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MEMORANDUM

To: Infrastructure, Utilities & Franchise Subcommittee

From: Randy Breault, Director of Public Works/City Engineer via City Manager

Subject: San Francisco Planning Department's Bayshore Multi-Modal Facility Study

Date: June 21, 2017

The San Francisco Planning Department has produced a final draft of the Bayshore Multi-Modal Study Phase II Report, including a preferred western location for the connection to an upgraded Caltrain station.

In very general terms, the study's results are consistent with Brisbane General Plan Policy 50, to "Seek opportunities to install and improve transit facilities and establish multi-modal connections", and Policy 55, to "Continue participation in subregional and regional transportation improvements".

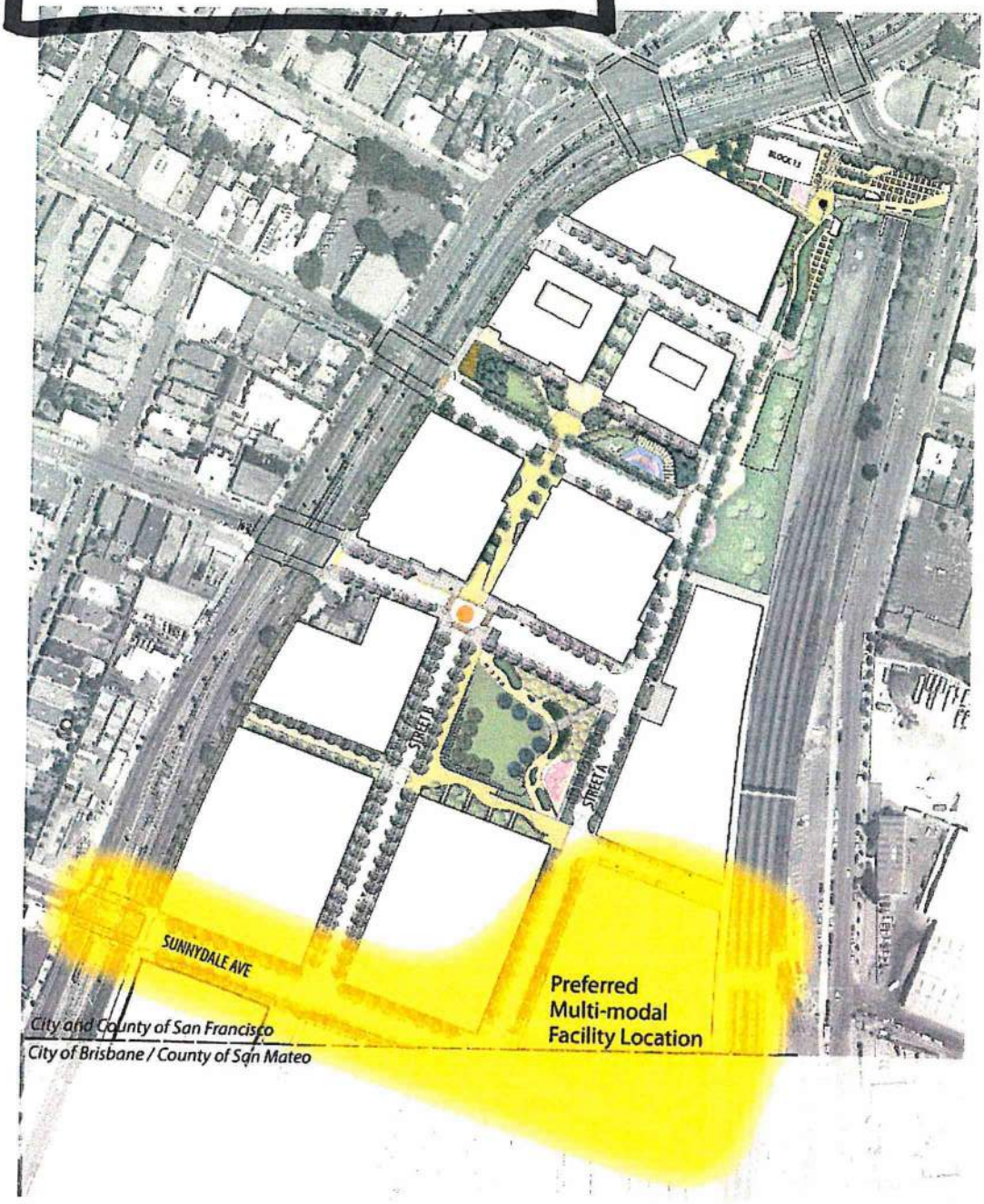
Figure 16 of the report (attached) shows the general area of the preferred facility location, and Figure 21 (also attached) shows the proposed extension of San Francisco's Sunnydale Avenue into Brisbane's city limits, with the creation of a "tear drop" loop adjacent to the Bayshore Station.

Approval of a "new" street within our city limits would require the approval of the Brisbane City Council, and would presumably also include an agreement with the City & County of San Francisco requiring they maintain the roadway to acceptable standards.

This item is provided to the subcommittee for their review and comment, so that staff can provide those comments to San Francisco as they finalize this planning document.

The entire draft study is attached following the two referenced figures.

Figure 16 Preferred Multi-Modal Facility Location - Concept

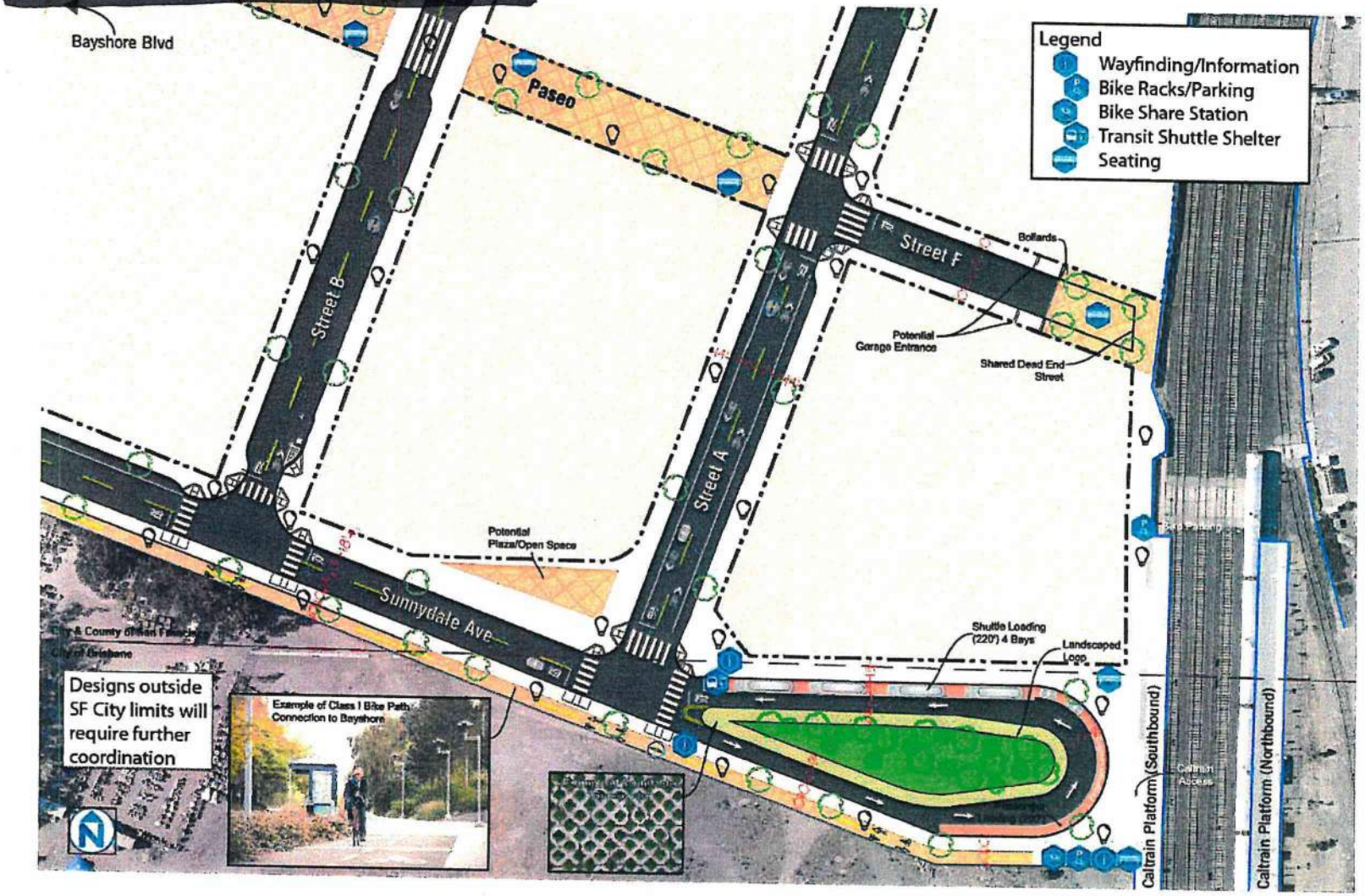


ALTERNATIVES DEVELOPMENT

Multi-Modal Facilities link transportation services and infrastructure within a single location or area, providing better access and connectivity for people using regional and rapid transit, local buses and shuttles, private vehicles (cars/trucks), cycling, and walking. Facilities can take many forms, including special street designs, a kiosk, shared platforms, or a physical station building. The alternatives designed by the Study Team, with input and guidance from the public and



Figure 21 Bayshore Multi-Modal Facility Alternative 4







Bayshore Multi-Modal Facility Study

Phase II

DRAFT

April 2017

NELSON
NYGAARD

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1 EXECUTIVE SUMMARY

The Bayshore Multi-Modal Facility will improve access to the Bayshore Caltrain Station by closing the existing physical gap between the station and surrounding land uses and transit connections, as shown in Figure 1.

Currently, Muni and SamTrans services along Bayshore Boulevard do not have an accessible connection to the Bayshore Caltrain Station. Bicycle and pedestrian as proposed in the first Phase of the Schlage Lock development would only available through a circuitous route. The Bayshore Multi-Modal Facility will provide the direct access needed to grow transit ridership, increase safety and serve existing and future neighborhoods. Together with the planned Geneva-Harney Bus Rapid Transit (GHBRT) Line, the Multi-Modal Facility will facilitate a vast improvement in east-west mobility serving the southern portion of San Francisco. In particular, GHBRT will connect Caltrain to existing and planned Muni and SamTrans services, linking Candlestick/Hunters Point in the east to destinations in Visitacion Valley and then west to the Balboa Park BART Station and the Sunset District.

Straddling the border of San Francisco and San Mateo Counties, the preferred Multi-modal Facility location of Sunnydale Avenue is surrounded by neighborhoods with great economic development potential for both current and new residents and workers. With a context-sensitive Multi-modal Facility design and implementation, transit can play a significant role in expanding existing residents' access to transit and opportunities in the Bi-County area.

Four conceptual designs of the Multi-Modal Facility along Sunnydale Avenue were created and presented at a public meeting in Visitacion Valley in November 2016. After a thorough evaluation, the overall tradeoffs between implementation, safety, and effective transit connections for people using all transportation modes resulted in a preferred concept alternative. While all the alternatives were determined to be viable designs for the Multi-Modal Facility, this report recommends Bayshore Multi-Modal Facility Concept Alternative 4 before the initiation of Geneva Harney BRT (approximately 2022). The Study concludes with considerations for funding and implementation. The Study's recommendations are provided with the understanding that certain factors may change, including the details of land use and influences outside of San Francisco.

2 INTRODUCTION

The Bayshore Multi-Modal Facility Study seeks to establish a feasible configuration for the proposed Facility elements, assess its transit operational needs, engineering feasibility, land use connections, and economic development potential, and develop a funding and implantation strategy.

The Bayshore Multi-Modal Facility will improve connections between various transit agencies to the Bayshore Caltrain Station including, but not limited to, Muni Metro T-Third Line, Geneva Harney Bus Rapid Transit (BRT), and existing and future local bus service. The Multi-Modal Facility will also close the existing physical gap between the station and surrounding land uses and transit connections, as shown in Figure 1.

- Phase I, conducted between 2014-2015, evaluated site alternatives based on different future land use scenarios, and subsequently recommended a preferred location.
- Phase II, conducted between 2016-2017, prepared the concept sketches, conducted feasibility and operational needs assessments, developed economic, funding, and implementation strategies, and refined the concepts as a foundation for preliminary engineering and design work for the preferred location.

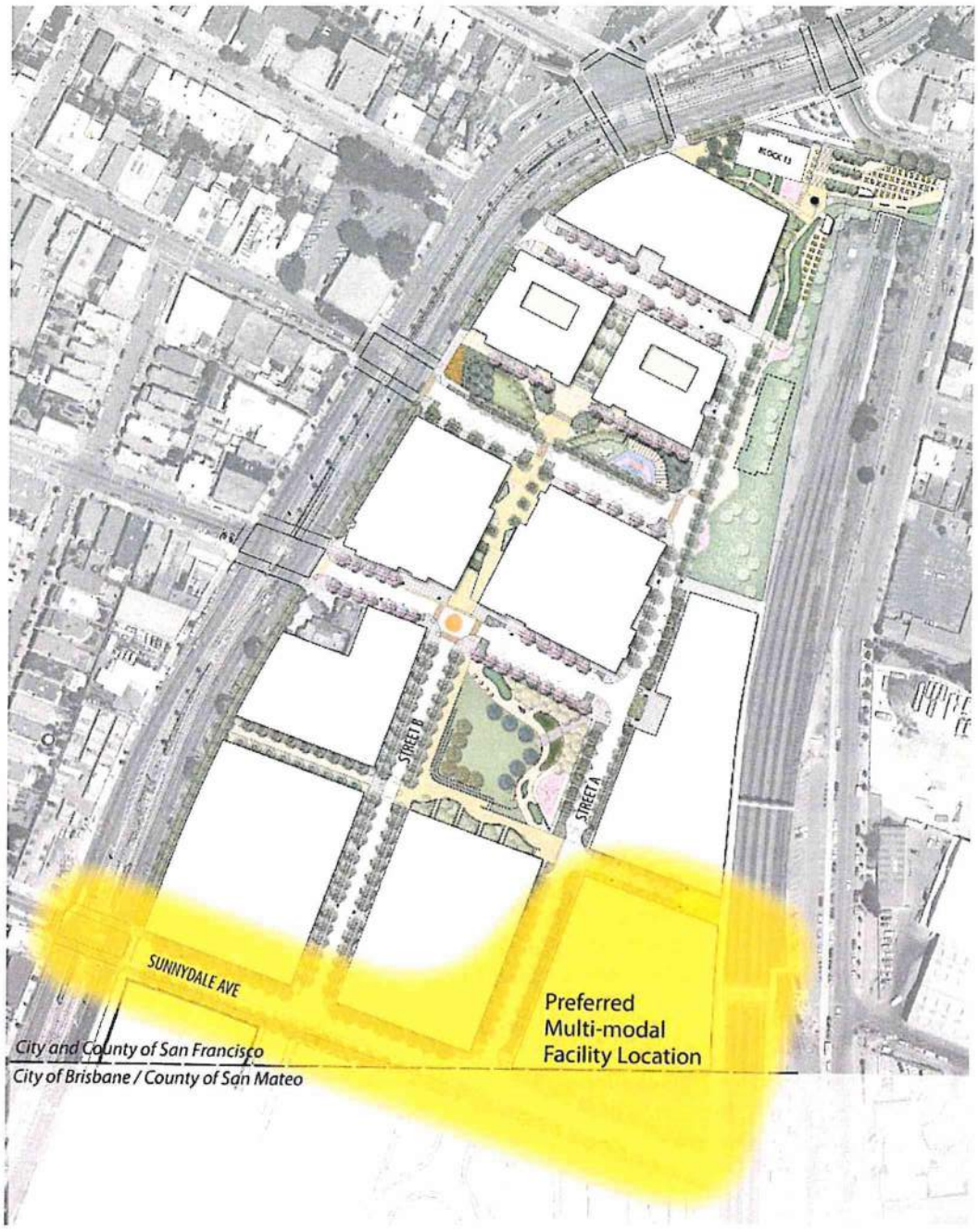
Identification of a preferred location (Phase I) and development of a feasible design (Phase II) are the primary objectives of the Bayshore Multi-Modal Facility Study.

