

CHAPTER 1.0 PROJECT PURPOSE AND NEED

1.1 Introduction

The Federal Transit Administration (FTA), San Francisco County Transportation Authority (SFCTA), and San Francisco Municipal Transportation Agency (SFMTA) have prepared this Final Environmental Impact Statement (EIS)/Record of Decision (ROD) to address the environmental effects of the proposed Geary Corridor Bus Rapid Transit (BRT) Project and respond to the comments received on the Draft EIS/Environmental Impact Report (EIR). These agencies have prepared this combined Final EIS/ROD in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code Section 4321 et seq. FTA is the federal lead agency (hereinafter, “lead agency”) pursuant to NEPA.

SFMTA, a project sponsor along with SFCTA, would be the recipient of any grant funds, and is the joint lead agency under NEPA.

SFCTA, in cooperation with FTA and SFMTA, proposes to implement BRT improvements along the City’s Geary corridor. The Geary corridor encompasses all of Geary Boulevard/Geary Street, O’Farrell Street from Gough Street to Market Street, as well as blocks of several others streets that provide connections to and from the Transbay Transit Center (see Figure 1-1).

In 2004, SFCTA initiated a Geary Corridor BRT Study (Feasibility Study). Published in 2007, the study evaluated the feasibility of three different BRT configurations on Geary Boulevard and associated streets, as well as two “no build” non-BRT options, for a total of five conceptual design alternatives for the corridor. The Feasibility Study found each of the three BRT configurations to be potentially feasible and to have the potential to result in substantial benefits. The Feasibility Study did not eliminate any configurations, but recommended environmental review and further design work to identify a preferred alternative.

KEY AGENCIES

SFCTA: Transportation planning and funding agency for San Francisco

SFMTA: Owner and operator of San Francisco’s streets and Municipal Railway (“Muni”) transit system

FTA: Federal agency responsible for providing technical and financial assistance to local and regional transit agencies

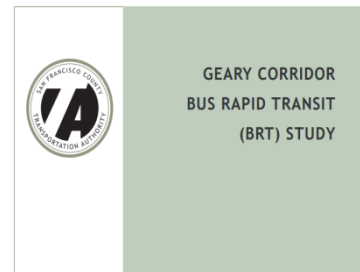


Figure 1-1 The Geary Corridor between 48th Avenue and the Transbay Transit Center



Source: SFCTA, 2014

Following adoption of the Feasibility Study, SFCTA and SFMTA called for the next phase of project development – preliminary engineering and environmental analysis. After the environmental scoping process that developed and facilitated community input on potential project alternatives and included two additional screening steps,¹ five alternatives were defined and carried forward for evaluation in the Draft EIS/EIR, including one No Build Alternative and four build alternatives – Alternatives 2, 3, 3-Consolidated, and the Hybrid Alternative, which was a variation that combined parts of other build alternatives. Chapter 2 (Descriptions of Project Alternatives) details each project alternative.

The Draft EIS/EIR was published on October 2, 2015, and was available for a 59-day public review period through November 30, 2015.

1.2 Final EIS/Record of Decision

The lead agency, in cooperation with SFCTA and SFMTA, have prepared this combined Final EIS/ROD to address the environmental effects of the proposed Geary Corridor BRT Project and respond to the comments received on the Draft EIS/EIR.

1.2.1 | Modifications to the Hybrid Alternative after Publication of the Draft EIS/EIR

A total of six minor modifications have been made to the Hybrid Alternative. Five of the six modifications were developed in direct response to public comments on the Draft EIS/EIR; the sixth was developed both in response to comments as well as in association with an agency initiative. See Sections 2.1.1 and 2.2.7 for further detail on these modifications.

SFCTA released the Final EIR for the Geary BRT project on December 9, 2016. As the California Environmental Quality Act (CEQA) lead agency, SFCTA certified the Final EIR, approved the project, and identified the Hybrid Alternative with five minor modifications as the LPA on January 5, 2017. All of these actions were on unanimous votes of the SFCTA Board. SFCTA issued a Notice of Determination (NOD) on January 6, 2017. The sixth minor modification was subsequently added and analyzed in a CEQA addendum; the SFCTA Board took an approval action on June 27, 2017, as further discussed in Section 2.2.7.6.6.

