 percent lower than the No Build Alternative for the entire Geary corridor, and 15 to 30 percent lower between Van Ness and 25th Avenues. In terms of system-wide multi-modal delay, the Hybrid Alternative/SRA would improve the flow of traffic and provide streetscape improvements that would improve pedestrian crossings and safety. As a result, the improvements to transit service in the Hybrid Alternative/SRA would contribute to multimodal accessibility in the Geary corridor.

The Draft EIS/EIR did not include any avoidance, minimization or mitigation measures in Section 3.3.5 as there were no potential adverse effects to transit (bus) conditions.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to result in new or worsened effects to transit conditions.

#### ***Retention of Webster Street Pedestrian Bridge***

Retaining the Webster Street pedestrian bridge would require westbound BRT buses to travel in mixed flow lanes in approaching the Webster Street intersection. (See **Appendix D** of this Final EIR for detailed diagrams of bus lanes in the Hybrid Alternative/SRA).

This is because the pedestrian bridge supports do not permit full extension of the westbound bus-only lane across the Webster Street intersection. SFMTA examined whether the change in bus lane configuration here, along with anticipated pedestrian improvements, would have any potential to substantially alter bus service through this area. SFMTA's examination concluded that the retention of the Webster Street pedestrian bridge could result in 1-2 second westbound bus delays on average; such delays would not substantially affect BRT service.<sup>2</sup>

Construction-period impacts would be greatly reduced at Webster and Geary as the proposed modification would eliminate demolition, major excavation work, and associated costs of demolition work. This would result in a reduced number of traffic and transit disruptions.

#### ***Retention of Spruce-Cook Local/Express Stops***

Regarding the Hybrid Alternative/SRA changes in the Spruce-Cook area, existing eastbound and westbound local/express bus stops on this block would remain. Given that a new BRT stop would not be built, no related construction would occur. Both the eastbound and westbound bus stops would be slightly reduced in length. Given that there would no longer be BRT stops in this

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<sup>2</sup> SFMTA, 2016. Geary Boulevard Bus Rapid Transit: Webster Street Bus Delay Analysis.

location, overall BRT travel time would be slightly faster (due to one less BRT stop), which would benefit riders traveling between other stops. BRT buses would stop at Arguello to the west and Presidio/Masonic to the east. However, this would result in a greater walking distance to or from a BRT stop (approximately 5 blocks) for people starting or ending journeys in the Spruce-Cook area who prefer not to use the local service. However, the stops would continue to be served by local and commute-period express buses.

**Additional Pedestrian Improvements**

The additional pedestrian improvements would require conversion of a total of 25 on-street parking spaces to non-parking use and would all occur within existing right-of-way. None of the additional pedestrian improvements would be constructed where a traffic or transit lane currently exists or is planned to exist, so they would not affect traffic or transit lane configurations or capacity. Therefore, they would not affect vehicle delay and no new or worsened effects to mixed-flow travel lanes or bus/automobile travel times would occur.

**Changes to the Draft EIS/EIR**

As a result of the foregoing, several text changes to the Draft EIS/EIR are needed to reflect the above changes to the Hybrid Alternative/SRA introduced in this Final EIR and to make minor text revisions in response to comments and/or to correct minor typographical errors.

*Page 3.3-4, changes in response to comment A-3.10 and text edits*

**Table 3.3-2 Existing Transit Routes Crossing the Geary Corridor**

ROUTES	CROSS STREET AT GEARY	WEEKDAY HOURS OF OPERATION	WEEKDAY AM/PM PEAK HEADWAYS (MIN)	AVERAGE WEEKDAY RIDERSHIP (2011)
18 46th Avenue	33rd Avenue	5:00 AM to 1:00 AM	20/20	3,700
29 Sunset	25th Avenue	5:45 AM 1:00 AM	10/10	18,800
28 19th Avenue	Park Presidio Boulevard	5:45 AM 1:00 AM	11/10	12,800
28L 19th Avenue	Park Presidio Boulevard	AM Peak and PM Peak Only	12/-	3,000
44 O'Shaughnessy	6th Avenue	5:00 AM to 1:00 AM	9/9	16,900
33 Stanyan	Arguello Boulevard	5:00 AM to 1:00 AM	15/15	6,200
43 Masonic	Masonic Avenue	5:00 AM to 1:10 AM	10/12	12,000
24 Divisadero	Divisadero Street	24 hours daily	10/10	11,400
22 Fillmore	Fillmore Street	24 hours daily	9/8	16,800
49 Mission/Van Ness	Van Ness Avenue	6:00 AM - 1:15 AM	8/8	26,800
47 Van Ness	Van Ness Avenue	6:00 AM - 1:15 AM	10/10	13,100
19 Polk	Polk Street	5:20 AM to 1:30 AM	15/15	7,600
27 Bryant	Leavenworth Street/ Jones Street	5:00 AM to 1:00 AM	15/15	7,900
30 Stockton	Mason Street/ Kearny Street	5:20 AM to 1:30 AM	7.5/8	32,400
45 Union Stockton	Mason Street/ Kearny Street	5:30 AM to 1:00 AM	8/12	11,700
Golden Gate Transit Route 92	Park Presidio to Webster Street	AM Peak and PM Peak Only	Between 30 and 60/between 30 and 60	230
BART	Market Street at Montgomery BART	4:00 AM to 12:00 AM	3/3	44,300 <del>39,000</del> *

Connecting services at Market Street include the 9-San Bruno, 9L-San Bruno Limited, F-Market & Wharves, J-Church, KT-Ingleside/Third Street, L-Taraval, M-Ocean View, and N-Judah routes.

Connecting services at Market Street and Sansome Street include the 10-Townsend and 12-Folsom/Pacific routes.

Connecting services at Market Street between 3rd and 5th Streets include the 8X Bayshore Express, 8AX-Bayshore A Express, 8BX-Bayshore B Express, and 81X-Caltrain Express (NB Only) routes.

\*Average Weekday Entries to Montgomery Street BART Station, 2015September-2013.

Source: SFMTA, 2013; BART, 2013; Golden Gate Transit, 2013.

*Page 3.3-18, text and figure edits (Figure 3.3-10) to correct minor typographical errors*

### 3.3.4.1 | FUTURE GEARY CORRIDOR RIDERSHIP

Projections of future Geary corridor bus ridership show that weekday Geary corridor boardings would increase by approximately ~~29~~21 percent from over 50,000 in 2012 to about ~~70,000~~64,000 in the year 2020. Ridership is projected to increase by an additional ~~24~~19 percent to ~~nearly 84,000~~about 77,000 in 2035 under the No Build Alternative; this ridership increase is related directly to the expected increases in study area population. The No Build and build alternatives would result in higher ridership on Geary corridor bus routes.

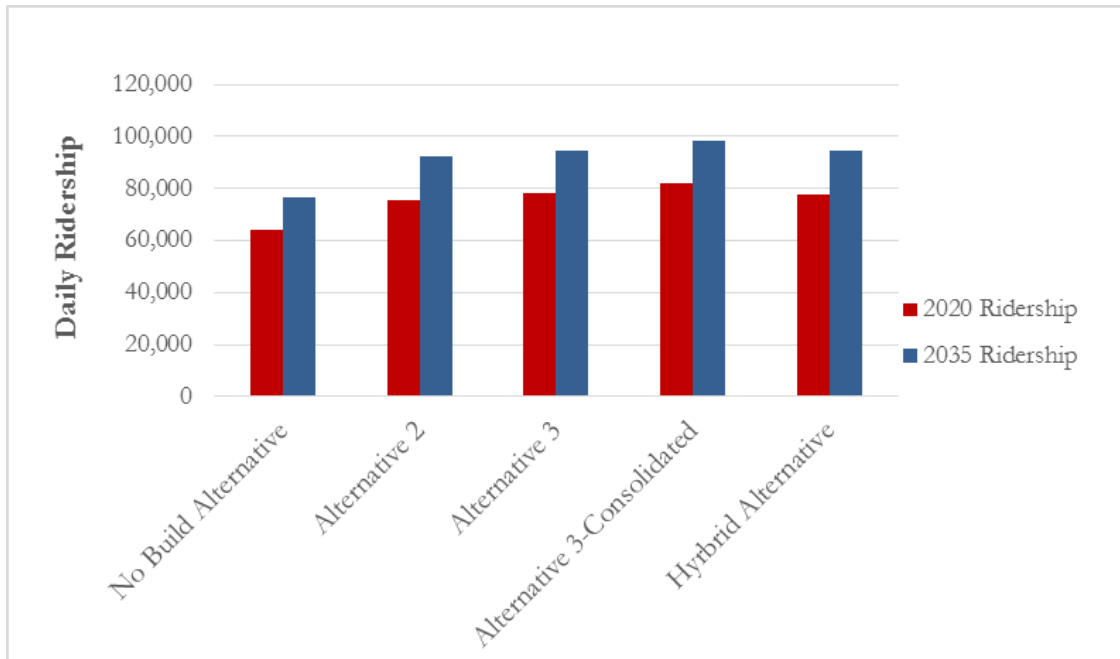
In 2020, the build alternatives would result in daily transit boardings ~~ranging between 75,000 and 82,000 boardings (9 percent to 18 percent higher than in the No Build Alternative)~~ of up to 82,000 boardings (28 percent higher than in the No Build Alternative). In 2035, the build alternatives would serve between 92,000 and 99,000 daily transit riders (~~44~~20 percent to ~~48~~28 percent higher than in the No Build Alternative).

In both future years, Alternative 2 would attract the lowest amount of ridership among the build alternatives. Meanwhile, Alternative 3-Consolidated would serve the highest number of projected transit trips. Alternatives 3 and the Hybrid Alternative would attract ridership levels somewhere between those of Alternatives 2 and 3-Consolidated. Alternative 3-Consolidated would attract more riders than the other build alternatives because it would offer the shortest waiting times and the shortest average walking distances to stations. In the other build alternatives, travelers may need to wait for a local service or an express service, under Alternative 3-Consolidated all riders would board the first bus that shows up. Since the overall level of service is similar in each scenario, Alternative 3-Consolidated would offer the shortest waiting times. By providing high frequency and rapid service at all stations, Alternative 3-Consolidated would offer shorter walking distances for travelers wishing to use a limited or BRT service. Ridership under Alternative 3-Consolidated would suffer from longer minimum walking distances to all stations and slightly slower travel speeds, but the benefit of more BRT stations and shorter waiting times would do more to attract ridership than the lack of local stops and slower travel speeds would to discourage riders. Projected ridership for 2020 and 2035 is presented in Figure 3.3-10.<sup>3</sup> As shown, projected daily ridership for 2020 varies by build alternative between ~~70,000~~75,000 and ~~over 80,000~~nearly 82,000. By 2035, build alternative daily ridership would approach 100,000 for Alternative 3-Consolidated.

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<sup>3</sup> The only change to Figure 3.3-10 from the Draft EIS/EIR is to the No Build Alternative ridership number bars, thus this change is not shown in the strikethrough underline format.

Figure 3.3-10 2020 and 2035 Daily Transit Ridership



Page 3.3-19, changes in response to staff-initiated modifications (Retention of Spruce/Cook Local/Express Stops)

**Table 3.3-4 Number of Bus Stops between 34th Avenue and Market Street**

STOP COUNT	ALTERNATIVE				
	NO BUILD ALTERNATIVE	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3-CONSOLIDATED	HYBRID ALTERNATIVE
<b>LOCAL STOPS</b>					
Eastbound Local Stops	33	30	27	NA	22
Westbound Local Stops	34	31	28	NA	25
<b>BRT STOPS</b>					
Eastbound BRT/Limited Stops	15	12	13	20	<del>16</del> <u>15</u>
Westbound BRT/Limited Stops	16	13	14	21	<del>17</del> <u>16</u>

Source: Fehr & Peers, 2014

**Table 3.3-5 Average Bus Stop Spacing from 33rd Avenue to Kearny Street**

SERVICE TYPE	AVERAGE STOP SPACING IN FEET				
	NO BUILD ALTERNATIVE	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3-CONSOLIDATED	HYBRID ALTERNATIVE
<b>AVERAGE STOP SPACING (IN FEET)</b>					
BRT/Limited Stops	1540	2180	2180	1310	<del>1630</del> <u>1740</u>
Local Stops	720	840	960	1310	1190
<b>AVERAGE DISTANCE TO STOP (IN FEET)</b>					
BRT/Limited Stops	380	540	540	330	<del>410</del> <u>440</u>
Local Stops	180	210	240	330	300

Source: Fehr & Peers, 2014

Page 3.3-20, text edits to correct minor typographical errors

**3.3.4.4 | BUS TRAVEL TIMES (2020)**

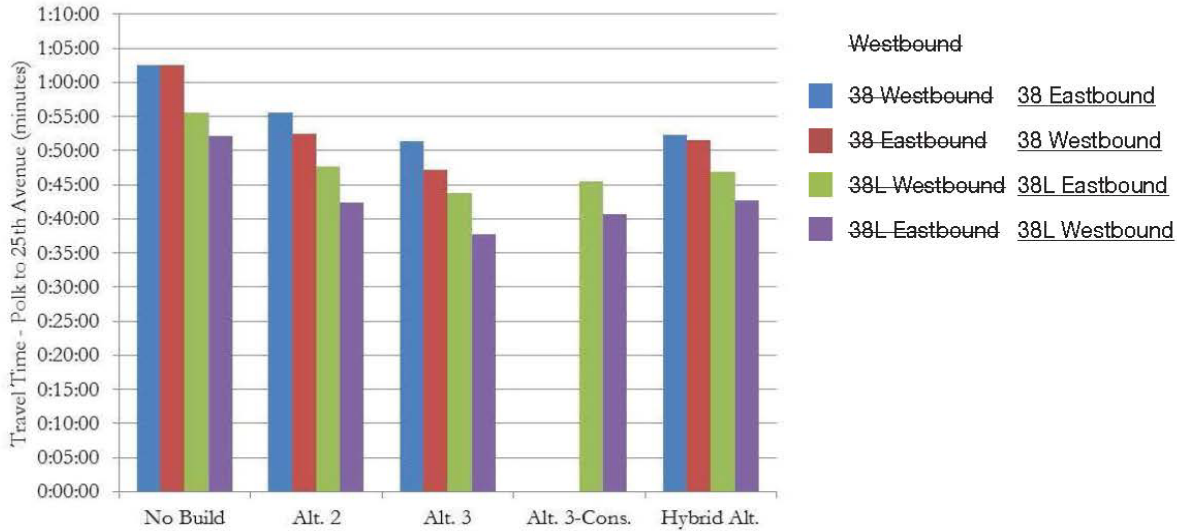
In future scenarios, bus travel times are expected to vary by alternative. In all 2020 scenarios, the No Build Alternative would result in the highest travel times. In the No Build Alternative, anticipated infrastructure improvements will marginally improve travel time, but future increases in traffic will offset any benefits of these basic improvements.

Alternatives 3 and 3-Consolidated would have center-running lanes that help reduce travel times. Alternatives 3 and 3-Consolidated have the lowest travel time of all alternatives in 2020, with reductions in travel time of between 15 and 30 percent relative to the No Build Alternative for the entire Geary corridor. For the segment between Van Ness Ave and 25th Ave where the build alternatives would have the greatest impact, travel time reductions would be between 30 and 40 percent. Alternative 2 and the Hybrid Alternative would reduce travel times by 10 to 20 percent for the entire Geary corridor and by 15 to 30 percent between Van Ness Ave and 25th Ave.

Tables 3.3-7 and 3.3-8 and Figures 3.3-11 and 3.3-12 show travel times by alternative in 2020 and 2035. Tables 3.3-6 and 3.3-9 display the percent reduction in travel times from the No Build Alternative.

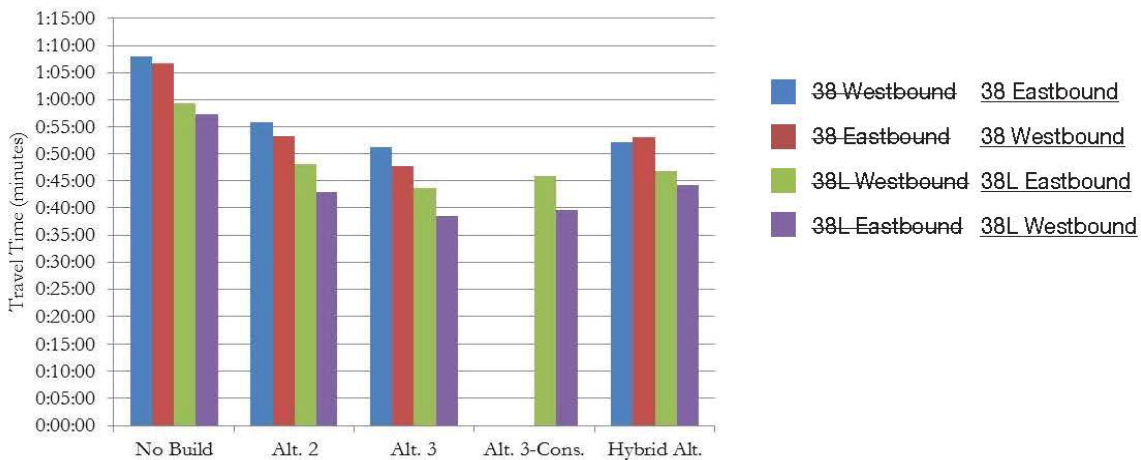
Page 3.3-21 and 3.3-23, figure edits

**Figure 3.3-11 Year 2020 Geary Corridor Bus Travel Times (Entire Corridor, 48<sup>th</sup> Avenue to Transbay Terminal)**



Source: Fehr & Peers and SFCTA, 2014

**Figure 3.3-12 Year 2035 Geary Corridor Bus Travel Times (Entire Corridor, 48<sup>th</sup> Avenue to Transbay Terminal)**



Source: Fehr & Peers and SFCTA, 2014



## 3.4 Automobile Traffic

### Summary of Draft EIS/EIR Findings

Section 3.4 of the Draft EIS/EIR analyzed the potential for the alternatives to result in adverse impacts to automobile traffic. The analysis in the Draft EIS/EIR was based on travel forecasting and assignment models including the SF-CHAMP, Dynamic Traffic Assignment, VISSIM and Synchro. The Draft EIS/EIR examined the potential for the alternatives to affect automobile travel time delay, intersection delay/level of service (LOS), system-wide multi-modal delay, and vehicle miles traveled. Traffic operations were analyzed at 49 on-corridor intersections and 29 off-corridor intersections for three project years: existing conditions (2012); the anticipated project opening year (2020); and the project horizon year (2035).

Section 3.4.2 of the Draft EIS/EIR reported that traffic volumes on the Geary corridor are generally higher than those on many other corridors in San Francisco. The speed limit on Geary is 25 miles per hour throughout the corridor, with the exception of Masonic Street to Gough Street, where the speed limit is 35 miles per hour in both directions (where the roadway serves as an expressway). Most Geary corridor intersections currently operate at LOS C or better. However, the unsignalized intersection of Presidio Avenue and Geary Boulevard currently operates at LOS E. Daily weekday VMT in San Francisco is expected to increase by 4.3 percent from existing conditions under the 2020 No Build Alternative.

Section 3.4.4 of the Draft EIS/EIR concluded that traffic operations under any of the build alternatives, including the Hybrid Alternative/SRA, would not severely inhibit circulation for automobiles in the Geary corridor in 2020 or 2035. Although levels of peak hour traffic congestion would increase at some intersections by varying degrees depending on the build alternative, the Geary corridor cannot feasibly be widened to accommodate higher automobile volumes without acquisition and demolition of existing buildings. Additionally, overall corridor travel times for automobile traffic would be similar under each of the build alternatives.

In terms of potential automobile traffic effects, the Draft EIS/EIR noted that by 2020 and 2035, the Hybrid Alternative/SRA was projected to have less overall PM peak hour traffic on Geary Boulevard than the No Build Alternative. The reduction in traffic with the build alternatives is primarily due to the reduction in traffic capacity caused by the removal of mixed travel lanes, but also due to improved transit service. As Geary corridor transit service improves, some drivers would switch travel modes from driving to transit for travel on the Geary corridor.

Notwithstanding the above, Draft EIS/EIR reported that the Hybrid Alternative/SRA would cause adverse effects at four study intersections in 2020; three on-corridor intersections and one off-corridor intersection. Additionally, three intersections would continue to operate at LOS E or F during the PM peak hour under the Hybrid Alternative/SRA, but would not be adversely affected by the project. The Hybrid Alternative/SRA would cause adverse effects at eight study intersections in 2035; four on-corridor intersections and four off-corridor intersections. Additionally 11 intersections would continue to operate at LOS E or F during the PM peak hour, but would not be adversely affected by the project.

