



**GEARY BUS RAPID TRANSIT (BRT)**  
Environmental Impact Report / Environmental Impact Statement (EIR/EIS)  
**ALTERNATIVES SCREENING REPORT**

**Adopted May 19, 2009**

**San Francisco County Transportation Authority**



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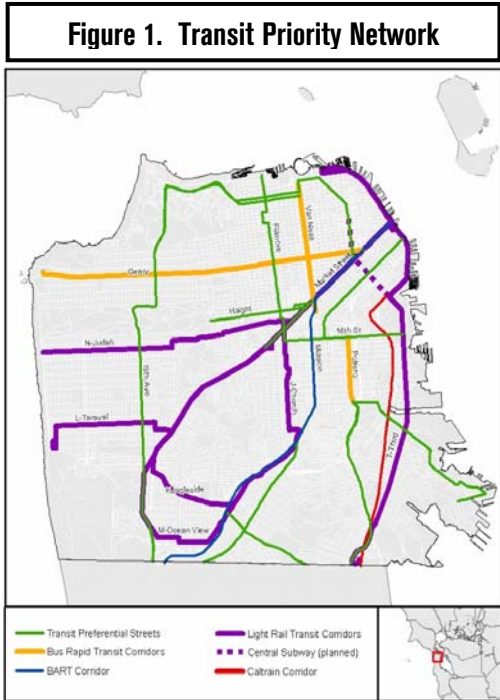
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- A. Annotated Screening Matrix – Typical Sections
- B. Annotated Screening Matrix – East of Gough



# 1 Background

The San Francisco County Transportation Authority (Authority), in partnership with the San Francisco Municipal Transportation Agency (SFMTA) proposes to implement Bus Rapid Transit (BRT) on Geary Boulevard from the Transbay Terminal (at First and Mission Streets) to 33rd Avenue.

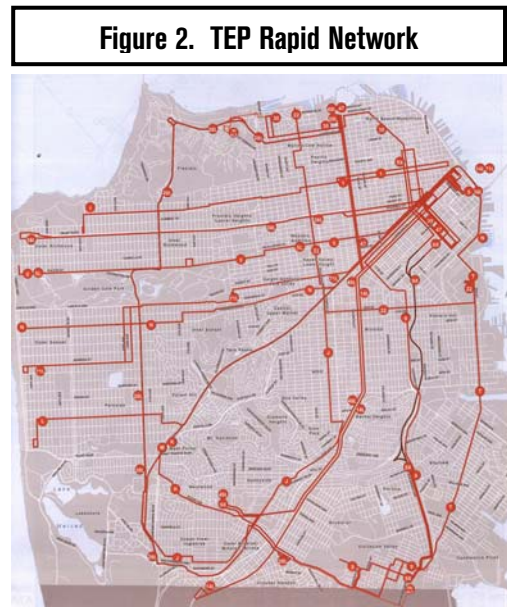


The Authority is preparing an EIR under the provisions of the California Environmental Quality Act (CEQA) for the proposed action. The proposed Project involves a Federal action and, therefore, the Authority is also preparing an EIS under the National Environmental Policy Act (NEPA). The environmental document will be a combined Environmental Impact Report and Statement (EIR/EIS). The Authority is the Lead Agency under CEQA, and the Federal Transit Administration (FTA) is the Lead Agency under NEPA.

Geary is a major east-west transit route that currently serves over 50,000 weekday transit trips on Geary Boulevard. Over 100,000 daily transit trips are made in the broader Geary corridor. Geary is part of the San Francisco Transit Priority Network adopted in the 2004 San Francisco Countywide Transportation Plan (see Figure 1),

and has been identified in long range planning studies conducted by the Authority and SFMTA as a priority route for rapid transit treatments. The SFMTA Transit Effectiveness Project (TEP) Recommendations (2008) identify Geary as *Rapid Network* corridor in the Muni system (see Figure 2). The 2003 Proposition K Expenditure Plan identified Geary BRT as part of a strategic investment in a citywide network of rapid transit intended to address, within available resources, the key need identified in the Expenditure Plan: declining transit mode share resulting from uncompetitive transit travel times and poor reliability.

The Authority, in cooperation with SFMTA, completed the Geary Corridor Bus Rapid Transit Study (the Feasibility Study) in 2007. Through a technical and community analysis process, the study developed and evaluated a set of BRT alternatives for Geary Boulevard. The study developed conceptual BRT designs and assessed benefits and impacts of the alternatives. Multiple BRT design configurations were shown to provide significant transit performance benefits at an affordable cost, with manageable impacts. With





the adoption of the final study report, the Authority Board moved to initiate the next project phase, environmental analysis of Geary BRT.



## 2 Scoping and Purpose of Screening

### 2.1 Scoping Period

In November 2008, the Authority initiated the Project Scoping period with the issuance of a Notice of Intent (NOI) and a Notice of Preparation (NOP) pursuant to Federal and State requirements, respectively. The purpose of the Scoping period was to obtain public and agency input regarding the alternatives to be analyzed in the EIR/EIS and the range of environmental impacts to be considered. The Authority held formal Scoping meetings with the public and with government agencies during December 2008. The *Scoping Summary Report* documents the Scoping process and the input received during Scoping, focusing on:

- Notification of the Scoping period and Scoping period activities;
- Public and agency input on the range of alternatives to be considered in the EIR/EIS; and
- The potential environmental impacts recommended for consideration in the EIR/EIS by agency and public participants.

One of the key outcomes of Scoping is a large set of Project alternatives suggested for analysis in the EIR/EIS.

### 2.2 Purpose of Screening

Since the conclusion of the Scoping period in December 2008, the Study Team has developed a Screening Framework (i.e., methodology) for assessing each suggested alternative's ability to meet the purpose of and need for the project ("Purpose and Need"). The purpose of this Screening Assessment is to narrow the full range of alternatives suggested during the Scoping period to a limited set of alternatives to be analyzed in the EIR/EIS.

**It is important to note that alternatives which are not recommended for EIR/EIS analysis are not necessarily precluded from any of the following: further planning; assessment in a separate environmental review; or implementation.**

The purpose of this Alternatives Screening Report (Report) is to: review the range of alternatives suggested during Scoping; document the Screening process; and present the set of alternatives recommended for analysis in the EIR/EIS.

This Report concludes with a conceptual description of the EIR/EIS alternatives. This Report does not constitute—but will provide a key foundation for—two technical documents that will be subsequently prepared as part of the EIR/EIS and concomitant Federal Transition Administration (FTA) Alternatives Analysis process: 1) the Detailed Definition of Alternatives; and 2) the Final Definition of Alternatives Report.



### 3 Range of Alternatives

This section describes the range of alternatives suggested by agencies and/or the public during the Scoping period.

Transit improvements that affect the operating plan only, such as increased service frequency and stop consolidation, are not considered distinct alternatives for Screening purposes. Each of the alternatives advanced into the EIR/EIS analysis will incorporate operational modifications to varying degrees. Operating plans and stop placement for each alternative have not been finalized and will be developed as appropriate for each alternative. Further analysis will be performed on alternatives carried forward to produce more detailed definitions.

This Report addresses alternatives for the two general street configurations present in the Study Area: **Typical Sections** (Geary Boulevard between Gough Street and 33<sup>rd</sup> Avenue); and **East of Gough** (where transit service is currently routed via the Geary Street and O'Farrell Street one-way couplet pair). The characteristics of the alternatives discussed in this Report are presented with respect to these representative (i.e., prototypical) street configurations.

At a limited number of locations in the corridor, the street configuration varies from the prototypical configuration; examples include the Masonic and Fillmore areas and transition locations, such as at the Gough/Geary/Starr King Way intersection. At and near these complex locations, specialized (i.e., atypical) designs may be necessary to accommodate the overall Project alternatives. These design treatments are not considered distinct Project alternatives necessitating consideration in the Screening Report. Rather, as the EIR/EIS analysis progresses, such “design options” will be developed for the specialized locations/transitions in order to accommodate Project alternatives and to shift between varying configurations.

#### 3.1 Range of Alternatives for Typical Sections

A total of nine build alternatives was identified in the Feasibility Study and during the Scoping period for Typical Sections, as well as a No Project/Transportation System Management (TSM) alternative.