Figure 1 Study Area and Caltrain Spatial Gap to Surrounding Uses



Source: SFMTA 2017

Figure 2 Preferred Multi-Modal Facility Location - Concept



STUDY PURPOSE AND ROLE

Extensive growth in the Bi-County area (San Francisco and San Mateo) is placing substantial pressure on regional and local transportation systems. To meet both current neighborhood needs as well as the expected increase in travel and commuting demand, several transportation improvements have been identified for the Bi-County area including: Muni Forward service enhancements, US-101/Candlestick Point interchange (also known as the Geneva Avenue extension and interchange), Caltrain Modernization, and Geneva-Harney Bus Rapid Transit.

A Multi-Modal Facility is one way to substantially improve connections between/to these projects and serve future transportation demand in the Bi-County area. Currently, Muni and SamTrans services along Bayshore Boulevard do not have an accessible connection to the Bayshore Caltrain Station from the west side of the station. Further, bicycle and pedestrian access is only available through a circuitous routing via Blanken and Tunnel Avenue. Along with the Schlage Lock streetscape network (Figure 2), the Bayshore Multi-Modal Facility will provide safe, direct connections needed to grow ridership, increase safety, and serve existing and future neighborhoods. A facility will also support regional priorities of coordinating land use and transportation planning, as well as reducing greenhouse gas (GHG) emissions through decreases in automobile trips amongst people living and working in the area.

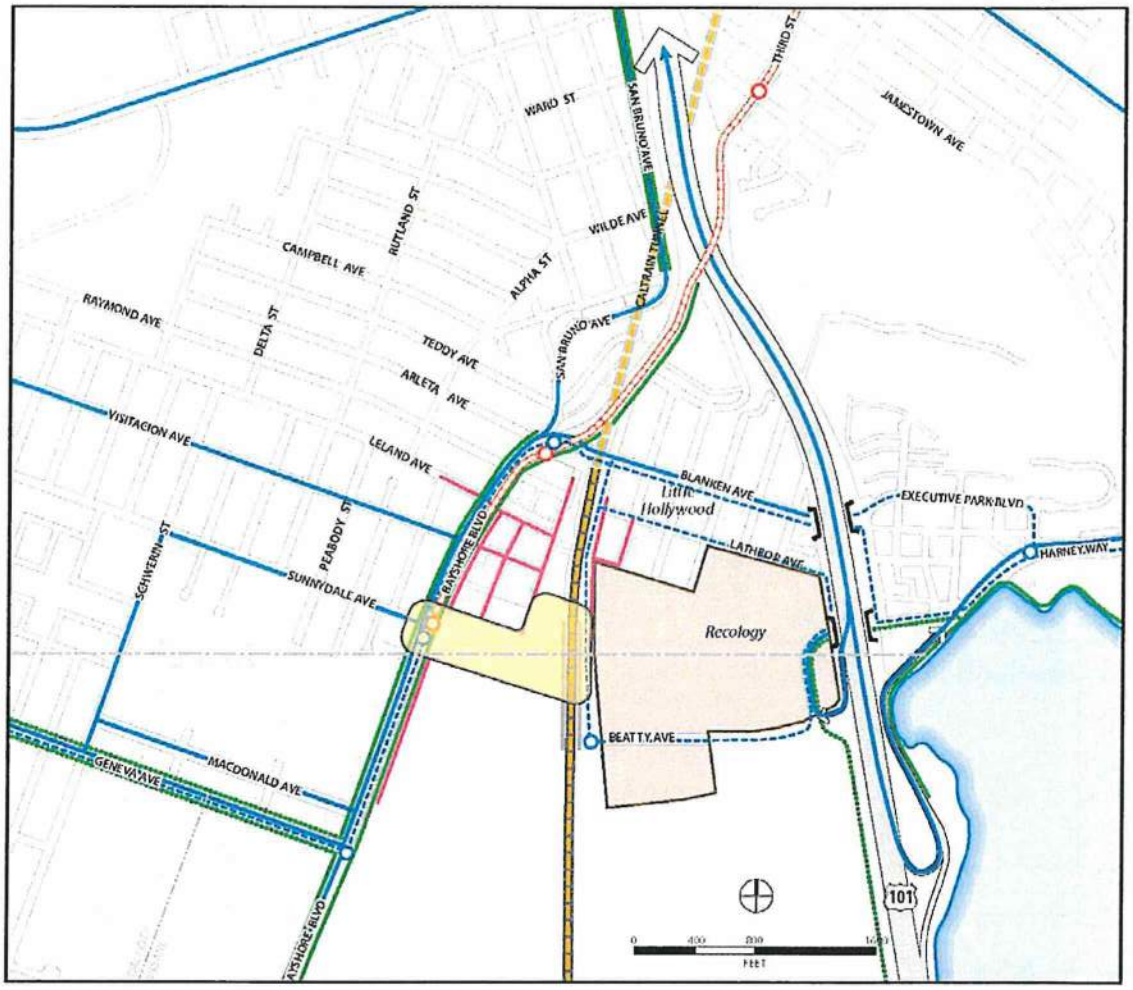
The Bayshore Multi-Modal Facility Study analyzed four alternative locations, conceptual designs, and implementation plans for such a facility in the Bayshore area. Together with the planned Geneva-Harney BRT Line, the Multi-Modal Facility will facilitate a vast improvement in east-west mobility serving the southern portion of San Francisco. In particular, Geneva-Harney BRT will connect Caltrain to existing and planned Muni and SamTrans services, linking Candlestick/Hunters Point in the east to destinations in Visitacion Valley and then west to the Balboa Park BART Station and the Sunset District.

Phase II Background

Phase I of the Bayshore Multi-Modal Facility Study identified Sunnydale Avenue as the preferred location for a Multi-Modal Facility, as shown in Figure 3. Phase II develops and evaluates concept alternatives for the preferred location. The facility location and design as recommended through Phase I and II focuses on a mid-term timeframe for implementation, roughly in the 2022-2035 window, which would coincide with Geneva-Harney BRT.

As development in Schlage Lock continues, further discussion of the preferred design and elements of the Multi-Modal Facility will be undertaken in order to ensure what is eventually built is useful, accessible, attractive, and scalable. Dependent on other agency projects, including those from Caltrain, Caltrans, CHSRA, City of Brisbane, and City and County of San Francisco, the elements of the Multi-Modal Facility may be relocated to better serve users in the long term.

Figure 3 Sunnydale Avenue Preferred Multi-Modal Facility Location



Preferred Multi-Modal Facility Location on Sunnydale Ave

Caltrain Rail

Existing Caltrain Platforms

Existing/Plannned Class I/II Bicycle Facilities

Direct Walking Routes to Potential Multi-Modal Facility from Outside of 1/4 Mile Radius

Existing Muni Metro (T-Third)

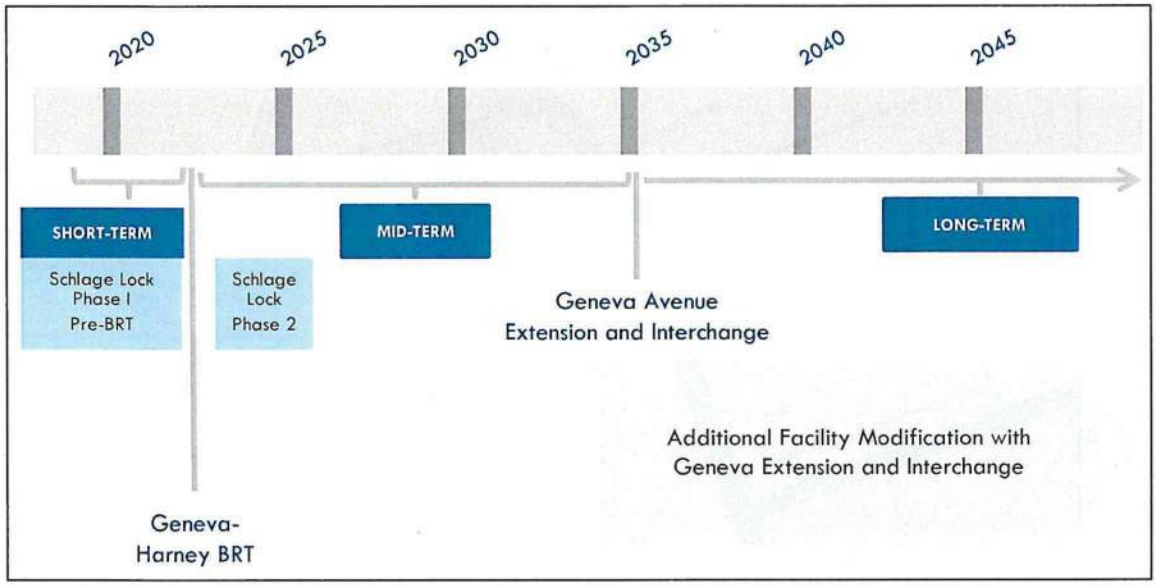
Existing and Committed Bus Transit Service

Potential BRT Alignments and Station Locations in Study Area

TIMELINE

Figure 4 shows the expected timeline for related projects in the Bi-County area within the short, medium, and long terms. The SFCTA Bi-County Transportation Study (2013) identified the three transportation projects (Geneva-Harney BRT, Geneva Avenue Extension, and re-configuring the Bayshore Intermodal Station area) as priority projects. The Bi-County Transportation Study also recommended implementing the BRT and station-area improvements in the 10-year timeframe (roughly 2022-2035) and in concert with surrounding land uses.

Figure 4 Timeline of Planned Transportation in the Bi-County Area



PLANNING CONTEXT

Planning for a Multi-Modal Facility at the Bayshore Caltrain Station has roots back to the initial days of planning for Schlage Lock and Brisbane Baylands sites, and was first identified as a high priority infrastructure improvement corridor in the Bayshore Intermodal Station Access Study (SFCTA, 2012). Other studies guiding the project's purpose and need include:

- Muni Forward Geneva Avenue Multimodal Improvement Project, SFMTA 2016
- Geneva-Harney BRT Feasibility Study, SFCTA 2015
- Visitacion Valley/Schlage Lock Plan, San Francisco Planning Department, 2014
- Bi-County Transportation Study, SFCTA 2013
- Bayshore Intermodal Station Access Study, SFCTA 2012
- Brisbane Baylands Specific Plan, Universal Paragon Corporation 2011

Appendix A of the Phase I memo summarizes previous studies, programs, and relevant policies. The Phase I memo can be found at http://sf-planning.org/bayshore.

Existing City and County Planning Efforts to Date

Phase I Summary of Findings from Phase I

Phase I identified the minimum elements to be included in a Bayshore Multi-Modal Facility, criteria for evaluating four alternative facility locations, and the resulting preferred location of Sunnydale Avenue based on those criteria. If future land use or transportation conditions change, Multi-Modal Facility elements may be moved or added in a different location to best serve the residents and transit users in the area.

Based on input from the public, the technical advisory committee, and City agencies, the Study Team determined that the desired elements for a Multi-Modal Facility include: a shuttle loading area, seating and shelter, passenger loading area, pedestrian access, bicycle access, bicycle storage, bicycle share, wayfinding, and information kiosks (see Chapter 4).

For further details see the Phase I memo at http://sf-planning.org/bayshore.

Priority Development Areas

The Bayshore Multi-Modal Facility is located within the San Francisco/San Mateo Bi-County Area Priority Development Area (Bi-County Area PDA), which is poised for significant growth due to new residential and non-residential development. A Priority Development Area (PDA) is an area designated by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC) as a key infill development location within the Bay Area for new investment, homes, and job growth, which is within walking distance of frequent transit service.

As the Bayshore Multi-Modal Facility is proposed to be located next to a key transit stop along the Geneva-Harney BRT route, two other PDAs poised for significant growth will also be significantly affected by the Facility: the Bayview PDA and Bayshore (Daly City) PDA. Figure 5 for a summary of existing demographic data for each PDA, and see Figure 6 for a map of the three PDAs that will benefit from the Bayshore Multi-Modal Facility.