Increased traffic delay at some intersections would not adversely affect multimodal travel on the Geary corridor (as discussed in Section 3.3.4 of the Draft EIS/EIR). Because traffic operations were evaluated during worst-case PM peak hour conditions and because non-peak hour traffic operations would be substantially better, the build alternatives would not create severely congested roadway operations throughout the day.

Each build alternative would incorporate features that would help avoid or minimize traffic congestion attributable to the features of the proposed project. These features include: optimized signal timing, signal priority for transit vehicles on Geary Boulevard (benefitting east-west traffic movements), reduced left-turn movements along the Geary corridor, and the addition of new right-turn pockets at key locations. With these features, the overall travel times for automobile traffic along the corridor would not substantially change under the build alternatives.

The Draft EIS/EIR reported that daily weekday VMT in San Francisco is expected to increase by 4.3 percent from existing conditions under the 2020 No Build Alternative. Relative to VMT under 2020 No Build, the Hybrid Alternative/SRA is projected to result in a decrease in VMT by about 0.1 to 0.4 percent. These numbers indicate that the project could enhance transit service levels without causing major disruptions to vehicular traffic patterns in San Francisco. Similarly, in 2035, the Hybrid Alternative/SRA would decrease VMT relative to the No Build Alternative by approximately 0.4 percent.

The Draft EIS/EIR included several minimization measures and standard practices would be employed to reduce the need for mitigation measures. At all intersections along Geary Boulevard, measures that would reduce automobile delay may include intersection widening, removal of parking lanes, addition of travel lanes or other strategies to increase intersection capacity. Providing additional travel lanes or otherwise increasing vehicular capacity at these intersections is not feasible because it would require narrowing sidewalks to deficient widths and/or demolition of adjacent buildings. Signal timing adjustments may improve intersection operations, but major timing changes would be infeasible due to traffic, transit, or pedestrian signal timing requirements. Other measures to increase capacity, such as the use of tow away zones or other parking prohibitions to add through lanes or turn pockets, would worsen pedestrian conditions by eliminating the buffer between pedestrians and moving traffic that on-street parking provides. This would increase exposure of pedestrians at intersections that would not support project goals for pedestrian comfort and safety. The Draft EIS/EIR found that because no feasible measures exist to reduce project impacts at the 11 affected intersections, traffic effects at these intersections under the associated build alternative would remain substantial and adverse.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to result in new or worsened effects to automobile traffic.

#### ***Retention of Webster Street Pedestrian Bridge***

The retention of the Webster Street pedestrian bridge would result in greatly reduced construction-period impacts to traffic at Webster and Geary, as the proposed modification would eliminate demolition and major excavation work that would have been required under the previous proposal to demolish the existing bridge. Retention of the bridge would not change the number or capacity of proposed mixed-flow traffic lanes; therefore, no new or worsened traffic impacts would occur as a result of the bridge retention and crossing modification.

### ***Retention of Spruce-Cook Local/Express Stops***

Regarding the Hybrid Alternative/SRA changes in the Spruce-Cook area, the changes propose removal of the originally proposed BRT stops from the Spruce-Cook block of Geary Boulevard. Existing eastbound and westbound local/express bus stops on this block would remain and their lengths would be slightly reduced. There would be no change to mixed-flow traffic lanes, and therefore no change to automobile travel times or delay. This proposed modification would reduce construction impacts as new block-long BRT stops would not be constructed and the existing eastbound and westbound bus stops would be reduced in length through painting/restriping. Construction-period effects related to this modification would not result in any new or worsened effects to automobile traffic require any avoidance, minimization, or mitigation measures not already identified in the Draft EIS/EIR.

### ***Additional Pedestrian Improvements***

The Hybrid Alternative/SRA as described in the Draft EIS/EIR included the implementation of 65 pedestrian crossing bulbs throughout the Geary corridor; the modified Hybrid Alternative/SRA would include 26 additional pedestrian crossing bulbs at numerous locations through the Geary corridor. These pedestrian improvements would require conversion of a total of 25 on-street parking spaces to non-parking use. None of these improvements would require any space from an existing or future automobile travel lane. Since traffic modeling in the Draft EIS/EIR assumed that all turning movements would occur only from existing or proposed travel lanes, none of the pedestrian improvements added to the Hybrid Alternative/SRA would have any potential to result in any new or worsened traffic impacts relative to the conclusions expressed in the Draft EIS/EIR.

### **Other Changes to the Draft EIS/EIR**

#### ***Regulatory Requirements Change: Vehicle Miles Traveled***

The following changes to Draft EIS/EIR Section 3.4, Automobile Traffic, are needed to address San Francisco's adoption of revised transportation impact CEQA thresholds pursuant to Senate Bill 743 through Planning Commission Resolution 19579 (further discussed below) as well as to provide minor corrections to the text.

Senate Bill 743, signed in 2013, requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to automobile level of service (LOS) for evaluating transportation impacts. In January 2016, OPR published a revised proposal for changes to the CEQA Guidelines recommending vehicle miles traveled (VMT) as opposed to LOS as the primary metric of transportation impact across the State of California. San Francisco adopted OPR's proposed CEQA Guidelines in March 2016 through Planning Commission Resolution 19579. This resolution removes automobile delay as a significant impact on the environment under CEQA and replaces it with a VMT threshold for the City's CEQA determinations going forward.

The Draft EIS/EIR utilized LOS-based analysis, since it was the City's metric for evaluating transportation impacts at the time of preparation and publication of the Draft EIS/EIR. As noted in the Draft EIS/EIR, the LOS-based analysis led to several substantial, adverse impacts at intersections along and near the Geary corridor. These include four study intersections in the year 2020 and eight study intersections in the year 2035, as expressed on Draft EIS/EIR page 3.4-59:

- Parker Street and Geary Boulevard (2035)
- Laguna Street and Geary Boulevard (2020, 2035)
- Gough Street and Geary Boulevard (2020, 2035)
- Van Ness Avenue and Geary Boulevard (2020, 2035)
- California Street and Arguello Boulevard (2035)
- California Street and Presidio Avenue (2035)
- Fulton Street and Stanyan Street (2020, 2035)
- Anza Street and Park Presidio Boulevard (2035)

For the reasons outlined above, none of the changes to the Hybrid Alternative/SRA or the VMT policy change would alter any of these impact conclusions from the Draft EIS/EIR.

In sum, this Final EIR is updating the regulatory information in the Draft EIS/EIR to reflect the City's policy decision regarding the VMT metric. Notably, this Final EIR is retaining all LOS-based traffic impact conclusions from the Draft EIS/EIR.

Please also see **Appendix A** (Errata Summary), which reflects updates to Draft EIS/EIR Chapter 7 (CEQA Analysis), to which VMT-based significance criteria have been similarly appended.

*Page 3.4-7, text changes to provide additional discussion of regulatory changes*

LOS ~~has been~~ is a performance metric used by the City to evaluate intersection operations for automobiles. ~~However, pursuant to Planning Commission Resolution 19579, automobile delay as described by LOS is no longer considered a significant impact on the environment pursuant to CEQA.~~<sup>4</sup>~~The City has recently been studying potential alternative metrics that could be used in addition to, or in lieu of LOS as a performance metric. Additionally, in September 2013, the Governor signed Senate Bill 743, which established a process to change the analysis of transportation impacts under CEQA to include alternative performance metrics. Based on the draft alternative methods of transportation analysis currently proposed by the Governor's Office of Planning and Research, several alternatives are being considered to evaluation transportation conditions, including the change in Vehicle Miles Traveled (VMT) resulting from a proposed project. As a result, and consistent with the evaluation of other recent projects in San Francisco, as well as recent statewide guidance,~~ this chapter includes information on LOS as well as other automobile performance metrics, including project-related changes to travel times, reliability, and VMT.

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<sup>4</sup> Because the public comment period for the Draft EIS/EIR ended before the Planning Commission's adoption of Resolution 19579, the analysis of LOS has been retained in this document. This Final EIR considers traffic impacts of the proposed project under both LOS and VMT.

*Page 3.4-8, text changes to provide additional discussion of regulatory changes*

#### 3.4.2.6 | REGIONAL AND CITY VEHICULAR MILES TRAVELED

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has a lower VMT ratio than the nine-county San Francisco Bay Area region. In addition, some areas of the City have lower VMT ratios than other areas of the City. These areas of the City can be expressed geographically through transportation analysis zones. Transportation analysis zones are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

For example, for households, the regional average daily household VMT per capita is 17.2. The City's average daily household VMT per capita is 8.4.

*Page 3.4-8, text changes to provide additional discussion of regulatory changes*

Traffic conditions were analyzed at 49 on-corridor intersections and 29 off-corridor intersections. As previously mentioned, the PM peak period was chosen as the analysis time period as it represents the period when the maximum use of the transportation system occurs. It is also consistent with the approach suggested in the San Francisco Planning Department's *Transportation Impact Analysis Guidelines*.

SFCTA uses SF-CHAMP to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings.

*Page 3.4-27, text edits to make minor clarifications/correct typographical errors in the Draft EIS/EIR*

#### 3.4.4.5 | EFFECTS ON TAXI AND SHUTTLE OPERATIONS

The build alternatives would not affect taxi or shuttle operations beyond the effects of the project on private vehicle traffic. Through roadway signing and marking, as well as enforcement, taxis and shuttles would not be permitted to use the dedicated center-running bus-only lanes along the Geary corridor. In locations where buses would operate next to the curb, parking would be prohibited; however, loading zones for taxis and shuttles would be provided at upstream or downstream curb space. Please refer to 3.6, Parking and Loading Conditions.

*Page 3.4-56, text edits needed to amend typographical errors in the Draft EIS/EIR*

#### ***Hybrid Alternative (2035)***

The Hybrid Alternative would cause adverse effects at eight study intersections in 2035; four on-corridor intersections and four off-corridor intersections:

- 1) **Parker Street and Geary Boulevard (signalized)**
  - **2035 No Build Conditions:** LOS D
  - **2035 Hybrid Alternative Conditions:** LOS E

**Reason for effect:** The intersection LOS would degrade under Hybrid Alternative ~~3-Consolidated~~ conditions. This overall decrease in delay is primarily attributable to an increase in delay in the north- and southbound directions.
- 2) **Laguna Street and Geary Boulevard (signalized)**
  - **2035 No Build Conditions:** LOS F
  - **2035 Hybrid Alternative Conditions:** LOS E

**Reason for effect:** The effect of the Hybrid Alternative ~~3-Consolidated~~ under 2020 Conditions would be considered an adverse effect. This would also be considered an adverse effect under 2035 Conditions.
- 3) **Gough Street and Geary Boulevard (signalized)**
  - **2035 No Build Conditions:** LOS F
  - **2035 Hybrid Alternative Conditions:** LOS F

**Reason for effect:** The effect of the Hybrid Alternative ~~3-Consolidated~~ under 2020 Conditions would be considered an adverse effect. This would also be considered an adverse effect under 2035 Conditions.
- 4) **Van Ness Avenue and Geary Boulevard (signalized)**
  - **2035 No Build Conditions:** LOS F
  - **2035 Hybrid Alternative Conditions:** LOS E

**Reason for effect:** The effect of the Hybrid Alternative ~~3-Consolidated~~ under 2020 Conditions would be considered an adverse effect. This would also be considered an adverse effect under 2035 Conditions.
- 5) **California Street and Arguello Boulevard (signalized)**
  - **2035 No Build Conditions:** LOS D
  - **2035 Hybrid Alternative Conditions:** LOS E

**Reason for effect:** The intersection LOS would degrade under Hybrid Alternative conditions. This overall decrease in delay is primarily attributable to an increase in delay in the east- and westbound directions.
- 6) **California Street and Presidio Avenue (signalized)**
  - **2035 No Build Conditions:** LOS D
  - **2035 Hybrid Alternative Conditions:** LOS E

**Reason for effect:** The intersection LOS would degrade under Hybrid Alternative conditions. This overall increase in delay is primarily attributable to increased volumes and subsequent delays on the eastbound and westbound through movements.
- 7) **Fulton Street and Stanyan Street (signalized)**
  - **2035 No Build Conditions:** LOS F
  - **2035 Hybrid Alternative Conditions:** LOS F

**Reason for effect:** The effect of the Hybrid Alternative under 2020 Conditions would be considered an adverse effect. This would also be considered an adverse effect under 2035 Conditions.

**8) Anza Street and Park Presidio Boulevard (signalized)**

- **2035 No Build Conditions:** LOS E
- **2035 Hybrid Alternative Conditions:** LOS E

**Reason for effect:** The intersection would continue to operate at the same LOS with the Hybrid Alternative ~~3-Consolidated~~. The Hybrid Alternative ~~3-Consolidated~~ would not increase the overall intersection LOS to a significant degree, although it would contribute to the worsening of delay via an increase in traffic volumes to the westbound critical movement that would be considered significant.

Additionally the following 11 intersections would continue to operate at LOS E or F during the PM peak hour under the Hybrid Alternative ~~3-Consolidated~~, but would not be adversely affected by the project:

- Wood Street and Geary Boulevard
- Lyon Street and Geary Boulevard
- Divisadero Street and Geary Boulevard
- Scott Street and Geary Boulevard
- Steiner Street and Geary Boulevard
- Webster Street and Geary Boulevard
- Van Ness Avenue and O'Farrell Street
- Fulton Street and Park Presidio Boulevard
- Bush Street and Franklin Street
- Polk Street and Hyde Street
- O'Farrell Street and Hyde Street

## 3.5 Pedestrian and Bicycle Transportation

### *Summary of Draft EIS/EIR Findings*

The Draft EIS/EIR analyzed the potential for the alternatives to result in adverse impacts to pedestrian and bicycle modes of transportation. These impacts are summarized here. The analysis in the Draft EIS/EIR was based on technical reports prepared for the Geary BRT Project, including a Pedestrian Safety Analysis and Recommendations (Appendix D-8 of the Draft EIS/EIR). The Draft EIS/EIR examined the potential for the alternatives to affect pedestrians and bicyclists in terms of pedestrian delay, sidewalk conditions, pedestrian safety, access for senior and persons with disabilities, and bicycle delay.

The Draft EIS/EIR noted in Section 3.5.2 that there are high pedestrian volumes on the entire Geary corridor, especially during peak commute hours. Based on existing counts and travel assumptions from the SF-CHAMP model, there are over 38,000 walking trips along the Geary corridor during the evening peak hour.

The study area is home to a significant population of seniors, as approximately 40 senior centers are located within a quarter mile of the Geary corridor. The corridor is also heavily used by people

with disabilities, including people who use wheelchairs, are deaf, and/or are blind. On some segments of the corridor, such as the blocks between Masonic Avenue and Gough Street, long block lengths combined with long crossing distances restrict pedestrian connectivity. Pedestrian crossing distances, i.e., the length across the roadway between curb ramps, vary along the Geary corridor. Crossing distances gradually increase from approximately 50 feet near 48th Avenue to approximately 125 feet between Divisadero Street and Gough Street.

The Mayor's Pedestrian Strategy and WalkFirst Study identified the Geary corridor as a high pedestrian injury corridor, especially for collision types involving a left-turning vehicle, high speeds, and pedestrians crossing without a crosswalk. The Geary corridor is home to a large senior population; about 20 percent of pedestrians injured along the corridor are seniors.

Geary Boulevard currently has no separated right-of-way for bicycle facilities, except for one block between Presidio Avenue and Masonic Avenue (Class III). Cyclists must therefore share travel lanes with all other traffic. As a result of these unfavorable bicycling conditions, few bicyclists currently travel along the corridor. Geary carries the fewest bicyclists of all nearby parallel east-west streets, with less than five bicyclists per hour in the morning and afternoon peak periods.<sup>5</sup> However, many cyclists cross Geary Boulevard at various locations. During a five-year period (2006-2010), there were 69 reported bicycle collisions in the Geary corridor, or approximately 14 per year. Bicycle collisions are more common east of Van Ness Avenue and on streets parallel to or crossing Geary rather than along Geary itself.

Section 3.5.4 of the Draft EIS/EIR noted that overall pedestrian delay would not substantially change under Alternative 2 and the Hybrid Alternative/SRA relative to No Build conditions, as signal phasing would largely remain similar to existing conditions. Conversely, Alternatives 3 and 3-Consolidated would have slightly higher pedestrian delay than the No Build Alternative, caused by differences in signal phasing. The Draft EIS/EIR found that the average pedestrian delay during the PM peak hour would be roughly 25-30 seconds per person traversing the corridor for Alternative 2 and the Hybrid Alternative/SRA, and 35-40 seconds per person for Alternatives 3 and 3-Consolidated.

Curb-to-curb crossing distance would not vary substantially between the No Build and build alternatives. In center-running segments of the Hybrid Alternative/SRA, curb-to-curb crossing distances would be divided by a center median and signal. Therefore the total crossing distance would not increase, and the center median would provide refuge for pedestrians not able cross both segments of Geary in one signal length.

The section of the Hybrid Alternative/SRA west of Palm Avenue would have center-running transit operations. In these locations, protected left turn signal phasing for automobiles would be provided, thus reducing potential vehicle-pedestrian conflicts at intersections with left-turns from Geary Boulevard to side streets. People with visual impairments may have difficulty identifying locations of bus stops in sections of the corridor with center-running transit operations, but design features such as tactile cues on signal posts would provide wayfinding information to people with visual impairments.

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<sup>5</sup> SFCTA & SFMTA. 2008. Bicycle Demand Study.



Bicycle volumes on Geary are expected to increase by approximately 20 percent by 2020 and by 30 percent by 2035 compared to existing volumes. The Hybrid Alternative/SRA would include enhanced bicycle accommodations on Geary Boulevard on the one block between Presidio Avenue and Masonic Avenue. This would include designated bicycle lanes in both directions as well as enhanced treatments to promote cyclist visibility. The Hybrid Alternative/SRA would not be expected to adversely affect bicycling delays in the corridor. Bicycle delay per person during the PM peak hour would be roughly 60-80 seconds per person bicycling along the corridor.

In summary, the Draft EIS/EIR concluded that there would be no adverse effects to pedestrian and bicycle circulation along the Geary corridor as a result of the project and thus no avoidance, minimization, or mitigation measures related to pedestrians or bicycles were necessary. However, Section 3.5.5 of the Draft EIS/EIR did identify a number of improvement measures to enhance the pedestrian and bicycle environment. These are set forth in **Appendix C of this Final EIR**.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects to pedestrians and bicycles.

#### ***Retention of Webster Street Pedestrian Bridge***

The retention of the Webster Street pedestrian bridge and addition of two pedestrian surface crossings on either side of the Webster Street bridge (a straight crossing on the west side of the intersection and a staggered crossing on the east side) would yield benefits related to pedestrian safety, as there would be street-level crossings in addition to the overhead crossing. Pedestrians would have the option to use either the new surface crossings or the existing Webster Street pedestrian overcrossing. The staggered crossing would improve pedestrian sight distance at the westbound frontage road, as pedestrians would cross in front of the existing bridge pier so the pier would not obstruct sight lines between crossing pedestrians and approaching vehicles. A pedestrian barrier would be installed on the center median to guide pedestrians to the second crossing.

#### ***Retention of Spruce/Cook Local/Express Stops***

The Hybrid Alternative/SRA would no longer add BRT stops and associated full block bus bulbs to the Spruce-Cook block of Geary Boulevard and would retain the current local/express bus stops in this area. Given that there would only be no BRT stops on this block, the walking distance between BRT stops would increase by approximately five blocks in this area. In addition, changes to the Hybrid Alternative/SRA include one additional pedestrian crossing bulb in this area to better facilitate pedestrian movement and crossings. Thus, the mixed effects of increased walking distance between BRT stops, but enhanced pedestrian conditions with the addition of a pedestrian crossing bulb, would offset one another. Accordingly, the removal of the BRT stops at Spruce/Cook as part of changes to the Hybrid Alternative/SRA would not result in any new or worsened pedestrian or bicycle effects.