The general characteristics of the range of alternatives for Typical Sections are described as follows:

**TS-1.** No Project/Transportation System Management (TSM). The “build” alternatives recommended for analysis in the EIR/EIS will be compared to a No Project alternative, also known as the Transportation Systems Management (TSM) alternative. The No Project/TSM alternative includes low-cost transit improvements that are expected to be implemented even in the absence of the “build” project. Multiple TSM measures are in place currently in the corridor, including the provision of limited and express services and the use of transit signal priority at certain intersections. A wide variety of further transit preferential treatments has been considered for the Geary corridor as part of the Transit Effectiveness Project (TEP) and the Feasibility Study. Based on available funding and the planned timeline for



development and delivery of additional improvements in the corridor, the features of the No Project/TSM include:

- Low-floor buses that allow for level boarding;
- Transit signal priority—already provided through infrared at several locations along the corridor—at selected additional locations and/or upgraded to more advanced technologies;
- Rebalancing of limited and local services to provide a net increase in service frequency on Geary;
- Minimal consolidation of limited stops per the TEP;
- Moderate expansion in the span of service hours for limited operations, (between 2-4 additional hours in the evening); and
- Real-time information at major bus stops, using NextMuni display screens and programmed replacement of existing transit shelters.

Improvements that are not planned or anticipated are not included in the No Project; examples include proof-of-payment and bus bulbs.

- TS-2.** Peak Period/Direction Bus Lane. This alternative would include the No Project/TSM treatments described above, as well as provide a designated lane in the rightmost travel lane, which would be reserved for buses only during the peak period in the peak direction (approximately eastbound 7 am-9 am and westbound 4 pm-7 pm). This alternative was developed during the Feasibility Study and suggested again during Scoping. Both local and limited vehicles would operate in the bus lane.
- TS-3.** All-Day Bus Lanes was an alternative suggested during the Scoping period. This alternative would involve extending the bus-only diamond lanes that are currently marked on Geary and O'Farrell Streets to both directions of Geary Boulevard. The termini of the lanes have not been determined. Non-transit vehicles would be restricted from entering the diamond lane at all hours of the day and in both directions, except for parking movements and to make allowed right turns. This alternative would also share the features of the No Project/TSM alternative.
- TS-4.** One-Sided Busway BRT was recommended by two members of the public during Scoping. Under this alternative, transit and non-transit traffic would be completely separated. Buses would run in adjacent dedicated transit lanes on one side of the street. Other vehicles would operate in both directions on the other side of the street with two mixed-traffic lanes provided in each direction of travel. Local and BRT vehicles would operate in the dedicated lane. BRT station platforms and an operating plan for the interaction of service classes have not been determined. Due to the unique design of this alternative, modifications would need to be made to traffic signals (to protect left and right turns). This alternative would remove all existing median landscaping.
- TS-5.** Side-Running BRT was developed during the Feasibility Study. It would provide a dedicated BRT lane in the rightmost travel lane adjacent to curbside parallel parking in each direction. Two travel lanes for mixed-traffic would be provided to the left of the BRT lane in each direction. Both local and BRT vehicles would operate in the dedicated lane. Non-transit vehicles would be able to cross the bus lane to park or



- make right turns. BRT station platforms would be located on new bus bulb-outs created by extending the sidewalk into the parking lane at limited stop locations. Local buses would continue to pull next to the curb for stops, allowing BRT vehicles to pass local buses at local stops. This alternative would retain the single landscaped center median along the corridor.
- TS-6.** *Center-Running BRT with Side Platforms / Dual Medians*, developed during the Feasibility Study, would convert the existing median and two centermost traffic lanes into adjacent dedicated BRT lanes separated from traffic by two side medians. These medians would serve as right-side bus platforms at stations, and serve as landscaped medians elsewhere in the corridor. The medians would physically separate buses and other traffic, eliminating transit and auto conflicts. With all buses operating in the center busway, BRT buses could pass local buses at local stops by narrowing the medians at these locations. This alternative would be designed for all transit vehicles to operate in the center BRT lanes; however an operating variation could include local vehicles at the curb. Parallel parking and two mixed-traffic travel lanes would be provided in each direction.
- TS-7.** *Center-Running BRT with Center Platforms* was also developed during the Feasibility Study. It would convert the leftmost traffic lane in each direction into a dedicated BRT lane. Buses would run on either side of a single, shared, wide center median. The median would serve as a transit platform at stations, and waiting passengers would be buffered from auto traffic by BRT lanes. The BRT lanes would be physically separated from auto movements through a street treatment (e.g., raised curb), eliminating bus and auto conflicts. This alternative would be operated using left/right door buses because the center station platform is located on the left side of the bus. An option for BRT buses to pass local buses (if both ran in the center busway) has yet to be developed for this alternative. Parallel parking and two mixed-traffic travel lanes would be provided in each direction.
- TS-8.** *Surface Rail*, suggested during Scoping, would have a configuration similar to Center-Running BRT/Center Platform. It would convert the center traffic lane in both directions to a dedicated transit lane. Light rail vehicles would run on either side of a single, shared, wide center median. Transit platforms would be located in the center median. Rail service would replace all limited service and much of the local service in the corridor.
- TS-9.** *Underground Rail*, also suggested during Scoping, would include a tunnel beneath Geary in which light rail would operate. Stations locations and termini have not been developed. Rail service would replace all limited service and much of the local service in the corridor.
- TS-10.** *Combination of Surface and Underground Rail* was suggested during the Scoping period and involves routing light rail using a mix of surface-running and subway sections. The point of transition between surface and underground sections was not suggested, though past studies have identified a potential portal in the vicinity of Laguna Street (with surface-running light rail west of this location). Rail service would replace all limited service and much of the local service in the corridor.

Except for the three suggested rail alternatives (TS-8, TS-9, and TS-10), alternatives for Typical Sections apply to the portion of the corridor west of Gough Street. The rail

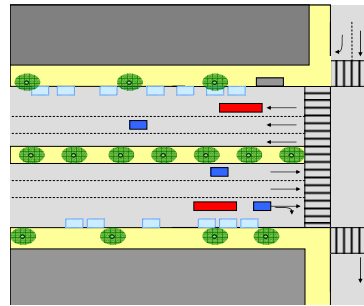


alternatives apply to the full length of the corridor. Also, some elements of the No Project/TSM alternative affect the entire corridor, such as low-floor vehicles, rebalancing of limited and local service, and the moderate of expansion of limited service hours.

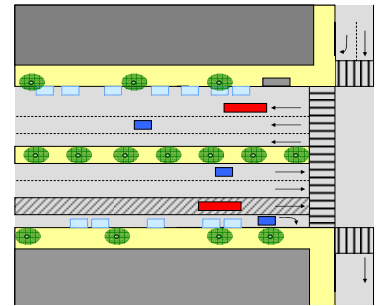
This description is not intended to capture every possible variation of alternatives, but instead, to capture important distinctions. The range of alternatives for Typical Sections is illustrated in Figure 3. The illustrations are meant to depict representative locations along the corridor. Figure 4 compares key features of these alternatives.



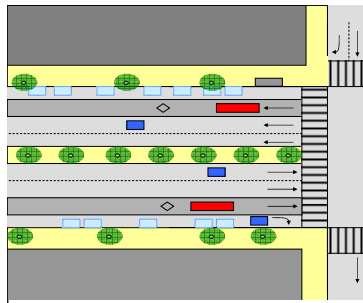
**Figure 3.  
 Range of Alternatives—Typical Sections**



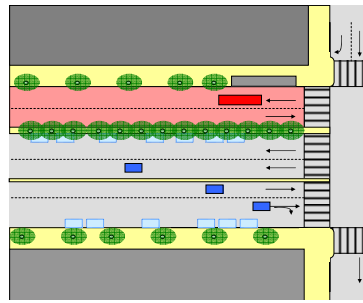
TS-1. No Project/TSM



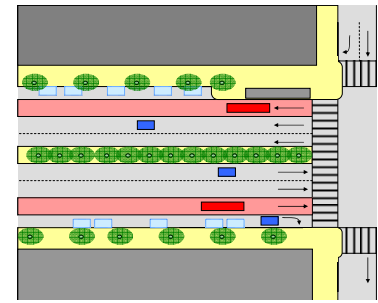
TS-2. Peak Period/Direction  
 Bus Lane



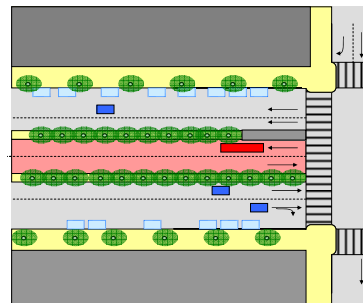
TS-3. All-Day Bus Lanes



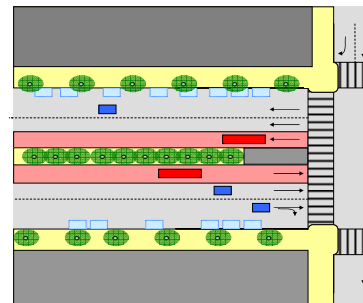
TS-4. One-Sided Busway BRT



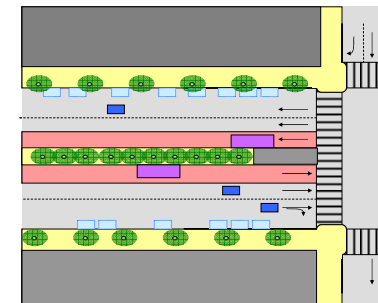
TS-5. Side-Running BRT



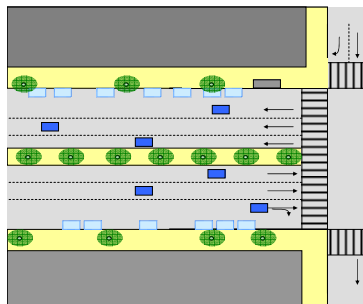
TS-6. Center-Running BRT with  
 Side Platforms / Dual Medians