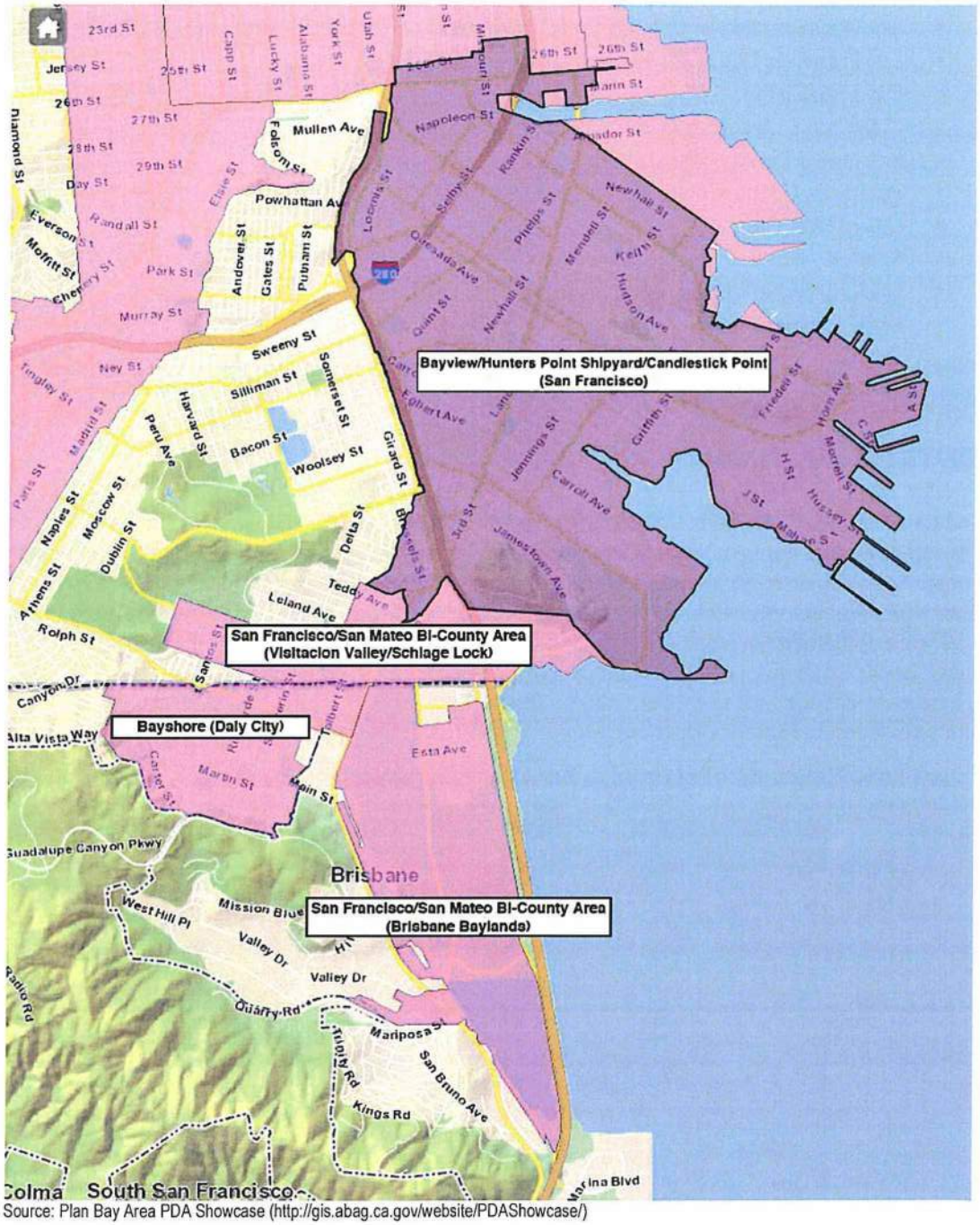
In summary, the three PDAs in the proximity of the proposed Bayshore Multi-Modal Facility together account for over 50,000 residents and 25,000 jobs. While transit access has improved in recent years to these PDAs, significant new transit improvements are proposed to occur in the PDAs, including the proposed electrification of the Caltrain line, Geneva-Harney BRT, upgrades to local bus service, and the T-Third Muni Metro line. The Bayshore Multi-Modal Facility will tie all these services together, connecting southeast neighborhoods to BART, the west side, and downtown San Francisco, as well as the peninsula. Significant new development is proposed to occur in all three PDAs, and new development will benefit from improved transportation accessibility to the Bayshore area.

Figure 5 Summary of Priority Development Areas[1]

PDA	San Francisco/San Mateo Bi-County Area PDA		Bayview/ Hunters Point Shipyard/ Candlestick Point PDA	Bayshore (Daly City) PDA	Total Surrounding PDA
County	San Francisco County	San Mateo County	San Francisco County	San Mateo County	
Plan Status	Planned	Planned	Planned	Potential	
Future Place Type	Transit Neighborhood	Suburban Center	Urban Neighborhood	Transit Town Center	
PDA Transit	Muni, Caltrain, SamTrans	Muni, Caltrain, SamTrans	Muni, Caltrain, SamTrans	Muni, SamTrans	
Major Projects	Schlage Lock, Sunnydale Hope SF, Executive Park, and Recology Expansion	Brisbane Baylands, Recology Expansion	Candlestick/ Hunters Point Shipyard	N/A	
Net Acres	283	596	2,133	320	**3,332**
Population (2010)	10,251	-	36,373	5,729	**52,353**
Households (2010)	2,828	-	10,320	1,550	**14,698**
Jobs (2010)	983	505	22,461	1,100	**25,049**
Jobs Sorted by Land Use					
Agricultural & Natural Resources (Jobs)	*11*	-	*19*	*1*	***31***
Manufacturing, Wholesale, & Transportation (Jobs)	*172*	*285*	*4,778*	*123*	***5,358***
Retail (Jobs)	*53*	*85*	*1,719*	*85*	***1,942***
Financial & Professional Services (Jobs)	*374*	*1*	*5,228*	*150*	***5,753***
Health, Educational, & Recreational Services (Jobs)	*240*	*41*	*4,742*	*604*	***5,627***
Other (Jobs)	*134*	*92*	*5,975*	*136*	***6,337***

[1] Source: Plan Bay Area, July 2013 and Plan Bay Area forecast update, February 2015

Figure 6 Map of Priority Development Areas



Source: Plan Bay Area PDA Showcase (http://gis.abag.ca.gov/website/PDAShowcase/)

STUDY PARTNERS

This study was developed by a multi-disciplinary and inter-agency team of public agency staff and consultants. The project was led by the San Francisco Planning Department in coordination with other city partners, neighboring jurisdictions' public agencies, and consulting firms including:

- San Francisco Mayor's Office

- San Francisco Municipal Transportation Agency (SFMTA)
- San Francisco Office of Economic and Workforce Development (OEWD)
- San Francisco Office of Community Investment and Infrastructure (OCII)
- San Francisco County Transportation Agency (SFCTA)
- City of Brisbane
- City/County Association of Governments of San Mateo County (C/CAG)
- San Mateo County Transit District (SamTrans)
- Peninsula Corridor Joint Powers Board (Caltrain)
- City of Daly City
- Stantec
- Nelson\Nygaard Consulting Associates, Inc.
- Seifel Consulting Inc.

The City and County of San Francisco is independently conducting the study with a grant from the Metropolitan Transportation Commission (MTC).

OUTREACH SUMMARY

The Bayshore Multi-Modal Facility Study Phase II Open House was held on November 3, 2016 at the San Francisco Public Library Visitacion Valley Branch, just over a year after the Phase I open house. Approximately 20 members of the public attended. Mandarin/Cantonese Chinese translation was made available. Project team staff as well as San Francisco Planning and SFMTA staff were on hand to engage the public and offer one-on-one explanations and clarifications of study intent, Study Area overview and upcoming development, concept alternative designs, and the framework proposed to evaluate them. The public provided comments on all the presented alternative designs and boards. Comments are detailed in the Appendix of this report.

Figure 7 Public Meeting at the San Francisco Public Library Visitacion Valley Branch



3 EXISTING AND FUTURE CONDITIONS

The following chapter consists of an overview of the transportation and land use conditions in the Multi-Modal Facility Study Area. The several planning and development efforts in the Study Area are also summarized. By looking at the overall conditions, both existing and future, the context of improving access to, from, and within the Multi-Modal Facility will be illuminated.

TRANSPORTATION NETWORK OVERVIEW

Existing Transit Services

The transit services specified in Figure 8 are accessible within a reasonable walking distance (1/4 mile or approximately 7.5 minutes) of the Multi-Modal Facility and Bayshore Caltrain Station.

Caltrain Ridership

With such limited accessibility and a lack of station area serving uses, current and historical Caltrain ridership at the Bayshore Station is consistently near the bottom of all stations along the line. Roughly 250 people board at the station each day, which has remained constant over the period between 2014 and 2016. A major benefit of the Schlage Lock development and Geneva-Harney BRT combined with the Bayshore Multi-Modal Facility is that together they would support a higher level of Caltrain demand and service at this station. This greater ridership potential is reflected in both the high planned development levels around the station and major upgrades in station accessibility, security, and potential transit-oriented development anticipated.

Muni Ridership

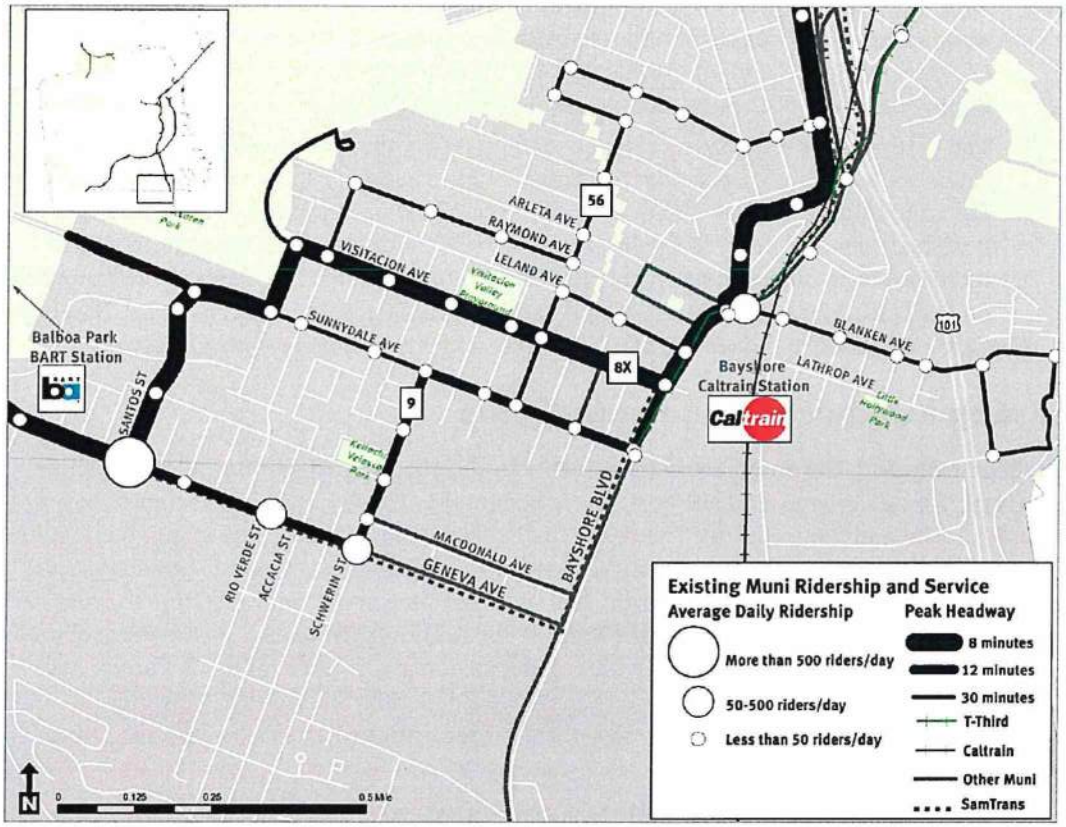
As shown in Figure 9, most of the Muni ridership in the Study Area is lightly distributed (with fewer than 50 average daily boardings per stop) on the streets surrounding the Multi-Modal Facility site location on Sunnydale Avenue. The busiest stop, at Bayshore Boulevard and Blanken Avenue, has a combined daily stop activity of 56 boardings. The next stop that comes close in ridership is outside the Study Area (and City limits) at the intersection of Geneva Avenue and Schwerin Street. These ridership counts were taken in 2011, during the Muni Transit Effectiveness Project planning process, and then used in the Geneva-Harney BRT Feasibility Study, published by SFCTA in 2015. Since these ridership counts occurred prior to any Muni Forward service improvements, today's ridership in the Study Area is expected to be somewhat higher than shown, and will continue to increase as new development comes online. Just like in the safety assessment, Bayshore Boulevard's relative dominance of ridership and overall traffic within the Study Area necessitates its improvement as a top recommendation.

Figure 8 Existing Weekday Transit Service in Facility Area[2]

Route	Destination	Daily Headway Range (mins.)	AM / PM Peak Headway (mins.)	Weekday Hours of Operation
Muni Bus				
8-Bayshore	Balboa Park to Downtown San Francisco via Bayshore Blvd and US-101	8-15	8 / 8	4:40 am–1:15 am
8AX-Bayshore A Express	Geneva/Schwerin to downtown San Francisco and North Beach via San Bruno Avenue and US-101	8	8 / 8	6:40–10:00 am; 3:30–7:40 pm
8BX-Bayshore B Express	Balboa Park to Downtown San Francisco via Bayshore Blvd and US-101	8	8 / 8	6:20–10:00 am; 3:30–7:50 pm
9-San Bruno	Visitacion Valley to Downtown San Francisco via US-101 and Potrero Ave	12-20	12 / 12	4:55 am–1:40 am
9R-San Bruno Rapid	Visitacion Valley to Downtown San Francisco via US-101 and Potrero Ave	8	8 / 8	6:00 am–7:00 pm
90-San Bruno (Owl)	San Bruno Ave/Arleta Ave to Downtown San Francisco via US-101 and Potrero Ave	30	30	12:40 am–5:50 am
56-Rutland	Visitacion Valley and Executive Park via Blanken Ave	30	30 / 30	7:00 am–9:30 pm
Muni Metro (Light Rail)				
T-Third	Embarcadero to Visitacion Valley / Sunnydale via Mission Bay, Dogpatch and Bayview	9-20	9 / 9	5:00 am–12:50 am
SamTrans (Bus)				
24	Brisbane to Westmoor HS (Daly City) via Geneva Ave and Mission St	(one bus)	—	7:10–7:50 am; 3:00–3:40 pm
29	Templeton/Brunswick (Daly City) to Lipman MS (Brisbane) via Geneva Ave and Bayshore Blvd	(one bus)	—	7:45–8:15 am; 3:10–3:40 pm
292	Hillsdale Shopping Center to Downtown San Francisco via Caltrain line and SFO	15-60	15 / 20	3:55 am–2:35 am
397	San Francisco to Brisbane and Palo Alto via Bayshore (Overnight)	60	—	12:45 am–6:25 am
Commuter Rail				
Caltrain	North to San Francisco; South to Peninsula (Bayshore Station)	60	60	6:35 am–12:10 am
Shuttle				
Bayshore-Brisbane Senior	Bayshore Caltrain Station to Daly City Library to downtown Brisbane via Bayshore Blvd	55-100	—	9:45 am–3:45 pm
Brisbane-Crocker Business Park	Balboa Park Station to Brisbane-Crocker Industrial Park via the Bayshore Caltrain Station	10-30	20 / 20	5:45–9:35 am; 2:45–7:30 pm
Brisbane-Bayshore Caltrain	Bayshore Caltrain Station to Brisbane-Crocker Industrial Park via Bayshore Blvd and San Bruno Ave	60	60	5:50–9:00 am; 4:45–7:10 pm
Daly City Bayshore	Serramonte Transit Center to Bayshore Blvd via Daly City and Balboa Park stations	65-100	65 / 65	6:30 am –8:03 pm
Executive Park	Balboa Park Station to Executive Park via Recology	30-45	30-45	6:10–8:15 am; 3:05–5:50 pm

[2] Geneva-Harney BRT Feasibility Report, p. 24

Figure 9 Existing Muni Ridership and Service Map[3]



Planned Transit Improvements

Within the Study Area, there are several planned transit improvements that would affect the use and operation of the Multi-Modal Facility, as well as facilitate travel between the facility and key destinations. These transit improvements include the Geneva-Harney Bus Rapid Transit route, the Geneva Avenue & Visitacion Valley Multimodal Improvement Project (benefiting the 8-Bayshore), and Caltrain Electrification.