On July 18, 2017, the SFMTA Board unanimously approved the project and concurred with the LPA, including all six minor modifications noted above. SFMTA issued a NOD on July 25, 2017.

¹ See Chapter 10 of this Final EIS (Initial Development and Screening of Alternatives) for more information on the various design options and configurations that SFCTA considered in formulating project alternatives.

1.2.2 | Final EIS

Material that is new or has been revised since publication of the Draft EIS/EIR is indicated by a vertical bar in the margin; text deletions are shown in ~~striketrough~~ and insertions are underlined.

After considering public and agency comments on the Draft EIS/EIR and identifying the LPA, the lead agency, SFCTA, and SFMTA cooperatively prepared this Final EIS, which includes responses to comments on the Draft EIS/EIR. Text changes between the Draft EIS/EIR and Final EIS primarily reflect documentation of the LPA, responses to comments received on the Draft EIS/EIR, and staff-initiated changes to correct minor errors or improve/update the presentation of information. This Final EIS is prepared in two formats, a version without any revisions noted, prepared as a published print-version of the document, as well as a version available electronically as an appendix which denotes revisions (including deletions, new text, and moved text) using ~~strikeout~~ for deletions and underline for additions.

The analytical chapters of the Final EIS (Chapters 3 through 6) reflect revisions and expansions of the text and analysis of the Draft EIS/EIR to include consideration of each of the six minor modifications to the Hybrid Alternative/LPA described above. These added subsections provide analysis and reasoning demonstrating that the six minor modifications do not change any of the environmental conclusions for any resource area. In other words, the modifications would not result in any new or more severe environmental impacts nor would they result in more severe cumulative effects beyond what the Draft EIS/EIR described.

1.2.3 | Environmentally Preferable Alternative

Based on analysis in the Draft EIS/EIR and as updated throughout the revised and expanded analytical sections of this Final EIS, this document identifies the environmentally preferable alternative, as required by federal regulations.² Sections 2.3.8 and 2.3.8.1 describe considerations in determining the environmentally preferable alternative; these considerations draw on the analysis summarized in Chapters 3 through 6 of this Final EIS. Based on this analysis, the Hybrid Alternative/LPA is the environmentally preferable alternative.

As noted in Section 2.3.8.1, the six modifications applied to the Hybrid Alternative/LPA did not result in any new or more severe environmental impacts from those described in the Draft EIS/EIR.

1.2.4 | Preferred Alternative

As detailed in Section 2.3.8.2, the LPA is also considered the preferred alternative pursuant to federal regulations.³ This is because the Hybrid Alternative/LPA would balance improvements to transit performance and pedestrian safety in the corridor with reduced impacts in key areas of community concern, and would meet the project purpose and need. The

KEY CONCEPT

This document informs the public and governmental decision makers of the environmental effects of the project and describes the measures that would be undertaken to mitigate them

² Code of Federal Regulations, Title 40, Section 1505.2

³ Code of Federal Regulations, Title 23, Part 771.125; Code of Federal Regulations, Title 40, Part 1502.14(e); and Questions 4a and 4b of the Council on Environmental Quality's *40 Questions*

lead agency (FTA) also recognizes that SFCTA designated the Hybrid Alternative as the LPA, and that SFMTA concurred with this designation.

1.2.5 | Uses of the Final EIS

Pursuant to requirements of NEPA, this document informs the public and governmental decision-makers about potential environmental impacts of the project alternatives during both construction and operational phases. Where warranted, this document identifies avoidance, minimization, and/or mitigation measures to avoid, lessen, or compensate for adverse environmental effects. Federal, state, regional, and local agencies will use this document as may be required or necessary to assess the environmental impacts of the build alternatives on resources under their jurisdictions, to make discretionary decisions regarding the project, and to exercise review and permit authority over the project.

See Table 2-11 for a list of other anticipated approvals and permits.

1.3 Project Location

The proposed project would be located along the entire 6.5-mile length of the Geary corridor, a primary east-west roadway and transit spine across the northern neighborhoods of San Francisco. The corridor is comprised of: Geary Boulevard, a two-way arterial between 48th Avenue and Gough Street and the pair of one-way streets between Gough and Market streets including Geary Street, which runs westbound, and its companion, O'Farrell Street, which runs eastbound one block south of Geary Street. The corridor also includes Geary bus line routing between Market Street and the Transbay Transit Center. The project does not propose roadway infrastructure changes south of Market Street or west of 34th Avenue.