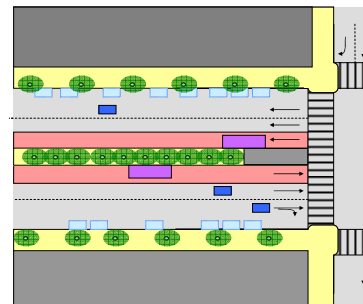
TS-7. Center-Running BRT with  
 Center Platforms



TS-8. Surface Rail



TS-9. Underground Rail



TS-10. Combination of Surface and  
 Underground Rail

**Legend**

- Diamond Lane
- Peak Hour Lane
- Transit Lane
- Bus
- Train
- Car
- Parked Car
- Station

**Figure 4. Characteristics of the Range of Alternatives for Typical Sections**

Alternative	Vehicles	Transit Signal Priority	Real-Time Info. at Stops	Transit Lane	Proof of Payment / Multi-Door Boarding	High-Quality Transit Stations	Pedestrian Safety Improvements	Bicycle Amenities	Expanded Hours of Service	Mixed-traffic Lanes (per direction)
TS-1. No Project/TSM	Low Floor	Some Signals	Some Stops	(none)					Moderate	3 (2 where diagonal parking present)
TS-2. Peak Period/Direction Bus Lane	Low Floor	Some Signals	Some Stops	Peak Hour / Direction Only					Moderate	2 (peak) 3 (off-peak)
TS-3. All-Day Bus Lanes	Low Floor	Some Signals	Some Stops	Striped Diamond Lane					Moderate	2
TS-4. One-Sided Busway BRT	Full BRT Buses	Most Signals	Most Stops	Physically-separated	✓	✓	✓	✓	✓	2
TS-5. Side-Running BRT	Full BRT Buses	Most Signals	Most Stops	Parking & Turning Conflicts	✓	✓	✓	✓	✓	2
TS-6. Center-Running BRT with Side Platforms / Dual Medians	Full BRT Buses	Most Signals	Most Stops	Physically-separated	✓	✓	✓	✓	✓	2
TS-7. Center-Running BRT with Center Platforms	Full BRT Buses	Most Signals	Most Stops	Physically-separated	✓	✓	✓	✓	✓	2
TS-8. Surface Rail	Light Rail Vehicle	Most Signals	Most Stops	Physically-separated	✓	✓	✓	✓	✓	2
TS-9. Underground Rail	Light Rail Vehicle	n/a	All Stops	n/a	✓	✓			✓	3
TS-10. Combination of Surface and Underground Rail	Light Rail Vehicle	Most Signals	Most Stops	Physically-separated	✓	✓	✓	✓	✓	2 (surface) 3 (subway)

Note: Full BRT buses are low-floor, but may also include: wider doors; more doors; doors for boarding on both the left and right side of the bus; higher quality passenger amenities within the bus; and/or unique branding to distinguish the higher level of service.



### 3.2 Range of Alternatives for East of Gough

A total of five alternatives was suggested during the Scoping period for East of Gough, as well as a No Project alternative.

The Geary Street and O'Farrell Street one-way couplet pair was the subject of the Inner Geary Transit Preferential Streets (TPS) Project, which was completed by SFMTA in January 2005. The TPS Project's goal was to improve the previously existing transit lanes on Geary and O'Farrell Streets by making the lanes wider, creating turn pockets, and adding yellow loading zones to reduce conflicts with delivery vehicles. Three local stops were also eliminated to improve transit travel time. The Inner Geary TPS Project was designed and implemented in anticipation of the Geary BRT project.

The general characteristics of the range of alternatives for East of Gough are described as follows:

- EG-1.** No Project. Because this portion of the corridor was recently the subject of a significant TPS project, as described above, the East of Gough No Project alternative includes minor adjustments to the existing TPS treatments, such as planned fine-tuning of passive-priority signal timing to improve transit performance. This alternative also includes elements of the Typical Section No Project/TSM alternative (EG-1) that affect the entire corridor, such as low-floor vehicles, rebalancing of limited and local service, and the moderate of expansion of limited service hours.
- EG-2.** TSM Basic. During the Feasibility Study, conceptual designs were developed to improve the streetscape environment and pedestrian safety in the Geary Street/O'Farrell Street portion of the corridor. The TSM Basic alternative would provide pedestrian and streetscape improvements, as well as BRT station area amenities such as real-time information and improved shelters. These enhancements will improve the waiting and boarding experience and increase the visibility of the transit-way in this portion of the corridor.
- EG-3.** TSM Plus. This alternative includes all elements of the TSM Basic alternative and would also include further operational improvements within the existing circulation pattern (i.e., the one-way couplet pair). These treatments would seek to improve transit travel time and reliability in this portion of the corridor, particularly east of Powell Street, and could include such elements as turn restrictions, pedestrian scrambles, improved management of parking and loading, transit stop consolidation, signal changes, and other strategies.
- EG-4.** Two-Way Geary: Bus-Only Transit Mall. This alternative was suggested during Scoping and would convert Geary Street to two-way operations. Post Street would be reversed to become a one-way westbound street, which would serve through-traffic in tandem with O'Farrell Street (in its current one-way eastbound configuration). Transit services currently utilizing Geary and O'Farrell Streets would be consolidated onto a two-way Geary Street. Under this alternative, Geary Street would be reserved for transit operations (i.e., automobile access and parking would be eliminated). In addition to the circulation changes on Post,



Geary, and O'Farrell, further changes to traffic circulation would be necessary in the greater downtown, both north and south of Market Street.

**EG-5.** *Two-Way Geary: Bus Lanes and Traffic Lanes.* This alternative was suggested during Scoping and would require all of the changes to traffic circulation and street directionality included in EG-4. However, under this alternative, mixed-traffic would be permitted on Geary. Buses would travel in designated transit lanes in each direction on Geary Street. A single traffic lane would also be provided in each direction on Geary Street. Although auto access would be maintained, on-street parking would be generally eliminated in order to accommodate all four travel lanes.

**EG-6.** *Two-Way Geary: Partial Transit-Only.* This alternative was suggested during Scoping and would also require all of the changes to traffic circulation and street directionality included in EG-4. However, under this alternative, auto access would be permitted for a certain segment or segments of Geary Street. Thus, this alternative could be considered a hybrid of EG-4 and EG-5. The precise locations of varying configurations have not been determined.

This description is not intended to capture every possible variation of alternatives, but instead, to capture important distinctions. Figure 5 compares key features of these alternatives.

**Figure 5. Characteristics of the Range of Alternatives for East of Gough**

Alternative	Vehicles	Real-Time Info. at Stops	Configuration	Proof of Payment / Multi-Door Boarding	High-Quality Transit Stations	Pedestrian Safety Improvements	Bicycle Amenities	Expanded Hours of Service	Operational Modifications	Street Network Circulation Changes
EG-1. No Project	Low Floor	Some Stops	Existing Diamond Lanes					Moderate		
EG-2. TSM Basic	Full BRT Buses	Some Stops	Existing Diamond Lanes	✓	✓	✓	✓	✓		
EG-3. TSM Plus	Full BRT Buses	Some Stops	Existing Diamond Lanes	✓	✓	✓	✓	✓	✓	
EG-4. Two-Way Geary: Bus-Only Transit Mall	Full BRT Buses	Most Stops	Transit-Only Street	✓	✓	✓	✓	✓	✓	✓
EG-5. Two-Way Geary: Bus Lanes and Traffic Lanes	Full BRT Buses	Most Stops	Transit Oriented Street	✓	✓	✓	✓	✓	✓	✓
EG-6. Two-Way Geary: Partial Transit-Only	Full BRT Buses	Most Stops	Transit Oriented Street	✓	✓	✓	✓	✓	✓	✓

Note: Full BRT buses are low-floor, but may also include: wider doors; more doors; doors for boarding on both the left and right side of the bus; higher quality passenger amenities within the bus; and/or unique branding to distinguish the higher level of service.