- The Geneva-Harney Bus Rapid Transit (BRT) line is a proposed service envisioned to provide existing and future neighborhoods along the San Mateo-San Francisco County border with a bus connection to the border area's key regional transit system hubs. Initial service would offer 8-minute headways on average throughout the day and would improve based on demand. From its northern terminus in the Inner Richmond neighborhood, the route would assume the 28R routing along 19th Avenue to Daly City BART and then to Balboa Park BART. From Balboa Park BART/Muni Station in the west, the corridor extends to Hunters Point Shipyard in the east, including making a connection to the Bayshore Caltrain Station. Exact routing east of the Caltrain tracks has yet to be determined, but within the Study Area, the closest station connecting to the Bayshore Caltrain Station would be on Bayshore Boulevard at Sunnydale Avenue. Additional connections could be made at a stop northwest of the Multi-Modal Facility on Bayshore Boulevard at Arleta/Blanken Avenues.

[3] Geneva-Harney BRT Feasibility Report, 23.

- As part of Muni Forward, SFMTA is proposing transit priority and pedestrian safety improvements along routes (including the 9-San Bruno corridor) that will make it safer to walk, increase the frequency and reliability of service, and enhance the customer experience both on and off the bus. Within the Study Area, Muni Forward would make improvements to Visitacion Avenue and Bayshore Boulevard.
- The Caltrain Modernization Program would electrify the Caltrain Corridor from San Francisco's 4th and King Station to Tamien Station in San Jose, convert diesel-hauled to Electric Multiple Unit (EMU) trains, and increase service up to six Caltrain trains per peak hour per direction. At the Bayshore Caltrain Station service frequency could be increased from one train per hour per direction to two trains per hour per direction based on demand. A successful Multi-Modal Facility would encourage activity at the Bayshore Caltrain Station and have a synergistic effect on justifying more Caltrain service.

Existing Roadways and Future Plans

As noted in Figure 3, the Study Area is dominated by a series of north-south routes (Bayshore Boulevard, Tunnel Avenue, and US-101), due to geography. These routes are a series of barriers for multi-modal and non-motorized access to the Facility, which is described in greater detail in Chapter 5 (Facility and Area Connectivity Assessment). Meanwhile, east-west connections are primarily discontinuous. Plans have long discussed an extension of Geneva Avenue to cross over the multiple barriers running through the Study Area. Additionally, one of the top goals of the Geneva-Harney BRT project is to "Close the rapid transit network gaps in the Bi-County Area between transit projects east of Geneva Avenue & west of Santos Street."[4] Existing bicycle connections in the network will follow most of the aforementioned arterial routes, including Bayshore and Geneva.

Phase I of the Multi-Modal Facility Study identified a series of future plans for the roadways and other transportation facilities in and around the Study Area. These improvements, which have ramifications for transit access in the Bayshore Study Area, originate from other plans, and may change in the future. Overall, these future plans, alongside existing roadway conditions and characteristics, were summarized in Phase I of the project and are reiterated in Figure 10.

LAND USE

The Study Area, defined as a half-mile from the edges of the Caltrain platforms, is currently a disconnected mix of industrial, formerly industrial, and redeveloping areas. The area includes several residential neighborhoods, Bayshore Boulevard, US-101, and a portion of the Brisbane Baylands. As noted in Phase I, "Bayshore Station is currently a quiet transit stop that is isolated from surrounding neighborhoods by a large, formerly industrial piece of land called the Brisbane Baylands. But future plans for the area envision transforming the Station's neighboring uses into vibrant new residential and employment centers, including the Baylands" (see Figure 10).[5]

[4] SFCTA, Geneva-Harney BRT Feasibility Report, 2015, p. 3.

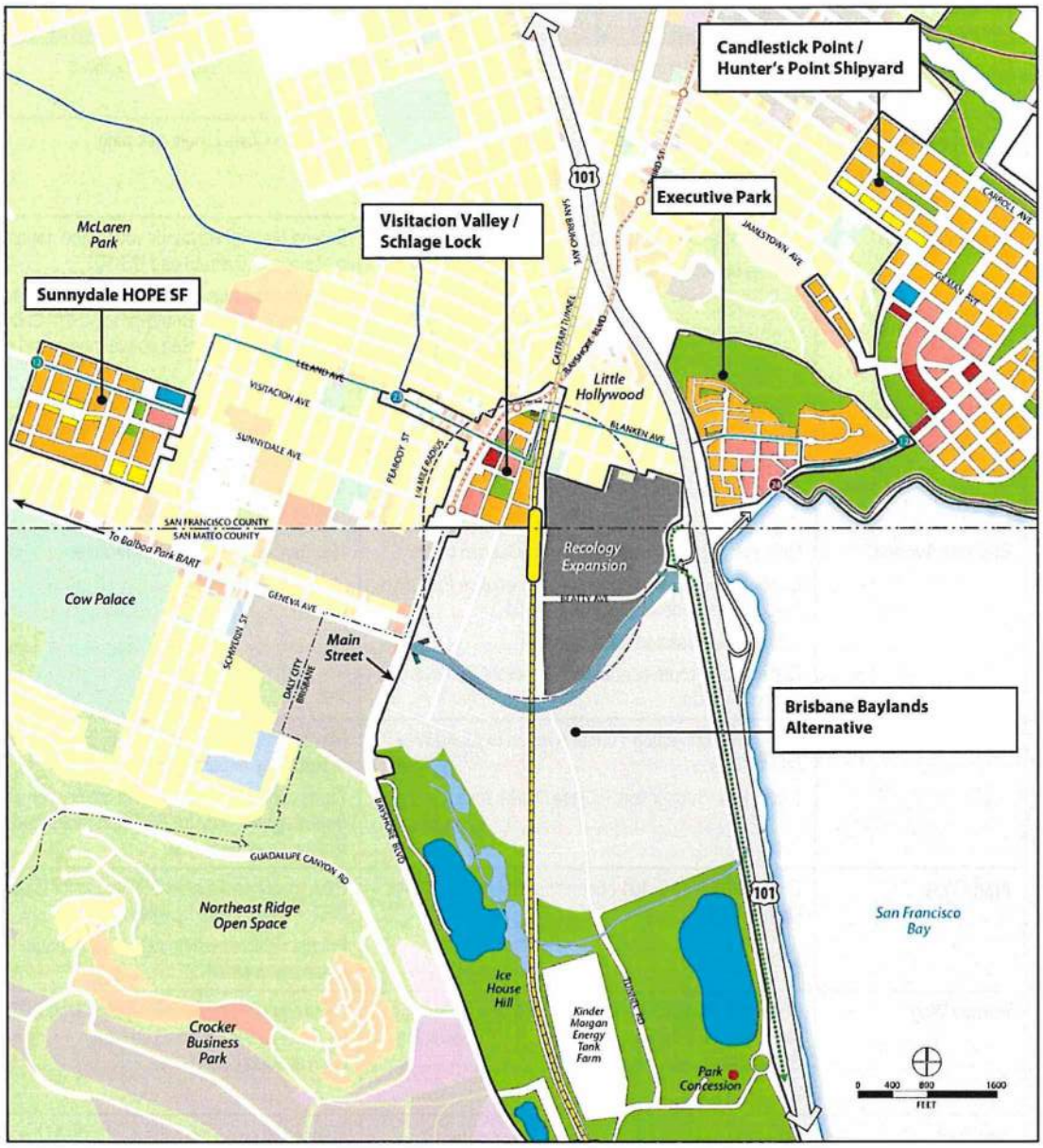
[5] SFCTA, Bayshore Intermodal Station Access Study, 2012, p. 17

Figure 10 Existing and Future Street/Transportation Facilities Near Bayshore Station[6]

STREET/FACILITY	EXISTING CONDITION	FUTURE PLANS
Bayshore Boulevard	North-south on west side of Caltrain tracks 2 lanes + bike lane + sidewalks in each direction	No change to street widths/facilities
Tunnel Avenue	North-south on east side of Caltrain tracks 1 lane in each direction + Class III bike route + sidewalks	2 lanes + Class I multi-use path
Geneva Avenue	East-west arterial terminating at Bayshore Boulevard 2 lanes in each direction + sidewalks	Extend through Baylands with grade separated crossings of Caltrain and US-101 Geneva would be even with the groundplane between Bayshore Boulevard and the Caltrain tracks, and be elevated above the ground plane east of the tracks 2 general purpose lanes + designated bus lane + buffered bike lane + sidewalk in each direction Study considers alternate configuration of designated bus lane between US-101 and the Caltrain tracks (see Chapter 3)
Blanken Avenue	Only existing east-west crossing of Caltrain tracks Connects Bayshore Boulevard to Executive Park, including an undercrossing of US-101 1 lane + sidewalks in each direction Class III bike route connecting Bayshore Boulevard to Tunnel Avenue	No change to street widths/facilities
Beatty Road	East-west connecting Tunnel Avenue to Alana Way (at US-101) 1 lane in each direction + Class III bike route	May be closed as a public right-of-way as a part of Recology expansion Study considers aerial/tunnel connection along Beatty right-of-way for BRT/non-motorized Class I facility (see Chapter 3)
Alana Way	Crosses under US-101 connecting Beatty Road with Harney Way	Exclusively designated BRT lanes for Geneva BRT + Class I bike facilities Private vehicles will use Geneva Avenue Extension instead
Harney Way	Connects US-101 with Candlestick Point, connects to Alana Way which crosses under US-101, becoming Beatty Road 2 lanes in each direction	2 general purpose lanes + designated BRT lanes for Geneva BRT + bike lanes/path + sidewalks in each direction
Bay Trail	Off-street multi-use path planned to ring the San Francisco Bay Within Station area, only 1-mile east of US-101 has been implemented	Planned to cross from the east side to the west side of US-101, potentially through the Alana Way tunnel, cross Geneva Avenue, and south through the Baylands site

[6] SFCTA, Bayshore Intermodal Station Access Study, 2012, p. 21

Figure 11 Study Area Land Use Map



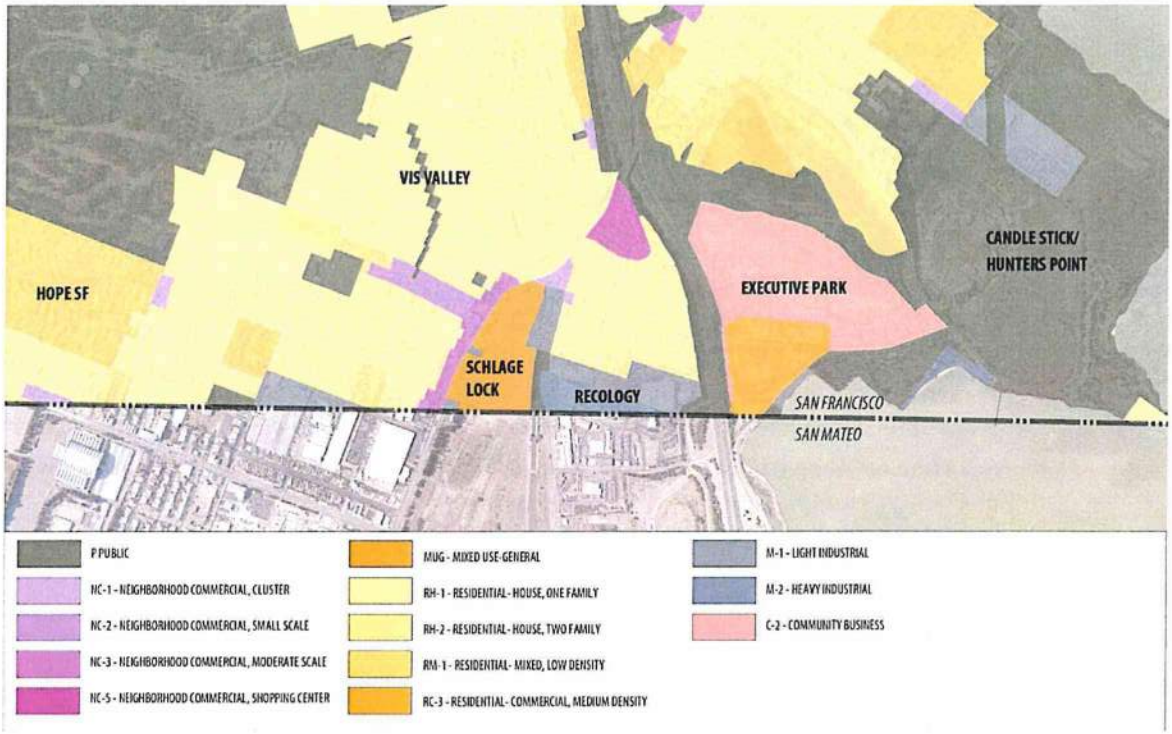
Study Area Land Use and Planned Developments

- Single Family Residential
- Multi-family Residential
- Residential Mixed Use
- Commercial/ Commercial Mixed Use
- Office
- R&D
- Cultural/Civic/ Entertainment
- Hotel/Hotel Overlay
- Industrial/Renewable Energy
- Institutional
- Open Space
- Vacant/Missing Information
- Area Plan
- Existing Caltrain Platform
- Caltrain Rail
- Existing Muni LRT
- Green Connection 12
- Green Connection 23
- Green Connection 24
- 1/4 Mile Walking Radius from the platform
- Geneva Extension Alignment
- Proposed Bay Trail

ZONING

The existing zoning in the immediate vicinity of the Preferred Multi-Modal Facility corridor allows for mixed-use development and for some light industrial uses (see Figure 12). The majority of surrounding neighborhoods consist of mixed-density residential zones. To the west of the Visitacion Valley/Schlage Lock site, two neighborhood commercial corridors – along Leland Avenue and along Bayshore Boulevard – allow for neighborhood commercial development. To the east, the area is predominantly zoned for single family residential. To the south of the Study Area, the Brisbane Baylands area is currently zoned for light industrial uses. Plans for the Baylands are discussed later in this report.

Figure 12 Land Uses in Visitacion Valley and Surrounding Developments[7]



Existing Developments

Visitacion Valley

Visitacion Valley is bounded to the west and north by McLaren Park, to the east by US-101, and to the south by the San Francisco/San Mateo County line. It contains mostly two- to three-story buildings with a variety of architectural styles, including local landmarks like Eichler homes and a Julia Morgan-designed church. Homeownership in the neighborhood is much higher than the citywide average. The area also includes McLaren Park, the second largest park in the City (317 acres), and the Visitacion Valley Greenway, a linear system of open space lots connecting to Leland Avenue. Leland Avenue and Bayshore Boulevard make up one of the San Francisco's "Invest in Neighborhoods" corridors. The Leland Avenue corridor is rich with retail and was redesigned with additional lighting, planting, seating, and safer pedestrian facilities in 2010.

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[7] Source: San Francisco Zoning Map

Businesses along the corridor include retail, food services, professional services, and social services agencies.

