



SAN FRANCISCO PLANNING DEPARTMENT

Memorandum

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Project Name: **19th Avenue Transit Study Final Report**
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The 19th Avenue Transit Study (Study) builds on recent planning efforts to develop plans for a west-side grade-separated (i.e. partial subway or bridge crossings of 19th Avenue) alignment of the M-Ocean View as it traverses the neighborhoods surrounding 19th Avenue in Southwest San Francisco. The purpose of the Study is to define conceptual alternatives and assess their feasibility, benefits, and impacts. The Study was unanimously adopted by the full San Francisco County Transportation Authority (Transportation Authority) Board on March 28, 2014. Throughout the study, the Planning Department played an advisory role in terms of land use, urban design, and transportation.

BACKGROUND

The M-Ocean View is part of the Muni Metro light-rail system, operating between Downtown and Balboa Park by way of 19th Avenue. 19th Avenue is a major north-south arterial in western San Francisco that is designated as State Highway 1 carrying approximately 66,000 vehicles per day, among the highest of any surface arterial in the city. The M-Ocean View operates in the median of 19th Avenue between approximately Sloat and Junipero Serra Boulevards, adjacent to major land uses on the west side of the street: the Stonestown Galleria regional shopping center, San Francisco State University (SF State), and the Parkmerced neighborhood.

The Transportation Authority initiated the 19th Avenue Transit Study (Study) to follow through on commitments that the City and County of San Francisco made as part of the approved Parkmerced Development Agreement, approved by the Planning Commission and the Board of Supervisors in 2011. The Parkmerced development will add more than 5,600 net new housing units and supportive mixed uses, approximately tripling the density of the site. Instrumental to that plan's vision of a transit-oriented development was bringing the M-Ocean View out of the median of 19th Avenue and through the Parkmerced site to provide strong transit access to new residents. Parkmerced is committed to implementing a relocation of the M-Ocean View through the site by creating two new at-grade crossings for the M-Ocean View to cross 19th Avenue at Holloway and at Junipero Serra (referred in the Study as the "Baseline"). The Study developed alternatives to grade-separate the M-Ocean View crossings of 19th Avenue (via subway or bridge) and run it along the west side of the street between Stonestown Galleria and Parkmerced. As articulated in conditions in the Development Agreement, the City and County of San Francisco has until July 2018 to develop and approve an alternative grade-separated version of the

project in order to coordinate with and use the investment Parkmerced is committed to making as local match to a larger project.

STUDY DESCRIPTION

The Study identified four major needs for Study alternatives to address:

- **Transit Performance Issues:** slow travel speed of the M-Ocean View (~8.5-9.5 mph during peak hours), low reliability, and crowded conditions;
- **Unattractive, Difficult Transit Access:** all M-Ocean View riders must cross three lanes of traffic to access or egress median-running M-Ocean View stations on 19th Avenue; both light-rail station platforms and bus stops experience overcrowded conditions during peak hours;
- **Challenging, Unattractive Pedestrian Conditions:** narrow sidewalks, long distance across the street, closed crosswalks, and long distances between crossing opportunities, all contribute to 19th Avenue's designation as a High-Injury Corridor, part of the 6% of street miles where 60% of all fatal and severe pedestrian collisions occur; and
- **Circuitous Bike Routing and Challenging Crossings:** most of 19th Avenue is not part of the San Francisco Bicycle Network, but adjacent streets on either side serve as an indirect north-south route through the area; bicyclists often bike on the sidewalk or on 19th Avenue despite the lack of a facility, given it provides more direct routing than the officially designated network.

Six options, three for the northern portion of the study area and three for the southern portion, were developed. Four of these were carried through for refinement and evaluation. The evaluation identified one northern option and one southern option as the highest-performing. This alternative would take the M-Ocean View underground between St. Francis Circle and SF State. The light-rail would travel through the center of Parkmerced at grade and exit the site by way of Font Boulevard, traveling over Junipero Serra Boulevard by way of a bridge that would land on Randolph Street. The entire 19th Avenue roadway would be re-constructed to make use of the vacated median light-rail tracks, rebuilt with wider sidewalks on both sides of the street as well as a landscaped median and pedestrian refuge.

The project team engaged in two rounds of intensive outreach over the course of the Study. The highest-performing alternative was also most supported by the community.

The next phase of work will advance project development to the 5-10% level of engineering, prepare a Project Study Report as required for projects affecting the State-owned right-of-way, clarify the alternatives to be analyzed in the environmental review phase, update capital and operating costs, and advance a funding and implementation strategy. This phase will be led by the SFMTA in continued partnership with the Transportation Authority. Start-up for this phase is currently underway, and is expected to last until July, 2015.

Attachments:

1. 19th Avenue Transit Study Executive Summary. Full Study can be found at http://www.sfcta.org/sites/default/files/content/Planning/19thAvenue/19thAve_final_report.pdf.

Executive Summary



PHOTO COURTESY PARKMERCED

E.1 Introduction

THE 19TH AVENUE TRANSIT STUDY (Study) explores the feasibility of making a major capital investment to re-envision transportation in the 19th Avenue/Highway 1 corridor from Sloat Boulevard to Brotherhood Way in Southwest San Francisco. The Study explores options for re-locating the M-Ocean View light-rail line from where it currently operates in the 19th Avenue median to the west side of the street through new subway or bridge structures that grade-separate the M-Ocean View crossings of 19th Avenue. Such an investment could provide for a major improvement in transit travel times and reliability, while providing the opportunity to dramatically re-orient the street for a safer, calmer corridor that marks San Francisco's southern entrance as a gateway into the city, improves neighborhood quality of life, and supports transit-oriented land use plans.

The purpose of the Study is to determine the feasibility, benefits, and impacts of such an investment, guided by a framework of eight goals centered on improving conditions for all 19th Avenue travellers as well as neighboring residents, businesses, and institutions. This effort represents the first stages of project development by defining potential project alternatives. The next stages of work include further project development, followed by environmental review; and, if a decision is made to move forward implementing the project, then more detailed design engineering, and construction.