The east and west project limits constitute logical termini as they include the full length of SFMTA's current 38 Geary bus services. The project limits were identified in accordance with the project purpose and need, described in the following sections, and in accordance with the opportunities and constraints of the local environment.

Four SFMTA Muni bus routes currently provide public transit service in the Geary corridor: 38 Geary Local (38), 38 Geary Rapid (38R⁴), 38 Geary B Express (38BX), and 38 Geary A Express (38AX). Golden Gate Transit, based in Marin County, also operates commuter service into San Francisco via a portion of Geary Boulevard between Park Presidio Boulevard and Webster Street.



A west to east view of the Geary corridor.

⁴ On April 25, 2015, SFMTA changed naming conventions for limited stop bus services. Bus services previously referred to as *limited* and denoted by the letter "L" following the bus line number, e.g. 38L, are now referred to as *rapid* services and are denoted by the letter "R."

A number of major north-south transit routes cross the Geary corridor and generate major transfers to and from Geary services, including but not limited to Muni bus lines 22 Fillmore, 47 Van Ness, 49 Van Ness, and 30 Stockton, and the Powell Street cable car line. Major regional transit lines also connect to Geary, including the Bay Area Rapid Transit (BART) lines along Market Street, several Golden Gate Transit routes that cross the Geary corridor at Van Ness Avenue, and several other regional bus lines at the Transbay Transit Center. Muni light rail lines also operate beneath the Geary corridor on Market Street, and the T-Third Central Subway extension currently under construction will cross below Geary Street near Union Square.

In addition to the routes on the Geary corridor, several routes operate within a few blocks, including the 1 California, 2 Clement, 3 Jackson, 5 Fulton, and 31 Balboa. Several Muni routes provide regional transit connections to BART trains, Caltrain, and bus services of Alameda-Contra Costa Transit District (AC Transit), Golden Gate Transit, and SamTrans. A number of private shuttles also operate on or near the Geary corridor.

1.4 Planning Context

Several planning studies and funding actions within San Francisco have documented a vision for the Geary corridor as part of San Francisco's rapid transit network.

- SFCTA's *Four Corridors Plan* (1995)
- SFMTA's *Vision for Rapid Transit* (2000)
- SFCTA's 2004 Countywide Transportation Plan (CWTP)
- SFMTA's Transit Effectiveness Project (2008)
- SFCTA's 2013 and 2017 San Francisco Transportation Plans (SFTP)

Each of these plans identified Geary as high-priority corridor for improvements within the City's rapid transit network. In 2014, the City's WalkFirst pedestrian safety effort identified portions of Geary Boulevard and Geary Street as part of the City's pedestrian high-injury network.

The CWTP evaluated alternative approaches to meeting the City's rapid transit system needs and recommended a preferred scenario that called for development of a citywide BRT network. Figure 1-2 shows the CWTP's identified rapid transit network. The Proposition K Expenditure Plan, the investment component of the 2004 CWTP approved by voters reauthorizing the City/County's half-cent transportation sales tax measure, featured Geary BRT as one of the named projects to be funded.



The San Francisco Transportation Plan (2040) includes the Geary corridor in the SFTP Investment Vision.

Figure 1-2 San Francisco Rapid Transit Network Map



In 2013, SFCFTA adopted a new version of the long-range, countywide transportation plan, called the San Francisco Transportation Plan (SFTP). It identified four core goal areas, including *Livability*, *Economic Competitiveness*, *World Class Infrastructure*, and *Healthy Environment*, and reaffirming the importance of the Geary corridor in meeting them by including it in the SFTP Investment Vision.

Under the *Livability* goal, the SFTP proposed to lift the non-auto travel mode share from its current 48 percent in 2013 to above 50 percent, noting that safety concerns prevented more walking, and transit reliability concerns prevented more transit use.

Within *Economic Competitiveness*, the plan identified increased transit capacity as necessary to support new planned growth in Civic Center, Downtown and the Eastern Neighborhoods.