#### ***Additional Pedestrian Improvements***

The third modification to the Hybrid Alternative/SRA includes incorporating additional pedestrian crossing improvements to further enhance pedestrian safety at high priority locations along the Geary corridor. The proposed modifications would include pedestrian bulbouts, painted safety zones, and daylighting at various intersections. These improvements would reduce pedestrian crossing distances and improve pedestrian visibility to drivers, which would help to

increase the overall safety of pedestrians in the corridor. Pedestrian crossing bulbs help reduce curb-to-curb crossing widths and the time needed to cross a roadway, especially for slower-moving pedestrians, through an extension of the sidewalk into the intersection. Additional benefits include increased pedestrian visibility, a larger pedestrian queuing area, traffic calming impacts by visually and physically narrowing the roadway, and extra space for curb ramps. This results in improved visibility for seniors and people with disabilities, and additional curb space for wheelchair maneuvering. Therefore, the addition of more pedestrian safety features would not result in any new or worsened pedestrian or bicycle effects. None of the Hybrid Alternative/SRA changes described above would require new avoidance, minimization, or mitigation measures.

### Changes to the Draft EIS/EIR

As a result of the foregoing, several text changes to the Draft EIS/EIR are needed to reflect the changes to the Hybrid Alternative/SRA introduced in this Final EIR, as well as to correct an erroneous reference to a Draft EIS/EIR appendix (the Pedestrian Safety Analysis and Recommendations was provided in Appendix D-8).

*Page 3.5-6, text edits to correct minor typographical errors*

The Mayor's Pedestrian Strategy and WalkFirst Study identified the Geary corridor as a high pedestrian injury corridor, especially for collision types involving a left-turning vehicle, high speeds, and pedestrians crossing without a crosswalk. Appendix D-~~84~~ (~~Geary Corridor Pedestrian Safety Analysis and Recommendations~~) describes pedestrian collision characteristics and recommends countermeasures, including those recommended through the WalkFirst Investment Strategy.

Figure 3.5-1 displays pedestrian-automobile collisions along the Geary corridor from 2007-2011 (Statewide Integrated Traffic Records System, 2014). The figure illustrates that the majority of collisions occurred east of Divisadero, although some portions to the west also experienced high concentrations of pedestrian collisions. In particular, some intersections between Arguello Boulevard and 25th Avenue have higher than average numbers of pedestrian collisions.<sup>6</sup> The Geary Corridor Pedestrian Safety Analysis confirms that segments east of Divisadero Street experienced the highest number of severity-weighted pedestrian injuries per-mile along the Geary corridor, followed by the segment from Cook Street to 22nd Avenue. The latter segment also experienced overrepresented shares of collisions involving left turning vehicles (about 40 percent versus 25 percent city-wide) and involving seniors (about 30 percent compared to 14 percent citywide).

*Page 3.5-8, text edits to correct minor typographical errors*

The Geary corridor is home to a large senior population; about 20 percent of pedestrians injured along the corridor are seniors (see Appendix D-~~84~~). Figure 3.5-2 shows existing senior centers and stop locations along the Geary corridor.

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<sup>6</sup> Appendix D-~~84~~ provides more detail on the corridor collision history by breaking down the corridor into seven segments and comparing their collision history.

Page 3.5-11, text edits to correct minor typographical errors

The Geary corridor does not have a dedicated bicycle facility, and few bicyclists currently travel along the corridor - Geary carries the fewest bicyclists of all nearby parallel east-west streets, with less than 5 bicyclists per hour in the morning and afternoon peak periods.<sup>7</sup> However, many cyclists cross Geary Boulevard at various locations. Bicycle volumes are over two hundred percent heavier east of Masonic Avenue on Geary Boulevard and Geary Street than west of Masonic Avenue. See Appendix D-84 for additional information on existing bicycle volumes along the Geary corridor.

Page 3.5-16, text edits to reflect staff-initiated changes (additional pedestrian improvements)

Pedestrian crossing bulbs and median nose cones reduce roadway crossing distances and provide refuge and improve visibility of the pedestrian to vehicle traffic, therefore reducing their exposure to traffic. As described in Chapter 2, the build alternatives project includes a provision of bulbouts to enhance transit access. The build alternatives project also includes a provision for 54 additional pedestrian crossing bulbs to improve pedestrian safety at high priority locations (Appendix D-84 provides detail on the process for selecting high priority locations for bulbouts). These bulbouts would add to the 14 corner bulbouts already planned to be completed along the Geary corridor in the No Build Alternative for a total of 65 new bulbouts. The Hybrid Alternative/SRA as revised would provide 26 additional pedestrian crossing bulbs, for a total of 91 bulbs including the 65 bulbs previously included.

Page 3.5-17, table edits to reflect staff-initiated changes (additional pedestrian improvements)

**Table 3.5-4 Number of Additional Pedestrian Crossing Bulbs by Alternative**

	NO BUILD ALTERNATIVE	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3-C	HYBRID ALTERNATIVE
Number of Pedestrian Crossing Bulbs Provided to Improve Pedestrian Safety (compared to existing conditions)	14	65	65	65	<del>65</del> <u>91</u>
Pedestrian Refuges Added to Medians	No	Yes	Yes	Yes	Yes

Source: Fehr & Peers, 2014

Page 3.5-19, text edits to correct minor typographical errors

The build alternatives would provide improved access for seniors and people with disabilities in several ways. All build alternatives would add new crosswalks at intersections where crossings are restricted today, which would benefit seniors and pedestrians with disabilities by providing more frequent crossing opportunities. Several new landscaping and urban design features, such as new ADA-compliant curb ramps, improved bus waiting areas, as well as new pedestrian crossing bulbs, nose cones, and pedestrian-scale lighting, would all promote improved comfort and have potential safety benefits for seniors and people with disabilities. Proximity to senior high injury

<sup>7</sup> SFCTA & SFMTA. 2008. Bicycle Demand Study.

density corridors was considered in the selection of proposed pedestrian crossing bulb locations (see Appendix D-84).

*Page 3.5-22, text edits to correct minor typographical errors*

There would be no adverse effects to pedestrian and bicycle circulation along the Geary corridor as a result of the project. The following improvement measures would be useful strategies to allow pedestrian and bicycle travel and access to and from BRT stops and would enhance overall project performance:

- **I-PED-1.** Include WalkFirst pedestrian safety recommendations where possible as part of project design (WalkFirst recommendations described in detail in Appendix D-84).
- **I-PED-2.** Use Universal Design Principles to inform detailed engineering design of pedestrian and station facilities to enhance access for disabled persons.
- **I-PED-3.** Include state of the practice bicycle safety and design treatments for the Masonic-to-Presidio bicycle connection, including current design guidance from the City's Bicycle Plan and other state and national sources.
- **I-PED-4.** Monitor pedestrian safety on parallel streets to assess if and how changes in traffic volumes affect pedestrian safety, and identify improvements to address safety issues if necessary.

## 3.6 Parking and Loading Conditions

### *Summary of Draft EIS/EIR Findings*

The Draft EIS/EIR Section 3.6 analyzed the potential for the alternatives to result in adverse parking and loading impacts. These impacts are summarized here. The analysis was based on detailed parking and loading studies prepared for the Geary BRT Project.

As noted in Draft EIS/EIR Section 3.6.2, the Geary corridor provides a diverse supply of on-street parking and loading facilities, including metered and unmetered general parking spaces, residential parking permit zones (RPP), commercial and passenger loading zones, and parking spaces for persons with disabilities. There are an estimated total of 1,704 parking and loading spaces along the Geary corridor between 34th Avenue and Market Street. Most of the spaces identified (74 percent) are metered or non-metered general parking spaces, including spaces in RPP zones. Fourteen percent of the spaces are designated for commercial loading at some or all times, 11 percent are for passenger loading, and about one percent is parking for people with disabilities. Individual on-street spaces often vary in use between times of day and days of the week. For example, many spaces are designated for loading activities only during specified daytime hours but become general parking spaces in the evening and overnight.

The study area for the parking and loading analysis in the Draft EIS/EIR included on-street spaces on the corridor between 34th Avenue and Market Street. The analysis evaluated how changes to parking in the Geary corridor affected the overall parking supply in the area, including the supply of parking on streets surrounding the corridor and nearby publicly-accessible off-street parking. To quantify the total parking supply available, all parking and loading spaces were considered together, including unrestricted parking spaces, metered spaces, short-term spaces, and

RPP zone spaces, since many users could use one or more types of spaces. The supplies of parking and loading spaces in the corridor are largely interchangeable. The analysis is conservative (i.e., “worst-case”), as the selected distance is well within the accepted significance criterion of one-quarter to one-half mile.

Section 3.6.4 of the Draft EIS/EIR presented the change in parking and loading supply that would result from implementation of the Hybrid Alternative/SRA both in the Geary corridor as a whole as well as for identified segments of the Geary corridor. The Hybrid Alternative/SRA would not remove any off-street spaces in garages or lots. Similarly, it would not involve changes to parking and loading spaces on surrounding streets or in off-street facilities.

The Draft EIS/EIR found that changes in the location and amount of parking spaces would vary by alternative. The Hybrid Alternative/SRA would not result in the net loss of parking between Park Presidio Boulevard and Palm/Jordan Avenues (center-running bus-only lane), but would result in net parking losses in other corridor segments. The largest amount of parking supply loss in a single segment (120 or more spaces) would occur in the Broderick to Laguna segment in the Hybrid Alternative/SRA, where side-running bus lanes would be constructed.

On-street parking loss could result from construction of new station platforms, pedestrian crossing bulbs, travel lane striping to accommodate bus-only lanes, or exclusive right- and left-turn pockets. Parking gains could result from bus stop consolidation, relocation of curb bus stop locations, restriping of existing curb lanes for parking, or addition of parking spaces through restriping of existing parking.

The Hybrid Alternative/SRA would entail the relocation or removal of some commercial and passenger loading zones in the study area. However, all existing loading spaces would be replaced in close proximity to their current locations or their demand could be served with existing nearby loading zones. On Geary Boulevard between Lyon and Baker Streets, there is currently one passenger loading space along the service road on the north side of the block. The space serves Providence Place, a senior assisted living facility that does not have off-street parking or loading spaces. The parking lane along this block face is proposed for elimination with all build alternatives, including the Hybrid Alternative/SRA to accommodate a single, wider mixed-flow lane that would provide more spaces for buses to maneuver in the narrow service road. The Hybrid Alternative/SRA proposes to designate the curb lane along this block as an “active loading zone,” which would prohibit parking but allow standing. This modification would allow passenger loading to continue along the facility’s frontage but still provide most of the benefits to traffic and transit associated with parking lane removal.

In the Union Square area, approximately five commercial spaces and one passenger loading space would be removed and could not be relocated in the nearby area. Most nearby curb space is already designated for loading and general parking in the area is very scarce, resulting in few opportunities to convert parking spaces to loading spaces. Consolidation of loading zones in this area would occur in the following blocks:

- Geary Street between Mason and Powell Streets on the north side (net loss of one passenger loading space and one commercial loading space).
- Geary Street between Grant and Kearny Streets on the north side (net loss of three commercial loading spaces).
- O'Farrell Street between Stockton and Market Streets on the south side (net loss of one commercial loading space).

However, the Draft EIS/EIR found that eliminating these loading spaces would have a minimal effect on the total loading space supply in the Union Square portion of the corridor. In the section of the Geary corridor between Mason and Market Streets, 94 existing spaces (70 percent) are dedicated to commercial loading and 38 existing spaces (28 percent) are dedicated to passenger loading. A loss of six loading spaces would equate to less than 5 percent of total loading spaces in this section of Geary Street and O'Farrell Street. Most perpendicular streets in this area also have large supplies of loading spaces. The remaining loading spaces would be expected to accommodate loading demand. The project team would work with affected land uses (including local business owners) to try to improve effects of loading space consolidation.

The Draft EIS/EIR found that a net loss of parking in the Geary corridor under the Hybrid Alternative/SRA would not inhibit multimodal access in the corridor because a sufficient parking supply would remain to accommodate automobile access while improvements to pedestrian, bicycle, and transit travel would enhance access by alternative modes. The Hybrid Alternative/SRA was designed to minimize parking space removal, and additional parking spaces cannot be accommodated along the Geary corridor without reducing the pedestrian and transit performance benefits of the project. With the Hybrid Alternative/SRA, all loading spaces removed would be relocated within close proximity or would be consolidated because loading demand could be accommodated with existing nearby loading zones.

The Draft EIS/EIR identified one avoidance measure in Section 3.6.5 to further reduce the project's parking and loading effects. That measure is listed as A-PRK-4, and states "Where there are multiple options available to relocate lost loading spaces, the project team shall work with affected land uses, including businesses owners, to identify which location best meets local loading needs and the purpose and need of the project. If space is not available to relocate loading spaces, then loading spaces shall be consolidated with existing nearby loading zones that have additional capacity."

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to result in new or worsened effects to parking and loading.

#### ***Retention of the Webster Street Pedestrian Bridge***

The retention of the Webster Street pedestrian bridge would not require any changes to parking and loading spaces. Changes to the Hybrid Alternative/SRA to retain this bridge would thus not introduce any new or worsened effects regarding parking and loading.

#### ***Retention of Spruce/Cook Local/Express Stops***

The Draft EIS/EIR proposed block-long BRT stops on the Spruce-Cook block of Geary Boulevard, which would have required removal of all parking and loading spaces on that block.

Regarding the Hybrid Alternative/SRA changes in the Spruce/Cook area, without implementation of new BRT bus stops as previously proposed, approximately 10 existing parking and loading spaces on the Spruce-Cook block would be preserved. Therefore, the change in the Spruce/Cook area between the Draft and Final EIR would not introduce any new or worsened effects regarding parking and loading.

### *Additional Pedestrian Improvements*

The additional pedestrian improvements would require conversion of a total of 25 on-street parking spaces to non-parking use. Ten of these spaces would be along the Geary corridor; 15 would be along side streets. The combination of two proposed modifications to the Hybrid Alternative – these pedestrian improvements plus the aforementioned changes to the Spruce-Cook bus stops – would collectively result in a net increase of 15 on-street spaces lost on the Geary corridor, which would be a negligible portion of overall parking loss along the immediate Geary corridor as described in the Draft EIS/EIR (i.e., this change would not change the overall 3-percent decrease in area-wide parking supply under the Hybrid Alternative/SRA, as reported in the Draft EIS/EIR). Therefore, these changes to the Hybrid Alternative/SRA would not result in any new or worsened effects regarding parking and loading.

### **Changes to the Draft EIS/EIR**

As a result of the foregoing, the following text changes to Draft EIS/EIR Section 3.6, Parking and Loading Conditions, are needed to reflect the changes to the Hybrid Alternative/SRA introduced in this Final EIR. The changes below reflect the net decrease of 15 parking spaces due to the Spruce-Cook bus stop configuration changes and additional pedestrian improvements.

*Page 3.6-7, staff-initiated modifications reflecting a net decrease of approximately 15 parking spaces under the Hybrid Alternative (note that not all numbers sum correctly due to rounding)*

**Table 3.6-2 Change in Area-wide Public Parking Supply in the Geary Corridor, by Alternative and Corridor Segment**

CORRIDOR SEGMENT	ESTIMATED PUBLIC PARKING SPACES IN AREA	AREA-WIDE PUBLIC PARKING SUPPLY (WITH % CHANGE)			
		ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3-CONSOLIDATED	HYBRID ALTERNATIVE
34th Avenue - 25th Avenue	1,000	950 (-6%)	960 (-4%)	960 (-4%)	960 (-4%)
25th Avenue - Park Presidio	1,430	1,380 (-4%)	1,320 (-7%)	1,410 (-1%)	1,410 (-1%)
Park Presidio - Palm/Jordan	1,750	1,710 (-2%)	1,740 (-1%)	1,770 (+1%)	1,750 (0%)
Palm/Jordan - Broderick	1,830	1,740 (-5%)	1,710 (-7%)	1,760 (-4%)	1,740(-5%)
Broderick - Gough	3,790	3,630 (-4%)	3,700 (-2%)	3,730 (-1%)	3,660(-4%)
Corridor (34th - Gough) total	9,800	9,400 (-4%)	9,430 (-4%)	9,630 (-2%)	9,490(-3%)

Note: SFCTA rounded to nearest ten. Not all numbers sum correctly due to rounding.

Page 3.6-11, minor corrections to the text

**Table 3.6-5 Change in Parking Supply in the Masonic Study Area**

ALTERNATIVE	NUMBER OF PARKING SPACES ON GEARY	PERCENT CHANGE IN AREA PUBLIC PARKING SUPPLY
No Build	109	N/A
2	32	-7%
3	16	-9%
3-Consolidated	36	-7%
Hybrid	<del>32</del> <u>31</u>	-7%

Page 3.6-12, staff-initiated modifications and minor corrections to the text.

**Table 3.6-7 Change in Parking Supply in the Japan/Fillmore Study Area**

ALTERNATIVE	NUMBER OF PARKING SPACES ON GEARY	PERCENT CHANGE IN AREA PUBLIC PARKING SUPPLY
No Build Alternative	154	N/A
Alternative 2	60	-3%
Alternative 3	105	-2%
Alternative 3-Consolidated	105	-2%
Hybrid Alternative	<del>60</del> <u>59</u>	-3%

**Table 3.6-9 Change in Supply of Commercial Loading Spaces**

CORRIDOR SEGMENT	# SPACES: NO BUILD ALTERNATIVE	CHANGE IN NUMBER OF COMMERCIAL LOADING SPACES IN GEARY CORRIDOR							
		ALTERNATIVE 2		ALTERNATIVE 3		ALTERNATIVE 3- CONSOLIDATED		HYBRID ALTERNATIVE	
		SPACES RELOCATED	CHANGE IN TOTAL SUPPLY	SPACES RELOCATED	CHANGE IN TOTAL SUPPLY	SPACES RELOCATED	CHANGE IN TOTAL SUPPLY	SPACES RELOCATED	CHANGE IN TOTAL SUPPLY
34 <sup>th</sup> Avenue - 25 <sup>th</sup> Avenue	3	1	0	2	0	2	0	2	0
25 <sup>th</sup> Avenue - Park Presidio	10	0	0	3	0	0	0	0	0
Park Presidio - Palm/Jordan	7	0	0	1	0	0	0	0	0
Palm/Jordan - Broderick	2	0	0	1	0	0	0	0	0
Broderick - Laguna	8	4	0	2	0	2	0	4	0
Laguna - Van Ness	2	0	0	0	0	0	0	0	0
Van Ness - Market	205	6	-5	6	-5	6	-5	<del>6</del> <u>8</u>	-5
Corridor Total	237	11	-5	15	-5	10	-5	<del>12</del> <u>14</u>	-5



## CHAPTER 4 AFFECTED ENVIRONMENT, ENVIRONMENTAL CONSEQUENCES, AND AVOIDANCE, MINIMIZATION AND/OR MITIGATION MEASURES

### 4.1 Land Use

#### Summary of Draft EIS/EIR

Section 4.1 of the Draft EIS/EIR analyzed the alternatives for consistency with existing and planned land uses, consistency with adopted plans and policies, and the potential to create a new physical division within a community. In considering such effects, the Draft EIS/EIR examined existing land use patterns and all relevant plans and policies adopted by the City and County of San Francisco as well as regional agencies. Section 4.1 is summarized here.

Section 4.1.4 of the Draft EIS/EIR found that none of the alternatives (including the Hybrid Alternative/SRA) would result in any adverse or significant effects with regard to land use. The Draft EIS/EIR found that the alternatives were supportive of existing and planned land uses as well as of adopted policies and would act to reduce divisions between communities by improving both transit operations and pedestrian mobility along the corridor. No avoidance, minimization, or mitigation measures were found necessary for any of the alternatives in Section 4.1.5.

#### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to result in new or worsened effects to land use. These changes would not substantially alter bus operations, traffic patterns, or bus ridership beyond what effects were identified in the Draft EIS/EIR (see **Sections 3.3** and **3.4** of this Final EIR). Previous findings regarding consistency with existing and planned land uses, as well as adopted policies, would therefore remain unchanged.

Two of the Hybrid Alternative/SRA changes (the additional pedestrian improvements and the retention of the Webster Street bridge, both introduced in response to public comment on the Draft EIS/EIR) would have beneficial (i.e., lessening) effects with regard to existing physical divisions in the community.

Therefore, the changes to the Hybrid Alternative/SRA would not change the findings regarding consistency with adopted land use plans and existing/planned land uses as described/disclosed in the Draft EIS/EIR. On this basis, no new or worsened land use effects would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

#### Changes to the Draft EIS/EIR

No changes to the text of Draft EIS/EIR Section 4.1, Land Use, are needed with regard to the changes to the Hybrid Alternative/SRA or in response to a comment on the Draft EIS/EIR.