Visitacion Valley currently has several challenges affecting the health of the commercial district, such as a high vacancy rate (23%) and low foot traffic. While the area has undergone physical improvements to the public realm, those improvements alone have not succeeded in attracting more shoppers to the district. A study of existing sales tax compared with local demand indicates that local residents patronize businesses outside of the area. Sales tax captured in the corridor has declined by 22% since 2006, compared with a citywide growth of 17%.[8]

Opportunities

- As an Invest in Neighborhoods (IIN) corridor with recent public realm improvements, Leland Avenue provides a safe pedestrian connection from Visitacion Valley to the Schlage Lock site and, ultimately, the Bayshore Caltrain Station or future Multi-Modal Facility. Multi-Modal Facility designs should accommodate this pedestrian connection and the Leland Avenue extension into the Schlage Lock site. The corridor also contains several storefronts and other opportunities for retail and commercial activity.
- The Visitacion Valley Community Facilities and Infrastructure Fee and Fund was established approximately ten years ago in anticipation of new development at Executive Park and other sites in the area. The Planning Department, in collaboration with the SFMTA and other city agencies, meets with the Visitacion Valley community annually to identify and prioritize project for impact fee spending. Future funds dedicated to "pedestrian, bicycle and streetscape improvements" could potentially contribute to elements of the Multi-Modal Facility. Approximately $4.4 million has already been programmed for planning, design, and construction work between FY 2016 and FY 2020.
- A portion of Schlage Lock contributions to the fund are already earmarked specifically for Bi-County priority projects, including the new bus rapid transit line, improvements to the Bayshore Caltrain Station, a potential Harney Way connection to Geneva Avenue, and smaller-scale pedestrian and bicycle improvements. These improvements could be designed as part of or coordinated with a future Multi-Modal Facility design.

Constraints

- According to San Francisco's Vision Zero plans and policies, the intersection of Arleta Avenue, Bayshore Boulevard, and San Bruno Avenue, an at-grade stop for the T-Third, is considered a High Injury Intersection. There are not any Vision Zero Priority Projects currently planned for the intersection.
- Visitacion Valley vehicle traffic entering and exiting US-101 frequently queues during peak hours on major north/south streets

Little Hollywood

The Little Hollywood neighborhood lies between Bayshore Boulevard and US-101, just east of the Schlage Lock site. Less than a square mile, Little Hollywood is one of the City's most diverse neighborhoods, home to mainly working families in one- to two-story bungalow-style homes.

[8] Visitacion Valley Neighborhood Profile, Invest in Neighborhoods Commercial District Profiles, 2013.

Opportunities

- A neighborhood rich with diversity, homeowners, and a small park, Little Hollywood provides critical pedestrian connections and, potentially, opportunities for improved pedestrian, bicycle, and transit access to and from areas east of US-101.

Constraints

- Narrow through-streets, topography, US-101, and freeway related traffic limit access and mobility in the neighborhood and near the Multi-Modal Facility.
- Residents have expressed concern about routing BRT through the neighborhood.

MAJOR DEVELOPMENT AND INFRASTRUCTURE PROJECTS

Currently, the entire Bi-County area is poised for significant growth. The Multi-Modal Facility will play an important role in connecting these growth areas and existing neighborhoods to various modes of transportation. The major growth areas and projects are summarized in Figure 13.

Figure 13 Major Plan Areas and Development Projects in the Bi-County Area

Project	Status	Acres	Housing Units (Gross)	Built units/ Units to be replaced	Non-Residential (square feet)
Candlestick/ Hunters Point	Under construction	784	12,100	900 in pipeline, 256 to be replaced	4,315,000
Schlage Lock	Approved	20	1,679	----	46,700
Executive Park Plan	Approved	70	2,800	500+ built	226,000
Brisbane Baylands*	Under review	648	----	----	8,215,000
Sunnydale Hope SF	Approved	50	1,785	685 to be replaced	----

* The current alternatives under review by the Brisbane City Council do not include housing on the Brisbane Baylands site. The Daly City Bayshore PDA, designated a Transit Town Center, has not been allocated housing or employment, either. One Bay Area Grant (OBAG) funds can be used for projects that support multi-modal access and projects in PDAs, but only if there is a commitment to growth and affordable housing

Planned Developments

Sites such as Schlage Lock, Executive Park, Candlestick Point, Hunters Point, and Sunnydale HOPE SF will develop in the next 10 years and generate trips to and from points all over the Bay Area. The projects and their implications on a future Multi-Modal Facility are summarized below.

Schlage Lock Site

This 20-acre, transit-oriented development site comprises 1,680 housing units on 12 building parcels, two parks, and a pedestrian-oriented streetscape plan. The development will also provide up to 46,700 square feet of commercial development. A third open space, Blanken Park, is proposed adjacent to the historic Schlage Lock Office Building in the north of the site. As part of the Schlage Lock development agreement, the historic building will be rehabilitated and in part house community uses.

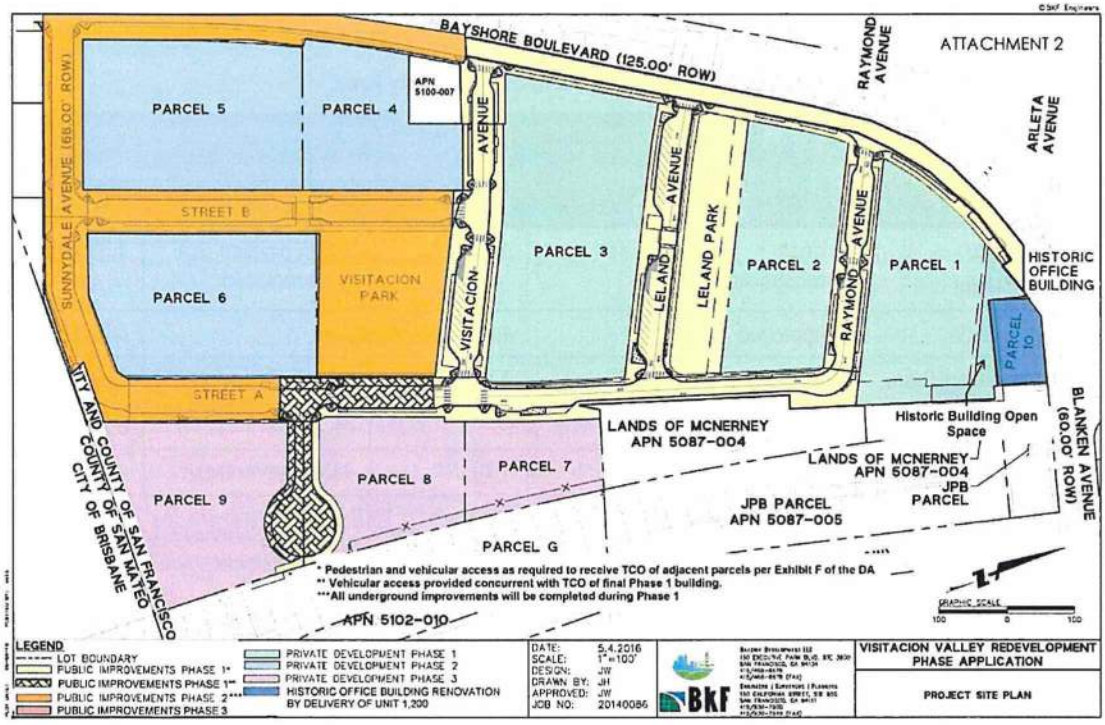
Access

When the Schlage Lock development is complete, surrounding streets will provide walking access to the Multi-Modal Facility utilizing sidewalks of various widths. Transit riders will have several

options for connecting between the Caltrain Station, the T-Third, and buses along Bayshore. The options include: the preferred Multi-Modal Facility alternative along Sunnydale Avenue; using Schlage Lock's Street A to connect to or from Bayshore/Arleta/Blanken and the historic office building plaza; or any alternative route through the Schlage Lock street network to or from Bayshore bus stops. Class II designated bikeways are currently located on Bayshore Boulevard and Class III bikeways (with sharrows) are designed throughout the Schlage Lock street network.

Phase I of Schlage Lock, as currently proposed (March 2017), will include a pedestrian and drop-off route to Caltrain via Raymond Avenue, Street A, and Street F on the Schlage Lock site (Figure 13). The pedestrian component of this connection would need to be completed before the temporary certificate of occupancy (TCO) for the first building in Phase I. The vehicular and bicycle access (i.e. the roadway, see hashed area in Figure 14) would need to be completed by the end of Phase I (Parcels 1, 2, and 3).

Figure 14 Draft Phasing Map of Schlage Lock Site (under public review, June 2017)



Although the west side has several options to access the Multi-Modal Facility, the east side has only one. From the east, pedestrians can access the Caltrain platform via the existing surface parking lot along Tunnel Avenue. Pedestrians currently walk from the platform entrance to the existing pedestrian bridge (~560 feet) to get to the southbound Caltrain platform on the west side of the Caltrain tracks. Currently, the 56-Rutland connects the Executive Park area and Little Hollywood neighborhood, and stops at Blanken/Tunnel and Bayshore/Arleta.

Opportunities

- The Schlage Lock site is already planned; however, the design and phasing of future construction should complement a Multi-Modal Facility and support access to it. Ample sidewalks, public spaces, and urban design will encourage safe pedestrian and bicycle travel to Muni T-Third, BRT, bus stops, the Caltrain station, and nearby land uses. The

phasing and construction should be coordinated to support safe pedestrian and bicycle access to the Multi-Modal Facility.

- Wayfinding signage, maps, real-time bus and train arrival information, shelters, and pedestrian-only paseos can enhance multi-modal access throughout the Schlage Lock site.
- The historic office building at the north of the Schlage Lock site could provide access to a BRT alignment alternative and/or several Multi-Modal Facility elements. The potential opportunities will need to be considered after further environmental analysis of the Geneva-Harney BRT and Phase II of this Multi-Modal Facility study.
- The owner of 2201 Bayshore Boulevard submitted a Preliminary Project Assessment (PPA) application for an early development concept on the site. While the initial concept was inconsistent with the vision of open space and pedestrian access in the area, the site represents an opportunity to enhance the public realm and pedestrian experience.

Constraints

- The Schlage Lock street network will be developed incrementally over several years of Phased development. A number of interim solutions may have to be designed. The current proposal does not provide a direct connection for Muni or SamTrans services to the Caltrain Station from the west. Further, access for pedestrians, transit riders and bicyclists would only be available via a circuitous, indirect route through Phase I of the Schlage Lock development. The timing of future development phases is unknown.
- The street network, street designs, and parcelization of the Schlage Lock site were determined prior to recent multi-modal transportation planning in the area. The facility design must therefore work within the constraints of the Schlage Lock development and coordinate changes with the Schlage Lock project sponsor.
- Sunnydale Avenue falls within two jurisdictions, the City of San Francisco and the City of Brisbane. The splitting of Sunnydale Avenue and the Brisbane Baylands process complicates Multi-Modal Facility implementation (see Brisbane Baylands section below).

Brisbane Baylands

Four development alternatives for the Brisbane Baylands are under environmental review in Brisbane: a Developer-Sponsored Plan (DSP), a DSP Variant (DSP-V), a Community Proposed Plan (CPP), and a CPP Variant (CPP-V) including an expansion of the Recology site. (A fifth alternative, the Renewable Energy Alternative, was not analyzed in the EIR). The alternatives include options for the amount of residential and commercial uses; the primary uses in the commercial or mixed-use core; and the Recology site. They are summarized in Technical Memo 2.2 of this Study and in the revised Notice of Preparation of the Draft EIR[9]. However, as of the August 25, 2016 recommendation of the Brisbane Planning Commission, the Brisbane City Council is considering alternatives with a net increase of 1-2 million square feet in building area, but no additional housing units.

Access

SamTrans bus connections from the south access the Study Area from Bayshore Boulevard, while three different shuttles provide Brisbane connection to the Bayshore Caltrain Station. Vehicles from the south and US-101 currently access the Caltrain station via Tunnel Avenue.

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[9] http://www.ci.brisbane.ca.us/baylands/eir-process/notice-preparation

The Bay Trail stops at Lagoon Road in Brisbane along the western side of US-101. The trail is planned to continue north, adjacent to US-101 and connect to a route under the freeway. When the trail is completed, bicyclists will have the opportunity to gain access to the Multi-Modal Facility and Caltrain from the east via Beatty Road and Tunnel Avenue.

Opportunities

- The clearest opportunity in the Baylands lies just south of the San Francisco-Brisbane border, extending Sunnydale Avenue straight to the Caltrain station. Completing the Schlage Lock street grid would improve multi-modal access, reduce irregularities in the street network and development parcels, and connect more seamlessly to potential future development in Brisbane.
- A temporary Multi-Modal Facility in Brisbane is possible independent of the Baylands development process.
- The Baylands also present great potential for mixed-use, transit-oriented development near a Multi-Modal Facility; more proximate shuttle and transit stops; and other elements of a Multi-Modal Facility.

Constraints

- The uncertain outcome and timing of the Brisbane Baylands EIR constrains the coordination and planning of a Multi-Modal Facility in Brisbane.
- The uncertain timeline and buildout of a potential Baylands development also affects the design or permanence of a temporary Multi-Modal Facility in Brisbane.
- Much of the Baylands, including areas near the Multi-Modal Facility, is contaminated and subject to remediation prior to development.
- Costs for building out and maintaining a temporary Multi-Modal Facility in Brisbane would present a constraint to future implementation.
- Brisbane's Baylands DEIR currently shows multiple scenarios. However, the Brisbane City Council, on recommendation from the Brisbane Planning Commission in late 2016, as part of their development review, is reviewing recommended project alternatives without housing, up to 1-2 million net new square feet of retail/office/school/renewable energy, and open space. This direction, in terms of land use mix, does not align with Priority Development Area (PDA) guidelines of which both the portion of southern San Francisco and northern Brisbane is currently identified.

Executive Park

Executive Park is located east of the preferred Multi-Modal Facility location and in the southeast part of San Francisco adjacent to US-101. Approved in 2011, the plan area consists of 70 acres, 2,800 new housing units, and 226,000 square feet of net new non-residential development. The site contains over 300,000 square feet of pre-existing office development and over 500 multi-family or townhome units that have been built since 2010. Currently, the 56-Rutland provides access between Executive Park and the Schlage Lock Historic Office Building. A commuter shuttle also provides service between Executive Park, BART, and Caltrain during morning and evening commute hours. The Bayshore Multi-Modal Facility will serve people leaving or arriving from the Executive Park development by BRT, on foot, or by bicycle.