Nineteenth Avenue is western San Francisco's major north-south transportation arterial. Carrying approximately 66,000 vehicles per day¹, it is among the busiest surface arterial streets in the entire city. The street is designated as Highway 1 and carries major through traffic between San Francisco's neighboring counties to the north and the south as well as from San Franciscans travelling to and from the western half of the city. The road is three lanes in each direction, and the M-Ocean View light-rail operates in the median for approximately one mile in the southern part of the corridor (see Figure ES-1). The areas just east and west of the street vary distinctly. To the east are lower density residential neighborhoods—West Portal, Lakeside, Oceanview-Merced Heights-Ingleside (OMI). To the west are more intense land uses: the Stonestown Galleria regional shopping center, San Francisco State University (SF State), and the Parkmerced residential neighborhood of high-rise apartment towers and low-rise garden townhomes with an existing population of approximately 8,000.



Figure ES-1. Study Corridor Overview

¹ California Department of Transportation (Caltrans), Average Annual Daily Traffic, 2012.



Left: The M-Ocean View must travel southbound in northbound travel lanes on 19th Avenue to enter the median near Rossmoor Drive. During peak hours, traffic often queues onto the light-rail tracks, delaying the light-rail from proceeding. Right: Access to M-Ocean View stations along 19th Avenue is challenging. Pedestrians and transit riders must cross three travel lanes to access the median stations, while avoiding conflicts with turning cars.

The result of the 19th Avenue Corridor Study was community prioritization of a west-side grade separated alignment of the M-Ocean View and identification of this study as a next step.

E.2 Predecessor Plans

About seven years ago, San Francisco stakeholders began discussing some major land use changes on the west side of the street, including:

- The *SF State Campus Master Plan*, adopted in 2007, which would add 1 million square feet of new facilities and grow the university's student body by 25%, bringing its total enrollment to 25,000 full-time equivalent students.
- The *Parkmerced Vision* plan, a master development plan proposed by the site's owners and ultimately adopted in 2011, which would result in a net addition of 5,679 new housing units, approximately tripling the residential density of the site, along with a mix of supportive commercial, retail and community uses.

Concerns about the transportation impacts of this new growth were raised to then-District Seven Supervisor, Sean Elsbernd. In 2008, Supervisor Elsbernd requested that the San Francisco Planning Department (SF Planning) prepare the *19th Avenue Corridor Study* to analyze the cumulative impacts of these and other potential developments in the vicinity of 19th Avenue. Corridor stakeholders helped the city set goals and infrastructure investment priorities to improve existing conditions and support future plans.

The result of this process was community prioritization of a west-side grade separated alignment of the M-Ocean View and identification of this study as a next step. Since that time, the *Parkmerced Vision* plan was adopted and includes a commitment for the developer to make a major upgrade to the M-Ocean View and 19th Avenue, valued at \$70 million,² in support of this priority. The Development Agreement between Parkmerced and the City and County of San Francisco spells out three ways this improvement would move forward:

1. Parkmerced would construct the Baseline improvement: a new segment of the M-Ocean View that would travel through the Parkmerced site between Holloway Avenue and Junipero Serra Boulevard through two new at-grade crossings of 19th Avenue. (See Figure ES-2, page after next.)
2. Parkmerced would construct a modified version of the Baseline that supports a west side grade-separated alignment of the M-Ocean View for the entire length it is in the 19th Avenue corridor.
3. Parkmerced would pay the City and County of San Francisco for investment in a modified version of the Baseline that supports a west side-grade separated alignment the cost of which they would have spent implementing the Baseline and not constructing anything.

² Cost estimate based on conceptual design subject to refinement. Parkmerced's responsibility is to construct the segment of the M-Ocean View through the Parkmerced site, regardless of the actual cost.

At the time of approval of the *Parkmerced Vision* plan, the second option was no more than an idea and a potential line on a map. One provision of the Development Agreement is an agreement between Parkmerced and the City and County of San Francisco that allows the further definition of a modified version of the Baseline. The agreement gives San Francisco until July of 2018 to develop and approve an alternative investment. This investment would cost more than the investment Parkmerced has committed to make, but could also create larger benefits to adjacent landowners and the surrounding neighborhoods and could therefore potentially leverage significant additional funding, using the Parkmerced investment as local match.

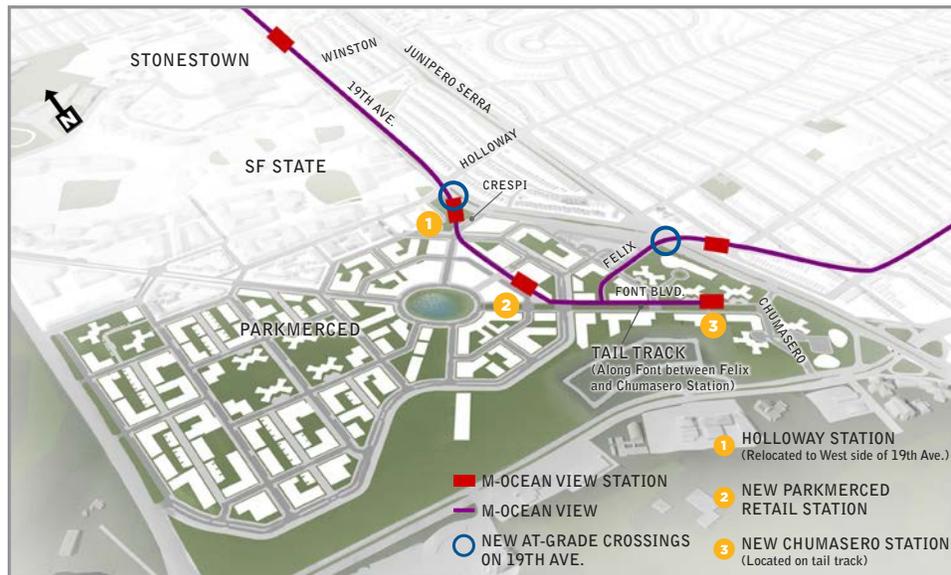
The San Francisco County Transportation Authority (Transportation Authority) conducted the Study to analyze potential alignments; their potential benefits, impacts and costs; as well as funding opportunities, following through on obligations that San Francisco made to the community and other stakeholders at the time of Parkmerced’s approval. The alternatives studied represent an opportunity for investments made in support of new growth to address existing transportation needs in the corridor as well as offset needs created by new development.