## 4.2 Community Impacts

### Summary of Draft EIS/EIR

Section 4.2 of the Draft EIS/EIR analyzed the potential for the alternatives to cause changes to community character or to disrupt, displace, or limit access to businesses, residences, community facilities, and other land uses. In considering such effects, the Draft EIS/EIR described social and community characteristics of the study area, including population, income and ethnicity, household size and composition, community/neighborhood characteristics, and public services and facilities, deriving data from the U.S. Census Bureau and Association of Bay Area Governments (ABAG). The Draft EIS/EIR examined whether any of the transportation-related effects of the alternatives (bus stop changes, changes to traffic and parking patterns, pedestrian and bicycle enhancements) would have the potential to impact the community.

Section 4.2.4 of the Draft EIS/EIR found that construction of the build alternatives would not result in the displacement of any business, residence, or community facility, as all work would take place in public rights-of-way. Improved community connectivity across the Geary corridor would increase accessibility to jobs and businesses. Improved mobility for pedestrians and cyclists along the Geary corridor would likely result in increased business activity and greater access for hospitals and medical centers, offices, government centers, and educational institutions in the area. The Draft EIS/EIR further found that none of the short-term traffic and mobility, visual, air quality, or noise/vibration effects resulting from construction would be adverse. To reduce temporary construction impacts to local businesses and residents, the Draft EIS/EIR identified avoidance, minimization, and mitigation measures related to air quality, noise and vibration, and traffic management in Section 4.2.5.

Section 4.2 of the Draft EIS/EIR found that no adverse effects would result to community character from project operation and that no avoidance, minimization, or mitigation measures would be required. In fact, because the project would result in decreased levels of air pollutant emissions, improved transit amenities, and improved transit travel times, the Draft EIS/EIR found that the project would enhance community connectivity such that benefits to businesses and economic activity would be expected within the study area.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to result in new or worsened community effects. The removal of the BRT stops that was proposed for the Spruce-Cook area and the retention of local/express stops in this area would result in mixed effects. Local and express buses would continue to serve this stop. However, BRT buses would stop at Arguello to the west and Presidio/Masonic to the east. This would result in a greater walking distance to or from a BRT stop (approximately five blocks) for people starting or ending journeys in this area. However, this increase in walking distance would be offset in part by improved BRT travel time resulting from one less BRT stop. In addition, changes to the Hybrid Alternative/SRA include one additional bus bulb in this area to better facilitate pedestrian movement and crossings. Accordingly, the removal of the BRT stops at Spruce/Cook as part of changes to the Hybrid Alternative/SRA would not result in any new or worsened community effects.

Retention of the Webster Street bridge would reduce localized construction impacts to the community, as the bridge would no longer be demolished. Retention of the bridge would also improve pedestrian conditions by providing not only the Webster Street bridge, but also two new street-level crossings.

The additional pedestrian enhancements throughout the corridor proposed under the modified Hybrid Alternative/SRA would increase beneficial effects to pedestrians in the area, which would enhance access and connectivity within the corridor.

Overall, therefore, no new or worsened community effects would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

No changes to the text of Draft EIS/EIR Section 4.2, Community Impacts, are needed with regard to the changes to the Hybrid Alternative/SRA or in response to a comment on the Draft EIS/EIR.

## **4.3 Growth**

### **Summary of Draft EIS/EIR**

Section 4.3 of the Draft EIS/EIR analyzed the potential for the alternatives to induce or otherwise affect population growth in and around the Geary corridor in excess of planned growth (as expressed through adopted plans and zoning). For this analysis, the Draft EIS/EIR examined demographic and development trends in the study area and evaluated the project's consistency with existing and planned land uses, planned growth, and San Francisco's adopted plans and policies related to planned land uses and transportation investments.

Section 4.3.4 of the Draft EIS/EIR found that the build alternatives would support existing and planned growth and development within the study area and would not result in growth-related effects. As such, no avoidance, minimization, or mitigation measures related to growth were found necessary for any of the alternatives in Section 4.3.5.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA following publication of the Draft EIS/EIR were examined for the potential to result in new or worsened effects to growth. The removal of the BRT stops in the Spruce-Cook area, the retention of the Webster Street bridge, and the additional pedestrian improvements would not substantially affect temporary employment opportunities or sidewalk closures, detours, or other temporary construction measures. These modifications to the Hybrid Alternative/SRA would remain consistent with planned development and planned land uses and would not change existing development patterns, population, housing, or employment densities. On this basis, no new or worsened growth effects would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

No changes to the text of Draft EIS/EIR Section 4.3, Growth, are needed with regard to the changes to the Hybrid Alternative/SRA or in response to a comment on the Draft EIS/EIR.

## **4.4 Visual Resources**

### **Summary of Draft EIS/EIR**

Section 4.4 of the Draft EIS/EIR analyzed the potential for the alternatives to affect visual resources and visual quality along the Geary corridor. This analysis was based on a review of preliminary project design documents and relevant citywide policy documents, such as the City of San Francisco *Better Streets Plan* (BSP) and the City of San Francisco *General Plan*.

Analysis in the Draft EIS/EIR was based on the Federal Highway Administration (FHWA) Visual Impact Assessment (VIA) methodology. The analysis divided the Geary corridor into three landscape units based on broadly common existing visual character. Consistent with the FHWA methodology, the alternatives were evaluated for potential effects to visual character, visual quality, and viewer response.

Each of the build alternatives considered in the Draft EIS/EIR included several aesthetic-related improvements, such as improving passenger waiting areas and adding street trees, landscaping, pedestrian-scaled lighting, distinctive paving, among other features. Each of the build alternatives was also found to result in a visual narrowing of paved roadway area. In sum, the Draft EIS/EIR found that the above features would enhance intactness and overall visual quality, particularly for pedestrians and bus passengers.

Section 4.4.4 of the Draft EIS/EIR found that construction activities associated with all build alternatives would cause temporary declines in visual quality. Visual evidence of construction, tree removal, and light and glare would all contribute to this temporary decline. The Draft EIS/EIR noted that adverse visual effects resulting from tree replacement would persist until replacement plantings begin to mature, over 3 to 5 years (though full maturity would take 5 to 10 years or more). Pedestrian enhancements and amenities at BRT stops would generally enhance visual quality. Overall, the Draft EIS/EIR found that the long-term visual effects of the Hybrid Alternative would be neutral to somewhat beneficial.

The Draft EIS/EIR identified one measure in Section 4.4.5 to minimize visual disruption from construction. As no adverse visual effects were identified for project operation, no further avoidance, minimization, or mitigation measures were found to be warranted. Regardless, the Draft EIS/EIR included three improvement measures to further enhance visual quality of the build alternatives.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to result in new or worsened visual effects. Two of these changes (removal of BRT stops at Spruce/Cook and retention of the Webster Street pedestrian bridge) would reduce the amount of construction in these areas and accordingly reduce the scale of construction period visual effects.

Similar to the pedestrian enhancements analyzed in the Draft EIS/EIR, the additional pedestrian crossing facilities added to the Hybrid Alternative/SRA would further enhance streetscape visual quality. Based on the foregoing, no new or worsened visual effects would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

**Changes to the Draft EIS/EIR**

The following changes to Draft EIS/EIR Section 4.4, Visual Resources, are needed to provide minor corrections to the text as well as to reflect the changes to the Hybrid Alternative/SRA introduced in this Final EIR.

*Page 4.4-19, text edits*

**Table 4.4-1 Potential Operational Visual Effects**

VISUAL ASSESSMENT UNITS	VISUAL EFFECTS UNDER EACH ALTERNATIVE				
	NO BUILD	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3-CONSOLIDATED	HYBRID ALTERNATIVE
<b>Landscape Unit 1 (Refer to Figure 4.4-3)</b>					
Palm Avenue to Wood Street (8 blocks)	Neutral or somewhat beneficial	Somewhat beneficial at <u>upgraded new</u> stops	<u>Somewhat beneficial at new BRT station</u> Negligible	Same as Alternative 2 & 3	Same as Alternative 2
<b>Landscape Unit 2 (Refer to Figure 4.4-4)</b>					
Scott Street to Laguna Street (Western Addition/Fillmore/ Japan Center) (5 blocks)	Neutral or somewhat beneficial	Somewhat beneficial at <u>upgraded new</u> stops	Beneficial effect experienced by all viewer groups	Same as Alternative 3	Same as Alternative 2

Note: All effects are assumed to be long-term for all viewer groups unless otherwise noted.  
Source: Circlepoint, 20164

*Page 4.4-30, staff-initiated modifications and text edits*

**Alternative 2, Palm Avenue to Wood Street**

There would be no BRT stops in this segment, and ~~three~~ two local stops. Changes associated with Alternative 2 would thus be limited to lane striping. Visual effects would thus be negligible to beneficial (at upgraded new stops) for all affected viewer groups.

**Alternative 3, Palm Avenue to Wood Street**

There would be no BRT stops in this segment, and two local stops. Changes associated with Alternative 3 would thus be limited to lane striping. Visual effects would thus be negligible to beneficial for all affected viewer groups.

**Alternative 3-Consolidated, Palm Avenue to Wood Street**

There would be one combined rapid and BRT stop in this segment. Thus, with implementation of a new BRT station and associated amenities, visual effects under Alternative 3-Consolidated would be beneficial for all viewer groups.

### **Hybrid Alternative, Palm Avenue to Wood Street**

Same as Alternative 3, thus visual effects would be negligible to beneficial for all affected viewer groups.

### **~~Alternatives 3, 3-Consolidated and the Hybrid Alternative, Palm Avenue to Wood Street~~**

~~For this area, these three alternatives propose the same improvements as Alternative 2. Visual changes and visual effects would therefore be the same for those described above for Alternative 2.~~

*Page 4.4-39, staff-initiated modifications*

### **Hybrid Alternative, Scott Street to Laguna Street**

Similar to Alternative 2 regarding proposed BRT stops; local-only stops would be in different locations than those of Alternative 2. In addition, the Hybrid Alternative would relocate reconfigured on-street parallel parking spaces on both sides of Geary Boulevard between Webster and Laguna.

Unlike the other build alternatives, the Hybrid Alternative would not remove the Webster Street bridge (refer to Figure 4.4-12a).

Figure 4.4-12a Key Viewpoint 5 - BRT Stop, Hybrid Alternative (Fillmore Street)

A. Existing view looking east



B. Simulated view looking east showing mature vegetation and the Webster Street pedestrian bridge



SFCTA, 2016

## 4.5 Cultural Resources

### Summary of Draft EIS/EIR

Section 4.5 of the Draft EIS/EIR analyzed the potential for the alternatives to result in adverse impacts to archaeological resources and historic architecture. The analysis in the Draft EIS/EIR was based on technical reports prepared for the Geary BRT Project, including an Archaeological Sensitivity Assessment and a Historic Resources Inventory and Evaluation Report. The Draft EIS/EIR examined the potential for the alternatives to affect any archaeological or historic architecture resources that could exist within the area that the alternatives would affect, all of which were in public right-of-way areas.

In terms of potential archaeological effects, the Draft EIS/EIR noted that there were no known archaeological resources existing within the project area but that excavation/construction associated with implementation of any of the build alternatives had the potential to encounter previously unrecorded archaeological resources. The Draft EIS/EIR included several avoidance and minimization measures intended to minimize potential effects on any such unrecorded resources.

Regarding potential effects to historic architecture, the Draft EIS/EIR considered that the entirety of construction and operational activities of the alternatives would occur within public right-of-way areas. The Draft EIS/EIR noted the presence of more than 50 eligible historic architectural resources in the Geary corridor, all but three of which were located outside the public right-of-way area in which construction and operation of alternatives would take place.

For two of the eligible resources within the public right-of-way, the Golden Triangle Light Standards and the light standards associated with the Japan Center, the Draft EIS/EIR included avoidance and minimization measures intended to govern advanced project design work so that any potential movement or relocation of these lighting features would be either avoided entirely or conducted in a manner that would not result in any adverse effect on the historic character of these resources.

Similarly, regarding the third eligible historic architectural resource within the public right-of-way, various elements of the Auxiliary Water Supply System (AWSS), including cisterns, hydrants, and underground conveyances, the Draft EIS/EIR included avoidance and minimization measures such that no adverse effect to the AWSS would result from implementation of the alternatives.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects to archaeological resources and/or historic architectural resources. Architectural historians who conducted analysis for the Draft EIS/EIR specifically examined the three project changes for any potential change in effects.<sup>1</sup>

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<sup>1</sup> JRP Historical Consulting, August 2016.



Regarding the Hybrid Alternative/SRA changes in the Spruce-Cook area, there are no historic architectural resources in this area. Moreover, the change to retain local and express stops here (and not construct new BRT stops, as had been assumed in the Draft EIS/EIR), would result in less construction activity in this area and thus less potential to encounter unrecorded archaeological resources. Accordingly, the change in the Spruce-Cook area after the Draft EIS/EIR would not introduce any new or different effects regarding historic architectural resources or archaeological resources.

The retention of the Webster Street pedestrian bridge would reduce the extent of demolition and ground disturbance needed as part of the Hybrid Alternative/SRA, and as such, would reduce the potential for the Hybrid Alternative/SRA to encounter unrecorded/unknown archaeological resources.

The Draft EIS/EIR evaluated the Webster Street bridge as a potential eligible historic architectural resource and concluded that the bridge was not eligible. Nor was the bridge considered a contributing element to the (eligible) Japan Center. The Hybrid Alternative/SRA had proposed removal of this bridge. Changes to the Hybrid Alternative/SRA to retain this bridge would thus not introduce any new or different effects regarding historic architectural resources.

The Hybrid Alternative/SRA change to include additional pedestrian improvements in the public right-of-way would have similar potential to affect cultural resources in the public right-of-way as was described/disclosed in the Draft EIS/EIR. The Hybrid Alternative/SRA as described in the Draft EIS/EIR included the implementation of 65 pedestrian crossing bulbs throughout the Geary corridor; the Draft EIS/EIR considered the potential for these to affect the historic lighting standards and the AWSS. The Draft EIS/EIR concluded that adverse effects would be fully addressed through the adherence to avoidance/minimization measures set forth in the Draft EIS/EIR. The modified Hybrid Alternative/SRA would include 26 additional pedestrian crossing bulbs at numerous locations through the Geary corridor. This change within the public right-of-way would not cause any direct or indirect adverse effect to historic properties at or near these project components. As noted in the Draft EIS/EIR, curb bulb outs are considered not to pose an effect upon historic properties because such construction would not cause a change in the character or setting of historic properties. As such this proposed project revision would not result in any adverse effect to any historic property.

### **Changes to the Draft EIS/EIR**

The following text changes to Draft EIS/EIR Section 4.5, Cultural Resources, are needed to reflect the changes to the Hybrid Alternative/SRA introduced in this Final EIR.

#### *Page 4.5-26, staff-initiated modifications*

No adverse effects from pedestrian bridge removal: Each build alternative proposes removal of the existing pedestrian bridges at Webster Street and Steiner Street. Alternatives 2, 3, and 3-Consolidated also propose the removal of the Webster Street pedestrian bridge. Elements of the AWSS (pipelines and cisterns) are located near the pedestrian bridges in both locations. However, the cisterns are not located directly beneath the pedestrian bridges and conform to the grade of the existing roadway, and the pipelines are located underground, as previously described in Section 4.5.2.3.2. Therefore, no adverse effects to the AWSS would be expected from demolition of either pedestrian bridge.

## 4.6 Utilities

### Summary of Draft EIS/EIR

Section 4.6 of the Draft EIS/EIR analyzed the potential for the alternatives to affect utilities and service systems, including utility facility relocations and modifications, stormwater management system capacity, potable and emergency service water supply capacities, solid waste collection capacity, and electricity demand and capacity. In considering such effects, the Draft EIS/EIR examined the San Francisco *Better Streets Plan*, utility maps of the Geary corridor, and related information compiled by the San Francisco Department of Public Works (SFDPW). The Draft EIS/EIR evaluated potential effects to utilities in terms of changes in demand requirements, available capacity, or potential physical conflicts/incompatibility.

Many utility facilities are located both above and below ground within the Geary corridor. Section 4.6.4 of the Draft EIS/EIR found that the build alternatives would require relocation or modification of some utilities to due to direct conflict or to maintain access for utility providers to maintain, repair, and upgrade the facilities. For example, construction of bus bulbs and pedestrian crossings would necessitate minor utility modifications, including relocation of stormwater drainage infrastructure, fire hydrants, valves, manholes, surface-mounted utility boxes, or other appurtenances. The Hybrid Alternative would require major reconstruction or relocation of two sewer lines (between 14th Avenue and 4th Avenue and between Funston Avenue and 12th Avenue). The Draft EIS/EIR anticipated that the construction and operation of any of the build alternatives would be coordinated with utility providers to avoid adverse impacts to utility facilities.

The Geary corridor is almost entirely covered by impervious surfaces. The Draft EIS/EIR found that the Hybrid Alternative would reduce the total area of impervious surfaces by approximately 0.5 acres and construction in existing landscaped medians could allow incorporation of rain gardens, biotreatment swales, pervious paving, and infiltration planters to control stormwater runoff. Moreover, the Draft EIS/EIR found that implementation of the stormwater retention and treatment features set forth in the *Better Streets Plan* would be possible under all build alternatives. Given the foregoing, the Draft EIS/EIR found that no substantial increase in stormwater quantity would result from the project.

The Draft EIS/EIR found that no substantial increases in potable water demand would result under any build alternative, as landscaping associated with the project would be subject to the City's Water Efficient Irrigation Ordinance. The Draft EIS/EIR found that, while the project would increase transit ridership and thereby slightly increase the amount of solid waste produced by passengers, the project would not substantially increase solid waste generation or have adverse impacts to landfill capacity. The alternatives would not substantially change demand or capacity for other utilities in the Geary corridor. The Draft EIS/EIR also identified a number of minimization measures in Section 4.6.5 to minimize adverse impacts to utilities.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects to utilities and service systems. The changes would not require any additional utility relocations, would not change the amount of impervious surfaces, would not change any plans for landscaping or irrigation, and would not substantially affect BRT ridership (and thereby

solid waste generation). As such, none of the proposed modifications—the removal of BRT stops in the Spruce-Cook area, the retention of the Webster Street bridge, and the additional pedestrian improvements—would generate new or worsened effects to utilities.

Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

The following text changes to Section 4.6, Utilities, of the Draft EIS/EIR are needed to reflect the changes to the Hybrid Alternative/SRA introduced in this Final EIR. In particular, the text changes on page 4.6-17 of the Draft EIS/EIR reflect the retention of the Webster Street pedestrian bridge as part of the Hybrid Alternative/SRA.

*Page 4.6-17, staff-initiated modifications*

#### ***Other Demands on Electricity***

Addition of Shelters with Next-Bus screens lighted advertising and push to talk features would increase demand for electricity.

Addition of Elevators at the Masonic BRT stations in Alternative 3 and 3-Consolidated would introduce additional demand for electricity.

Removal of the Fillmore pump station and Fillmore underpass lighting in Alternative 3 and 3-Consolidated would reduce demand for electricity.

Removal of the Webster Street ~~pedestrian bridge~~ Overcrossing under Alternatives 2, 3, and 3-Consolidated, which has lighting, will reduce demand for electricity.

## 4.7 Geology/Soils/Seismic/Topography

### **Summary of Draft EIS/EIR**

Section 4.7 of the Draft EIS/EIR considered the potential for the alternatives to have adverse effects related to geologic- and soils-related issues. As the Geary corridor is located within a seismically active region, the corridor would be subjected to strong ground shaking and several types of seismic-related soil failures (such as liquefaction and differential compaction).

The Draft EIS/EIR found that, during construction, all build alternatives would be susceptible to potential slope instability effects, area-wide ground shaking, and site-specific liquefaction. New structures associated with operation would be limited to streetscape features such as bus shelters that would bear relatively light loads and would, therefore, have a low risk of susceptibility to geologic hazards. While any new structures would be required to meet state and local seismic standards, the Draft EIS/EIR included a number of geotechnical minimization measures.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects related to geology and soils. Site-specific conditions are the primary driver of impacts with regard to geology and soils. Each of the modifications to the Hybrid Alternative

would occur under the same geologic conditions as described in the Draft EIS/EIR and do not include any changes that would result in substantially increased geologic hazards. Moreover, the Webster Street pedestrian bridge was seismically retrofitted in 1996. Retention of the bridge would continue current conditions and as such, would therefore not result in any increased seismic risk relative to existing conditions. As such, no new or worsened geologic and soils effects would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

No text changes are needed to Draft EIS/EIR Section 4.7, Geology/Soils/Seismic/Topography, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## **4.8 Hazards and Hazardous Materials**

### **Summary of Draft EIS/EIR**

Section 4.8 of the Draft EIS/EIR analyzed the level of risk associated with the alternatives in terms of hazardous materials, hazardous waste, and/or contamination within and near the Geary corridor. These types of risks would typically arise during ground-disturbing activities related to construction.