In *World-Class Infrastructure*, the plan noted transit operating costs growing faster than revenues, caused in part by declining transit speed performance – a 10 percent decrease from 1997 to 2008. Lower speeds mean the same driver and vehicle complete fewer route runs in a day, resulting in less service for the same price.

Improved transit and pedestrian conditions on Geary would constitute a major contribution toward those goal areas.

In 2017, SFCTA adopted SFTP 2040, an update to the 2013 SFTP. The updated SFTP reaffirmed the 2013 plan’s goals, investment plan, and supporting policy recommendations. SFTP 2040 provided an update on existing and future conditions impacting the San Francisco transportation system, revised transportation funding revenue forecasts, updated project costs, and reassessed projects previously identified for funding in the 2013 plan. The new plan confirmed the importance of Geary BRT to achieving the plan’s goals by including the project in the SFTP 2040 Investment Plan.

Lastly, several previous planning efforts have described a vision for light rail treatments on the Geary corridor, including SFMTA’s System Planning Study (1995). As a way to move toward that ultimate vision, the 2004 Proposition K Expenditure Plan included language requiring the Geary corridor BRT improvements to be rail-ready, such that the improvements facilitate an eventual implementation of light rail on the Geary corridor.

1.4.1 | Regional Planning Context

1.4.1.1 | METROPOLITAN TRANSPORTATION COMMISSION

The Metropolitan Transportation Commission (MTC) serves as the transportation planning, coordinating, and financing agency for the nine-county San Francisco Bay Area. MTC functions as both a regional transportation planning agency for state purposes, and for federal purposes as the region’s metropolitan planning organization (MPO). As such, MTC is responsible for regularly updating the Regional Transportation Plan (RTP), which is a comprehensive blueprint for the development of mass transit, highway, railroad, bicycle, and pedestrian facilities. The most recent RTP, adopted together with the region’s second Sustainable Communities Strategy in 2017 as *Plan Bay Area 2040*, specifies how \$303 billion in anticipated federal, state, and local transportation funds will be spent in the Bay Area in coming decades. The plan includes anticipated improvements to local and rapid bus services, with committed and discretionary funds for Geary BRT specifically identified in the plan.

1.5 Project Purpose and Need

1.5.1 | Project Purpose

The core purpose of the project is to improve the performance, viability, and comfort of transit and pedestrian travel along the Geary corridor. In fulfillment of NEPA requirements, the following statements comprise the project purpose.

- 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 remainder of this document, as summarized in Section S.6, helps the lead agencies and public understand the potential environmental effects of each alternative and evaluate how well each alternative meets the project purpose and need (or project objectives).

1.5.2 | Project Need

As recognized by the planning efforts for the Geary corridor and San Francisco overall cited above, the Geary corridor serves as an important vehicular and transit corridor, serving high-density commercial and residential areas along its entire length.

The major streets of the corridor – Geary Boulevard west of Gough Street and the one-way couplet streets of Geary Street and O’Farrell Street east of Gough Street – together serve as a major thoroughfare for local and through traffic. According to SFMTA, each day the corridor sees more than 50,000 person-trips via public transit, and it serves automobile volumes that vary between about 16,000 to 20,000 in the outlying neighborhoods west of Park Presidio to about 44,000 at the highest-demand locations. The corridor also sees tens of thousands of daily pedestrian trips.⁵ Unlike many public transit routes that can have disproportionate usage patterns related to commute direction and period, transit ridership on the Geary corridor is consistently high throughout the day, on weekdays and weekends, and in both the eastbound and westbound directions.

While the Geary corridor serves thousands of multimodal trips per day, current transit performance and pedestrian conditions in the Geary corridor are in need of improvement in several key ways. The following transportation needs have been identified in the Geary corridor, serving as the basis for the project purpose.

DEFINITION

SOIL LIQUIFACTION: When saturated, cohesionless soils lose their strength due to the build-up of excess pore water pressure, especially during cyclic loadings (i.e., shaking) such as those induced by earthquakes.

⁵ SFCTA, 2009-2012.