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Table ES-1. Study Goals and Objectives

GOAL	OBJECTIVE
Improve light-rail system operating performance, capacity, and flexibility	Decrease travel time
	Improve reliability
	Increase capacity
	Increase flexibility
Improve light-rail passenger experience and access	Improve safety and attractiveness of accessing light rail
Enhance bus and shuttle operations and passenger access	Consider opportunities to improve the speed and reliability of bus/shuttle travel time
	Consider opportunities to improve safety and attractiveness of accessing buses/shuttles
Provide attractive and safe walking and cycling conditions	Improve safety and attractiveness of walking conditions along and across 19th Avenue
	Consider opportunities to improve bike connectivity to and through the corridor
Improve neighborhood quality of life	Consider opportunities to allow for place-making, a gateway entrance into Southwest San Francisco
	Consider opportunities to reduce or minimize noise from light rail vehicles, traffic
Manage private vehicle traffic and parking conditions	Improve reliability of vehicle travel
	Maintain Baseline forecast vehicle travel time while maintaining today’s lane capacity
	Manage impacts of on-street parking reductions
Support transit-oriented land use plans	Maintain consistency with approved area land use plans, such as those at SF State and Parkmerced
Produce a feasible project	Minimize capital costs
	Decrease operating costs
	Minimize construction duration
	Design a community-supported project

Figure ES-2. Baseline Realignment of M-Ocean View Through Parkmerced



E.3 Study Goals

The Study team established eight goals to guide development and evaluation of the alternatives, as well as more specific objectives under each goal as shown in Table ES-1 (previous page). These goals were generated based on past planning work in the corridor, community input, as well as overarching City policies.

E.4 Study Process

The Study has been carried out over the course of approximately two years: from Spring 2012 to Spring 2014. The Study began by establishing a planning goals framework and documenting existing and expected future land use and transportation conditions in the corridor. Next, the Study generated several alternative ways to bring the M-Ocean View to the west side of the street and back, sharing them with the public during a first round of community outreach between February and April of 2013. Based on feedback received, some options were eliminated, others refined and evaluated to understand how they vary in their ability to achieve the goals and objectives established. A rigorous technical evaluation was completed during Spring and Summer of 2013, culminating in the identification of high-performing alternatives. The results were shared for input during a second round of outreach between September and November 2013. Finally, an initial funding and implementation strategy was prepared and the final work documented in this final report.

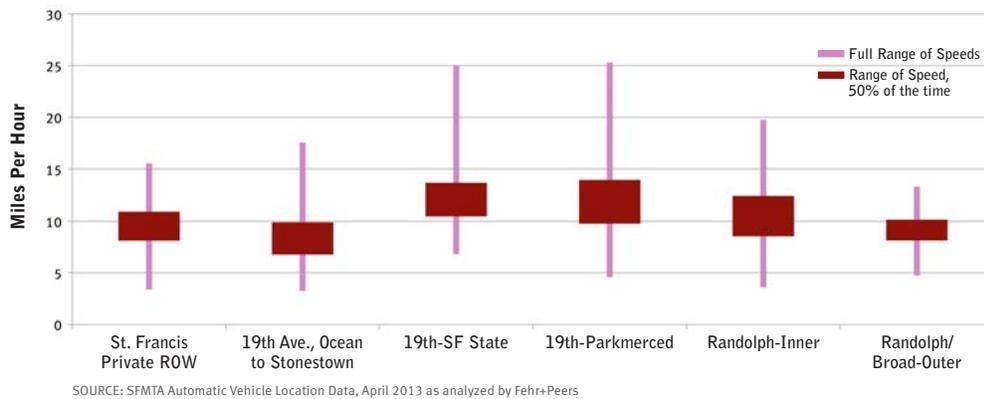
E.5 Existing Transportation Needs

The Study’s existing and future conditions analysis identified four needs that the alternatives were designed to address. Some shorter-term related projects—the Transit Effectiveness Project (TEP), the 19th Avenue Bulb-Outs Project and Transit Signal Priority projects—will alleviate some of these needs in the nearer term (see additional discussion, *Related Projects on 19th Avenue*, on page 34). In particular, the TEP and Transit Signal Priority projects will provide treatments to increase speed and reliability of the Muni 28 and 28-L lines. Frequency for the 28/28-L and M-Ocean View will



Figure ES-3. M-Ocean View Features and Operating Environment

Figure ES-4. M-Ocean View Variation in Travel Time, PM Peak Hour



increase. The Bulb-outs Project will extend the sidewalk into 19th Avenue at select intersections so that buses do not need to pull into and out of travel lanes and pedestrians have a shorter distance to cross the street. In addition, some improvements adjacent to Parkmerced are planned as a part of the development project and are described as a part of the Baseline alternative (see Chapter 3.2, Refined Alternatives).