Section 4.8.4 of the Draft EIS/EIR found that construction of the alternatives could potentially result in exposure risk from hazardous materials, aerially deposited lead in the soil, naturally occurring asbestos, lead, and other environmental concerns, especially in areas where the existing medians would be removed. In addition to compliance with existing applicable regulations, the Draft EIS/EIR identified a number of minimization measures in Section 4.8.5, which would be incorporated into the project to reduce risks related to hazards and hazardous materials during construction.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects related to hazards and hazardous materials. Because modifications to the Hybrid Alternative no longer propose to construct a BRT station on the Spruce-Cook block and no longer propose to demolish the Webster Street bridge, both construction activities and the risk of exposure to hazards would be reduced in these areas.

Construction of additional pedestrian improvements throughout the corridor would result in additional ground disturbance. However, all such activities would be subject to the same regulations and minimization measures as described in the Draft EIS/EIR and therefore would not be expected to result in increased hazards. As such, no new or worsened effects related to hazards and hazardous materials would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

No text changes are needed to Draft EIS/EIR Section 4.8, Hazards and Hazardous Materials, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## **4.9 Hydrology and Water Quality**

### **Summary of Draft EIS/EIR**

Section 4.9 of the Draft EIS/EIR evaluated the potential for the alternatives to adversely affect hydrologic and water resources in terms of changes to the impervious surface areas, stormwater runoff modification and requirements, quantities of soil disturbance and excavation, and changes to groundwater elevations and any groundwater demand. The analysis considered the hydrologic environment existing in the Geary corridor and its surrounding hydrologic area.

The Geary corridor is almost entirely covered with impervious surfaces, with the exception of existing landscaped center medians and tree and landscape plantings along sidewalks. The Draft EIS/EIR found that the Hybrid Alternative would reduce the existing impervious surface area by approximately 0.5 acres (17,000 square feet) and would disturb approximately 9 acres of soil.

Section 4.9.4 of the Draft EIS/EIR found that the greatest potential for adverse effects to water quality would be during construction, when soils are exposed and may be entrained in runoff, resulting in sediment in the combined sewer system as well as erosion within the study area. The Hybrid Alternative would require two sewer line relocations; however, groundwater depth is deeper than sewer infrastructure so substantial or adverse impacts to groundwater would not be expected.

Implementation of stormwater retention and treatment features required under City ordinances and the *Better Streets Plan* would be possible under all build alternatives and would result in slight, but beneficial effects to storm drainage in the Geary corridor, as there would be a net decrease in impervious surface area and no substantial localized increases that might increase flow to a specific area of the City combined sewer system. Because mature trees along the Geary corridor provide water quality benefits, mature tree removal may result in a period of reduced water quality until replacement tree plantings grow to maturity. However, this adverse effect would not be substantial due to overall landscaping improvements with the Hybrid Alternative, and would subside over time as replacement trees mature. The Draft EIS/EIR included several avoidance, mitigation, and minimization measures related to water quality and stormwater impacts in Section 4.9.5.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects to hydrology and water quality. Because the proposed retention of the local bus stops in the Spruce-Cook area and the retention of the Webster Street bridge would reduce the level of construction in these areas, the potential for adverse effects to water quality would be reduced. The installation of additional pedestrian improvements would require additional locations throughout the corridor for excavation (approximately 1.5 feet in depth), but adherence

to standard construction practice and best management practices would limit the potential for substantial additional quantities of construction-period runoff. The expected maximum depth of excavation (1.5 feet) would not be expected to affect any below-ground water resources, as such resources are typically found at much greater depths. As such, no new or worsened effects to hydrology and water quality would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

No text changes are necessary to the Draft EIS/EIR Section 4.9, Hydrology and Water Quality, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## **4.10 Air Quality and Greenhouse Gas Emissions**

### **Summary of Draft EIS/EIR**

Section 4.10 of the Draft EIS/EIR considered the potential for the alternatives to result in increased emissions of air pollutants during both construction and operation (including greenhouse gases [GHGs]) and to conform to pertinent requirements of the Clean Air Act.

Section 4.10.4 of the Draft EIS/EIR found that construction of any of the build alternatives would generate short-term criteria pollutant emissions. However, these construction period emissions would not exceed the Bay Area Air Quality Management District (BAAQMD) thresholds for health risk significance, and the Hybrid Alternative was among the alternatives that would result in the lowest risks.

Moreover, replacement of standard motor coaches with diesel-hybrid electric buses would result in a decrease in several pollutants over the long-term. Relative to the No Build Alternative, the build alternatives would generally decrease regional VMT and thus would be projected to result in an associated decrease in emissions of criteria pollutants, GHGs, and TACs, leading to overall improved air quality. The Draft EIS/EIR noted that the project would be consistent with the San Francisco Bay Area Air Basin 2010 Clean Air Plan's transportation control measures aimed at reducing vehicle trips, improving bus service, and promoting land use patterns facilitate walking, bicycling, and transit use.

Relative to the No Build Alternative, the Hybrid Alternative/SRA would result in approximately 20,000 fewer daily weekday VMT (0.2 percent) by 2020 and approximately 40,000 fewer daily weekday VMT (0.4 percent) by 2035. Regional transportation energy consumption would also be reduced. GHG emissions would decrease by 5,841 metric tons per year by 2035 under the Hybrid Alternative, representing the greatest reduction in GHGs compared to the No Build Alternative. Therefore, the Hybrid Alternative/SRA was found to result in a beneficial effect related to operational criteria pollutant and GHG emissions in both the near and far term.

With adherence to City ordinances and regulations regarding construction, the Draft EIS/EIR found that none of the build alternatives would result in adverse effects related to emissions of air pollutants and GHGs during construction. Given this, and the beneficial effects of project

operation on air quality, Draft EIS/EIR Section 4.10.5 found that no avoidance, minimization, or mitigation measures would be required.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects regarding air quality and GHG emissions. Temporary and localized air quality impacts related to construction activities would be reduced in the Spruce-Cook and Webster Street bridge areas, as construction and demolition levels in these areas would be substantially lessened. None of the changes to the Hybrid Alternative would have any substantial effect on bus operations (see **Section 3.3** of this Final EIR), so the changes would retain anticipated benefits to air quality. As such, no new or worsened effects to air quality and GHG emissions would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

The following text changes are needed to Draft EIS/EIR Section 4.10, Air Quality and Greenhouse Gases, to update information and correct a typographical error (i.e., not as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR).

*Page 4.10-5, text edit*

#### ***Council on Environmental Quality Guidelines***

The Council on Environmental Quality (CEQ) has provided a ~~draft~~ final guidance memorandum in August 2016, on the ways in which federal agencies can improve their consideration of the effects GHG emissions in NEPA documents.<sup>6</sup> The guidance provides a reference point of 25,000 metric TPY of carbon dioxide equivalent (or CO<sub>2</sub>e). The guidance states that proposed actions with emissions below this level can be addressed through a qualitative analysis; proposed actions with higher emissions levels may warrant a quantitative assessment.

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<sup>6</sup> Council on Environmental Quality. December 18, 2014. *Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts*. August 1, 2016. *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*.

*Page 4.10-19, text edit*

The build alternatives are not considered POAQC because they do not meet the definition of a POAQC as defined in EPA's Transportation Conformity Guidance. The build alternatives would not increase the percentage of diesel vehicles on the roadway, do not involve a bus or rail terminal that significantly increases diesel vehicles, and are not identified in the SIP as a possible PM<sub>2.5</sub> or PM<sub>10</sub> violation site. The build alternatives have undergone Interagency Consultation (IAC). IAC participants concurred that the build alternatives are not POAQC (refer to Appendix ~~G~~F).

## 4.11 Noise and Vibration

### Summary of Draft EIS/EIR

Section 4.11 of the Draft EIS/EIR evaluated the potential for construction and operation of the alternatives to result in substantial increases in noise and/or vibration. Use of heavy equipment during construction and demolition and changes in noise from bus activity would have the potential to affect noise and vibration along the Geary corridor.

Section 4.11.4 of the Draft EIS/EIR found that project construction would temporarily and intermittently increase ambient noise levels over the approximate 90- to 130-week construction schedule. Noise levels would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Perceived noise levels would fluctuate depending on the time of day, as sensitivity to nighttime noise would be higher. Temporary construction noise effects were found not to be adverse for the alternatives with adherence to the San Francisco Noise Ordinance, equipping impact tools with intake and exhaust mufflers, and obtaining a noise permit for nighttime work from SFPD. Construction activity for the alternatives would likely result in vibration effects for vibration-intensive construction activity located as close as 36 feet to certain historic structures; the Draft EIS/EIR included avoidance, minimization, and mitigation measures in Section 4.11.5 to address such effects from project construction. The Draft EIS/EIR found that the alternatives would not result in adverse operational noise effects and operational noise levels would not exceed the FTA significance criteria, and operational vibration would not be perceptible by sensitive receptors and, thus, would not result in an adverse effect. Consequently, the Draft EIS/EIR found that no operation-period avoidance, minimization, or mitigation measures were necessary.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects of noise and vibration. With planned retention of the Webster Street pedestrian bridge, construction-period noise and vibration impacts in the area would be reduced.

Also, the removal of BRT stops from the Hybrid Alternative/SRA in the Spruce/Cook area would reduce construction noise in this area. Construction of the additional pedestrian improvements would increase short-term noise levels in added areas (see **Figure 2-5**), but the relatively short duration of such activities and their location within the public right-of-way limits the potential for these additional improvements to substantially worsen any previously identified construction-period noise effects. The same minimization measures included in the Draft EIS/EIR (MIN-NOISE-C1 through MIN-NOISE-C5) would be applicable to the additional pedestrian improvements. Adherence to these measures, as well as pertinent City construction noise regulations, would ensure that no new or worsened construction-period effect would occur.

The modifications would have no bearing on operational noise. As such, no new or worsened effects of noise and vibration would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.



## Changes to the Draft EIS/EIR

The following text changes are needed to Draft EIS/EIR Section 4.11, Noise and Vibration, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR. In particular, comment A-1.3 (see **Appendix B**) pointed out a discrepancy between information presented in Table 4.11-4 of the Draft EIS/EIR and the text; some of the text changes below correct this error.

*Page 4.11-13, changes in response to comment A-1.3*

### ALTERNATIVE 2 - CONSTRUCTION EFFECTS

As shown on Table 4.11-4 above, the expected noise levels from construction equipment would ~~not~~ exceed 80 dBA at 100 feet from dump trucks and jack hammering. With adherence to the San Francisco Noise Ordinance, which includes limiting the noise levels from individual pieces of construction equipment to 80 dBA at a distance of 100 feet, equipping impact tools with both intake and exhaust mufflers, and obtaining a noise permit for night work from DPW, these temporary construction noise effects would not be adverse.

*Page 4.11-14, changes in response to comment A-1.3 and staff-initiated modifications*

### ALTERNATIVES 3 AND 3-CONSOLIDATED - CONSTRUCTION EFFECTS

The same general construction methods described for Alternative 2 would be used to build the physical elements of Alternatives 3 and 3-Consolidated, although Alternatives 3 and 3-Consolidated would entail more intensive construction of bus-only lanes and medians in the center of Geary Boulevard west of Gough Street. This activity would be further from sensitive receptors compared to Alternative 2, which would construct bus-only lanes closer to the edge of the street.

These alternatives would also include the conversion of the Fillmore Street underpass to a conventional, at-grade intersection (which in turn involves the filling and/or removal of the existing pump station, demolition of the existing grade separation structure, and rebuilding of the roadway). As previously discussed, the expected noise levels from construction equipment ~~could~~would not exceed 80 dBA at 100 feet. With adherence to the San Francisco Noise Ordinance, equipping impact tools with both intake and exhaust mufflers, and obtaining a noise permit for night work from DPW, temporary construction noise effects would not be adverse.

### HYBRID ALTERNATIVE - CONSTRUCTION EFFECTS

The Hybrid Alternative consists of different components from Alternatives 2, 3, and 3-Consolidated, thus the focus of construction activity would not be concentrated in one particular section of the street right-of-way. Therefore, the Hybrid Alternative would be represented by the range of construction activity covered between the three build alternatives. However, given that the Hybrid Alternative would not remove the Webster Street pedestrian bridge nor would it construct a new BRT station at Spruce/Cook, construction-period noise impacts would be reduced relative to the other build alternatives.

With adherence to the San Francisco Noise Ordinance, equipping impact tools with both intake and exhaust mufflers, and obtaining a noise permit for night work from DPW, temporary construction noise effects would not be adverse.

## 4.12 Energy

### Summary of Draft EIS/EIR

Section 4.12 of the Draft EIS/EIR assessed the direct and indirect effects of the project alternatives on energy consumption. *Direct* energy consumption includes the fuel required for passenger vehicles (i.e., automobiles, vans, and light trucks), heavy trucks (i.e., three or more axles), and transit buses that travel on the corridor. *Indirect* energy consumption includes fossil fuel expenditures required to construct the project alternatives using various equipment and materials.

Construction of the build alternatives would require *indirect* consumption of fossil fuels, labor, and construction materials. Construction includes energy used by construction equipment and other activities at the worksite (i.e., median removal, excavation, paving), in addition to the energy used to manufacture the equipment, materials, and supplies to transport them to the worksite. Energy for maintenance includes that for day-to-day upkeep of equipment and systems, as well as energy embedded in any replacement equipment, materials, and supplies. These expenditures would be, for the most part, irrecoverable; however, they are not in short supply, and the Draft EIS/EIR found that their use would not have an adverse effect upon continued availability of these resources.

Automobile VMT is considered indirect energy use and any changes that would occur to automobile VMT would be an indirect effect of the project. In general, because the automobile VMT of the build alternatives would not vary significantly coupled with a small fraction of total energy used by transit vehicles (less than 0.5 percent of the total energy), the build alternatives would have little to no effect on auto vehicles energy supply and consumption. The Draft EIS/EIR found that the Hybrid Alternative would result in a slight reduction in direct transportation energy use—a small, but beneficial, effect. As none of the build alternatives would result in adverse effects, Draft EIS/EIR Section 4.12.5 concluded that no avoidance, minimization, or mitigation measures would be required.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects related to energy use. The modifications to the Spruce-Cook area and the retention of the Webster Street pedestrian bridge would reduce construction-period energy consumption in these areas. Conversely, construction of additional pedestrian improvements would increase construction-period energy consumption. However, these changes would not appreciably affect overall energy consumption, nor would energy consumption during project operation be affected as none of these changes would substantially affect bus operations from the levels described in the Draft EIS/EIR (also please see **Section 3.3** of this Final EIR). As such, no new or worsened effects to energy would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### Changes to the Draft EIS/EIR

No text changes are needed to Draft EIS/EIR Section 4.12, Energy, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## 4.13 Biological Resources

### Summary of Draft EIS/EIR

Section 4.13 of the Draft EIS/EIR analyzed potential effects of the alternatives to biological resources. The analysis was informed by a Geary corridor tree survey (included in Appendix I of the Draft EIS/EIR), a pedestrian survey of the corridor, review of the California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, U.S. Fish and Wildlife Service (USFWS) Threatened and Endangered Species database, USFWS Critical Habitat Mapper, USFWS Wetlands Mapper, National Marine Fisheries Service (NMFS) Essential Fish Habitat Mapper, and NMFS Critical Habitat Mapper.

The Geary corridor does not contain any known special-status species or habitat for special-status species, so the Draft EIS/EIR found that construction-period effects to biological resources would be limited to trees protected under the Urban Forestry Ordinance, birds, nests, and eggs protected under the Migratory Bird Treaty Act (MBTA), and potential for introduction or increases in noxious weeds associated with ground disturbance, as considered under Executive Order 13112.

While the Draft EIS/EIR found that the Geary corridor does not contain native plant assemblages, several landscape trees would likely be removed under each of the build alternatives. Construction of the Hybrid Alternative analyzed in the Draft EIS/EIR would require removal of 195 trees along the Geary corridor, of which 118 are considered Significant Trees (i.e., is located within 10 feet of the property edge of the sidewalk, is above 20 feet in height, has a canopy greater than 15 feet in diameter, or has a trunk diameter greater than 12 inches at breast height).

Section 4.13.4 of the Draft EIS/EIR also found that there would be a potential to directly affect migratory birds or their eggs and nests during construction. Direct effects to nesting birds could be due to tree or shrub removal or noise, vibration, or human activity during the nesting season. While the Hybrid Alternative proposed to replant a comparable quantity of new trees, tree removal and new plantings would have short-term indirect effect of having less capacity to host bird nests until replacement plantings matured.

The Draft EIS/EIR also indicated the potential for the introduction or spread of noxious species as a potential adverse effect. To minimize these potential effects, the Draft EIS/EIR identified minimization measures related to tree removal and invasive species in Section 4.13.5.

The Draft EIS/EIR found that project operation would not affect biological resources, as the Geary corridor is urbanized with little to no indigenous vegetation and no known special-status species.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects to biological resources. Thirteen trees that were proposed for removal on the block of Geary Boulevard between Spruce and Cook Streets to accommodate the proposed BRT stops under the Hybrid Alternative analyzed in the Draft EIS/EIR would now no longer need to be removed, as the existing bus stops would now remain and be reduced slightly in length. This would slightly lessen effects to biological resources identified in the Draft EIS/EIR, as the modifications would now require the removal of 182 total trees rather than the 195 trees reported

in the Draft EIS/EIR. Regardless, the same conclusions and minimization measures identified in the Draft EIS/EIR would still apply to the modified Hybrid Alternative/SRA. As such, no new or worsened effects to biological resources would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### Changes to the Draft EIS/EIR

The following text changes are needed to Draft EIS/EIR Section 4.13, Biological Resources, as a result of staff-initiated modifications.

*Page 4.13-8, staff-initiated modifications*

**Effects to Trees.** Each build alternative would have the direct effect of removing a number of trees, including some Significant Trees. No build alternative would remove any Landmark Tree.

- **Alternative 2 (Side-Lane BRT):** A total of 156 trees would be removed. Of these, 86 are Significant Trees.
- **Alternative 3 (Center-Lane BRT with Dual Medians and Passing Lanes):** A total of 253 trees would be removed. Of these, 154 are Significant Trees.
- **Alternative 3-Consolidated (Center-Lane BRT with Dual Medians and Consolidated Bus Service):** A total of 268 trees would be removed. Of these, 168 are Significant Trees.
- **Hybrid Alternative:** A total of 1824~~95~~ trees would be removed. Of these, 118 are Significant Trees.

## 4.14 Environmental Justice

### Summary of Draft EIS/EIR

Section 4.13 of the Draft EIS/EIR analyzed the potential for the alternatives to result in disproportionately high or adverse human health or environmental effects to minority or low-income populations (environmental justice communities).

Section 4.13.4 of the Draft EIS/EIR found that the alternatives would have no disproportionate effects on environmental justice communities and, therefore, no additional avoidance, minimization, or mitigation measures would be required.

Implementation of any of the build alternatives would include benefits to low-income and minority populations, as well as the community at large, including a safer, more reliable and improved transportation system, improved mobility across the Geary corridor, improved accessibility to jobs, and aesthetic improvements.

### Changes to the Hybrid Alternative/SRA

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects to environmental justice communities. As described in several preceding sections of this Final EIR, the modifications to the Hybrid Alternative/SRA would not result in any new

or worsened impacts that would disproportionately affect environmental justice communities with regard to community impacts, visual resources, hazards and hazardous materials, hydrology and water quality, air quality and GHG emissions, noise and vibration, or transportation and transit. As such, no new or worsened effects to environmental justice communities would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### **Changes to the Draft EIS/EIR**

No text changes are needed to Draft EIS/EIR Section 4.14, Environmental Justice, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## **4.15 Constructions Methods and Impacts**

### **Summary of Draft EIS/EIR**

Section 4.15 of the Draft EIS/EIR provided an overview of anticipated construction activities, including construction stages and their estimated durations, for each of the alternatives. While individual sections of Chapters 3 and 4 of the Draft EIS/EIR described and disclosed both construction and operational period impacts, Section 4.15 of the Draft EIS/EIR aggregated all such construction-related impacts as well as all avoidance, minimization, and mitigation measures previously disclosed in preceding sections of the Draft EIS/EIR.

### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA were examined for the potential to introduce new or worsened effects related to construction activities. As described in several preceding sections of this chapter, two of the changes to the Hybrid Alternative/SRA would reduce the extent of construction in their respective areas. The Draft EIS/EIR discussed a number of construction-related effects unique to the prospective removal of the Webster Street pedestrian bridge. Because the Hybrid Alternative/SRA has been changed to retain this bridge, all such construction- (and demolition-) related effects described in the Draft EIS/EIR would no longer occur. The protection measures identified in the Draft EIS/EIR to avoid damage to an adjacent underground auxiliary water service system (AWSS) cistern would no longer be needed. There would no longer be a potential risk of exposure of asbestos from demolition of the Webster Street bridge. Demolition equipment would also no longer be needed at Webster Street. Residences located as close as 15 feet to the Webster Street bridge would no longer be exposed to temporary noise increases during active demolition.

Retaining the Webster Street bridge and not constructing BRT stops on the Spruce-Cook block would lead to reduced construction activities in these areas and, hence, construction impacts. Construction of the additional pedestrian improvements would increase construction activities in added areas (see **Figure 2-5**), but the relatively short duration of such activities and their location within the public right-of-way limits the potential for these additional improvements to substantially worsen any previously identified construction-period effects. As such, no new or worsened effects related to construction activities would occur as a result of the changes to the Hybrid Alternative/SRA. Therefore, no new avoidance, minimization, or mitigation measures would be needed.

### Changes to the Draft EIS/EIR

The following text changes are needed to Draft EIS/EIR Section 4.15, Construction Methods and Impacts, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

*Page 4.15-4, staff-initiated modifications*

#### Pedestrian Bridge Removal (All Build Alternatives)

The alignments of proposed bus-only lanes within each build alternative would conflict with the piers of ~~the existing pedestrian bridges at Webster Street and Steiner Streets which would be removed under all build alternatives. Alternatives 2, 3, and 3-Consolidated would also remove the Webster Street pedestrian bridge. As a result, these reinforced concrete pedestrian bridges would need to be removed.~~ Demolition would include removal of the bridge superstructures, substructures, and below-ground (spread footing) foundations. Prior to removing the bridges a protective soil “blanket” would be spread under the bridges to catch debris. At Webster Street, protection measures would need to be implemented to avoid damage to an adjacent underground auxiliary water service system (AWSS) cistern.

*Page 4.15-5, staff-initiated modifications*

**Table 4.15-1 Major Construction Activities by Alternative**

Segment	Median Bus lanes	Side Bus lanes	Median Platform	New Medians	Bus Bulb <sup>1</sup>	Ped Xing Bulb	Modify Sewer	Modify Tunnel	Remove Underpass	Remove Pedestrian Bridge(s) <sup>2</sup>
<b>ALTERNATIVE 2</b>										
34th to Palm/Jordan		•			•	•				
Masonic Area		•			•	•				
Fillmore Area		•			•	•				•
Inner Geary Corridor		•			•	•				
<b>ALTERNATIVES 3 &amp; 3-CONSOLIDATED</b>										
34th to Palm/Jordan	•	•	•	•	•	•	•			
Masonic Area		•			•	•		•		
Fillmore Area		•			•	•			•	•
Inner Geary Corridor		•			•	•				

Segment	Median Bus lanes	Side Bus lanes	Median Platform	New Medians	Bus Bulb <sup>1</sup>	Ped Xing Bulb	Modify Sewer	Modify Tunnel	Remove Under-pass	Remove Ped-estrian Bridge(s) <sup>2</sup>
HYBRID ALTERNATIVE										
34th to Palm/Jordan	●	●	●	●	●	●	●			
Masonic Area		●			●	●				
Fillmore Area		●			●	●				●
Inner Geary Corridor		●			●	●				

<sup>1</sup> BRT and Local Bus Bulbs.

<sup>2</sup> Under the Hybrid Alternative, only the Steiner Street pedestrian bridge would be removed.

Source: Draft Project Construction Plan (PCP), Jacobs Engineering Group, Inc. October 2013

Page 4.15-31, staff-initiated modifications and text edits in response to comment A-1.3<sup>2</sup>

## Construction Period Effects - Noise and Vibration

### ENVIRONMENTAL CONSEQUENCES

**Noise:** As shown in Table 4.15-8, construction equipment noise (~~from jack hammers and dump truck activity~~) ~~would not be anticipated to exceed 80 dBA at 100 feet;~~ however, With adherence to the San Francisco Noise Ordinance, which includes limiting the noise levels from individual pieces of construction equipment to 80 dBA at a distance of 100 feet, equipping impact tools with both intake and exhaust mufflers, and obtaining a noise permit for night work from DPW, temporary construction noise effects would not be adverse. ~~As shown in Table 4.15-8, construction equipment noise would not be anticipated to exceed 80 dBA at 100 feet;~~ however, Additionally, some construction-related activities have potential to result in disturbance and annoyance effects on nearby sensitive receptors. To this end, minimization measures are incorporated herein to provide for noise monitoring throughout construction as well as the implementation of additional sound-attenuating measures (including but not limited to sound walls, management of truck routes, etc.) that are necessary to address potential adverse effects.

Each of the build alternatives includes demolition and removal of one or both of the pedestrian bridges at Webster and Steiner Streets, including all above- and below-ground bridge components. The bridge at Webster Street (proposed for removal under Alternatives 2, 3, and 3-Consolidated) is located as close as 15 feet to residential uses; the bridge at Steiner Street is proposed for removal under all of the build alternatives and is located approximately 60 feet from residences.

Bridge demolition and removal would expose these residential uses to temporary noise increases during active demolition. The primary source of noise associated with bridge removal would be from jack hammers and similar impact equipment. Jack hammers generate a noise level of

<sup>2</sup> Comment A-1.3 (see **Appendix B**) pointed out a discrepancy between information presented in Table 4.11-4 of the Draft EIS/EIR and the text; some of the text changes are needed to correct this error.

approximately 88 dBA at 50 feet, or 82 dBA at 100 feet. Section 2907(b) of the San Francisco Police Code states that it shall be unlawful for any person to operate any powered construction equipment if the operation of such equipment emits noise level above 80 dBA when measured at a distance of 100 feet from such equipment. However, this provision is not applicable to impact tools and equipment fitted with intake and exhaust mufflers recommended by the manufacturers and approved by the Director of Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation. In addition, pavement breakers and jack hammers are required to be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers and approved by the Director of Public Works or the Director of Building Inspection as best accomplishing maximum noise attenuation. With adherence to the San Francisco Noise Control Ordinance the temporary construction noise generated would not result in any adverse effects.

With the construction of Alternatives 3 and 3-Consolidated, the focus of construction activity would occur in the center of the right-of-way, where the new bus-only lanes would be located. This activity would be further from sensitive receptors compared to Alternative 2, which would construct bus-only lanes closer to the edge of the street. The Hybrid Alternative consists of different components from Alternatives 2, 3, and 3-Consolidated, thus the focus of construction activity would not be concentrated in one particular section of the street right-of-way. Therefore, the Hybrid Alternative would be represented by the range of construction activity covered between the three build alternatives.

All build alternatives may result in noise levels in excess of 80 dBA at 100 feet due to removal of pedestrian bridges at Webster and/or Steiner Streets. Given that the Hybrid Alternative only proposes to remove the pedestrian bridge at Steiner Street, construction-period noise impacts would be slightly reduced relative to the other build alternatives. However, with adherence to the aforementioned provisions of the San Francisco Noise Ordinance, these temporary construction noise effects would not be adverse.

## 4.16 Irreversible and Irretrievable Commitment of Resources

### Summary of Draft EIS/EIR

Section 4.16 of the Draft EIS/EIR discussed the uses of nonrenewable resources under implementation of the alternatives. Construction and operation of any of the build alternatives would require consumption of fossil fuels, labor, and construction materials. These expenditures would be, for the most part, irrecoverable. However, such resources are not considered to be in short supply, and their use would not have an adverse effect upon continued availability of these resources to other projects. Moreover, the project would accommodate a greater number of transit trips into the future and would thus provide more efficient use of fossil fuels than if these trips were to be taken in private automobiles. Additionally, the project would upgrade the existing bus fleet from a mix of diesel motor coaches to diesel hybrid motor coaches, which are more fuel efficient.



Construction would also require a substantial one-time expenditure of federal and local funds. These funds have been planned and programmed and are further explained in **Chapter 6** of this Final EIR. The capital cost of BRT elements and related improvements of the project are estimated to cost between \$190 to \$450 million, depending on alternative.

#### **Changes to the Hybrid Alternative/SRA**

The changes to the Hybrid Alternative/SRA would not appreciably change the expenditures of nonrenewable resources or project costs described above. Two of these changes would reduce the extent of resources needed to construct the Hybrid Alternative/SRA (no addition of BRT stops in the Spruce/Cook area; Webster Street pedestrian bridge retention). The other change would increase the number of pedestrian improvements implemented in the corridor, but as described in **Section 4.12** above, this would not require substantial additional energy resources over levels anticipated in the Draft EIS/EIR. Moreover, none of the changes to the Hybrid Alternative would result in changes to bus operations (see **Section 3.3**), so no long-term changes in resource usage would result.

#### **Changes to the Draft EIS/EIR**

No text changes are needed to Draft EIS/EIR Section 4.16, Irreversible and Irretrievable Commitment of Resources, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## 4.17 Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity

#### **Summary of Draft EIS/EIR**

Section 4.17 of the Draft EIS/EIR discussed that each of the alternatives would involve construction of public infrastructure improvements, which would involve short-term uses of the environment via the use of fuels and construction materials as well as through temporary increases in noise levels and air pollutants. For the build alternatives, these short-term effects and uses of resources would result in demonstrable long-term benefits, such as improved transit travel times and increases in transit ridership. As demonstrated above, other long-term benefits to air quality, noise, and energy demand would result from an upgrade of the existing bus fleet to diesel hybrid buses, as well as from an anticipated reduction in auto use in favor of bus use. Each of the build alternatives is expected to reduce emissions of several air pollutants, including nitrogen oxides, particulate matter, carbon dioxide, and greenhouse gases. These improvements would contribute to the long-term livability and, therefore, productivity of the Geary corridor.

### **Changes to the Hybrid Alternative/SRA; Changes to the Draft EIS/EIR**

The changes to the Hybrid Alternative/SRA would not appreciably change the short-term uses and long-term benefits described above. No text changes are needed to Draft EIS/EIR Section 4.17, Relationship between Local Short-Term Uses of the Environment and the Maintenance and Enhancement of Long-Term Productivity, as a result of staff-initiated modifications or in response to a comment received on the Draft EIS/EIR.

## CHAPTER 5 PUBLIC PARTICIPATION

### 5.1 Overview

The Geary corridor's six miles feature a very diverse mix of communities from Ocean Beach in the west to the Financial District and South of Market neighborhood in the east. In between, the Geary corridor passes through neighborhoods historically associated with Russian, Japanese, Chinese, Vietnamese, and African-American communities. The Geary corridor also passes through some of the City's major civic spaces, cultural districts, and business centers.

With such length and diversity, the proposed Geary bus rapid transit (BRT) project (the Project) is responsible to a large and complex constituency. For over eight years, the San Francisco County Transportation Authority (SFCTA) and San Francisco Municipal Transportation Agency (SFMTA) have conducted a multi-faceted community engagement process regarding the project alternatives. This chapter summarizes the agencies' efforts to engage the public in the development of alternatives, the screening of alternatives, and the environmental review process. The Draft EIS/EIR Chapter 8 described public outreach prior to release of that document which is summarized here; this chapter also includes descriptions of public participation during and after the Draft EIS/EIR circulation period, as well as an explanation of planned outreach to coincide with release of the Final EIR. While not required by CEQA, this discussion is included in this Final EIR for informational purposes.

### 5.2 Interagency Consultation

Given the complex nature of the Project and the need for informed technical input during all phases of design and implementation, as well as to comply with the requirements of both NEPA and CEQA, SFCTA engaged with responsible public agencies on the scope of the environmental review as well as on the feasibility of various alternatives. These efforts included close coordination between SFCTA and SFMTA, consultation with other local agencies on an individual basis, through an inter-agency Technical Advisory Committee (TAC), and at the City's regular Directors Working Group (DWG) meetings, and consultation with the Federal Transit Administration (FTA). These efforts were described in further detail in Chapter 8 of the Draft EIS/EIR (Public Participation).

### 5.3 Community Involvement

Community involvement in the earliest stages of development of the Project has a long history, beginning with outreach around the 2003 Proposition K Expenditure Plan reauthorization and adoption of the 2004 Countywide Transportation Plan. During the preparation of the Geary BRT *Feasibility Study* (ultimately adopted by the SFCTA Board in 2007), SFCTA conducted extensive outreach. The details of prior outreach are described in the Geary BRT *Feasibility Study* final report, available at:

[http://www.sfcta.org/sites/default/files/content/Planning/GearyCorridorBusRapidTransit/Geary\\_FS\\_low-res.pdf](http://www.sfcta.org/sites/default/files/content/Planning/GearyCorridorBusRapidTransit/Geary_FS_low-res.pdf).

This section describes community involvement activities accompanying the environmental review phase, which began in 2008. Reaching and meaningfully engaging the diverse groups along the Geary corridor in the development of alternatives and environmental review requires a multi-faceted outreach effort utilizing different communication tools and in several different languages, including Chinese, Japanese, Korean, Russian, Spanish, Filipino, and Vietnamese. The project team has conducted multiple rounds of outreach as the design of prospective alternatives underwent refinement in response to community input. Community outreach efforts will continue throughout the environmental review process. Detailed project information, including fact sheets, progress reports, project schedule, etc. will remain available on SFCTA's project website at [www.gearybrt.org](http://www.gearybrt.org).

### 5.3.1 Scoping Phase

The scoping process included outreach that sought to raise awareness of the Project and gather input on actions, alternatives, and critical issues to be analyzed in the environmental review process. The Notice of Preparation (NOP) was sent to the State Clearinghouse and to local, regional, and State agencies on November 20, 2008. FTA published a Notice of Intent (NOI) in the Federal Register on November 24, 2008. Draft EIS/EIR Appendix B includes the NOP and NOI.

The public notice effort included advertisements in local newspapers; a mailing to more than 23,000 residential and commercial occupants of buildings along the Geary corridor, as well as to the outreach database of interested parties developed during the *Feasibility Study*; online announcements on SFCTA and SFMTA web sites; and an announcement poster at bus stops along the Geary corridor.

Scoping meetings were held in December 2008 in the Outer Richmond at the Jackie Chan Activity Center, and in the Tenderloin at the Tenderloin Community School. In July 2009, the project team hosted another community meeting in the Richmond neighborhood as part of the scoping process.

The project team also used their agencies' respective social media platforms to announce these and subsequent meetings. SFCTA also issued press releases as a means of partnering with the local media to raise awareness of the project and to communicate opportunities to provide input.

The results of the scoping process and lists of comments received are summarized in the *Draft Scoping Summary Report*, which is available on SFCTA's website at:

[http://www.sfcta.org/sites/default/files/content/Planning/gearybrtenvironmental/documents/GBRT\\_DraftScopingReport\\_20090223.pdf](http://www.sfcta.org/sites/default/files/content/Planning/gearybrtenvironmental/documents/GBRT_DraftScopingReport_20090223.pdf).

### 5.3.2 Community Meetings on Project Alternatives

After the scoping process concluded, SFCTA convened multiple rounds of general community meetings in part to obtain community input on development of project alternatives. SFCTA noticed these meetings on multiple platforms to encourage broad community participation. These notifications included announcements on the project website, emails to project contacts, displays inside SFMTA buses, bus shelter ads, flyers distributed to local gathering places, and newspaper advertisements in the *Examiner* and *Sing Tao Daily*. Briefings with and announcements to key

stakeholder groups were also used to inform the attendees of upcoming community meetings. In communities with high numbers of non-English speakers, information was provided in multiple languages, including Chinese, Japanese, Korean, Russian, Spanish, Filipino, and Vietnamese on the bus cards, shelter ads, and emails.

A round of outreach on the Project was held in 2012. Meetings focused on several key aspects, including overall project purpose, progress to date, proposed alternatives, and considerations for complex areas such as the Masonic Tunnel and the Fillmore underpass/Japan Center. Public comments elicited at these meetings helped SFCTA better understand the advantages and costs of different options in these areas. Meetings were held on the following dates and at the following places:

- June 25, 2012  
Richmond Recreation Center, 251 18th Avenue
- June 26, 2012  
Japanese Cultural and Community Center, 1840 Sutter Street
- June 27, 2012  
The Event Center at Saint Mary's Cathedral, 1111 Gough Street

In late 2013 and early 2014, SFCTA convened an additional round of community meetings conducted in an open house format. These meetings focused on proposed alternatives including such detail as stop spacing, and potential parking/traffic changes associated with the various alternatives. SFCTA described the potential benefits and concerns of the various alternatives and sought further community feedback in order to identify any other issues of concern.

- December 9, 2013  
Richmond Recreation Center, 251 18th Avenue
- December 17, 2013  
SF Main Library, Koret Auditorium, 100 Larkin Street
- January 30, 2014  
Japanese Cultural and Community Center, 1840 Sutter Street

### 5.3.3 Citizens Advisory Committee

To provide a sustained forum for public input with the ability to focus on key aspects of the Project in greater detail, SFCTA formed a Citizens Advisory Committee (CAC) of 13 members living or working on or near the Geary corridor. The CAC has held noticed and open-to-the-public meetings on approximately a quarterly basis, totaling 31 from July 2008 through September 2016.

The CAC was involved in Project development and design discussions and in previewing and providing recommendations about materials in advance of their provision to the general public. The CAC also assisted with publicizing community meetings, including participating in the distribution of flyers along the Geary corridor. In addition to its ongoing input on Project development, the CAC will make a recommendation to the SFCTA Board before the Board considers actions to certify the EIR and select the Locally Preferred Alternative (LPA). Upcoming meeting information, as well as previous meeting agendas, minutes, and other information about the CAC can be found at:

<http://www.sfcta.org/geary-corridor-bus-rapid-transit-citizens-advisory-committee>.

### 5.3.4 Meetings with Local Groups and Organizations

The project team convened meetings and/or briefings with over 65 local community, neighborhood, business, advocacy, and interest groups over the course of Project development and environmental review process. SFCTA and SFMTA's involvement with many of these groups is ongoing and is expected to continue through the final phases of the environmental review process and detailed design phase. The meetings to date have varied in character, including both small-group discussions and large-group presentations addressing multiple stakeholder groups.

- AfroSolo
- Alamo Square Neighborhood Association
- Alliance for a Better District 6
- Chinatown Community Development Center (including Japantown, Richmond, and Tenderloin facilities)
- Clement Street Merchants
- Central City SRO (Single Room Occupancy) Collaborative
- Coalition of San Francisco Neighborhoods
- Franklin Delano Roosevelt Democratic Club
- Fillmore/Lower Fillmore Neighborhood Association
- First Unitarian Universalist Society of San Francisco
- Friends of the Urban Forest
- George Washington High School Parent Teacher Student Association
- Greater Geary Merchants and Property Owners Association
- Holy Virgin Cathedral
- Institute on Aging
- Interfaith Council
- Japantown Organizing Committee
- Japantown Taskforce
- Kaiser Permanente
- Kimochi
- La Voz Latina
- LightHouse for the Blind
- Lower Polk Neighborhood Association
- Lower Fillmore Merchants Association
- Mo' Magic
- Nihonmachi Little Friends
- Pacific Heights Residents Association
- Pedestrian Safety Advisory Committee
- Planning Association of the Richmond (PAR)

- Richmond District Democratic Club
- Richmond District Neighborhood Center
- Richmond District Senior Center
- Richmond Village Beacon
- Rosa Parks Elementary School
- Roosevelt Middle School
- Russian American Community Services
- Saint Francis Square Cooperative
- Saint Mary's Cathedral
- Save Muni
- San Francisco Council of District Merchants
- San Francisco Planning and Urban Research (SPUR)
- San Francisco Unified School District
- San Francisco Youth Commission
- Senior and Disability Action Network
- Sequoias San Francisco
- SFMTA Community Advisory Committee
- Shell Car Wash, 3005 Geary Boulevard
- Sierra Club of San Francisco
- SF Bicycle Coalition
- SFMTA Citizen Advisory Committee
- SF Small Business Commission
- SF Transit Riders
- Spruce-Cook Block Merchants
- Tenderloin Community Benefit District
- Tenderloin Futures Collaborative
- TransForm
- Union Square Business Improvement District
- University of San Francisco Student Senate
- University of San Francisco Residence Hall Association
- Urban Forestry Council
- Walk San Francisco
- Yerba Buena Alliance

### 5.3.5 Corridor Surveys and Visualization Kiosks

In addition to the meetings with neighborhood groups, the project team conducted several surveys on the Geary corridor. A 2013 visitor intercept survey reached nearly 600 travelers in the corridor and obtained information on their travel behavior and perspectives on Geary transportation needs and the BRT Project. Also in 2013, a door-to-door survey of over 500 local

merchants along the Geary corridor obtained responses from over 200 businesses, capturing their perspectives on transportation needs along Geary. From October to December 2015, the project team placed two visualization kiosks on Geary Boulevard, one at Webster Street and one at 17<sup>th</sup> Avenue, allowing passers-by to view simulated images of the proposed improvements at those locations and complete a short survey to share their opinions on the Project. Over 6,400 people used the devices; of these, about 1,800 completed the survey.