1) *Existing transit service in the Geary corridor is unreliable, slow, and crowded, and is in need of improvement in order to promote high ridership and competitiveness with other travel modes.*

Less than two-thirds of the 38 Local and 38R buses arrive within five minutes of their scheduled arrivals over the course of the day, and in the p.m. peak hour, only about half arrive on time.⁶

The average vehicle speed for all buses over the length of the corridor is 7.3 mph, with slightly higher speeds prevailing west of Divisadero Street and lower east of Webster Street.⁷ An average six-mile trip from the Transbay Transit Center to 48th Avenue during the p.m. peak hour takes about 54.5 minutes by 38 Local bus and 47 minutes by 38R bus; by car, the trip from Market Street to 48th Avenue takes about 22 minutes, and would be a few minutes longer if starting from the Transbay Transit Center.⁸

The most common sources of delay for buses are those from loading and unloading passengers (or “dwell time”); waiting at traffic lights; private vehicle loading and parking in the right-most travel lane; and moving across the mixed-flow travel lanes to access bus stops. Factors contributing to long dwell times include the need for people to walk up the three steps required to board buses that are not low-floor buses, which is particularly challenging for people with disabilities or mobility impairments; and the distance from the bus to the curb caused by the difficulty buses have when attempting to pull completely parallel to the bus stops (see Figure 1-3). In addition, buses spend time waiting at traffic signals and re-entering the mixed-flow travel lanes after passenger loading and unloading.

Congestion, demand, and transit inefficiencies have resulted in higher transit operating costs and crowding

These factors slow bus travel and make travel times less reliable, leading to bus bunching. As many as 30 percent of the vehicles arrive less than one minute apart (see Figure 1-4 for an example). This bus bunching results in longer gaps between subsequent buses and therefore longer passenger wait times.⁹ Given the corridor’s high ridership demand, bunching can also cause overcrowding on the first bus within a bunch, which adds to further delays as alighting and boarding become more time-consuming, and at bus stops, as passengers continue to arrive to wait for a late bus (see Figure 1-5).

2) *Geary Boulevard’s wide travelway and high vehicle travel speeds create unfavorable pedestrian conditions – especially west of Gough Street and throughout the Richmond District.*

The Geary corridor’s non-vehicular mode share – the proportion of those traveling via transit, walking or bicycling – reaches 50 percent in its Tenderloin segment, 40 percent in its Western Addition/Japantown segment, and over 30 percent in its Richmond segment. As a key pedestrian street with high pedestrian volumes, the Geary corridor features conditions that affect a large number of those who walk to or from work, school, or home. A concentration of residences and service centers for seniors are

⁶ SFCTA & SFMTA, 2012.

⁷ SFCTA & SFMTA, 2011.

⁸ SFCTA & SFMTA, 2011 & 2013.

⁹ SFCTA & SFMTA, 2012 & 2013.

located within the corridor, and a high percentage of seniors reside in the corridor relative to the rest of San Francisco – a group of people with higher rates of disabilities and other mobility limitations than the overall population. Because most transit riders access the Geary corridor transit stops by walking from adjacent neighborhoods, the quality of the pedestrian experience, including safety and comfort, affects the corridor’s ability to retain existing riders and attract new ones.

Current pedestrian conditions in the Geary corridor need improvement. Large portions of the Geary corridor, particularly Geary Boulevard, are very wide, ranging in width from 125 feet to 168 feet including medians, travel lanes, parking lanes, and sidewalks. Consequently, pedestrians face relatively long crossing distances with limited refuge areas and minimally marked crosswalks.

In the Japantown area, as depicted in Figure 1-6, narrow medians and circuitous pedestrian bridges that intimidate some and do not comply with accessibility standards for people with disabilities discourage pedestrian movement and activity. Near the Fillmore Street underpass, nearly 40 percent of vehicles have been gauged reaching speeds faster than the 35 mph limit. Lastly, the wide vehicular right of way, high-speed vehicular traffic, and lack of pedestrian-crossing facilities at some locations divide the neighborhoods on the north and south sides of the street.

In the segment of the corridor that includes Masonic Avenue and the Richmond District, several uncontrolled pedestrian crosswalks cross six or more lanes of Geary Boulevard. Here, the speed limit is 25 mph, but as many as 75 percent of vehicles have been gauged going faster than that.