TRANSIT PERFORMANCE ISSUES (SPEED, RELIABILITY, CAPACITY)

The M-Ocean View travels slowly, on average 8.5–9.5 miles per hour through the 2-mile Study corridor during pm peak hours³. The slow travel time is caused by intersection delay at each of the locations the M-Ocean View must cross traffic, including at Rossmoor, Winston, Holloway, and Junipero Serra (see Figure ES-3, previous page). Other factors that contribute to slow travel time are closely spaced stations (e.g. Ocean and Eucalyptus) and long dwell time for riders boarding and alighting, particularly at the Stonestown and SF State stations with high ridership and narrow platforms. Travel time on the M-Ocean View is also highly variable, meaning the time it takes to travel the two-mile Study corridor can range significantly. Figure ES-4 shows variation in travel time for several corridor segments, showing that the segments of the line along 19th Avenue are those with the highest variability.

Variability of travel time, as well as high ridership, also contributes to crowding on the line. While the most crowded maximum load points on the line are in the Downtown Muni Metro system near Van Ness (outbound) and Civic Center (inbound) stations⁴, the variability can result in some trains experiencing crowded conditions throughout the corridor.

UNATTRACTIVE, CHALLENGING TRANSIT ACCESS

All riders boarding and alighting at the existing Winston and Holloway stations must cross a turn lane and three travel lanes to access the median station. When a train is at or approaching the station, riders are tempted to cross against the signal to access the train, creating a potentially unsafe situation (discussed further in the next section, Pedestrian Conditions). The vast majority of these riders, more than 95%, cross to/from the west side of the street.⁵

Both light-rail stations and bus stops (See Figure ES-5, previous page) in the corridor experience significant crowding during peak hours.

³ SFMTA Automatic Vehicle Location data, April 2013, as analyzed by Fehr & Peers.
⁴ San Francisco Planning Department. 19th Avenue Corridor Study.
⁵ SFCTA, September 2013, PM Peak Pedestrian Counts at 19th/Winston, 19th/Holloway.



Figure ES-5. Existing Transit Services Serving 19th Avenue

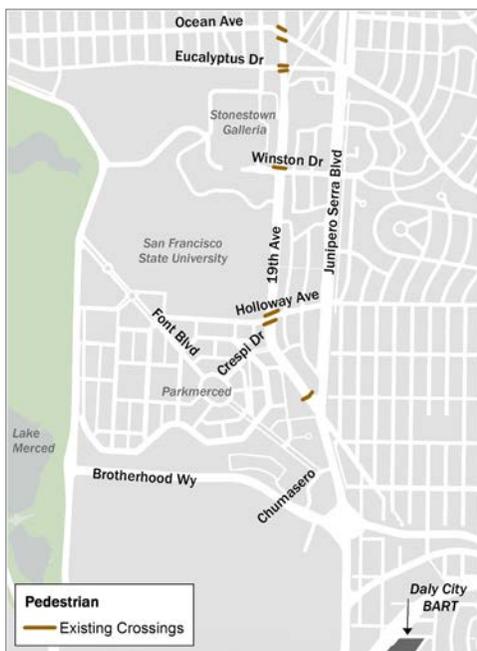


Figure ES-6. Pedestrian Crossing Opportunities Across Highway 1: Ocean to Junipero Serra

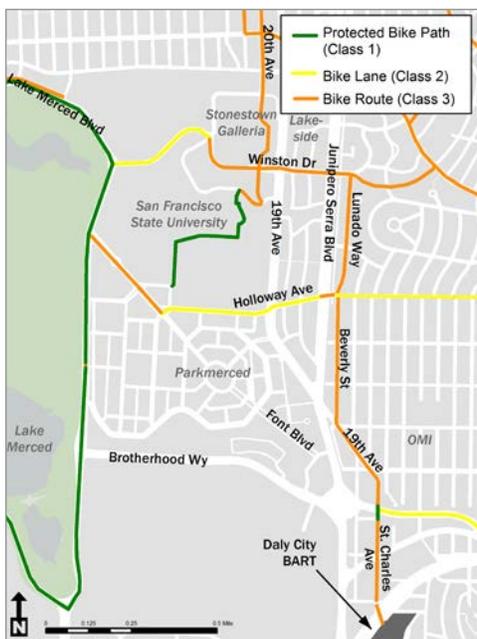


Figure ES-7. Existing Bicycle Network

DIFFICULT PEDESTRIAN CONDITIONS

High transit ridership and pedestrian volumes, long crossing distances, vehicle-pedestrian conflict points, and limited crossing opportunities all contribute to difficult pedestrian conditions. Nineteenth Avenue is designated as a high-injury corridor, meaning it is among the 6% of San Francisco street miles where 60% of all severe and fatal injuries occur.

Conditions can also be unpleasant when walking along the corridor. The only opportunities within the Study corridor to cross 19th Avenue between Eucalyptus and Junipero Serra (a 1-mile distance) are at Winston and Holloway, making for an average distance between crossing opportunities of one-third of a mile (see Figure ES-6). The sidewalk width along 19th Avenue ranges from five to ten feet, less than San Francisco’s *Better Streets Plans* guidelines that suggest a minimum of 12 feet and recommend 15 feet for this street. The narrow sidewalk means pedestrians are also walking very close to high-speed traffic noise.

CIRCUITOUS BIKE ROUTING AND CHALLENGING CROSSINGS

Figure ES-7 presents the existing bicycle network in the corridor, with Winston and Holloway as major east-west bike routes, and generally streets adjacent to 19th Avenue (20th Avenue north of Winston), Lunado Way (south of Winston) as the major north-south route. Previous plans, including the San Francisco Bicycle Plan (2009) and the SF State Campus Master Plan, contemplated a separated bike facility on the west side of 19th Avenue as the most direct north-south route through the Study corridor. The improvement would have required removal of some on-street parking as well as re-location of the existing sidewalk onto campus property. Instead, a north-south separated bike path through SF State was implemented, which provides a safe, high-quality facility, but one that is less direct. At times, cyclists ride on 19th Avenue or on sidewalks along 19th Avenue instead. The two locations where the designated bicycle network crosses 19th Avenue (at Winston and at Holloway) also experience the same challenging conditions as pedestrians: a long distance across the street and conflicts with turning vehicles.