### **5.3.6 Informational Materials**

To facilitate public outreach, SFCTA developed an array of informational materials to foster understanding of the Project's purpose and potential alternatives.

In 2008, SFCTA first developed and distributed a four-page fact sheet to provide a Project overview. The fact sheet also included detailed information on specific issues of community concern on which SFCTA sought focused input to help shape Project alternatives. SFCTA updated and distributed the fact sheet regularly through the course of project development, most recently in November 2016. Iterations of the fact sheet were translated from English into several languages, including Chinese, Japanese, Korean, Russian, Spanish, Filipino, and Vietnamese. The current project fact sheet is available for download at [www.gearybrt.org](http://www.gearybrt.org).

### **5.3.7 Cultural Resources Community Consultation**

As part of the Historic Resources Inventory and Evaluation Report (HRIER) and the Archaeological Survey Report, local historic preservation groups, as well as Native American tribes, groups, and individuals, were contacted and were provided the opportunity to review these reports and provide input. Please see Section 4.5 for additional information on this outreach.

### **5.3.8 Outreach during the Draft EIS/EIR Circulation and Public Comment Period**

SFCTA distributed the Draft EIS/EIR on October 2, 2015, in accordance with both CEQA and NEPA, to applicable federal, state, and local agencies, elected officials, neighborhood groups, and other interested parties who had expressed interest in the proposed project and those who requested a copy of the Draft EIS/EIR. It was made available for a 59-day public review period to solicit public comment from agencies, organizations, and individuals. An electronic version of the Draft EIS/EIR was posted to the project website at [www.gearybrt.org](http://www.gearybrt.org); paper copies were made available at SFCTA (1455 Market St.), the SFMTA (1 S. Van Ness Ave.), the SF Planning Information Center (1660 Mission St.), the SF Main Library (100 Larkin St.), the Anza Branch Library (550 37th Ave.), the Richmond/Senator Milton Marks Branch Library (351 9th Ave.), and the Western Addition Branch Library (1550 Scott St.) throughout the duration of the public comment period. CD copies of the Draft EIS/EIR were made available upon request through the SFCTA at no cost to the public and paper copies could be purchased at the cost of printing.

SFCTA invited comments to be submitted in writing via mail or email throughout the public comment period, or provided at the public comment meeting orally or in writing. A total of 299 comment communications (e.g. letters, emails, oral comment transcripts) were submitted. These included six communications from agencies, 13 communications from organizations, and 280 separate communications from 244 individuals. All comments received during the public



comment period, as well as those received before December 10, 2015, are included in **Appendix B** of this Final EIR along with written responses to each of these comments. The topics most commonly raised in the comments received are reflected in the list of Master Responses provided in **Appendix B, Table B.2-1**.

#### 5.3.8.1 DOCUMENT RELEASE NOTIFICATION

Notification of the availability of the Draft EIS/EIR and the associated public comment meeting was provided in a variety of mediums, formats, and languages, including the following:

- 1) A multi-lingual (English, Spanish, Filipino and Chinese) mailer was mailed to over 20,000 residents and owners along the length of the corridor, stakeholder groups and past meeting attendees.
- 2) The Project website was updated the week prior to release of the Draft EIS/EIR announcing the upcoming public comment period. Information was provided in English, Spanish, Chinese, Filipino, Russian, Japanese, Vietnamese and Korean.
- 3) Multi-lingual bus shelter ads were posted along the Geary corridor in English, Spanish, Chinese and Filipino, announcing the availability of the Draft EIS/EIR for public review and comment. The same ad was also posted inside buses in the space behind the driver's seat.
- 4) A multi-lingual email was sent on October 5, 2015 in English, Spanish, Chinese and Filipino to over 1,000 people by SFCTA and SFMTA. Additional communications were sent on the following dates: October 30, 2015 and November 12, 2015 via SFCTA's and SFMTA's Twitter and Facebook pages announcing the public comment meeting and the extension of the public comment period.
- 5) The Notice of Availability/Notice of Completion of the Draft EIS/EIR was published in the following publications: San Francisco *Examiner*, *Richmond Review*, *The New Fillmore*, *Western Edition*, *Central City Extra*, *Kstati*, *Nichi Bei Weekly*.
- 6) Facebook ads were posted to announce the public comment meeting targeting people using the application near the Geary corridor.
- 7) A Project Fact Sheet was housed on the Project website ([gearybrt.org](http://gearybrt.org)) available for the public to download. It was also provided at all community meetings and briefings, and available at the public comment meeting held on November 5, 2015. Fact sheet inserts describing the public comment period and meeting were available in Spanish, Chinese, Filipino, Russian, Japanese, Vietnamese and Korean.
- 8) A SFMTA Blog post was published on October 20, 2015 that described the environmental process, including the purpose of the public comment period and public comment meeting.
- 9) SFCTA and SFMTA contacted over 80 local stakeholder organizations and met with those groups that requested a meeting with the project team prior to or during the public comment period for the Draft EIS/EIR. These meetings occurred in October and November 2015 and provided project updates, including information about the Draft EIS/EIR and the public comment meeting.
- 10) Information about the release of the Draft EIS/EIR and public comment meeting were provided to the Citizen's Advisory Committee (CAC) at the October 7, 2015 meeting.
- 11) A press release announcing the availability of the Draft EIS/EIR was distributed to local media outlets on Thursday October 1, 2015.

#### 5.3.8.2 PUBLIC COMMENT MEETING

SFCTA held a public comment meeting in an open house format on November 5, 2015 at St. Mary's Cathedral, 1111 Gough Street. The purpose of the meeting was to encourage the public to

provide oral comments at the meeting and submit written comments. The public had an opportunity to discuss issues and questions with subject experts including engineers and planners on the project team. There was a 30-minute formal presentation given during the meeting, and over two hours were devoted to an open house Q/A session with the project team to provide open dialogue between the public and staff. Comment cards were available for participants to submit written comments at the meeting, and court reporters were present to record and transcribe all oral comments on the Draft EIS/EIR. Approximately 160 people attended the meeting.

During the formal presentation at the meeting, some previously submitted written comments and sign-in sheets were stolen from the sign-in table. As soon as staff were made aware, a staff member publicly announced the incident to all community members in attendance and encouraged those who had previously submitted comments to resubmit and sign in again. As a result of the incident and subsequent public comments requesting an extension of the public comment period, SFCTA extended the public comment period an additional 14 days, from its originally scheduled November 16, 2015 end date to November 30, 2015. SFCTA notified the public of the incident and extended comment period with an email to the 750 subscribers to the project email list; newspaper advertisements in the *San Francisco Examiner*, *Western Edition*, *Kstati*, and *Nichi Bei Weekly*; an SFMTA blog post; and social media posts on Facebook, Twitter, and Nextdoor. Several comments that were stolen from the meeting, possibly representing all of the stolen comments, as well as stolen meeting sign-in sheets were later returned anonymously to SFCTA by mail. The recovered comments are included in Final EIR **Appendix B** together with all other comments received.

### 5.3.9 Outreach following the Draft EIS/EIR Circulation Period

Following the end of the public comment period on November 30, 2015, the project team contacted some of the neighborhood groups, advocacy organizations, residences, and merchants who submitted comments in order to better understand their concerns, develop responses to comments addressing those concerns, and refine design to better fit the key needs of communities along the corridor. The project team also received additional meeting requests from stakeholder groups who did not submit comments during the public comment period.

Since the release of the Draft EIS/EIR, the project team has convened a total of more than 60 meetings with over 30 stakeholder groups. At several of the meetings, additional concerns outside of those articulated during the comment period were voiced and documented. In addition, meeting attendees made recommendations of additional community groups, advocacy organizations, and institutions the project team should engage with to collect additional public input on project proposals.

All of the stakeholder groups the project team met with since the release of the Draft EIR/EIS are discussed in Section 5.4 below. The project team met with several groups multiple times to address key issues raised.

In addition to stakeholder meetings, the project team tabled at community events and updated the Geary BRT CAC quarterly (four times since the release of the Draft EIS/EIR) on outreach efforts, community concerns and design refinements.

## 5.4 Community Input Received after the Draft EIS/EIR Circulation Period

Since the close of the public comment period of the Draft EIS/EIR on November 29, 2015, the project team has continued to receive public input. In some cases, members of the public have provided input as part of the ongoing outreach processes described in Section 5.3.9 above, while in other cases the project team has received written communications including letters and emails.

Communications received after December 10, 2015 are not considered formal comments on the Draft EIS/EIR and not included in this Final EIR. However, the project team has continued an open dialogue with members of the public and worked to respond to these additional communications, including answering questions and addressing concerns where possible, outside and in addition to the formal Response to Comments process. Agency staff responded to some of these communications in writing, particularly if a member of the public had a specific question or concern about the Project. In other instances, staff met with the member(s) of the public who submitted a communication in order to provide additional project information, answer questions, and discuss specific issues.

None of the communications received after the close of the comment period contain new information revealing new or more severe significant environmental impacts that would result from the Project, identify feasible project alternatives or mitigation measures substantially different from those identified in the Draft EIS/EIR, or point to substantial flaws in the Draft EIS/EIR.

### 5.4.1 Responses to Key Issues Raised

This section provides a summary of the primary concerns members of the public raised in communications received between December 10, 2015 and September 9, 2016 and how the project team has addressed them. The project team met with members of the public regarding a number of specific issues in order to better understand the concerns raised and work to address them if possible. Several of these, including the Richmond stakeholder concerns, red transit-only lane concerns, Spruce Street bus stop, and Webster and Steiner bridge issue were initially raised in comments on the Draft EIS/EIR.

Issues regarding the Laguna stop (Section 5.4.1.3 below) and Holy Virgin Cathedral (Section 5.4.16 below) were raised by these stakeholders after the conclusion of the public comment period on the Draft EIS/EIR.

#### 5.4.1.1 RICHMOND STAKEHOLDER CONCERNS: PROJECT BENEFITS AND IMPACTS

A group of Geary merchants, representatives of PAR, and other Richmond District residents presented the project team with a document of community “narratives” detailing several community concerns. They are concerned that the travel time benefits of the Hybrid Alternative/SRA within the Richmond District are not worth the estimated cost of construction of the Project, and that construction and traffic impacts will negatively impact the community. In addition, the group does not support the removal of trees in the Richmond District or full-time transit-only lanes. The group also voiced concerns regarding the project public outreach and environmental review processes.

In response, the project team provided detailed presentations on the following subjects: Geary corridor existing and future bus travel times, parking impacts, application of red color treatment on transit-only lanes, construction outreach and mitigation strategies, and research on the economic effects of BRT.

#### 5.4.1.2 RED TRANSIT-ONLY LANES

Owners of the Shell Car Wash at 3005 Geary Boulevard, in addition to several other Geary merchants in the Richmond, have articulated concerns with the SFMTA's use of red color treatment on transit-only lanes (see comments I-216 and I-217 in **Appendix B** of the Final EIR). These concerns are related to the effectiveness of the treatment, legality of its application, access to adjacent driveways, and driver confusion. Several businesses between Spruce and Blake Streets signed a petition illustrating their opposition to red transit-only lanes on Geary Boulevard.

The project team provided the owners of the Shell Car Wash with details regarding the status of the SFMTA's permission to experiment with red color treatment, driveway access, and the effectiveness of red color treatment across key transit and safety performance metrics. In addition, the project team met with the owners to discuss the bus-only lane striping in front of their establishment. The layout of the Hybrid Alternative/SRA has been clarified to reflect *dashed* red bus-only lanes in front of their driveway and approaching the adjacent Cook Street intersection. See Final EIR **Appendix B**, response to comment I-217.3.1.

#### 5.4.1.3 LAGUNA STREET BUS STOP

Members of the Japantown Taskforce and residents at the Sequoias senior living facility who live near Geary/Laguna expressed concerns regarding the Hybrid Alternative/SRA's proposal to have the Laguna bus stop serve only Local buses, as compared to serving both Local and Rapid buses today, and submitted several hundred petition signatures against this change after the close of the public comment period on the Draft EIS/EIR. This concern was raised and the petition was submitted after the comment period, during discussions with the Japantown taskforce regarding the Webster and Steiner overcrossings.

After meeting with area stakeholders to understand their concerns, the project team analyzed the implications of maintaining a Rapid stop for key project performance metrics (transit travel time, reliability, and pedestrian safety). Findings were documented in a memo.<sup>1</sup> The project team recommends keeping Laguna as a Local-only bus stop as proposed in the Draft EIS/EIR, and will continue to dialogue with stakeholders to ensure the roll-out of this service change happens with adequate communication so that riders can more readily understand the new service pattern, particularly vulnerable populations such as seniors.

#### 5.4.1.4 WEBSTER AND STEINER STREET PEDESTRIAN OVERCROSSINGS

The proposed removal of the pedestrian overcrossing at Webster Street was the concern raised by the largest number of public comments on the Draft EIS/EIR, including a petition with more than 700 signatures (Comment O-6.3). Members of the Japantown and Western Addition communities were particularly concerned about the need for groups of children to cross Geary

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<sup>1</sup> See memo *Analysis of Geary Corridor Stop Options at Laguna Street* from Wahid Amiri and Colin Dentel-Post to Ed Reiskin and Tilly Chang dated September 14, 2016.

Boulevard, and felt that new surface crossings would be inadequate for this purpose. A small number of stakeholders also expressed concerns about removing the pedestrian overcrossing at Steiner Street.

The project team held a series of meetings with neighborhood schools and the Japantown Task Force to understand their concerns, develop potential design solutions, and share analysis results. The team also consulted the San Francisco Department of Recreation and Parks, which operates recreation facilities at Steiner Street (the Hamilton Recreation Center and the Raymond Kimbell Playground). The Department of Recreation and Parks supports removal of the Steiner Street bridge. The project team considered the implications of retaining each bridge (including transit travel time, reliability, traffic circulation, ADA access, and pedestrian safety) and documented the results of a bus travel time analysis in a technical memo.<sup>2</sup> As a result of this outreach and analysis, the project team modified the Hybrid Alternative/SRA to retain the pedestrian bridge at Webster Street. The Hybrid Alternative/SRA still includes removal of the Steiner Street bridge. For more information about project changes, see Final EIR **Chapter 2** and Master Response 1b within Final EIR **Appendix B**.

#### 5.4.1.5 SPRUCE STREET BUS STOP

Merchants on Geary in the block between Spruce and Cook Streets submitted several comments on the Draft EIS/EIR expressing concerns with the project proposal to construct full-block bus bulbs on both sides of Geary Boulevard, removing all parking and loading adjacent to their businesses. See Final EIR **Appendix B**, comments I-33, I-36, I-111, I-120, I-121, I-130, I-136, I-137, I-197, I-200, I-205, I-216, I-217, and I-225 for examples of such comments and written responses to each of these comments. They also provided a petition opposing the construction of the bulb and removal of parking. The stop at Spruce is currently a combined local, Rapid, and express stop. The Hybrid Alternative/SRA as articulated in the Draft EIS/EIR proposed a BRT stop, but would also serve local and express buses. The full block bulbs on each side of the street were proposed to accommodate three articulated buses.

The project team met several times with merchants on this block and conducted a survey of adjacent blocks to determine if the bulbs could be relocated nearby. However, because of design constraints and adjacent land uses, relocating the bulb was not a feasible solution. Given the low ridership of the stop relative to other Rapid stops in the corridor, the project team considered converting the stop to local-only and met with nearby stakeholder groups to solicit input on this idea. Nearby University of San Francisco student groups and staff were supportive of the overall Project, regardless of the proposed change in this area. Based on this evaluation of options and community input, SFCTA and SFMTA modified the Hybrid Alternative/SRA to convert the stop to local-only, maintain the existing bus zones as-is in lieu of constructing to bus bulbs, and preserve all on-street parking and loading between Spruce and Cook streets. See Final EIR **Chapter 2** for a further description of these changes to the Hybrid Alternative/SRA; see Final EIR **Appendix D** for revised plan drawings.

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<sup>2</sup> See memo *Geary Boulevard Bus Rapid Transit: Japantown Bus Delay Analysis* from Daniel Mackowski to Wahid Amiri dated March 29, 2016.

#### 5.4.1.6 HOLY VIRGIN CATHEDRAL CONCERNS: PARKING AND BUS LANE TRANSITION

The project team met several times with representatives of the Holy Virgin Cathedral (HVC), located on Geary Boulevard between 26th Avenue and 27th Avenues, who expressed concerns regarding parking and the bus lane transition from the center to the side of the street proposed to occur on this block. The project team will continue to engage with HVC to alleviate any concerns as necessary.

## 5.5 Current and Future Outreach Efforts

In advance of the Final EIR release, the project team launched a multi-channel, multi-lingual education campaign beginning in October 2016 outlining recent design refinements and details related to the environmental review process. The campaign includes website updates, social media, corridor-wide mailings, canvassing at bus stops, and Textizen updates. Textizen is a service that allows subscribers to opt in to receive project information via text.

In addition, the project team will provide notice of the Final EIR release and upcoming hearing dates in multiple languages and explain how to provide public feedback to the project decision-makers, the SFCTA Board and SFMTA Board. Advertisements will include newspaper ads, postcards at bus stops, information cards in bus shelters and on buses, and ads in local newspapers in accordance with Federal, state and local law.

The Final EIR will be available online at [www.gearybrt.org](http://www.gearybrt.org), and the website will also provide information on how to view or obtain a hard copy.

Following review under NEPA and CEQA, if the Project is approved, the SFMTA will manage the Project's design and implementation and would also lead ongoing outreach efforts, including convening a new Citizens Advisory Committee (CAC) and Business Advisory Committee (BAC).

The main project website would be hosted by the SFMTA at [www.sfmta.com/gearybrt](http://www.sfmta.com/gearybrt). The previous site ([www.gearybrt.org](http://www.gearybrt.org)) would still be live and updated periodically by SFCTA staff.

## CHAPTER 6 FINANCIAL ANALYSIS

This chapter provides a summary of the estimated costs of construction, annual operations, and maintenance of the improvements associated with the Hybrid Alternative/SRA, which is anticipated to be adopted as the Locally Preferred Alternative (LPA). The chapter also summarizes committed, planned, and potential additional sources of project funding. Since publication of the Draft EIS/EIR, there have been no changes to the overall cost estimate for the Hybrid Alternative/SRA or to the project elements proposed for funding by the Federal Small Starts program.

For full details on costs and funding for all alternatives, as well as descriptions of funding sources and other projects to be coordinated with the Geary BRT project, please refer to the project Draft EIS/EIR, Chapter 9. While not required by CEQA, this discussion is included in this Final EIR for informational purposes.