The City’s WalkFirst study (2012) identified Geary Boulevard as a top-priority corridor for pedestrian safety improvements because of its very high rate of pedestrian injury and its role as a key street for pedestrian activity. Many of its intersections see pedestrian volumes greater than 500 in the p.m. peak hour, with pedestrians numbering as many as 4,000 at a few intersections.¹⁰ All segments of the Geary corridor have worse pedestrian safety performance than the citywide average, seeing 30 to 110 severity-weighted pedestrian injuries per mile from 2005 to 2011, compared with less than 10 per mile citywide.¹¹ The Geary corridor’s areas of highest pedestrian injury rates are Market Street to Laguna Street, and the section from Cook Street to 22nd Avenue.

3) The Geary corridor’s existing street and streetscape environment do not provide a high-quality transit passenger experience, despite the corridor’s high transit ridership.

Despite the corridor’s high transit use, the existing roadway layout is not designed to provide a high-quality transit experience. The corridor’s ample width provides room for multiple travel lanes, with between four and eight lanes in the stretches west of Van Ness Avenue.

¹⁰ SFCTA, 2009-2012.

¹¹ San Francisco Department of Public Health Pedestrian Collision Scorecard, 2012.

In contrast, multiple conditions are unfavorable for transit riders as they walk to transit stops, wait for the bus, board the bus, ride the bus, and finally get off the bus.

First, the unfavorable crossing conditions described above affect all transit passengers as they access bus stops.

Second, once arriving at bus stops, the passenger experience can still be lacking. As shown in Figure 1-5, exiting bus stop waiting areas can be overcrowded. Once passengers board the bus, further crowding can occur creating unfavorable riding conditions. As shown in Figure 1-7, some locations throughout the corridor feature only a bus stop pole, with no shelter from the elements, no map of bus system routes, and no other amenities, such as “next bus” arrival signs. Elsewhere, at heavily used transit stops near Market Street and in the Japantown area, bus loading areas are too narrow and too short to accommodate typical passenger volumes. As depicted in Figure 1-8, additional space is needed where the bus shelter, waiting passengers, and other features like newspaper boxes compete for sidewalk space, hindering pedestrian movement and limiting the perceived viability of transit use.

Third, the current street design makes it challenging for buses attempting to position themselves completely parallel and adjacent to the short curbside bus stops, which in turn creates difficulty and delay for those boarding and alighting the buses.

Finally, after boarding, bus passengers experience frequent and abrupt side-to-side movements as buses change lanes to pull into and out of bus stops and around vehicles that may be double-parked in the right-side curb lane, stopped for loading, or queuing for a right turn.

Figure 1-3 Curbside Bus Stop

Short, curbside bus stops like this one in the Richmond District make it difficult for buses to position themselves completely parallel and adjacent to bus stops, making the passenger loading process more onerous and time-consuming.



Figure 1-4 Bus Bunching

Lack of reliability in Geary bus travel times leads to bus bunching, in which buses have been so delayed that they arrive together at a bus stop, such as this one in the Japantown area, instead of at even time intervals, contributing to bus crowding and further delays.



Figure 1-5 Bus Delays and Crowding

Bus delays combine with high ridership demand to result in crowding at Geary corridor bus stops, like this one in the Richmond District, and on buses, as more people arrive to wait for and board a delayed bus.



Figure 1-6 Pedestrian Access Conditions

Pedestrian access conditions are poor at some locations, including 28th Avenue below, which lacks a pedestrian countdown signal, which can be challenging for people with disabilities and senior citizens. Unsignalized crossings, such as at Cook Street (not shown) and closed crosswalks, such as at Webster and Steiner streets (below), create challenging pedestrian access conditions.



Figure 1-7 Existing Bus Stop Amenities at Various Locations

Some stop locations throughout the corridor, like this location in the Tenderloin, feature only a bus stop pole, with no shelter, map, or other amenities.



Figure 1-8 Bus Loading Areas

At heavily used transit stops in the downtown area near Market Street and in the Japantown area, bus loading areas are too narrow and too short to accommodate the volume of passengers, and additional space is needed where the bus shelter, waiting passengers, and other amenities like newspaper boxes compete for sidewalk space, hindering pedestrian movement and access to transit use.