Opportunities

- The future Geneva-Harney Bus Rapid Transit line will connect Executive Park to the Bayshore Multi-Modal Facility.
- Executive Park transportation mitigation measure TR-1[10] includes changes to signals, street parking and striping at Tunnel and Blanken Avenues. These measures should be coordinated with designs, signalization and striping which maximize pedestrian safety and access to the Multi-Modal Facility.[11] See also mitigation measures M-TR-12, M-TR-21, and the remainder of transportation measures which require fair share contributions to intersection improvements in the vicinity.
- Executive Park transportation mitigation measure TR-3 requires increased weekday shuttle service, implemented "as needed," as well as "revised route and stop pattern to make the Bayshore Caltrain Station a permanent stop and include two additional stops..." The Multi-Modal Facility should coordinate with these changes and accommodate additional service from this project and others in the vicinity.
- Neighborhood access to a variety of land uses could be improved.
- Increased land use intensity and densification in Executive Park will likely increase potential ridership and outreach opportunities.
- The Executive Park streetscape plan, including potential BRT routing under US-101, is currently under review. The Multi-Modal Facility Study and designs should coordinate with this effort.

Constraints

- US-101 forms a barrier to connecting the area to all transportation modes; it specifically affects pedestrian and bike access. The only east-west routes across US-101 are Blanken and Beatty/Harney.
- The Caltrain tracks (south of Blanken) are also a significant barrier.
- The light industrial zoning to the east of the surface parking limits the amount of transit-supportive land uses in the area.

Candlestick Point/Hunters Point Shipyard

Together, the Candlestick Point and Hunters Point Shipyard (CP-HPS) areas comprise nearly 800 acres of waterfront land along San Francisco's southeastern shores. The development project includes 12,100 residential units (32% affordable), over 300 acres of new waterfront parks, approximately 885,000 square feet of neighborhood retail and entertainment space, and 2.5 million square feet of commercial space oriented around a "green" science and technology campus. An extension of the 56-Rutland route is expected to provide full service to CP-HPS.

Opportunities

- CP-HPS areas are densifying, which will increase opportunities to grow ridership. With the completion of the Geneva-Harney BRT connecting CP-HPS to the Bayshore Multi-Modal Facility and Balboa Park BART, opportunities for multi-modal access, outreach and coordinating operations abound.

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[10] Executive Park Subarea Plan EIR, 10/13/10 *sf-planning.org/ftp/files/MEA/2006.0422E_Exec_Park_DEIR.pdf*

[11] Executive Park Subarea Plan Transportation Study, AECOM, 10/1/10

- The CP-HPS developer is required to make a number of phased improvements to the roadway, as well as pedestrian and bicycle facilities along Harney Way[12]. These designs should be consistent with recommendations from this Multi-Modal Facility Study.
- The project includes the provision of express shuttles from both Hunters Point and Candlestick Point to downtown San Francisco during peak hours. While distant from the Multi-Modal Facility, the rollout of the service presents opportunities for coordinating multi-modal access and outreach in the area.
- While not timed with the CP-HPS development, T-Third service between Bayview and Chinatown via the Central Subway will ultimately be improved from one-car to two-car trains or a comparable service improvement.

Constraints

- Several mitigations are already determined, without the benefit of coordinating with this Multi-Modal Facility study resulting in limited ability for coordinated efforts in improvements.

Sunnydale HOPE SF

Currently the City's largest public housing site, Sunnydale-Velasco ("Sunnydale") sits in the Visitacion Valley neighborhood at the foot of McLaren Park. The 50-acre, 785-unit site is home to more than 1,700 ethnically diverse residents. The HOPE SF plan will:

- Replace 785 units of housing
- Build 900 new affordable and market-rate units in new residential buildings throughout the site.
- Create a hub of activity for the Visitacion Valley community, with a new recreational and educational center, parks, a community garden, farmer's market, neighborhood-serving retail, and other community services.
- Add new streets and blocks that are pedestrian oriented, reflect the neighborhood's scale, and incorporate green designs and bioswales.

The 8, 9 and 56 buses connect the Multi-Modal Facility area to Sunnydale. Leland Avenue also provides on-street bike parking (40 spaces in total) between the Visitacion Valley Playground and Bayshore.

Opportunities

- Improved bicycle connectivity and bike infrastructure between Sunnydale and the Multi-Modal Facility.
- In addition to the existing transit infrastructure, the Geneva-Harney Bus Rapid Transit line would be the major route connecting Sunnydale Hope SF to the Bayshore Caltrain Station, as well as the Balboa Park BART Station. Neighborhood access to a variety of land uses could be improved.

Recology Expansion

In April 2015, the City of Brisbane held a hearing to discuss Recology's proposed application for expansion. Among other things, the proposal included consolidating existing Pier 96 and 7th

[12] CP-HPS Phase II Case No. 2007.0946E - Final EIR, Addendum 4, Feb 22, 2016, Exhibit I
http://sfmea.sfplanning.org/Addendum%204%20Exhibits%20A-R.pdf

Street operations into their Tunnel Avenue Facility, which overlaps the San Francisco/Brisbane border. The expansion would also include a new visitor center and auditorium, additional car parking structure, rezoning, new roadway alignments and utility easements, and new administrative offices. Taken together, the expansion would incorporate 21 additional acres in Brisbane. The proposal is currently on hold and subject to change pending conversations with the Cities of San Francisco and Brisbane.

Opportunities

- Shared vehicle parking facilities, potentially reducing the area devoted to parking
- Negotiation for boundaries and roadway alignments to better suit the station access, amenities and circulation.

Constraints

- Expansion plans are in progress and uncertain at this time, including the street network, street design, and routing for Recology trucks, private vehicles and BRT. Bayshore Multi-Modal Facility planning will have to accommodate alternative scenarios based on the information available at this time.
- Parking accommodation for Recology employees, while an opportunity, can also present a challenge to pedestrian, bicycle, or transit access.

High Speed Rail Maintenance Facility

The California High Speed Rail Authority (CHSRA) is studying a potential light maintenance facility (LMF) in the Baylands as part of its Environmental Impact Report/Environmental Impact Statement (EIR/S). The CHSRA study is reviewing locations both west and east of the Caltrain tracks/proposed high speed rail corridor (see Figure 15).

Opportunities

- Any potential maintenance facility will have to be carefully planned, designed, and coordinated with the City of San Francisco, City of Brisbane, and property owners, including UPC (owner of Schlage Lock and Baylands) and Recology. Street designs leading to the facility and the site design should be coordinated with local efforts to enhance multi-modal access.

Constraints

- A maintenance facility will limit the potential for transit-oriented, mixed-use neighborhoods adjacent to the Multi-Modal Facility.
- Both potential maintenance facility locations suggest moving the existing Bayshore Caltrain station further south. This would significantly affect the ridership catchment area and remove the immediate access of environmental justice (EJ) neighborhoods along the southern edge of San Francisco. The proposed location is not near either the Geneva-Harney BRT alignment currently under consideration for near- or long-term operations and would make it difficult to provide cross modal connection.

Figure 15 Area under review for California High Speed Rail light maintenance facility[13]



[13] Source: Google; Potential facility may be on either side of the Caltrain right-of-way

4 MULTI-MODAL FACILITY CONCEPT ALTERNATIVES AND EVALUATION

Based on the current understanding of land use in the area, Phase I of this Study identified Sunnydale Avenue as the preferred location for the Bayshore Multi-Modal Facility, as illustrated in Figure 16. As part of Phase II, a total of four concept alternatives for this location were developed and evaluated. Each alternative represents an 8-12% design concept for a new connection between the eastern side of Bayshore Boulevard and the western side of the Bayshore Caltrain station.

Two alternatives (1 and 2) are entirely within the City and County of San Francisco, and two alternatives (3 and 4) extend Sunnydale Avenue beyond the City and County line into the City of Brisbane in San Mateo County.

The Schlage Lock development sits between the Caltrain tracks and Bayshore Boulevard along a busy north-south corridor in the southeast corner of San Francisco. Schlage Lock will transform an abandoned industrial facility into a new mixed-use community with 1,679 housing units, a grocery store, two parks, and a pedestrian-oriented streetscape plan. Development here can help address regional growth and related transportation needs by integrating an inviting, useful, and efficient Multi-Modal Facility into the overall design and functionality of the Schlage Lock site.

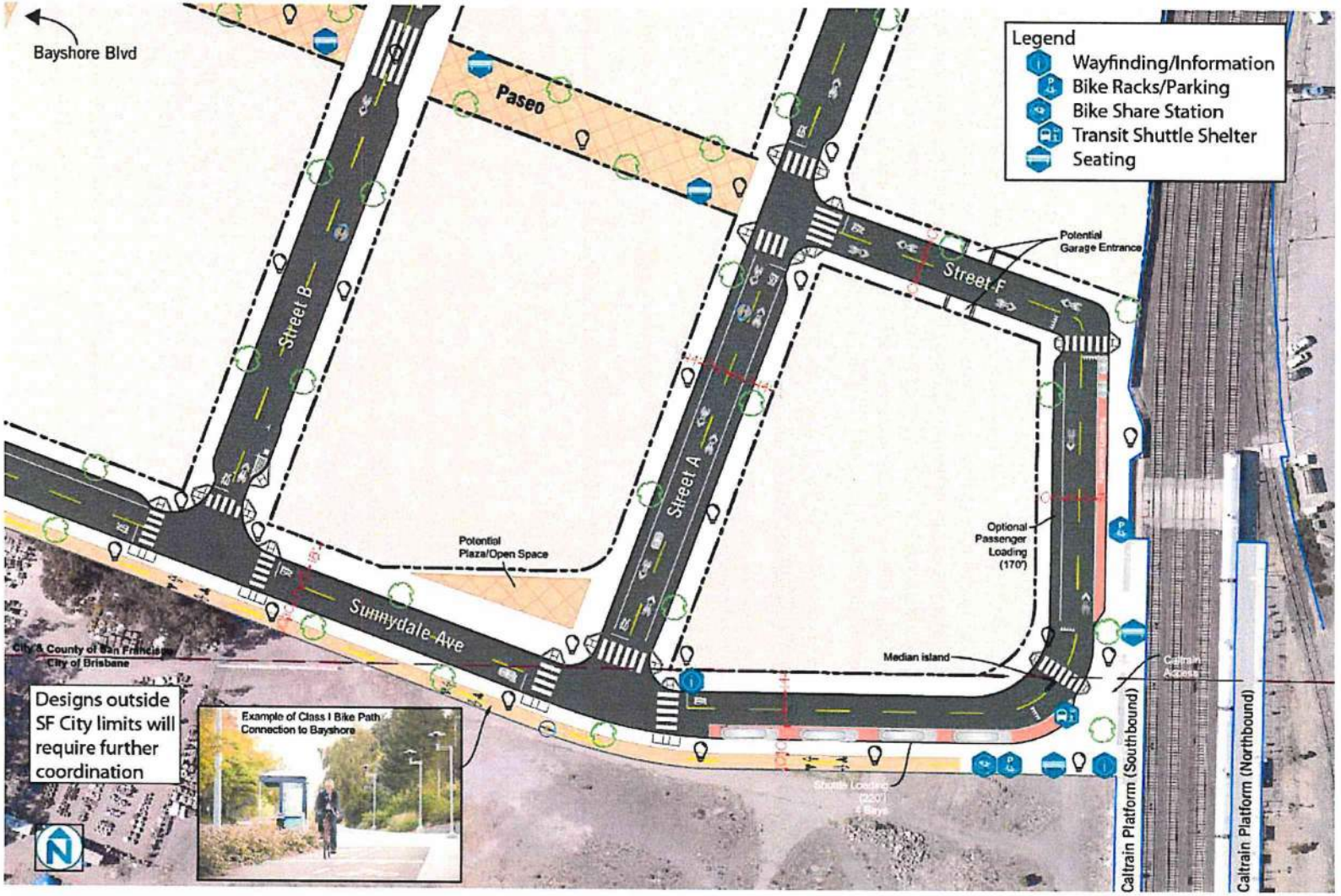
Figure 16 Preferred Multi-Modal Facility Location - Concept



ALTERNATIVES DEVELOPMENT

Multi-Modal Facilities link transportation services and infrastructure within a single location or area, providing better access and connectivity for people using regional and rapid transit, local buses and shuttles, private vehicles (cars/trucks), cycling, and walking. Facilities can take many forms, including special street designs, a kiosk, shared platforms, or a physical station building. The alternatives designed by the Study Team, with input and guidance from the public and

Figure 20 Bayshore Multi-Modal Facility Alternative 3



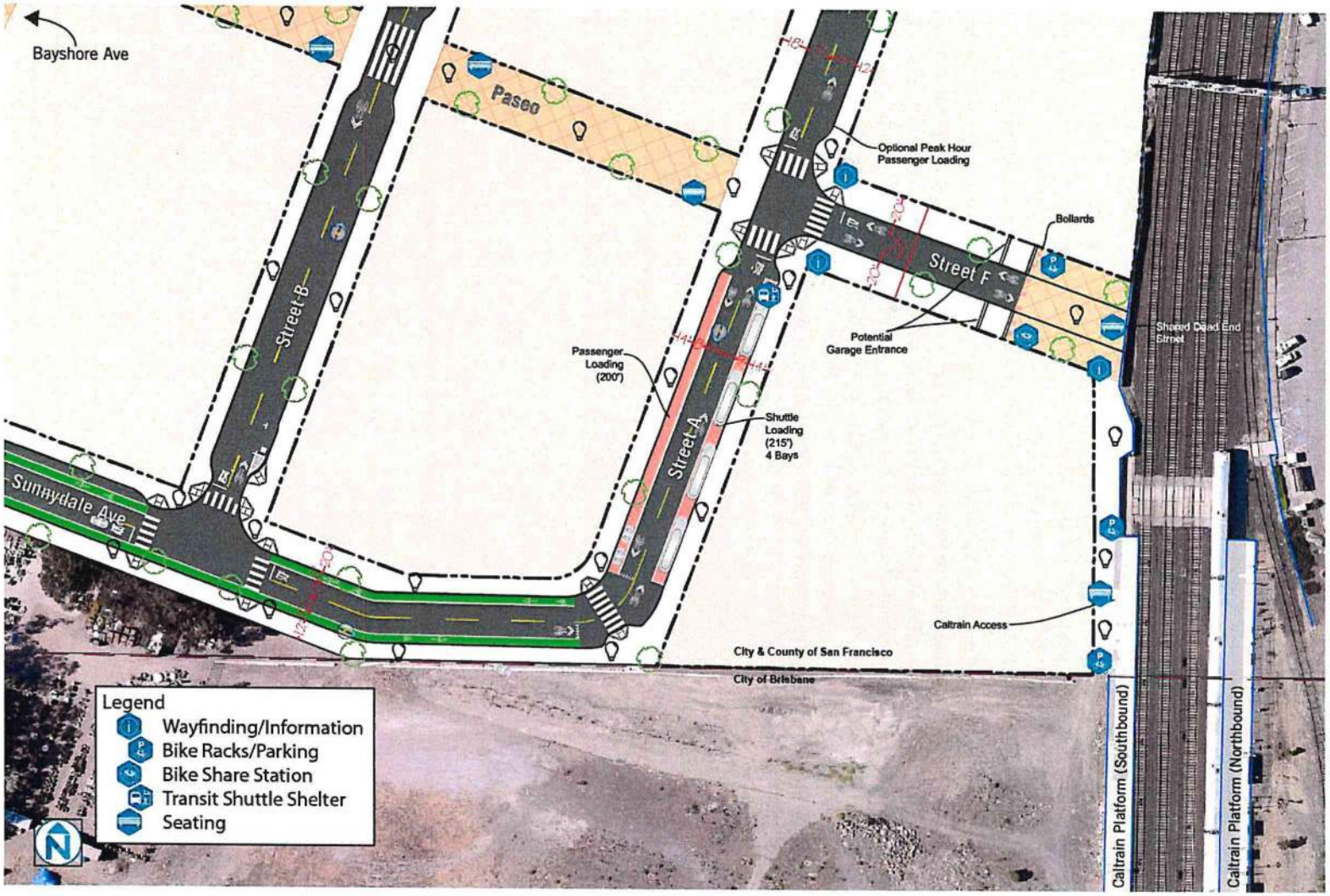
Alternative 3 – Loop Road (Sunnydale Ave/Street F)

This alternative (Figure 20) improves upon the operational functionality of the Multi-Modal Facility by expanding its footprint and creating a station loop road to better serve users. Since Alternatives 1 and 2 border the City and County line, the only way to expand the footprint was to extend Sunnydale Avenue and the Multi-Modal Facility into Brisbane, on land owned by the Brisbane Baylands applicant, by approximately 26,000 square feet. This concept offers a superior sense of place, with the public area between Sunnydale Avenue/Street F devoted solely to the Multi-Modal Facility and its users. However, it reduces the size of the southeastern Schlage Lock development parcel more than Alternatives 1 and 2.