### 6.1 Capital Costs

SFCTA and SFMTA have collectively developed cost estimates for the engineering, design, and construction of the proposed improvements. As a first step in estimating costs, SFCTA prepared preliminary-level engineering design drawings for each alternative over the entire Geary corridor. Design and construction costs are comprised of:

- Hard costs based on itemized quantities of project components using the preliminary engineering drawings, including anticipated contractor mark-ups
- Allowances for scope items identified as necessary but not yet defined at an engineering level
- Soft costs for needed professional services
- Contingencies to account for uncertainties inherent at this preliminary level of engineering design

These costs include all of the scope elements described in this chapter and analyzed in this document. Some of these scope elements are not strictly needed in order to provide and operate a BRT facility, but they otherwise benefit the community in other ways or are needed to facilitate the continued management and stewardship of the City's street, streetscape, and utility systems as changes are made to the Geary corridor to accommodate BRT. These related improvements are therefore important to coordinate closely with the BRT components for construction. Examples of each type of scope element are as follows:

- **BRT elements:** Includes new road surface and base for bus lanes where no surface currently exists (such as for center-running alternatives); new road surface for bus lanes where pavement condition is poor; new landscaped medians to accommodate bus lanes for center-running alternatives and segments; new bus bulbs; station platforms where none currently exist (such as for center-running bus lanes); station and stop passenger amenities; bus vehicles for increased service; right-turn pockets to improve bus flows; traffic signal modifications to improve bus flows and accommodate center-running bus lanes; and removal of the pedestrian bridge at Steiner Street to provide bus lanes and accommodate improved street-level crossings and smoother traffic flows. In addition,

elements such as underground sewer and water line relocations and replacements are needed to accommodate bus lanes, stations, and bus bulbs but represent opportunities for cost-sharing.

- **Related improvements:** Includes new street lights; roadway base and surface repair for mixed-flow travel lanes; traffic signal modifications for pedestrian crossing enhancements (including at Webster and Steiner Streets, where new surface crossings are proposed); traffic signal underground communications; pedestrian crossing bulb-outs; new landscaping on existing medians; sidewalk and streetscape improvements; a street re-design between Masonic and Presidio Avenues to accommodate bike lanes; and a street re-design between Gough and Scott Streets to accommodate a road diet to remove mixed-flow travel lanes.

The capital cost for the Hybrid Alternative/SRA is \$300 million. Although several changes were incorporated in this alternative between the Draft EIS/EIR and Final EIR (see Final EIR **Chapter 2**) the overall cost estimate has not changed. Of the three project changes, the retention of the pedestrian overcrossing at Webster Street and the elimination of BRT stops at Spruce Street would together reduce the cost of the Hybrid Alternative/SRA by approximately \$4 million. However, the additional pedestrian bulbs and other safety improvements added to the Hybrid Alternative/SRA would add a roughly equivalent cost. Therefore, on balance the changes to the Hybrid Alternative do not affect the total cost estimate of \$300 million.

### 6.1.1 FTA Small Starts-Funded Project Elements

For federal funding purposes, the cost estimate has been developed with separate costs for each scope element and corridor segment. As noted in Sections 6.1.2 and 6.1.3 below, the Project would draw upon multiple sources to fund its capital cost. This approach requires the Project to be separated into packages of scope elements as appropriate to maximize eligibility and competitiveness for each funding source. In addition, there are opportunities for cost-sharing with other City efforts, such as for re-surfacing and utility replacements, which SFMTA will pursue.

The cost of the Project is \$300 million, including the \$200 million cost of the FTA Small Starts package, which makes the project eligible to compete for funds within the FTA Small Starts program.

To illustrate Project packaging for funding purposes, Table 6-1 below describes separation of the Hybrid Alternative/SRA into three packages. A potential set of near-term improvements, as initially outlined in Draft EIS/EIR Section 2.3, has been bundled together as Package A and would be funded locally. Package B would serve as the project definition for application to the FTA Small Starts program. Package C would represent other concurrent improvements to be implemented in the corridor that would use other funding, including local sources and potentially other federal sources aside from the FTA Small Starts program.

All of the changes to the Hybrid Alternative/SRA incorporated since the Draft EIS/EIR would be included in Package A below, and would thus not affect the definition of the project for purposes of the Small Starts-funded package.



**Table 6-1 Proposed Geary Corridor Funding Packages**

PROJECT FUNDING PACKAGE	IMPROVEMENTS INCLUDED	COST ESTIMATE (YEAR OF EXPENDITURE \$) AND PROPOSED FUNDING SOURCES
A. Near-term improvements (initiate construction 2017)	<ul style="list-style-type: none"> <li>• Red bus-only lane, Gough to Stanyan, where feasible<sup>1</sup></li> <li>• Bus stop changes</li> <li>• Bus and pedestrian bulb-outs</li> <li>• Traffic signal upgrades</li> <li>• Right-turn pockets</li> <li>• Fillmore-area road diet (lane reduction), pedestrian bridges removal, median improvements, and signals</li> <li>• Upgraded station amenities and real-time passenger information</li> <li>• Mixed-flow lane re-surfacing, Market to Stanyan, as needed</li> <li>• Utility relocation related to BRT<sup>2</sup></li> </ul>	<p style="text-align: right;">\$65M</p> <p style="text-align: right;">All local funds</p>
B. Geary Bus Rapid Transit project (initiate construction as early as 2018)	<ul style="list-style-type: none"> <li>• Center-running, red bus-only lane, Stanyan to 27th Ave with high-amenity stations</li> <li>• Masonic-area transit improvements</li> <li>• Bus and pedestrian bulbs, stops, and signals (additional locations)</li> <li>• Vehicles for increased service</li> <li>• Utility relocation related to BRT<sup>2</sup></li> </ul>	<p style="text-align: right;">\$200M</p> <p style="text-align: right;">FTA Small Starts (\$100M) with matching local and non-Small Starts federal funds</p>
C. Other Concurrent Improvements (initiate construction as early as 2018)	<ul style="list-style-type: none"> <li>• Red bus-only lane and stop modifications, 27th to 48th Ave</li> <li>• Masonic-area bike lane and median modifications</li> <li>• Mixed-flow lane re-surfacing, remainder of corridor, as needed</li> <li>• Pedestrian bulbs (additional safety-related locations) west of Stanyan</li> </ul>	<p style="text-align: right;">\$35M</p> <p style="text-align: right;">Local and non-Small-Starts federal funds</p>

**Notes:**

1 Some blocks around Fillmore and Masonic may have insufficient width to designate a transit-only lane without additional street infrastructure changes.

2 Additional utility work not related to the Geary Corridor project may be coordinated with the project to minimize public disruption and maximize efficiency.

### 6.1.2 Budgeted/Planned Funding

SFCTA and SFMTA have identified a portion of the funding needed. Budgeted and planned funding sources for the Project are described below and summarized in Table 6-2, along with other potential funding sources, which are described in Section 6.1.3.

#### 6.1.2.1 FEDERAL

- **FTA Small Starts (\$100 million).** This FTA program provides competitive grants for new transit projects with capital costs that do not exceed \$300 million. Since the Draft EIS/EIR, FTA has increased the maximum grant amount from \$75 to \$100 million, and the maximum project capital cost from \$250 to \$300 million. SFCTA and SFMTA intend to apply for the maximum grant amount, \$100 million, with plans to enter the program in Fiscal Year 2017/18.

### 6.1.2.2 LOCAL

- **Proposition K Sales Tax (\$50 million).** In November 2003, San Francisco voters approved Proposition (Prop K), extending the existing half-cent local sales tax for transportation and approving a new 30-year Expenditure Plan identifying projects and programs to be funded by the sales tax, including BRT on Geary. The Prop K Strategic Plan (2014) prioritized funding for BRT on Geary within the BRT/Transit Preferential Streets/MUNI Metro Network and Transit Enhancements categories. To date, the SFCTA Board has allocated \$17.16 million in Prop K funds for the planning/conceptual engineering, environmental studies, and detail design phases of the project. Going forward, an additional \$33.62 million is programmed to the Project, summing up to a total of \$50.79 million in Prop K funding.
- **Local General Obligation Bonds and SFMTA Revenue Bonds (up to \$18 million).** San Francisco voters approved a General Obligation bond measure for transportation in November 2014, with a program emphasis on improving transit and safe streets. In addition, SFMTA Revenue Bonds can fill in funding gaps where other funding sources have traditionally not been available and provide funding for state of good repair projects and capital improvement programs such as Muni Transit Safety and Spot Improvements, Transit Fixed Guideway Improvements, Pedestrian Safety and Traffic Signal Improvements and Muni Light Rail Vehicle Procurement. San Francisco voters had earlier authorized SFMTA to issue revenue bonds with the 2007 passage of Proposition A. The first such revenue bonds for new projects and financing existing debt were issued in 2012. SFMTA has programmed approximately \$9 million of these local sources for the proposed project in its Capital Improvement Program (CIP) and may consider adding additional revenue in future CIPs.
- **Proposition AA Vehicle Registration Fee (up to \$5 million).** In November 2010, San Francisco voters approved a \$10 increase in vehicle registration fees, with revenues dedicated to transportation improvements identified in the 30-year Expenditure Plan. Under this source, elements of the Project would be eligible for funds under all three Expenditure Plan categories: (1) street repair and reconstruction; (2) pedestrian safety; and (3) transit reliability and mobility improvements. Proposition AA (Prop AA) generates approximately \$5 million annually and is administered by SFCTA. Funds are currently programmed for projects through the Prop AA Strategic Plan and 5-Year Prioritization Programs, which cover Fiscal Years 2012/13 through Fiscal Year 2016/17. Prop AA funds are currently available in the Street Repair and Transit categories in Fiscal Year 2016/17. The next project selection is anticipated to occur in March 2017 for funds available in Fiscal Years 2017/18 – 2021/22.

### 6.1.3 Other Potential Funding Sources

As the project advances through the next steps of development and approvals, SFCTA and SFMTA staff will continue to identify possible sources of funding for the Project.

#### 6.1.3.1 FEDERAL

- **Transit Performance Initiative (TPI) Investment Program.** In May 2012, the Metropolitan Transportation Commission (MTC) created the TPI Investment Program, which functions as a competitive capital program focused on incremental investments to

improve performance on major transit corridors. Projects funded via this program are expected to be implemented or under construction within 18 months of funding approval. In the first two funding cycles, a total of \$54.7 million in federal funds was awarded to twelve projects, including \$19.9 million to SFMTA for five projects, such as Mission Mobility Maximization and N-Judah Mobility Maximization projects, along with additional bus stop consolidation and roadway modifications. MTC estimates at least \$17 million available for the third round of programming, which is underway. Additional funds will be available for subsequent calls for projects. The Project would likely be eligible and competitive for funding under this program. Based on the previously awarded projects, the Project could receive up to \$10 million.

- **OneBayArea Grant (OBAG) Program (Federal Surface Transportation Program (STP) / Congestion Mitigation and Air Quality Improvement (CMAQ) Program Funds).** Projects funded through this program are selected by SFCTA for federal funding passed through MTC, and are meant to support projects that support transit oriented development and advance the region's greenhouse gas emissions reductions goals. Over \$35 million in federal funds were programmed to projects within San Francisco through the first grant cycle in 2012, with significant investments in streetscape upgrades, bicycle and pedestrian safety improvements, and local road rehabilitation. Elements of the proposed project, including the Small Starts BRT package (see Table 6-1), could compete for a portion of about \$35 million estimated to be available starting in Fiscal Year 2018/19. The Project would seek to secure up to \$10 million.
- **Lifeline Transportation Program (LTP).** Similar to OBAG, LTP is comprised of state and federal funds programmed by MTC, but San Francisco projects are selected by SFCTA and SFMTA. The LTP supports projects that improve transportation choices for low-income or otherwise disadvantaged communities or closes barriers to mobility. As the Geary corridor traverses identified Communities of Concern (Tenderloin/Civic Center, Western Addition, and Inner Richmond), components of the proposed project could potentially compete well in future LTP cycles. While the amount of LTP funding varies from cycle to cycle, with each cycle lasting approximately 3 years, in 2013 SFCTA programmed a little over \$5 million and SFMTA programmed over \$17 million to eligible projects. Based on previous cycles, the Project could compete for approximately \$5 in the 2017 call.

#### 6.1.3.2 STATE

- **Cap and Trade.** The state's cap and trade program includes 10% of continuously appropriated funds for the Transit and Intercity Rail Capital Program (TIRCP). Although revenues are in a state of flux, SFMTA received \$86 million in the first two rounds of programming. In August 2016, the Legislature approved AB1613, which among other things appropriated \$135 million from prior auction process to TIRCP. TIRCP will fund direct investments in transit programs that reduce greenhouse gas emissions and benefit disadvantaged communities. The proposed project would be eligible to seek funds from this program although the amount is difficult to estimate at present. MTC has adopted a regional framework for the TIRCP, and includes funds for SFMTA core capacity and BRT projects generally, potentially also including the Geary BRT Project.

### 6.1.3.3 LOCAL

- **Charter Amendment / General Sales Tax Funds.** A charter amendment and a general sales tax increase for funding homelessness and transportation are currently proposed for the November 2016 ballot. If both measures are approved by voters, the sales tax could raise funds in the order of \$100 million annually for transportation, which would be distributed among various projects, potentially up to 30 million for the Project.
- **Other Developer Contributions.** The SFMTA works with real estate developers to fund transportation improvements that mitigate the impacts caused by new development through development agreements or other arrangements, which are separate and on top of the aforementioned TSF funds. It is possible that the Project could receive up to \$10 million in funds from developer contributions.
- **Transportation Sustainability Fee.** In 2015, San Francisco approved the Transportation Sustainability Fee (TSF) as part of a program that aims to take a comprehensive approach to new development's role in supporting the transportation system. The TSF replaces the existing Transit Impact Development Fee and helps to offset the impacts of new development on the transportation system. The TSF is anticipated to fund a \$1.2 billion expenditure program over 30 years. The amount and timing of these funds are dependent on the pace of development in San Francisco, but revenues are anticipated to be collected beginning in Fiscal Year 2016/17 with approximately \$5 million that could be used for the Project.

SFCTA and SFMTA staff will continue to advocate for future regional, state, and federal revenue sources for the Project, including new state and regional revenues such as from an additional Bay Area bridge toll, which is contemplated in the Regional Transportation Plan update that is underway.

**Table 6-2 Planned and Potential Geary Corridor Funding Sources**

PROPOSED FUNDING SOURCE	PROPOSED (UP TO) AMOUNT (\$M)	PROPOSED YEAR AVAILABLE
<b>FEDERAL FUNDS</b>		
FTA Small Starts	\$100	FY 2018
Transit Performance Initiative-Investment	\$10	FY 2018-2020
OBAG Program (Federal STP/ CMAQ Program funds)	\$10	FY 2019-2020
Lifeline Transportation Program	\$5	FY 2019
<b>STATE FUNDS</b>		
Cap and Trade	\$20	FY 2017-2020
<b>LOCAL FUNDS</b>		
Prop K Transportation Sales Tax	\$50	FY 2011-2020
Cost sharing opportunities (e.g. Public Utilities Commission, San Francisco Public Works, others for utilities, paving, etc.)	\$50	FY 2015-2020
Charter Amendment/Sales Tax	\$30	FY 2017-2020
2014 General Obligation Bond	\$13	FY 2015-2020
Other Developer Contributions	\$10	FY 2018-2020
Prop AA Vehicle Registration Fee	\$5	FY 2017-2020
SFMTA Revenue Bond	\$5	FY 2015-2020
Transportation Sustainability Fee	\$5	FY 2017-2020
<b>TOTAL</b>	<b>\$313M</b>	

## 6.2 Operations and Maintenance Costs

This section summarizes the expected operations and maintenance costs associated with each of the build alternatives. Funding for operations and maintenance of the proposed project would come from existing revenue sources for SFMTA, which include fare and parking revenues, operating grants (e.g., State Transit Assistance), traffic fees, and fines. Changes that have been incorporated in the alternative since the Draft EIS/EIR do not increase the proposed amount of transit service or materials that require maintenance, such as landscaping or other infrastructure, so the operations and maintenance costs have not changed.

### 6.2.1 Operating Costs

Table 6-3 illustrates the annual costs for SFMTA to run vehicles and provide revenue service for the No Build and the build alternatives. These estimates include the annualized vehicle operating costs and roadway maintenance costs. The operational cost of Alternative 2 and the Hybrid Alternative/SRA are the highest; approximately 33 percent higher than the No Build Alternative.

Alternatives 3 and 3-Consolidated are about 25 and 19 percent higher than the No Build Alternative, respectively.

Each build alternative would provide increased transit service (relative to No Build) in anticipation of higher demand resulting from improved transit performance.

It should be noted that these service plans and resulting operating costs are intended for analysis and comparison purposes only. Ultimately, SFMTA will make service decisions based on the analysis of empirical ridership data and other available resources. Therefore, actual service plans may vary.

**Table 6-3 Annual Operating and Maintenance Costs for Proposed Service**

COST TYPE	NO BUILD ALTERNATIVE	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 3-CONSOLIDATED	HYBRID ALTERNATIVE/SRA
Annualized Revenue Hour Vehicle Operating Cost*	\$36,471,000	\$48,409,000	\$45,586,000	\$43,322,000	\$48,340,000
% Change From No Build Alternative	--	+33%	+25%	+19%	+33%
Other Incremental Annualized Operating and Maintenance Costs**	\$251,000	\$1,091,000	\$596,000	\$596,000	\$858,000
% Change From No Build Alternative	--	+335%	+137%	+137%	+242%
Total Cost	\$36,722,000	\$49,500,000	\$46,182,000	\$43,918,000	\$49,198,000
Total % Change From No Build Alternative	--	+35%	+26%	+20%	+34%

Note: Operating and vehicle maintenance costs based on National Transit Database (NTD); other roadway maintenance accounts for paving, pothole, red lane, and landscape costs.

\* Vehicle cost type includes costs for operating the service and maintaining the vehicles.

\*\* Other cost type includes busway surface maintenance and landscaping maintenance.

Source: SFMTA, 2015

## 6.2.2 Maintenance Costs

Table 9-4 also shows the maintenance cost of the street infrastructure improvements. Each of the build alternatives would result in greater maintenance costs than the No Build Alternative. Increased maintenance costs include any needed repairs to potholes and patches to any center-running bus-only lanes, maintenance of thermoplastic material in side-running bus-only lanes, and additional landscaping and tree maintenance costs for new medians. Both Alternative 2 and the Hybrid Alternative/SRA's maintenance costs would be higher than those of Alternatives 3 and 3-Consolidated due to the additional costs associated with maintaining the red lanes in the side-running segments.

In summary, the total estimated annual operations and maintenance cost for the No Build Alternative would be approximately \$36.7 million. As shown in Table 9-4, annualized operations

and maintenance cost estimates range from \$43.9 million for Alternative 3-Consolidated (20 percent higher relative to the No Build Alternative), to \$49.5 million for Alternative 2 (35 percent higher relative to the No Build Alternative). For the Hybrid Alternative/SRA, annualized operations and maintenance would cost \$49.2 million, approximately 34 percent higher than the No Build Alternative.

## 6.3 Coordination with MTC and Plan Bay Area Consistency

The Metropolitan Transportation Commission (MTC) serves as the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area. The MTC functions as both a regional transportation planning agency for California, and for federal purposes, as the region's metropolitan planning organization (MPO). As such, it is responsible for regularly updating the Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS), which adopts a land use vision and a transportation investment and growth strategy for the Bay Area. The most recent RTP/SCS, *Plan Bay Area*, was adopted in 2013 and specifies how \$292 billion in anticipated federal, state, and local transportation funds will be spent in the Bay Area during the next 25 years. Improvements to local and express bus services are included as a major project in the 2013 *Plan Bay Area*, including BRT service on Geary Boulevard with the cost of \$183.7 million. MTC is currently undertaking the next update, titled Plan Bay Area 2040, scheduled for adoption in 2017. The Plan Bay Area 2040 Draft Investment Strategy includes the Geary BRT Project with its full updated cost (\$300 million) as a high performing project in the financially constrained plan.

The 2017 Transportation Improvement Program (TIP), the comprehensive four-year regional spending plan, along with the Transportation Air-Quality Conformity Analysis for the 2013 RTP, was approved by MTC in September 2016 and is scheduled for final federal approval in mid-December 2016. The proposed 2017 TIP currently includes the Geary BRT project with the cost as shown in the 2013 RTP; however, MTC plans to update the 2017 TIP to reflect the updated cost and funding information at the time of the 2017 RTP adoption in 2017.

## 6.4 Financial Analysis Summary

In conclusion, the funding plan for the Project remains a work in progress, as is normal for a project of this type in the environmental phase, with \$64 million of the needed capital funding already committed and up to \$249 million in planned and potential funding sources identified. As the Project enters the detailed engineering design phase, SFCTA and SFMTA will seek additional grants from various sources to complete the funding plan. Funding for operations and maintenance of the Project would come from existing revenue sources for SFMTA, which include fare and parking revenues, operating grants (e.g., State Transit Assistance), traffic fees, and fines.

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