E.6 Alternatives Development Process

The Study team divided the corridor into a northern and southern segment (dividing point near Holloway, one segment for each grade separated crossing), and studied feasible ways to make each crossing point grade-separated. In addition to the Baseline, three northern and three southern options were developed, summarized in Table ES-2 (next page) and shared with the public during the first round of outreach. Based on feedback received, two options were rejected and the remaining four were carried through for refinement and evaluation.

The results of the evaluation revealed that the Longer Subway and the Southern Bridge options performed the best and were paired together as an alternative; Shorter Subway and Southern Tunnel were paired together as a second alternative to serve as a point of comparison for the evaluation, although the four options can continue to be mixed and matched to form four distinct alternatives.

Table ES-2. Initial Options Developed and Outcomes

NAME	DESCRIPTION	OUTCOME
NORTHERN OPTIONS		
1 Baseline	M-Ocean View crosses from median to west side of 19th Avenue at Holloway, at-grade, re-locating the Holloway station to a new transit plaza between Holloway and Crespi	Carried through evaluation
2 Longer Subway (N1)	Both tracks underground from south of St. Francis Circle to south of Buckingham Way, northbound track underground until south of Gonzalez	Carried through evaluation and selected as part of Highest-Performing alternative.
3 Shorter Subway (N2)	Both tracks underground from south of St. Francis Circle until north of Winston, northbound track underground until south of Winston	Carried through evaluation.
4 Northern Bridge (N4)	Both tracks above ground from south of St. Francis Circle to south of Winston, crossing over 19th Avenue near Rossmoor and elevated over the west side of 19th Avenue in front of Stonestown Galleria	Dropped after first round of outreach.
SOUTHERN OPTIONS		
5 Baseline	M-Ocean View crosses 19th/Junipero Serra through at-grade crossing	Carried through evaluation
6 Southern Tunnel-19th/Junipero Serra (S1)	Underground from Felix in Parkmerced emerging in a portal on 19th Avenue, south of Junipero Serra Boulevard	Carried through evaluation.
7 Southern Bridge (S2)	Above ground between Font and Randolph, lowering Junipero Serra to enable a gradual crossing	Carried through evaluation and selected as part of Highest-Performing alternative.
8 Southern Tunnel-Junipero Serra to Brotherhood Way (S3)	Below ground under Junipero Serra emerging at grade on northern extent of Brotherhood Way, returning to existing M-Ocean View alignment at Broad/Orizaba.	Dropped after first round of outreach.

Maps at right are keyed to table, above



E.7 Highest-Performing Alternative: Longer Subway and Bridge

The highest-performing alternative, Longer Subway and Bridge is shown in Figure ES-8. Key features of the alternative, from north to south would include:

- Light-rail tracks descend underground in the Lakeside private right-of-way entering a portal, fully underground before Ocean Avenue.
- Both tracks cross to the west side of the street under 19th Avenue near Rossmoor.
- A new northbound left-turn opportunity is introduced at northern Buckingham Way (allowing for reduction from double to single northbound left-turn pockets at Winston).
- A new Stonestown station that consolidates the Ocean, Eucalyptus, and Winston stations near Macy's and Mercy High School is provided. The station would be fully below 19th Avenue, but exposed at parking lot level of the Stonestown Galleria, one level below street level. It would also serve as a new place to cross the street for pedestrians and cyclists below 19th Avenue, and the station would be staffed to ensure personal security. The actual staffing and maintenance plan would be determined in a future phase and would explore maintenance agreements with Stonestown and Mercy High School.
- The southbound/outbound track surfaces just south of Buckingham Way running adjacent to and west of the 19th Avenue travel lanes, and serving as a shared transit-way with buses and shuttles. The northbound/inbound track surfaces just south of Gonzalez Drive in Parkmerced.
- A new station at SF State could be located as far north as near the SF State Science Building and Wyton Lane (a pedestrian pathway on the east side of the street), or as far south as between Holloway and Crespi on the west side of 19th Avenue in the northeast corner of the Parkmerced site. To ensure east-side connectivity, a new station in the northern location would be accompanied with a new signalized at-grade crossing of the street.
- Vehicle access on Holloway west of 19th Avenue is closed and re-directed to Crespi to allow for faster light-rail travel time and a safer pedestrian crossing of the north leg of 19th Avenue.
- Light-rail tracks travel through Parkmerced at-grade along Font with a new station near the Parkmerced retail core, and another station near Chumasero.
- Light-rail tracks begin to elevate to travel over Junipero Serra where Font on the Parkmerced side meets Randolph on the OMI side. Junipero Serra is lowered by about 10.5 feet to enable a gradual elevation over Junipero Serra.
- Bridge over Junipero Serra is designed for light-rail, pedestrians, cyclists, and emergency vehicles and lands on Randolph coming to grade and joining the existing alignment where Randolph meets 19th Avenue.
- Opportunities to upgrade the existing alignment along Randolph include upgrading the Randolph/Arch station with high-level boarding and consolidating it with the existing 19th/Randolph and 19th/Bright stations. The 19th/Randolph station would need to be eliminated because of the re-located alignment, but consolidating the 19th/Bright station and upgrading the Randolph/Arch station are optional.
- The entire length of 19th Avenue from Junipero Serra to Rossmoor would be re-built, with three travel lanes in each direction maintained, but re-located to re-purpose the median light-rail track space. The street would be re-configured with a landscaped median and wider sidewalks on each side of the street. North of Buckingham there would be somewhat more space available for wider sidewalks because both tracks would be underground.

The results of the evaluation revealed that the Longer Subway and the Southern Bridge options performed the best and were paired together as an alternative.