Station access is improved compared to Alternatives 1 and 2. There is direct connection and clear line of sight along Sunnydale Avenue to the Caltrain Station from Bayshore Boulevard. Shuttle and passenger loading occurs adjacent to the southbound Caltrain platform; passengers transferring between those modes do not have to cross a street for access. Further, this alternative is able to avoid conflicts between Caltrain-bound traffic and Schlage Lock development traffic since all loading would occur on streets that do not contain residential or retail destinations. Another major non-motorized design change compared to Alternatives 1 and 2 is the addition of a Class 1 bike path on Sunnydale Avenue between the Caltrain Station and Bayshore Boulevard.

This alternative was well-received at the November 3rd public meeting. Many attendees thought it had the best circulation of the four concepts for cars, bikes, and walkers.

Figure 19 Bayshore Multi-Modal Facility Alternative 2



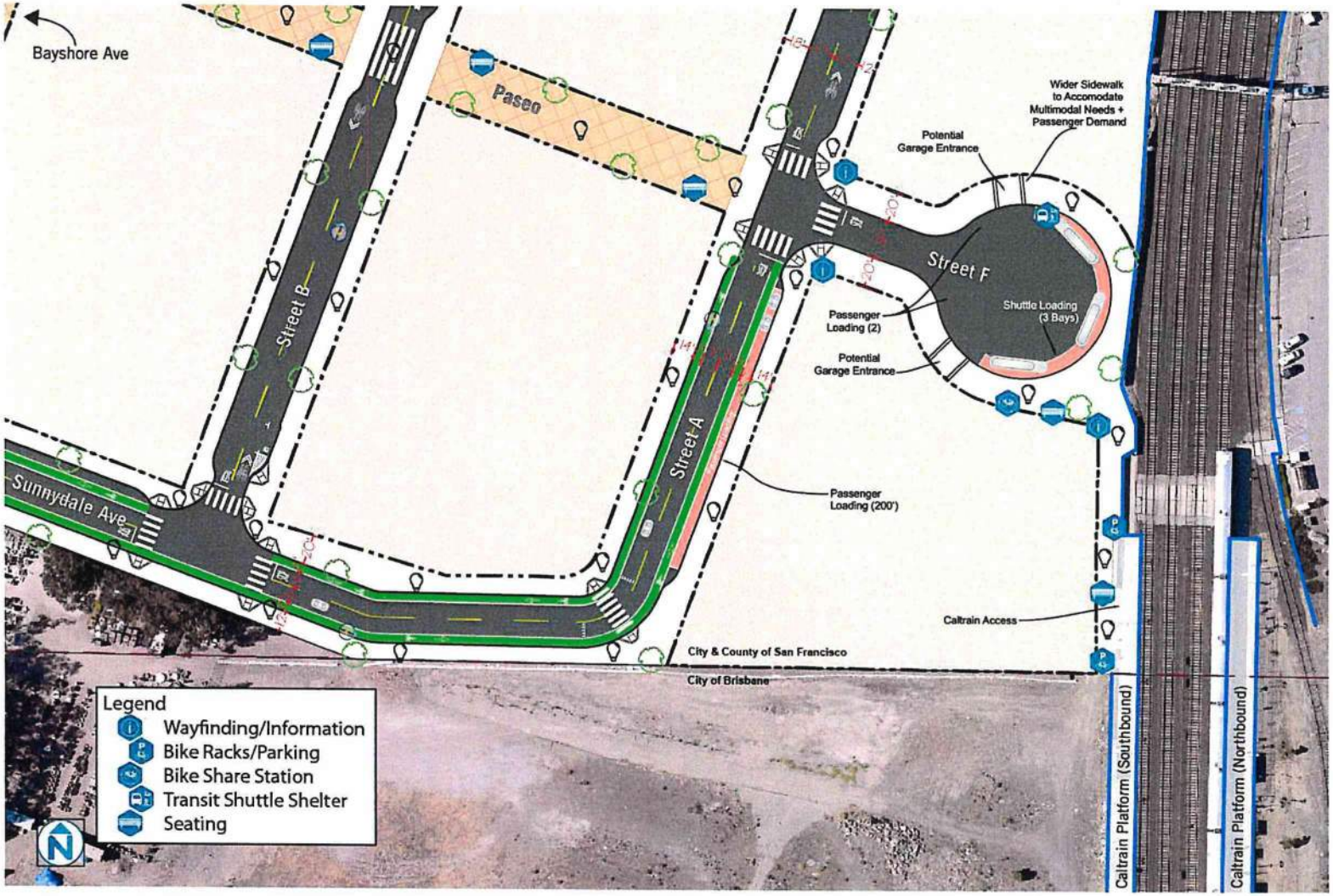
Alternative 2 – On Street (Street A)

Similar to Alternative 1, this facility (Figure 19) is fully contained within the City and County of San Francisco and also deviates from the vision in the original Schlage Lock OSSMP. Different from Alternative 1, Alternative 2 replaces the cul-de-sac with a 66-foot right-of-way with 20-foot sidewalks that ultimately connect to the Caltrain platform. All passenger loading and unloading would occur on Street A between Street F and Sunnydale Avenue. Private vehicles would load on the west curb of Street A, requiring passengers to cross Street A to reach the station entrance. Shuttles would load on the eastside curb. Since shuttles would be active primarily during peak weekday periods, private vehicles could also use the east side curb space on Street A during off-peak hours. Additional passenger loading could occur, if demand warrants, north of Street F. Garage access to parcels 8 and 9 remains on Street F; east of the garage entrances this street would be reserved for pedestrians and bicyclists (past the parking garage entrances).

Connectivity to the external street network would essentially be the same as under Alternative 1. There is not a direct connection or clear line of sight, which can increase safety, ease and appeal of transit, from transit along Bayshore Boulevard to the Caltrain Station. Bike access would be the least convenient of the alternatives; with most loading occurring on Street A, only a Class III facility could be accommodated. The most direct connection to Bayshore Boulevard would be via the public paseo/Street F. Comments received at the November 3rd public meeting stated that the Caltrain Station was too far to walk under this alternative and that the dead-end street could become a traffic nightmare.[14]

[14] The project team attempted to mitigate circulation issues at the dead-end street by shifting all passenger loading to Street A. The dead-end street would be for garage access and non-motorized travel only.

Figure 18 Bayshore Multi-Modal Facility Alternative 1



zone to Street A to eliminate conflicts in the cul-de-sac. Even with these operational improvements, this alternative would still have a smaller shuttle zone than the other alternatives.

Regarding connectivity to the external street network, the most direct connection between Bayshore Boulevard and the Caltrain Station would be via the public paseo/Street F which links to Visitacion Avenue, to be built in a later phase of the Schlage Lock development without a clear timeline for implementation. There is not a direct connection or clear line of sight, which can increase safety, ease, and appeal of transit, from transit along Bayshore Boulevard to the Caltrain Station. This quality differentiates it from the original Schlage Lock Open Space and Streetscape Master Plan (OSSMP), which extends Sunnydale Avenue in a straight line to the Bayshore Caltrain Station. Public comments received on this alternative included the observation that Caltrain to BRT on Bayshore Boulevard would be a long walk and that a path or walkway along the southern edge of the development, directly connecting Sunnydale Avenue, is desired.

Minimum Standards and Design Guidelines

Each concept alternative strives to meet minimum standards for operational efficiency, effectiveness, and safety, as shown in Figure 17. These minimum standards are specific requirements for the high-priority elements (e.g. four shuttle bays for the shuttle loading area element).

Figure 17 Desired Facility Elements: Design Principles

Category	Design Principle
Transit Operations	Minimum of four shuttle bays for 30' vehicles
	170' minimum for independent shuttle movement
	Maximize quality, size of waiting area
Multi-Modal Connectivity	Minimum 170' curbside pick-up space
	Direct connections for all modes (especially pedestrian and bike)
	Safe, secure bike paths
	Safe, secure pedestrian paths
	Wayfinding features
Vehicle Access	20' minimum clear-width
	30' design vehicle
Policy	Minimize impact on developable land
	Minimize encroachment on neighboring parcels

Other considerations, including geotechnical issues, utility conflicts, and development yields were incorporated in the feasibility analysis portion of this evaluation.

CONCEPT ALTERNATIVES

In order to accommodate the required design elements, the Planning Department recommended that four alternatives with different site layouts be explored to analyze how each one could incorporate the design elements and effectively address overall Multi-Modal Facility operations. The four concept alternatives are described as:

1. Modified Schlage Lock plan (pedestrian access through cul-de-sac)
2. On-street (Street A)
3. Loop road (Sunnydale Avenue/Street F)
4. "Tear drop" loop Multi-Modal Facility (Sunnydale Avenue)

Alternative 1 – Modified Schlage Lock Plan (cul-de-sac)

This facility concept (Figure 18) is fully contained within the City and County of San Francisco. In order to meet the facility requirements outlines above, the cul-de-sac radius is designed to allow for independent pull-in/pull-out of three 30-foot shuttles. The radius (58 feet) is larger than a recently proposed cul-de-sac from Schlage Lock's Phase I application (48 feet). This increase in street right-of-way does reduce the amount of developable land on parcels 8 and 9, but offers significantly improved vehicular operation on a dead-end street. This concept also moves the passenger loading

stakeholders, incorporated a wide range of multi-modal elements (e.g. shelters, public space, bike parking) and met minimum design standards (e.g. four shuttle bays when possible), as described below.

Desired Facility Elements

Every transit trip starts and ends with a walking trip. A Multi-Modal Facility should therefore be a place where people feel safe, comfortable, and can circulate with ease. All concepts were designed to be ADA-accessible and were developed with the following high-priority elements in mind:

Shuttle Loading Area: Refers to the location where first/last-mile shuttles would serve the Multi-Modal Facility. This would be a place easily and directly accessible by employee, community, senior, and paratransit shuttles.

Seating and Shelter: Refers to seating for waiting passengers and protection from the elements in the form of roofs, enclosed areas, or shade. This requirement was supported by the public, many of whom commented that the area can get very windy.

Passenger Loading Area: Refers to the location where private vehicles, taxis, and transportation network companies (TNCs) would serve the Multi-Modal Facility. This would be a place easily and directly accessible by vehicles.

Pedestrian Access: Refers to the availability of direct and safe walking paths to and from the Facility. This is very important given that the majority of users are expected to walk to the Facility and between transit modes. The facility area will include additional pedestrian-oriented elements layered on the Schlage street network, making walking trips safer, more comfortable, and direct.

Bicycle Access: Refers to the availability of direct and safe bicycling paths to and from the Facility, including connections to existing bicycle routes along Bayshore Boulevard, San Bruno Avenue, Blanken Avenue, Geneva Avenue, and Tunnel Avenue.

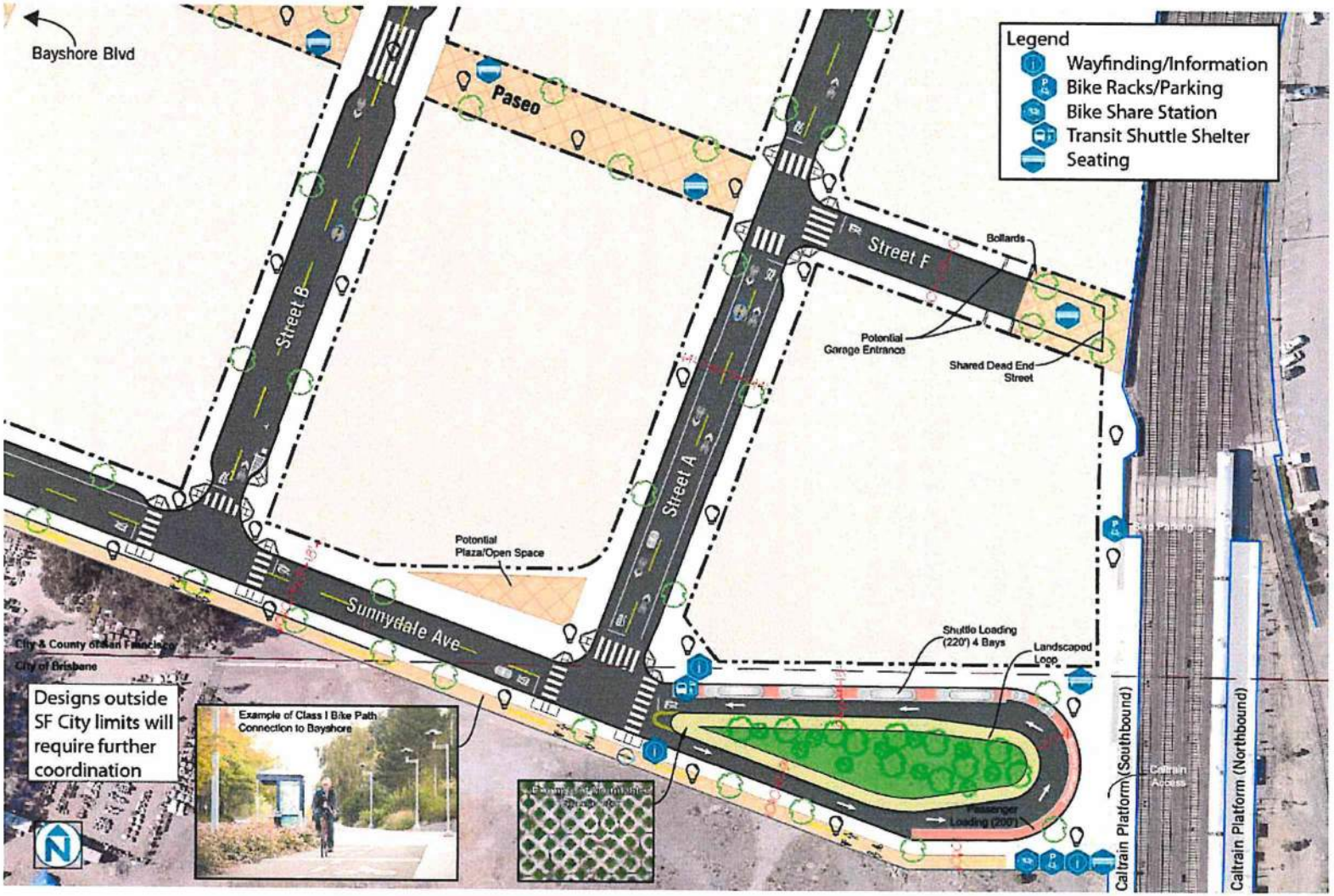
Bicycle Storage: Refers to the bicycle lockers and bicycle racks, and perhaps even bicycle storage rooms. Caltrain in particular has a large percentage of passengers who access its services by bicycle, suggesting a growing need for bicycle storage at this Facility as the area develops around it.