## 4 Screening Framework and Process

The Screening Assessment results in a recommendation to advance a limited set of Project alternatives for analysis in the environmental document. This set of alternatives should address the purpose of and need for the project (“Purpose and Need”) and have potential environmental impacts requiring evaluation and disclosure.

To perform the Screening Assessment, a Screening Framework was developed, in consultation with the Geary BRT Technical Advisory Committee (TAC) and the Geary BRT Citizens Advisory Committee (GCAC).

This section presents the Purpose and Need and the Screening Framework. The process undertaken to develop and apply the Screening Framework is also discussed.

### 4.1 Purpose and Need

The Geary BRT Purpose and Need reflects citywide transit priority network development policies articulated in the 2004 San Francisco Countywide Transportation Plan, as well as corridor-specific goals and needs identified during the Feasibility Study.

The project *purpose* is to:

- Support the city’s growth and development needs;
- Better serve existing transit riders;
- Stem and reverse the trend toward transit mode share loss;
- Improve the operational efficiency and cost-effectiveness of the transportation system; and
- Accommodate potential rail in the future.

The *need* for the project is indicated by the following:

- The existing street configuration is unfavorable for buses, pedestrians, and bicyclists;
- Current transit service on Geary is inadequate for consistently high ridership throughout the day, on weekdays and weekends, and in both directions; and
- Existing bus service is slow and unreliable.

The Purpose and Need are also consistent with, and supportive of, the recommendations of SFMTA’s Transit Effectiveness Project (TEP), which anticipate the Geary BRT project.

### 4.2 Screening Framework

The Screening Framework utilizes a set of Screening Criteria, which were developed based on the project Purpose and Need. The Screening Criteria do not support a comprehensive *evaluation* of alternatives; rather, the Screening Criteria provide a comparative *assessment* of the suggested alternatives’ performance with respect to Purpose and Need. The Criteria address both project benefits and project impacts, as well as compliance with the rail-ready mandate in the Prop K Expenditure Plan. Figure 6, below, presents the Screening Criteria for Typical Sections.



**Figure 6. Screening Criteria for Typical Sections**

	Category	Screening Criteria
<b>Benefits</b>	<i>Transit Performance</i>	Improve Transit Speed and Reliability
		Attract and Retain Transit Riders
		Distribute Benefits Equitably
	<i>Transit Rider Experience</i>	Improve Ride Quality
		Improve Waiting and Boarding Experience
		Improve Pedestrian Access and Safety
	<i>Urban Design</i>	Enhance Street Identity, Landscaping, and Integration with Adjacent Land Uses
	<i>Multimodal System Performance</i>	Strengthen the City’s Rapid Transit Network
		Minimize Time to Benefits
Accommodate Bicycle Access		
<b>Impacts</b>	<i>Traffic and Parking</i>	Accommodate Traffic Circulation and Access
		Change to Available On-Street Parking and Loading
	<i>Capital and Operating Costs</i>	Capital Cost
		Operating and Maintenance Cost
	<i>Construction</i>	Construction Duration and Intensity
<i>Rail-Readiness</i>	Rail-Ready Compliance	

A condensed set of Screening Criteria was developed for assessing the East of Gough alternatives. The primary rationale for employing a modified methodology East of Gough is that the Geary Street and O’Farrell Street one-way couplet pair was the subject of the Inner Geary TPS Project, as discussed in Section 3.2, above. The Screening Criteria for East of Gough alternatives reflect the completion of this project while providing for consideration of potential benefits that could be achieved through further improvements. All impact criteria proposed for Typical Sections are maintained. Figure 7, below, presents the Screening Criteria for East of Gough.

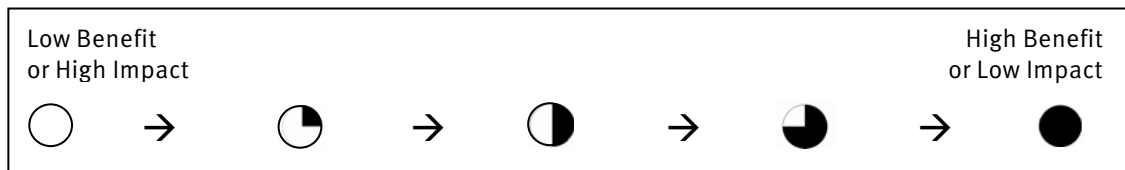


**Figure 7. Screening Criteria for East of Gough**

	Category	Screening Criteria
<b>Benefits</b>	<i>Transit Performance</i>	Maintain Transit Speed and Reliability
	<i>Transit Rider Experience</i>	Improve Pedestrian and Waiting Environment
		Improve Pedestrian Access and Safety
	<i>Urban Design</i>	Enhance Street Identity, Landscaping, and Integration with Adjacent Land Uses
<i>Multimodal System Performance</i>	Minimize Time to Benefits	
<b>Impacts</b>	<i>Traffic and Parking</i>	Accommodate Traffic Circulation and Access
		Change to Available On-Street Parking and Loading
	<i>Capital and Operating Costs</i>	Capital Cost
		Operating and Maintenance Cost
	<i>Construction</i>	Construction Duration and Intensity
<i>Rail-Readiness</i>	Rail-Ready Compliance	

Under the Screening Framework, the performance of both Typical Section alternatives and alternatives East of Gough with respect to the Screening Criteria is assessed. Rail-ready compliance for each alternative is assessed as either compliant or not compliant (or not-applicable in the case of rail alternatives). For all other criteria, an individual alternative is rated as illustrated in Figure 8, below.

**Figure 8. Criteria Rating Scale**



This rating process ultimately results in a completed screening matrix in which each cell indicates an individual alternative’s performance with respect to a specific screening criterion.

**4.3 Screening Process**

Development of the Screening Framework and the completion of the Screening Assessment were conducted in consultation with the Geary BRT TAC and the GCAC.

On February 19, 2009, the draft Screening Framework was presented to the project’s TAC for review and input. Agencies present at the TAC meeting included (in addition to the Authority and SFMTA) were as follows:

- San Francisco Planning Department;
- San Francisco Public Utilities Commission; and
- Golden Gate Bridge, Highway, and Transportation District.



On February 26, 2009, the GCAC reviewed and approved the Alternatives Screening Framework.

The Study Team performed the draft Screening Assessment in March 2009. This effort was guided by the technical analyses, conceptual designs, and alternatives evaluation completed during the Feasibility Study.

On April 2, 2009, the GCAC held a special meeting to review and discuss the draft results of the Screening Assessment. On April 22, 2009, the results of the draft Screening Assessment were also presented to the TAC for review and input. Agencies present at the TAC meeting included (in addition to the Authority and SFMTA) were as follows:

- San Francisco Planning Department;
- San Francisco Public Utilities Commission; and
- Golden Gate Bridge, Highway, and Transportation District.

Following the input of the TAC and the GCAC, the Study Team finalized the Screening Assessment for presentation in this Report.



## 5 Screening Results

This section presents the results of Screening. First, the Screening Framework’s designation of alternatives is discussed. This is followed by a discussion of the recommendation for each alternative for both Typical Sections and East of Gough.

The completed Screening Matrices summarize the performance of each alternative with respect to the Screening Criteria. The annotated Screening Matrices for Typical Sections and East of Gough are included with this Report as Appendix A and Appendix B, respectively.

The Screening Framework assigns the following designations for alternatives based on the Screening Assessment ratings:

- *Fatally-flawed* – One or more empty circles.
- *Low-performing* – Multiple quarter-filled circles.
- *High-performing* – No empty or quarter-filled circles; multiple fully-filled circles.

The results of this designation constitute the assessment of each alternative’s ability to meet the project Purpose and Need. Under this designation system, certain alternatives may not be classified into any of the three categories. Such an alternative has no fatal flaws and is considered a “medium-performer” in addressing Purpose and Need.

The goal of screening is to advance high-performing alternatives into the EIR/EIS analysis. Alternatives are screened out of further environmental analysis if are assessed as “fatally-flawed” or low-performing.

**Fatally-flawed alternatives** fail to address one or more Screening Criteria or would worsen existing conditions. Any alternative that would fail to meet one or more of the Screening Criteria is dropped from consideration in the EIR/EIS. In other words, alternatives that do not address all elements of project Purpose and Need are not carried forward.

**Low-performing alternatives** have no fatal flaws, but would provide only slight or modest levels of improvement; these alternatives are indicated by the presence of multiple quarter-filled circles. Alternatives which do little to advance multiple Screening Criteria are eliminated from consideration in the EIR/EIS. In other words, only projects which provide sufficient ability to meet all aspects of project Purpose and Need are carried forward.