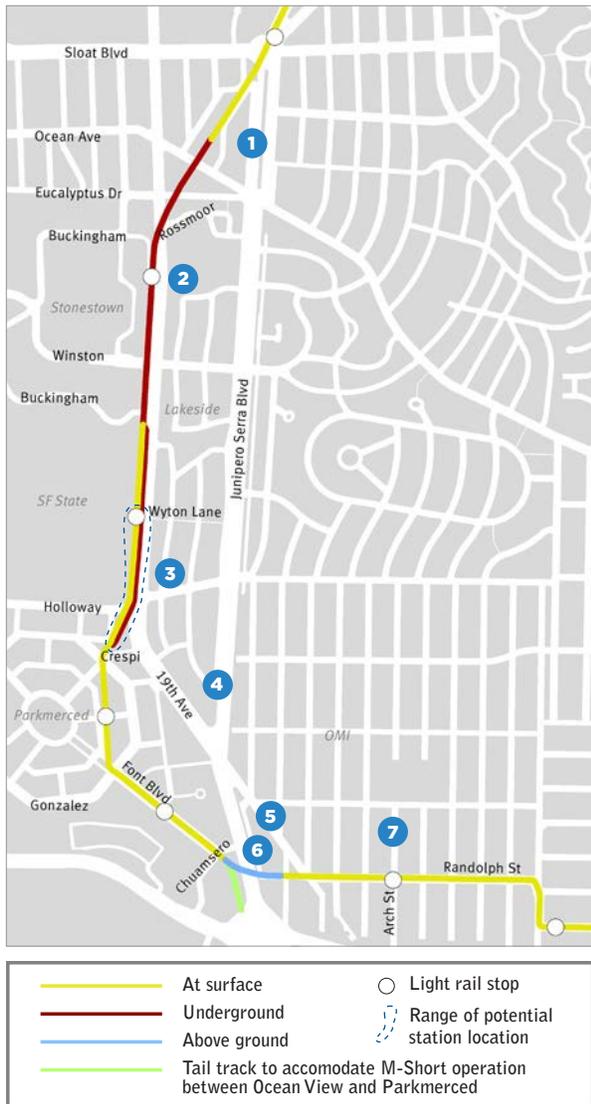


Figure ES-8. Key Features of the Highest-Performing Alternative (Longer Subway and Bridge)

Larger versions of the numbered images are available in Chapter 3.



Portal in Lakeside private right-of-way, just south of St. Francis Circle.



New station between Macy's and Mercy High School with entrances on both sides of the street.



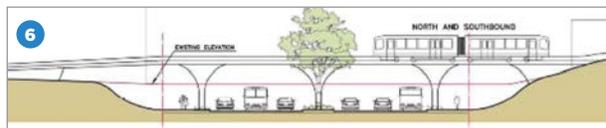
SF State's 19th Avenue frontage, reconfigured with wider sidewalks/bus stops, and a landscaped median.



New buffered pedestrian and bicycle space on both sides of street.



Narrowed, calmer street, providing a signature entranceway to the Broad-Randolph corridor.



Bridge between Font and Randolph for light rail, cyclists, and pedestrians.



(Optional) Upgraded station on Randolph at Arch with level boarding.

- Approximately 163 parking spaces on 19th Avenue between Rossmoor and Holloway and approximately 22 spaces on Randolph west of 19th Avenue would be removed to enable a major pedestrian environment upgrade and provide room for a bridge landing.
- Major transit access and pedestrian safety upgrades would be made throughout the corridor by decreasing the distance across the street by 33%, introducing four new crossing opportunities that would decrease the temptation to cross mid-block and dramatically decreasing exposure by locating the M-Ocean View stations on the same side of the street as the major trip generators of Stonestown, SF State, and Parkmerced. Excess nearby parking supplies are expected to accommodate this reduction, including more than 700 excess spaces at SF State and almost 200 excess spaces on nearby streets in the OMI neighborhood during peak hours.

Table ES-3. Longer Subway and Bridge Key Benefits and Considerations

GOAL	LONGER SUBWAY AND BRIDGE KEY BENEFITS AND CONSIDERATIONS
Light-rail operating performance	35-45% improvement in light-rail travel time, 7-8 minutes in savings relative to Baseline At least 50% increase in capacity in all alternatives
Light-rail access	All light-rail riders boarding/alighting at Stonestown and 97% of those boarding/alighting at SF State no longer cross any lanes of traffic 5- and 10-minute walk distance to stations stays about the same although some small increases due to stop consolidation.
Bus/shuttle access/performance	2-3 minute bus/shuttle travel time savings from new shared light-rail bus/shuttle transitway; larger bus stops
Walking and cycling safety/attractiveness	Four new places to cross the street (new Stonestown station, Winston south leg, Wyton Lane, Font-Randolph Bridge) 33% decrease in distance across the street from 120 to 80 feet 30-50 feet of space re-purposed for wider sidewalks, cycling facilities, and landscaped median Opportunity for new bicycle facility on 19th Avenue between Junipero Serra and Eucalyptus and upgraded facility south of Junipero Serra
Neighborhood quality of life	Opportunity to address neighborhood concerns with light-rail noise, vandalism in private right-of-way Opportunity for interesting, attractive visual feature with Bridge, and traffic calmed block of 19th Avenue south of Junipero Serra Design challenge on Randolph Street between Junipero Serra and 19th by introducing light-rail and bridge landing on a residential street
Private vehicle conditions	Average vehicle delay through the corridor stays about the same, but reliability improves Reduction in on-street parking can be managed with nearby excess supply and parking management
Support transit-oriented land use	All options support visions established in SF State Campus Master Plan and Parkmerced Vision Plan for a west side alignment of the M-Ocean View
Community-supported, feasible project	Longer Subway and Bridge favored by the majority of stakeholders (86% and 57%, respectively) surveyed during second round of outreach (n=156) Capital cost \$420–780 million, most likely cost \$520 million Capital cost of Shorter Subway \$90 million less than Longer Subway Operating cost savings of Longer Subway and Bridge \$2 million annually as compared to \$0.9 million for Shorter Subway and Tunnel*

* Operating costs calculated using SFMTA operating cost model, SPASM, see Appendix C for methodology. This model is based on average operating costs in the system. The next phase of work will do analysis to better understand the station operating and maintenance cost implication, given the two new stations would require greater level of staffing and maintenance than surface stations.