**High-performing alternatives** have no fatal flaws, meet all of the Screening Criteria satisfactorily, and substantially address project Purpose and Need. These alternatives are recommended for advancement into the EIR/EIS analysis.

These designations are the basis for recommending the set of alternatives to be advanced into the EIR/EIS analysis. The last column of each Screening Matrix (see Appendices A and B) indicates which alternatives are recommended for study in the EIR/EIS. Fatally-flawed alternatives are not recommended for advancement. High-performing alternatives are recommended for advancement. Other alternatives can be considered for advancement, given a clear need and rationale to do so; such considerations require a balance with the necessity of prioritizing analysis efforts during the development of the EIR/EIS. While the goal is to advance high-performers, some medium-performing alternatives may advance in an effort to strike a balance between benefits and impacts, to leave open the opportunity for



phased implementation, and/or to advance a sufficient range of alternatives for analysis in the EIR/EIS.

To reiterate, alternatives which are not recommended for EIR/EIS analysis are not necessarily precluded from any of the following: further planning; assessment in a separate environmental review; or implementation.



## 5.1 Screening Results – Typical Sections

This section presents the results of the Screening Assessment for Typical Sections.

### 5.1.1 Alternatives with Fatal Flaws – Not Recommended

This section discusses the six Typical Section alternatives that are not recommended for further evaluation in the EIR/EIS because they are considered fatally-flawed with respect to one or more of the Screening Criteria.

***TS-2. Peak Period/Direction Bus Lane***

***TS-3. All-Day Bus Lanes***

The above two alternatives are not recommended for further evaluation in the EIR/EIS because the magnitude of expected benefits is low.

A peak period/direction bus lane would provide some transit travel time and reliability benefits during the peak period in the peak direction. However, Geary transit experiences delays and reliability problems throughout the day and in both directions, and transit ridership on Geary is robust throughout the day, not just during peak periods. Finally, peak period/direction transit riders are less likely to be transit-dependent than off-peak and reverse-commute riders. A peak period/direction bus lane would deliver some benefit to commuters, but would fail to deliver benefits to a substantial cohort of the corridor’s transit-dependent travelers.

The All-Day Bus Lanes alternative would deliver benefits more equitably than the peak period/direction alternative. However, striped/diamond lanes typically deliver substantially less transit travel time benefit than full-featured BRT treatment. Without a highly-visible physically separated busway, buses would continue to be in conflict with mixed-traffic and be subject to the associated reliability and travel time impacts. Finally, Alternative TS-3 does not satisfactorily address significant elements of Purpose and Need, most notably the need to improve pedestrian safety and access on Geary.

***TS-4. One-Sided Busway BRT***

The above alternative is not recommended for further evaluation in the EIR/EIS because it is fatally-flawed.

This alternative would create a physically-separated transit-way and bring a distinctive design treatment to the corridor. However, a number of considerations force its removal from consideration in the EIR/EIS. This alternative would require a highly-complex street configuration—impacts would be unevenly distributed and pedestrian safety would be degraded. Pedestrians crossing Geary would have to cross a wide street in which traffic directionality switches more than once, creating confusion as buses and mixed-traffic approach from unfamiliar and alternating directions. Motorists utilizing on-street parking adjacent to the busway would likely jaywalk through the transit lanes in order to reach the sidewalk. Benefits and impacts would be disproportionately distributed to either side of the street—substantial station area improvements could be provided on the sidewalk adjacent to the busway, but loading would be severely-impacted on this side of the street. Finally, this alternative would have greater traffic and circulation impacts than other BRT alternatives



due to the need to provide for both protected left and right turning movements across the busway.

***TS-8. Surface Rail***

***TS-9. Underground Rail***

***TS-10. Combination of Surface and Underground Rail***

The above three rail alternatives are not recommended for further analysis in the EIR/EIS. Rail technology would provide high levels of transit benefits, but with much more significant capital cost, operating cost, and construction impacts.

Surface light rail capital costs are in excess of \$100 million per mile, and a subway project would cost over \$500 million per mile; light rail service also has higher operating costs than Muni bus service.<sup>1</sup> Less than \$100 million in Prop K funding is available to implement strategic transit expansion projects over the course of the 30-year Expenditure Plan. Current analysis projects a cost of approximately \$5 billion for a surface-to-subway Geary light rail project and a cost of approximately \$2.5 billion for an all-surface light rail alignment.<sup>2</sup> This would leave a substantial funding gap in project costs, with few prospects to resolve the situation within the BRT project timeframe.

Furthermore, because Federal transportation revenues have lost one-third of their value since the gas tax was last raised in 1993, the Federal Transit Administration (FTA) is increasingly seeking transportation investments that provide significant benefits for low cost. It is unlikely that the local or Federal funds to implement a rail project on Geary will materialize within the same timeframe as BRT when cost-effective alternatives such as those described herein are available.

The funding concern is related to another issue with respect to pursuing rail in the context of this environmental study: time to benefits. The Purpose and Need for Geary BRT reflects a need to improve transit travel time and reliability for current transit users in the near- and mid-terms. The timeline for achieving a Geary light rail project does not meet the Purpose and Need for Geary BRT established by the Countywide Transportation Plan and the Feasibility Study, supported by SFMTA's Transit Effectiveness Project (TEP), and confirmed during Scoping.

**5.1.2 Alternatives with High Performance – Recommended for EIR/EIS**

***TS-6. Center-Running BRT with Side Platforms / Dual Medians***

***TS-7. Center-Running BRT with Center Platforms***

The two Center-Running BRT alternatives were assessed as high-performing and are recommended for analysis in the EIR/EIS. These alternatives have no fatal flaws and have relatively high levels of performance across all Screening Criteria, with manageable impacts.

The Center-Running BRT alternatives would eliminate bus and auto conflicts by physically separating the BRT lanes from mixed-traffic lanes. In addition to reducing traffic-related delay, BRT treatments would reduce dwell and signal delay. With full-featured BRT,

<sup>1</sup> SFMTA Short-Range Transit Plan.

<sup>2</sup> These costs have been escalated and are presented for a theoretical year-of-expenditure, 2025.



pedestrian safety would be improved and bicycle and pedestrian access would be enhanced. The Center-Running BRT alternatives would also provide a highly distinguishable service within SFMTA's Rapid Network, helping to complete a network of rapid transit service in San Francisco. These alternatives would also improve the urban design of the corridor and the integration of the street with adjacent land uses.

Center-Running BRT would cause some impacts to automobile capacity and traffic circulation. These changes in circulation may be mitigated through traffic signal management and traffic calming measures on adjacent streets. BRT will also induce some travelers to switch from driving to transit.

### **5.1.3 Alternative with Medium Performance – Recommended for EIR/EIS**

#### ***TS-5. Side-Running BRT***

The Side-Running BRT alternative was assessed as a medium-performer with respect to Purpose and Need. Side-Running BRT includes many of the same elements as the Center-Running BRT alternatives, including enhanced urban design and improved pedestrian safety and access. It would also have similar manageable impacts to auto capacity and traffic circulation.

The capital cost and other impacts of the Side-Running BRT alternative are comparable to those of the Center-Running BRT alternatives; however, the transit performance benefits of the Side-Running BRT alternative are somewhat less than those of either Center-Running BRT alternative. Side-Running BRT would not eliminate traffic conflicts because vehicles would have to enter the transit lane to park and to make a right turn.

Although it was not assessed as high-performer, this alternative presents no fatal flaws and is recommended for further analysis in the EIR/EIS. The Screening Framework does not require that medium-performing alternatives be recommended for advancement into the EIR/EIS; however, such an alternative can be advanced without prejudice given a reasonable rationale for doing so. Advancement of the Side-Running BRT alternative into the EIR/EIS analysis will help to ensure that the environmental study includes a sufficient range of Project alternatives that adequately address Purpose and Need. Given these considerations, the Side-Running BRT alternative is recommended for advancement into the full EIR/EIS analysis.

## **5.2 Screening Results – East of Gough**

This section presents the results of the Screening Assessment for East of Gough.

### **5.2.1 Alternatives with Fatal Flaws – Not Recommended**

***EG-4. Two-Way Geary: Bus-Only Transit Mall***

***EG-5. Two-Way Geary: Bus Lanes and Traffic Lanes***

***EG-6. Two-Way Geary: Partial Transit-Only***

These three alternatives fail to address multiple elements of project Purpose and Need and are not recommended for further analysis in the EIR/EIS.



The Two-Way Geary alternatives would create a highly unique, transit-oriented street and provide a high-quality pedestrian and waiting environment. However, these alternatives would not provide significant transit performance benefits—operations on the one-way couplet pair of Geary and O’Farrell Streets are able to provide the best transit travel time by optimizing signal timing in favor of transit. Two-way transit operations could potentially degrade transit performance over existing conditions—particularly under the alternatives that maintain auto access on some (EG-5) or all (EG-6) of Geary Street. The Two-Way Geary alternatives would also have significant impacts to parking and loading.

Finally, the Two-Way Geary alternatives would require a major reorganization and redesign of transit and traffic circulation in the greater downtown, both north and south of Market Street. In addition to the substantial capital cost associated with these changes, this redesign of area-wide traffic patterns would require significant additional time and resources in order to undertake the necessary planning and design activities.

## 5.2.2 Alternatives Recommended for EIR/EIS

*EG-2. TSM Basic*

*EG-3. TSM Plus*

The remaining East of Gough alternatives are recommended for analysis in the EIR/EIS. These alternatives have no fatal flaws and perform relatively well across all Screening Criteria, with manageable impacts.

SFMTA’s Inner Geary TPS Project has anticipated the Geary BRT project with a number of improvements, as discussed in Section 3.2. As such, the Purpose and Need has been addressed to some extent in this portion of the corridor. If BRT is implemented on Geary Boulevard, further improvements to operations East of Gough should, at a minimum, provide sufficient transit priority and maintain transit performance in the corridor as a whole.

The TSM Basic alternative would provide continuity in the BRT corridor by continuing various BRT treatments into this portion of the corridor, including high-quality stations, pedestrian safety enhancements, and other BRT features such as proof-of-payment.

The TSM Plus alternative includes all the features of the TSM Basic alternative as well as further operational modifications that could be implemented while retaining the area’s existing circulation pattern. These strategies would seek to improve transit performance and could include various approaches such as further stop consolidation, pedestrian scrambles, turn restrictions, signal changes, and improved management of on-street parking and loading.

## 5.3 Screening Results – Summary Conclusions

This section summarizes the recommendation for the set of alternatives to be advanced into the full EIR/EIS analysis. For both Typical Sections and East of Gough, the No Project alternative will be advanced into the full environmental analysis as the alternative against which all Project alternatives will be compared. Figure 9, below, presents the results of Screening.



**Figure 9. Screening Results**

	<b>Alternative</b>	<b>Screening Result</b>
<b>Typical Sections</b>	TS-1. No Project/TSM	Required – Advance
	TS-2. Peak Period/Direction Bus Lane	Fatally-Flawed
	TS-3. All-Day Bus Lanes	Fatally-Flawed
	TS-4. One-Sided Busway BRT	Fatally-Flawed
	TS-5. Side-Running BRT	Medium-Performing – Advance
	TS-6. Center-Running BRT with Side Platforms / Dual Medians	High-Performing – Advance
	TS-7. Center-Running BRT with Center Platforms	High-Performing – Advance
	TS-8. Surface Rail	Fatally-Flawed
	TS-9. Underground Rail	Fatally-Flawed
	TS-10. Combination of Surface and Underground Rail	Fatally-Flawed
<b>East of Gough</b>	EG-1. No Project	Required – Advance
	EG-2. TSM Basic	Medium-Performing – Advance
	EG-3. TSM Plus	Medium-Performing – Advance
	EG-4. Two-Way Geary: Bus-Only Transit Mall	Fatally-Flawed
	EG-5. Two-Way Geary: Bus Lanes and Traffic Lanes	Fatally-Flawed
	EG-6. Two-Way Geary: Partial Transit-Only	Fatally-Flawed

**5.3.1 Typical Sections – Summary Conclusions**

The No Project/TSM alternative will be advanced into the full environmental analysis as the alternative against which Project alternatives will be compared. Three Project alternatives for Typical Sections are recommended for full environmental analysis in the EIR/EIS:

- TS-5: Side-Running BRT
- TS-6: Center-Running BRT with Side Platforms / Dual Medians
- TS-7: Center-Running BRT with Center Platforms

These are the only alternatives with no fatal flaws and satisfactory performance across all Screening Criteria.

**5.3.2 East of Gough – Summary Conclusions**

The No Project alternative will be advanced into the full environmental analysis as the alternative against which Project alternatives will be compared. Two Project alternatives for East of Gough are recommended for full environmental analysis in the EIR/EIS:

- EG-2: TSM Basic
- EG-3: TSM Plus

These are the only alternatives with no fatal flaws and satisfactory performance across all Screening Criteria. All other East of Gough alternatives were assessed as fatally-flawed.



These other alternatives would require a major reorganization and redesign of transit and traffic circulation in the greater downtown.



## 6 Description of Alternatives Carried Forward

The purpose of this section is to describe the general characteristics of the No Project alternative and the Project alternatives recommended for analysis in the EIR/EIS. It is important to note that a number of design aspects of each alternative have not been determined. Following adoption of the general characteristics of the alternatives, the Authority will develop more advanced engineering designs for each Project alternative and continue to refine the specific features of each alternative.

The EIR/EIS analysis will determine negative environmental impacts of the alternatives and develop mitigation measures to reduce or remove their effects. The performance and potential impacts of these alternatives will be compared to the future No Project alternative. The overall No Project/TSM alternative is constituted by the combination of the No Project/TSM alternative for Typical Sections (TS-1) and the No Project alternative for East of Gough (EG-1).

### 6.1 No Project Alternative

The Geary BRT Project EIR/EIS will compare the benefits and impacts of with-Project scenarios against two No Project scenarios, one set in a near-term horizon year (2015), and one set in a long-range horizon year (2035).

All projects analyzed through EIR and EIS processes must contain a “No Build” alternative. This alternative represents a projection of existing conditions and planned improvements in the absence of the Project, based on the best available information. The No Project alternative will include demographic and land use characteristics forecast for year 2015, and also include transportation system improvements planned to be in operation by year 2015. Levels of projected growth in households and jobs in San Francisco and the Geary corridor will be documented in a subsequent report. Transportation system improvements planned for the corridor under the 2015 No Project alternative will continue to be refined, but are expected to include:

- *More sophisticated transit signal priority.* Traffic signals along Geary Boulevard currently provide transit signal priority at approximately 18 intersections; however, the current signal priority system uses infrared technology, which treats intersections and vehicles in isolation and cannot distinguish between local and limited buses. SFMTA is conducting research and analysis to determine which of the more advanced technologies available would most benefit Geary transit service and at which locations. While fiber optic-based SFgo is used to manage traffic and transit in real-time within other corridors in San Francisco, it is more likely that Geary service will take advantage of less aggressive and less costly technologies such as limited interconnects or GPS-based signal priority.
- *Low-floor buses.* SFMTA is gradually converting its fleet to low-floor buses which will provide improved boarding and alighting. Low-floor buses do not require passengers to climb steps to board or exit buses, helping to shorten dwell times.
- *Real Time Passenger Information.* SFMTA is installing real-time bus arrival information displays (NextMuni) at major stops; shelters are being replaced over time through a programmed cycle. Although this measure does not affect transit operations directly,



these improvements will make transit use more convenient and thereby contribute to increased ridership.

- *Rebalancing limited and local services to provide a net increase in service frequency on Geary.* As part of TEP implementation, SFMTA is working to redistribute service between limited and local operations in the corridor, to reduce headways on the limited. This will not only provide more frequent service, it will also help to reduce vehicle loads on the more popular and well-used of the two services.
- *Expansion in the span of service hours.* With the redistribution of limited and local service, along with other changes in the corridor and system, SFMTA plans to reinvest service hours saved in a longer span of weekday service for the limited line. Based on existing analysis, SFMTA will target 2 to 4 additional hours of limited service in the evening.
- *East of Gough.* No major changes are planned East of Gough. Only minor adjustments to the existing TPS treatments are expected, such as fine-tuning of passive signal timing to improve transit priority. The East of Gough portion of the corridor will also be affected by elements of the No Project/TSM alternative that apply to the entire corridor—such as low-floor vehicles, rebalancing of limited and local service, and the moderate of expansion of limited service hours.

The 2035 No Project alternative will include demographic and land use characteristics expected by year 2035, and also include transportation system improvements expected by year 2035. The specific levels of growth in households and jobs in San Francisco, and the set of transportation system improvements planned to be in place by this horizon year, will be established in a subsequent report.