E.8 Evaluation Results

Using the Study's goals and objectives as a guide, the Study team carried out a rigorous technical evaluation to compare the alternatives in terms of how well each would achieve the Study's eight goals. The results, summarized in Table ES-3 (previous page) reveal that the Longer Subway and Bridge alternative is the highest-performing, including notable improvements to light-rail operating performance and access (7-8 minute travel time savings, 50% capacity increase) and pedestrian safety and attractiveness (distance across the street reduced from 120 to 80 feet, four new places to cross the street, new landscaped median and wider sidewalks) in particular. In the next phase, specific attention will be given to the Randolph landing of the bridge over Junipero Serra, where narrow streets and adjacent residential uses create design challenges. This alternative's capital cost is estimated at \$420–\$780 million, with a most likely cost of \$520 million (in 2013 dollars). It is also expected to save \$2 million in operating costs annually, relative to the Baseline.⁶ A preliminary analysis of its cost effectiveness using the Federal Transit Administration's criteria for New Starts funding found it received a Medium-High to High rating.

E.9 Alternative Variations

Several variations to the alternatives are also possible but did not undergo the same level of project development and evaluation work as the main alternatives. In the next stage of development, analysis of their ability to further support the Study's goals and objectives relative to their additions in cost will be undertaken to determine whether to fold variants into the main project definition, remove from further consideration, or continue to study in the environmental review phase of the project. The variants, shown in Figure ES-9 include:

ST. FRANCIS CIRCLE GRADE SEPARATION: This variation would build on the Longer or Shorter Subway option by beginning the underground light-rail alignment north of this complex intersection, which currently causes significant delay for all modes.

OCEAN AVENUE UNDERGROUND STATION: This variation would build on the Longer or Shorter Subway option by adding an underground light-rail station at Ocean in the center of the Lakeside Village retail area.

CONTINUE SUBWAY THROUGH PARKMERCED: This variation would build on the Longer Subway option, keeping both tracks underground from where they descend south of St. Francis Circle through the southeast corner of Parkmerced, emerging as needed to begin elevating over Junipero Serra. Parkmerced is expected to have high levels of pedestrian activity as the site builds out, and underground light-rail may allow for faster speeds than what would be safe to operate through the site at-grade.

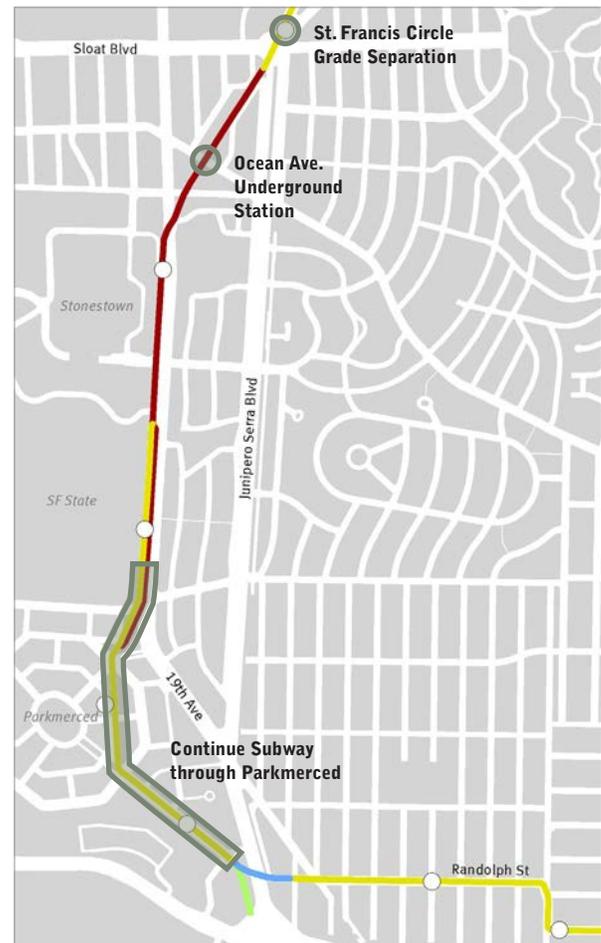


Figure ES-9. Alternative Variants

⁶ Capital and operating costs will be refined in the next phase of work.



E.10 Outreach

Outreach to the community and key stakeholders was a critical Study activity that informed Study findings and recommendations. The project team engaged in two rounds of intensive outreach, including a community meeting during each round and a series of presentations and discussions with neighborhood groups in the Study area as summarized in Table ES-4. Each round of outreach had a distinct purpose. The first round between February and April 2013 was focused on sharing the findings of the Study’s existing and future conditions analysis and seeking input on the initial alternatives the technical team developed. The second round between September and November 2013 was focused on sharing the results of an evaluation of the alternatives and seeking input on community preferences among alternatives. Community and stakeholder involvement included a comprehensive set of

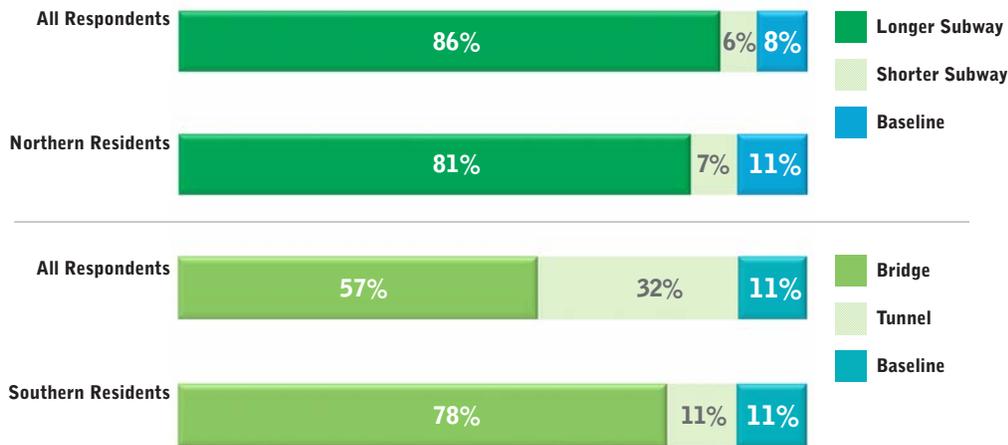
multi-lingual notification and input techniques.