## **6.2 Project Alternatives – Typical Sections**

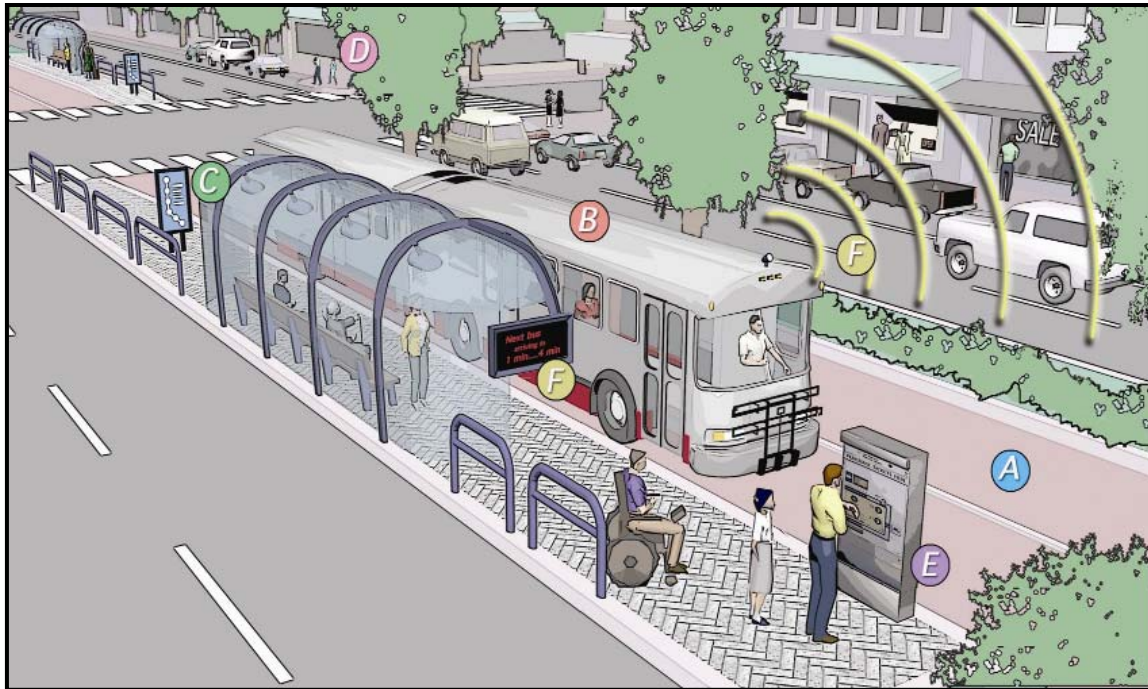
This section describes the known features of the Project alternatives for Typical Sections.

### **6.2.1 BRT Features Common to All Project Alternatives**

All Project alternatives would provide a dedicated transit lane and two mixed-traffic lanes in each direction. A lane of parallel on-street parking would generally be provided adjacent to both north and south sides of Geary Boulevard. East of Park Presidio Boulevard, all three Project alternatives would result in a reduction of one mixed-traffic lane per direction in order to provide a dedicated transit lane in each direction. West of Park Presidio Boulevard, blocks that currently have diagonal parking would be replaced with parallel parking, providing enough space to create a transit lane in each direction without reducing the number of mixed-traffic lanes.

Each Project alternative shares the common features of full-featured BRT described in the Feasibility Study and graphically depicted in Figure 10 and described below:

**Figure 10. Elements of Full-Featured BRT**



- A. *Dedicated Bus Lanes.* BRT buses would operate in an exclusive, dedicated transit lane on the street surface. One mixed-traffic lane in each direction would be dedicated to BRT vehicles only. The transit lane would be distinguished from mixed-traffic lanes by physical separation and/or colored pavement. To reduce conflicts with the transit lane, left turn opportunities for mixed-traffic would be reduced in each direction.
- B. *Level Boarding.* The No Project/TSM alternative includes low-floor vehicles; this would be preserved in the BRT Project alternatives and facilitate level boarding at BRT stations.
- C. *High-Quality Stations.* BRT stations would be of high-quality design and have various amenities. These treatments would include larger shelters, real-time information, and bicycle parking.
- D. *Streetscape Improvements and Amenities.* BRT includes pedestrian safety improvements (corner bulb-outs and median refuge upgrades), as well as increased landscaping.
- E. *Proof-of-Payment/All-door Boarding/Fare Prepayment.* All-door boarding will help to reduce dwell times. BRT will provide fare vending machines on station platforms, allowing fare pre-payment for passengers without transit passes.
- F. *Transit Signal Priority.* The No Project/TSM alternative includes some transit signal priority improvements; this feature would be improved and deployed throughout the corridor under the Project alternatives.

## 6.2.2 Side-Running BRT

This alternative would provide dedicated transit lanes in the rightmost travel lane adjacent to curbside parallel parking in each direction. Two travel lanes for mixed-traffic would be provided to the left of the transit lane in each direction. Both local and BRT vehicles would operate in the transit lane. Non-transit vehicles would be able to cross the transit lane to park or make right turns. BRT station platforms would be located on new bus bulb-outs created by extending the sidewalk into the parking lane at limited stop locations. This alternative would retain the single landscaped center median along the corridor. Figure 11, below, presents a conceptual simulation of the Side-Running BRT alternative.

**Figure 11. Conceptual Simulation of Side-Running BRT**



## 6.2.3 Center-Running BRT with Side Platforms / Dual Medians

This alternative would convert the existing center median and the two centermost traffic lanes (one eastbound and one westbound) to a dedicated busway with two bus lanes separated from mixed-traffic by dual landscaped medians approximately 4-8 feet wide. The busway would be physically separated from mixed-traffic by the medians. Station platforms would be located on the right-side median, allowing right-side boarding. The medians would physically separate buses and other traffic, eliminating transit and auto conflicts. Two mixed-traffic travel lanes would be provided in each direction. Figure 12, below, presents a conceptual simulation of the Center-Running BRT with Side Platforms / Dual Medians alternative.

**Figure 12. Conceptual Simulation of Center-Running BRT with Side Platforms / Dual Medians**



#### **6.2.4 Center-Running BRT with Center Platforms**

This alternative would convert the leftmost traffic lane in each direction into a dedicated BRT lane. Buses would run on either side of a single, shared, wide center median. The BRT lanes would be demarcated and separated from the adjacent mixed-traffic lanes with a physical design treatment, such as a raised/mountable curb. Two mixed-traffic travel lanes would be provided in each direction. Station platforms would be located on the single center median, requiring left-side passenger loading and unloading. Buses utilizing the busway would need doors on both the left and right sides of the vehicle to allow service to the left-side BRT platforms as well as right-side stops throughout other portions of the routes. Figure 13, below, presents a conceptual simulation of the Center-Running BRT with Center Platforms alternative.

**Figure 13. Conceptual Simulation of Center-Running BRT with Center Platforms**





## **6.3 Project Alternatives – East of Gough**

This section describes the known features of the Project alternatives for East of Gough.

### **6.3.1 TSM Basic**

Under this alternative, Geary transit service will be routed East of Gough as it is currently, with inbound 38-Local and 38L-Limited service utilizing eastbound one-way O’Farrell Street and outbound 38-Local and 38L-Limited service utilizing westbound one-way Geary Street. Although the two directions of transit service would remain on different streets utilizing the existing dedicated transit lanes, the TSM Basic alternative would extend various BRT amenities (as described in Section 6.2.1) to this portion of the corridor as appropriate and feasible. The primary goal of these improvements would be to enhance the pedestrian environment, waiting experience, and safety. These enhancements would include high-quality stations, pedestrian safety improvements, and other BRT features such as proof-of-payment. The area’s existing traffic circulation would be retained.

### **6.3.2 TSM Plus**

The TSM Plus alternative includes all elements of the TSM Basic alternative as well as additional operational improvements. Geary transit service would be routed East of Gough as it is currently, with inbound 38-Local and 38L-Limited service utilizing eastbound one-way O’Farrell Street and outbound 38-Local and 38L-Limited service utilizing westbound one-way Geary Street. The area’s existing traffic circulation would be retained. Operational improvements, to be studied and determined in the EIR/EIS process, would provide transit performance benefits in the existing transit-only lanes. These strategies may include, but are not limited to, further stop consolidation, signal changes, turn restrictions, pedestrian scrambles, and improved management of on-street parking and loading.

## **6.4 Project Alternatives – Miscellaneous/General Issues**

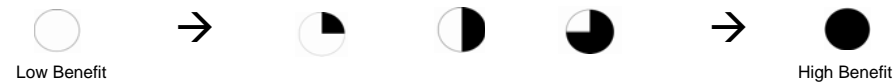
### **6.4.1 Features Not Yet Determined**

The suite of Geary transit routes currently provides 4 classes of service: local service stopping every 1 to 3 blocks along Geary; limited service stopping every 3 to 4 blocks; zonal express service making local stops on a section of Geary and expressing to/from downtown areas during the peak hours; and regional service making a few stops on Geary in between the North Bay and San Francisco’s Civic Center and downtown areas. While the project will be designed to accommodate and improve performance of these services, the distinct variations to their operating plans and final stop locations have not yet been determined beyond a preliminary evaluation during the Feasibility Study.