As a part of the second round of outreach, the Study team requested input on preferred options from members of the public through a survey administered online and via paper. Figure ES-10 (next page) summarizes preferences among those who responded to the survey, including for all respondents, as well as from only those who lived in the immediate vicinity of the Study corridor. The community overwhelmingly preferred Longer Subway (86%) to Shorter Subway (6%) and Baseline (8%). In the south, the majority (57%) preferred Bridge to Tunnel (32%) and Baseline (11%). Support for the Bridge was higher (78%) among those who indicated they lived in the surrounding neighborhoods.

Table ES-4. Summary of Community Outreach Activities

OUTREACH PHASE	PURPOSE	FEEDBACK SOUGHT	OUTREACH FORMATS
Round 1 (February to April 2013)	Provide an overview of the Study’s purpose and goals	Existing transportation needs in the corridor	Community meeting Direct outreach meetings
	Share findings of the Study’s existing and future conditions analysis	Areas of interest or concern in draft conceptual alternatives	Multilingual communication materials: website, fact sheet, advertisements on transit and in newspaper advertisements, flyers posted in corridor
	Share draft conceptual alternatives		Briefings with District Supervisors
Round 2 (September to November 2013)	Review the Study’s purpose and goals;	Community input on Study alternative preferences;	Community meeting Direct outreach meetings
	Share the results from the first round of outreach and review how this feedback was incorporated;		Multilingual communication materials: website, fact sheet, advertisements on transit and in newspaper advertisements, flyers posted in corridor
	Summarize the features, benefits, and considerations of the highest-performing alternative, provide more detail on additional options evaluated;		Briefings with District Supervisors Web and paper survey

Figure ES-10. Options Preferred By Survey Respondents (n=158)



E.11 Next Steps

The Study is the first stage of project development for the proposed project—a feasibility study that identifies high-performing alternatives to address significant transportation deficiencies along 19th Avenue. Many more steps lie between conclusion of this phase of work and when the City and County of San Francisco could be ready to recommend the project for implementation.

The subsequent phases of development for the proposed project are shown in Figure ES-11. The overall schedule is uncertain given the early stage in the planning process and would depend on notable questions such as funding availability. An aggressive schedule could see construction begin in 2020 and service opening in 2022, but this would assume a significantly accelerated pace as compared to recent experiences of other major transit capital projects under development and construction in San Francisco.

Figure ES-11. Potential Project Implementation Schedule



Identifying funding to support a project of this scale will be challenging given the number of competing priorities with more advanced project development within San Francisco and the Bay Area region. The proposed project’s cost for all future phases of work for the Longer Subway and Bridge option is estimated at \$520 million, with greater certainty that its range will be somewhere between \$420 and \$780 million (in 2013 dollars). Yet, the project is also uniquely competitive for funding because of the significant private sector investment it would leverage, the substantial need and potential benefit to the corridor, the project’s location along the State highway system making it eligible for certain funding sources, and

its designation as a Priority Development Area making it competitive for regional funding intended to support integrated land use-transportation plans, among many other considerations.

Although the proposed project is not recommended for funding through the Mayor's 2030 Transportation Task Force (T2030) proposed revenue measures, some elements of the project could be funded through the Task Force's investment in Complete Streets or traffic signal upgrades. T2030 also identifies the project as high-priority for other fund sources. It is expected that the project would be particularly competitive for TIFIA, a federal low-interest loan, if backed partially by development-related revenue.

E.12 Conclusion

The 19th Avenue Transit Study identifies multiple feasible west-side grade-separated alignment alternatives for the M-Ocean View and 19th Avenue between Sloat and Brotherhood Way. It finds that that one of the alternatives—the Longer Subway and Bridge—would provide the greatest benefits including substantial improvements to the speed, reliability, and capacity of the M-Ocean View light-rail line, as well substantial pedestrian and bicycle upgrades by freeing up space to provide wider sidewalks, landscaped medians, and new cycling infrastructure. The estimated capital cost of this alternative ranges from \$420 to \$720 million (most likely \$520 million) in 2013 dollars, including all soft costs. This alternative not only performs best according to the Study's technical evaluation of its ability to meet the Study's goals and objectives, but it also is widely supported by surrounding neighborhood leaders and stakeholders.

These findings will be the basis for the next phase of project development, which will be carried out between approximately Spring 2014 and Summer 2015. This phase will include analysis of multiple variations with potential to provide further transit performance, access, and non-motorized safety benefits (St. Francis Circle grade separation, Ocean Avenue underground station, full subway through Parkmerced) and preparation of a Project Study Report as required for projects affecting the state-owned right-of-way. Between approximately 2015 and 2018, environmental review will be undertaken, in compliance with the National Environmental Policy Act and the California Environmental Quality Act, providing additional information on the project's environmental impacts and mitigations, before making an implementation decision. While the project's most likely cost of \$520 million in 2013 dollars is a major investment decision and there are multiple competing priorities within San Francisco and the Bay Area region for capital funds, the project is expected to be competitive for many federal, state, regional, local, and private funding sources. The project represents a unique example of coordinated land use and transportation planning using a collaborative public-private partnership approach. The effort illustrates how investments made in support of new growth can be coordinated in such a way as to not just mitigate their own transportation impacts, but also catalyze improvements that address underlying existing transportation needs.