### **6.4.2 Golden Gate Transit Operations**

The Golden Gate Bridge, Highway, and Transportation District operates regional transit service along a portion of Geary Boulevard. The Project alternatives will seek to accommodate Golden Gate Transit operations in the dedicated transit lanes.

Screening Assessment - Typical Sections		BENEFITS									IMPACTS					RAIL READY	ADVANCE?	
Criteria Category		Transit Performance			Transit Rider Experience			Urban Design	Multimodal System Performance			Traffic & Parking		Capital & Operating Costs		Construction		
Criteria		Improve Transit Speed & Reliability	Attract & Retain Transit Riders	Distribute Benefits Equitably (i.e., income levels, geographic)	Improve Ride Quality	Improve Waiting & Boarding Experience	Improve Pedestrian Safety & Access	Enhance Street Identity, Landscaping, & Integration with Adjacent Land Uses	Strengthen the City's Rapid Transit Network	Minimize Time to Benefits	Accommodate Bicycle Access	Accommodate Traffic Circulation & Access	Change to Available On-Street Parking & Loading	Capital Cost	Operating & Maintenance Cost	Construction Duration & Intensity	Rail Ready Compliant?	Recommendation to Advance
Alternative																		
No Project/TSM																Yes	Yes (No Project)	
TS-1	 TSM measures result in slight improvement															Yes	No (fatal flaws)	
TS-2	 Some delays reduced during peak period in peak direction															Yes	No (fatal flaws)	
TS-3	 Some delays reduced															Yes	No (fatal flaws)	
TS-4	 Dwell & mixed traffic delays reduced															Yes	No (fatal flaw)	
TS-5	 Most delays reduced, but turning & parking autos share curb lane															Yes	Yes	



Screening Assessment - Typical Sections		BENEFITS										IMPACTS					RAIL READY	ADVANCE?
Criteria Category		Transit Performance			Transit Rider Experience			Urban Design	Multimodal System Performance			Traffic & Parking		Capital & Operating Costs		Construction		
Criteria		Improve Transit Speed & Reliability	Attract & Retain Transit Riders	Distribute Benefits Equitably (i.e., income levels, geographic)	Improve Ride Quality	Improve Waiting & Boarding Experience	Improve Pedestrian Safety & Access	Enhance Street Identity, Landscaping, & Integration with Adjacent Land Uses	Strengthen the City's Rapid Transit Network	Minimize Time to Benefits	Accommodate Bicycle Access	Accommodate Traffic Circulation & Access	Change to Available On-Street Parking & Loading	Capital Cost	Operating & Maintenance Cost	Construction Duration & Intensity	Rail Ready Compliant?	Recommendation to Advance
Alternative																		
TS-6	Center-Running BRT with Side Platforms / Dual Medians																Yes	Yes (high-performer)
		Dwell, signal, & mixed traffic delays reduced	Greater performance improvements attract more riders	High benefit to transit-dependent groups	Improves as traffic, loading, & parking conflicts are eliminated	High-quality stations; platforms on two separate medians	Pedestrian conditions & crossing experience substantially improved	Center-running treatment provides highly visible enhancement	Center-running treatment provides strong, highlighted service	Construction required	Moderate improvement to bicycle access	Reduced auto capacity	Smallest parking impact of BRT alternatives	Moderate capital costs	Best operational efficiency & reinvestment of travel time savings	Moderate construction impacts; phasing helps reduce impacts		
TS-7	Center-Running BRT with Center Platforms																Yes	Yes (high-performer)
		Dwell, signal, & mixed traffic delays reduced	Greater performance improvements attract more riders	High benefit to transit-dependent groups	Improves as traffic, loading, & parking conflicts are eliminated	High-quality stations; widest platforms on single center median	Widest median platforms provide significant improvement	Center-running treatment provides highly visible enhancement	Center-running treatment provides strong, highlighted service	Construction required	Moderate improvement to bicycle access	Reduced auto capacity	Parking impacted with need to accommodate turn pockets	Moderate capital costs	Best operational efficiency & reinvestment of travel time savings	Moderate construction impacts; phasing helps reduce impacts		
TS-8	Surface Rail																N/A	No (fatal flaws)
		Dwell, signal, & mixed traffic delays reduced	Greater performance improvements attract more riders	High benefit to many, but local/parallel service impacted	Improves as traffic, loading, & parking conflicts are eliminated	High-quality stations	Significant improvement	Significant enhancement	Rail treatment provides prominent service improvement	Significant funding gap prevents near term construction	Moderate improvement to bicycle access	Reduced auto capacity	Likely to result in moderate parking impacts	More than \$100M per mile; no feasible funding plan	Increased operating & maintenance cost	Longer & more intensive construction		
TS-9	Underground Rail																N/A	No (fatal flaws)
		Total grade separation eliminates traffic-caused delays		High benefit to many but local/parallel service impacted	Full grade separation provides best ride quality	Metro stations	Subway would not provide significant street-level improvements	Enhances street identity, but subway treatment would not enhance landscaping	Rail treatment provides prominent service improvement	Longest time to identify funds, plan, design, & construct	Limited surface improvements	Total grade separation improves auto circulation	No parking loss anticipated	Highest cost alternative; no feasible funding plan	Increased operating & maintenance cost	Long & intensive construction; street-level impact primarily at stations		
TS-10	Combination of Underground and Surface Rail																N/A	No (fatal flaws)
		Dwell, signal, & mixed traffic delays reduced		High benefit to many but local/parallel service impacted	Improves as traffic, loading, & parking conflicts are eliminated	High-quality stations	Substantial improvement for surface-running sections	Enhances street identity; improved landscaping for surface-running portion	Rail treatment provides prominent service improvement	Significant funding gap prevents near term construction	Moderate improvement to bicycle access	Reduced auto capacity in surface-running segments	Some parking impacts in surface-running portion	No feasible funding plan	Increased operating & maintenance cost	Long & intensive construction		



Screening Assessment - East of Gough		BENEFITS					IMPACTS					RAIL READY	ADVANCE?
Criteria Category		Transit Performance	Transit Rider Experience		Urban Design	Multimodal System Performance	Traffic & Parking		Capital & Operating Cost		Construction		
Criteria		Maintain Transit Speed & Reliability	Improve Pedestrian & Waiting Environment	Improve Pedestrian Safety & Access	Enhance Street Identity, Landscaping, & Integration with Adjacent Land Uses	Minimize Time to Benefits	Accommodate Traffic Circulation & Access	Change to Available On-Street Parking & Loading	Capital Cost	Operating & Maintenance Cost	Construction Duration & Intensity	Rail-Ready Compliant?	Recommendation to Advance
Alternative													
EG-1	No Project											Yes	Yes (No Project)
EG-2	TSM Basic											Yes	Yes
		Existing Bus Lanes maintained	Modest improvements at stops	Moderate improvement		Short implementation timeframe			Low capital costs	Minimal impact	Modest construction impact		
EG-3	TSM Plus											Yes	Yes
		Existing Bus lanes maintained with modest operational improvements	Modest improvements at stops	Moderate improvement		Moderate implementation timeframe	Could have slight traffic impacts		Moderate capital costs	Minimal impact	Modest construction impact		
EG-4	Two-Way Geary: Bus-Only Transit Mall											Yes	No (fatal flaws)
		Minimal change to speed & reliability	Transit-only street provides high-quality waiting environment	Transit-only street provides high-quality pedestrian environment	Transit-only street significantly enhances urban design	Requires significant time for planning, design, & implementation	Significant traffic impacts	Greatest parking and loading impacts	Substantial capital costs	Moderate impact	Significant construction impact		
EG-5	Two-Way Geary: Bus-Lanes and Traffic Lanes											Yes	No (fatal flaws)
		Two-way operations with traffic potentially degrade performance				Requires significant time for planning, design, & implementation	Substantial traffic impacts; auto access maintained	Significant parking and loading impacts	Substantial capital costs		Significant construction impact		
EG-6	Two-Way Geary: Partial Transit-Only											Yes	No (fatal flaws)
		Two-way operations with traffic potentially degrade performance	Transit-oriented street improves waiting experience	Transit-oriented street improves pedestrian environment	Transit-oriented street enhances urban design	Requires significant time for planning, design, & implementation	Significant traffic impacts	Significant parking and loading impacts	Substantial capital costs		Significant construction impact		