Bicycle Share: Refers to a Bay Area Bike Share kiosk. This would be a place where passengers could access or return shared bicycles. To be successful, at a minimum there would have to be multiple kiosks around the Bayshore area and in the Executive Park, Candlestick Point, and Hunters Point Shipyard developments.

Wayfinding: Refers to the signage placed strategically around the Facility area to direct people to the Multi-Modal Facility and within the Multi-Modal Facility to assist travelers to find specific modes and services.

Information Kiosks: Are street elements or furniture where travelers can find information related to services, routes, and fares.

Figure 21 Bayshore Multi-Modal Facility Alternative 4



Alternative 4 – "Tear Drop' Loop Multi-modal Facility (Sunnydale Ave)

This facility concept (Figure 21) is similar to Alternative 3: it creates a unique sense of place with its "tear drop" design and seamless connection to the Caltrain platform; passengers have easy access from Caltrain to shuttles and private vehicles, or vice versa, without having to cross even one street; it separates Caltrain-bound traffic from Schlage Lock retail/residential uses; and the Class 1 bike path on Sunnydale Ave provides a clear connection between the Caltrain Station and Bayshore Boulevard.

By re-envisioning the station loop road (see Alternative 3) as a "tear drop", this creates a Multi-Modal Facility that is primarily located in the City of Brisbane. By doing so, it offers the biggest footprint for developable land on the Schlage Lock site, and utilizes more developable land in Brisbane. It also maximizes the passenger waiting area amongst all the alternatives and offers the most direct sightline along Sunnydale Avenue: the Caltrain Station will be visible from Bayshore Boulevard.

This alternative was also well-received at the November 3rd public meeting, similar to Alternative 3. Community members especially liked the landscape potential, but compared to Alternative 3, felt that traffic issues would be more acute with the "tear drop" design than the larger loop road.

MULTI-MODAL EVALUATION APPROACH

This section describes the approach to the project team's evaluation of the likely benefits and impacts of the Multi-Modal Facility alternatives. To help understand fatal flaws, deficiencies, and to help rank and prioritize the concept alternatives, an evaluation framework and corresponding criteria were developed to analyze each. The framework consists of four main transportation-related categories: transit operations and performance, multi-modal connectivity, vehicular access, and policy and implementation considerations.

The concepts were developed to take into account existing and planned transportation services including:

- Caltrain commuter rail
- Geneva-Harney Bus Rapid Transit
- Local bus routes: Muni 8, 9, 56, and SamTrans 292
- Muni Metro T-Third line
- Employer/event shuttles
- Bicycles, bicycle storage, and bike sharing
- Pedestrian access
- Park & Ride/Kiss & Ride locations
- Taxi lane potential
- Carshare potential
- Bikeshare installation potential

At this time, there are no plans to divert fixed-route public transit (i.e. Muni, SamTrans) into the Schlage Lock Development site to serve the Multi-Modal Facility. However, while the designs do not specifically preclude these services, the physical constraints of Alternative 2 (dead-end street) and Alternative 4 (tight turning radius) could potentially inhibit the movements of transit buses.

Criteria and Metrics

Criteria are broken into two categories: benchmark metrics and performance characteristics. The benchmark metrics are used to comparatively evaluate the alternatives against one another and take into account operational and spatial needs in each alternative. They consist of quantitative measures, such as the number of bus bays, and qualitative elements, such as ease of implementation.

Criteria such as pedestrian experience, ease of navigation by user type, and consistency with area plans are also critical to the success of the Multi-Modal Facility; for this evaluation they are included as performance characteristics, or secondary metrics that help characterize the concepts but do not vary significantly for comparison purposes. The metrics included in the evaluation framework are shown below in Figure 22.

Figure 22 Multi-Modal Facility Evaluation Framework

Metric	Description	Benchmark	Performance Characteristic
Transit Operations & Performance			
Shuttle capacity	Number of independently accessible 30' bus bays	X	
Distance from Caltrain platform to connecting transit (closest stop in pair)	Walking distance to shuttles	X	
	Walking distance to Geneva-Harney BRT	X	
	Walking distance to Muni Metro T-Third		X
	Walking distance to Muni 8, 8BX, 9, 9R, SamTrans 292		X
Shuttle route directness	Number of turns from Bayshore Boulevard to Caltrain Station		X
Shuttle conflict potential	Severity of conflicts with other modes for station access (qualitative)		X
Multi-Modal Connectivity			
Distance from Caltrain platform to connecting mode	Walking distance to passenger loading	X	
	Distance to the bicycle network		X
Programming potential of waiting area and amenities	Programming of the space for all users		X
Programming potential of bike access	Facility type		X
Pedestrian experience	Sidewalk connection, ease of use		X
Sightline between Caltrain platform and Bayshore Boulevard	Clear sightline/directness		X
Vehicular Access			
Width of access lane	In feet	X	
Length of passenger loading and drop-off zone	In feet	X	
Internal roadway conflict and congestion potential	Potential for conflict between vehicles and all modes	X	
Route directness (in private vehicle)	Number of turns from Bayshore to Caltrain Station		X
Policy & Implementation Considerations			
Size of development parcel footprint	In square feet	X	
Development Potential	Based on street frontage and accessibility to the Caltrain Station and Bayshore Boulevard (qualitative)	X	
Ease of implementation	Based on administrative efforts and design considerations (qualitative)	X	
Consistency with Schlage Lock Plan	Is the alternative consistent with the original Schlage Lock Plan		X
Consistency with planning/design policy	Consistency with Phase 1 and regional TOD guidelines		X
Cost (i.e. 12% design)	Order of magnitude		X
Extent of facility sited in Brisbane	Original plans to stay within the SF City Limits preferred		X

EVALUATION RESULTS

The resulting evaluation details the strengths and weaknesses of each alternative based on the four transportation-related categories and their related performance metrics. All four concepts were designed to meet minimum design standards; thus minimum standards such as safety measures and ADA accessibility are not included in this evaluation. Any design concept with unsafe features or lacking ADA accessibility was removed from consideration or refined during the concept development stage to ensure minimum design standards were met. Figure 23 presents the legend used for scoring in the four primary categories.

Supporting data for quantitative measures can be found in the Appendix of this report.

Figure 23 Scoring Legend

○	Deficient
◑	Satisfactory
●	Ideal

Transit Operations and Performance

The metrics evaluated for transit operations and performance are shown in Figure 24. The defining strengths or weaknesses of each alternative are discussed below.

Figure 24 Transit Operations and Performance Metrics

Metric	Description	Benchmark	Performance Characteristic	Alt 1	Alt 2	Alt 3	Alt 4
Shuttle capacity	Number of independently accessible 30' bus bays	X		◑	●	●	●
Distance from Caltrain platform to connecting transit (closest stop in pair)	Walking distance to shuttles	X		◑	○	●	●
	Walking distance to Geneva-Harney BRT	X		○	○	◑	◑
	Walking distance to Muni Metro T-Third		X	○	○	◑	◑
	Walking distance to Muni 9, 9R, SamTrans 292		X	○	○	◑	◑
	Walking distance to Muni 8, 8BX		X	○	○	○	○
Shuttle route directness	Number of turns from Bayshore Boulevard to Caltrain Station		X	◑	◑	●	●
Shuttle conflict potential	Severity of conflicts with other modes for station access (qualitative)		X	○	◑	◑	●

The benchmark metrics include:

- The number of bays for 30-foot employer/event shuttles that can operate independently of one another. The number of desired shuttle bays was set at four. This would more than accommodate existing operations and this standard would also accommodate anticipated future activity when additional Caltrain service is projected.
- The walking distance between the Caltrain platform and the designated area for employer/event shuttles. With shuttles expected to provide first/last mile solutions for regional trips beginning or ending at the Bayshore Station, convenient and proximate access to/from Caltrain is a highly desired feature for many facility users.
- The walking distance between the Caltrain platform and the proposed Geneva-Harney BRT station on Bayshore Boulevard at Sunnydale Avenue (distance measured to northbound station). The Geneva-Harney BRT line would provide east-west connectivity through the Study Area between Balboa Park BART and Candlestick-Hunters Point Shipyard. It would be a logical connecting mode for regional trips south along the Peninsula Caltrain corridor.

Other performance characteristics reported include walking distance to other transit options on Bayshore Boulevard (closest stop relative to the Caltrain platform) and shuttle route directness and conflict potential. While there are multiple transit options on Bayshore Boulevard, the connection between Caltrain and the Geneva-Harney BRT line is the key connecting service; the other Muni routes (8, 8BX, 9, 9R, and T-Third) are focused on serving intra-city trips north to downtown SF, and SamTrans 292 parallels the Caltrain corridor. Although these routes demonstrate high ridership in the Study Area, they are not expected to have a high volume of transfers.[15]

Alternative 1

As part of the concept alternative development process, Alternative 1 widens the radius of the cul-de-sac proposed by the Schlage Lock developer (in the draft Phase I plan) to allow for independent shuttle operation. This design would provide enough curb space (170 feet) for three 30-foot shuttles to operate independently of each other. The four-shuttle standard would have required a larger cul-de-sac radius that would have taken away too much developable land from parcels 8 and 9. The potential for conflict for employer/event shuttles with other modes, and with each other, is higher than the other alternatives specifically due to the constraints of a cul-de-sac design. The walking distance required to transfer between the Caltrain platform and Geneva-Harney BRT is the longest under this alternative: a pedestrian would walk north to the paseo, then west to Bayshore Boulevard and south to Sunnydale Avenue or south on Street A to Sunnydale Avenue, then west to Bayshore Boulevard.

Alternative 2

This concept reduces the potential conflict and congestion in the cul-de-sac by moving the shuttle operations to Street A. This location allows for four shuttle bays, meeting the minimum standard of the desired facility elements. The drawback is that passengers transferring between Caltrain and shuttles have the longest most and indirect path to walk among all alternatives. Passengers transferring between Caltrain and Geneva-Harney BRT would follow the same indirect path as Alternative 1.

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[15] Ridership data used in this study was obtained from the *Geneva-Harney BRT Feasibility Study* (SFCTA, 2015) which analyzed Muni data from 2011. The Phase II Task 2.7 Memo presents this ridership data at the stop-level in the study area.

Alternative 3

This concept provides a direct path and clear sightline between the site of the future Geneva-Harney BRT stop at Bayshore Boulevard and Sunnydale Avenue to the Caltrain platform for pedestrians making transit connections. This alternative also offers a direct path for shuttles coming from Bayshore Boulevard to the station loop road that borders the Caltrain platforms, which reduces the potential for conflict between shuttles and other modes due to the station-serving nature of the loop.

Alternative 4

Similar to Alternative 3, this concept provides a direct route from Bayshore Boulevard for shuttles and pedestrians connecting to/from Caltrain. It also reduces the severity of potential conflict between shuttles and other modes compared to Alternatives 1 and 2, since all pick-up/drop-off activity is designed to occur within the tear-drop loop serving the Caltrain Station. It simplifies the shuttle routing from Bayshore Boulevard, allowing for ingress and egress to occur at the Sunnydale Avenue/Bayshore Boulevard intersection.

Multi-Modal Connectivity

The metrics evaluated for multi-modal connectivity are shown in Figure 25. The defining strengths or weaknesses of each alternative follow.

Figure 25 Multi-Modal Connectivity Metrics

Metric	Description	Benchmark	Performance Characteristic	Alt 1	Alt 2	Alt 3	Alt 4
Distance from Caltrain platform to connecting mode	Walking distance to passenger loading	X		◑	◑	●	●
	Distance to the bicycle network		X	○	○	●	●
Programming potential of waiting area and amenities	Programming of the space for all users		X	◑	○	●	●
Programming potential of bike access	Facility type		X	◑	◑	●	●
Pedestrian experience	Sidewalk connection, ease of use		X	○	○	●	●
Sightline between Caltrain platform and Bayshore Boulevard	Clear sightline/ directness		X	○	○	●	●

The benchmark metric identified in this category is the walking distance between the Caltrain platform and passenger loading area (i.e. private vehicles, taxis, transportation network companies). Pick-up/drop-off by private vehicles is expected to be a primary mode of access to Caltrain, and along with a designated shuttle loading zone, this is a necessary curb space component of the Multi-Modal Facility.

The performance characteristic metrics help evaluate the quality and functionality of the Facility for pedestrians and bicyclists. This group of metrics is important for ensuring that the Facility fosters a sense of place for users of all modes, and that connections between modes are as intuitive and user-friendly as possible.

Alternative 1

Space is allocated for passenger loading on Street A, however the location would require the second longest walk of the four alternatives. The cul-de-sac is not designated for passenger loading, but it will attract vehicles dropping off or picking up people and add to the congestion potential of this alternative. The cul-de-sac, while not directly adjacent to the Caltrain platform, provides a sense of place to users with its wide sidewalks and potential for a dedicated plaza area. Pedestrians and bicyclists will be required to travel between the back of a building to the west and the Caltrain tracks to access the Caltrain platform from Street F, which is less desirable than the pedestrian experience of Alternatives 3 and 4. Bicyclists could access Class II lanes south of Street F (cul-de-sac) and Class III lanes with sharrows to the north. As mentioned in the previous section, the design of this Facility alternative, in conjunction with the Schlage Lock site plan, would preclude a direct sightline between Caltrain and Bayshore Boulevard.

Alternative 2

As with Alternative 1, pedestrians and bicyclists will be required to travel between the back of Schlage Lock development on parcels 8 and 9 and the Caltrain tracks to access the Caltrain platform from Street F. The passenger loading area exceeds the minimum design standard but has been placed on the west side of Street A, requiring passengers to cross the street unlike under the other three alternatives. The wide sidewalks and limited access for vehicles east of Street A enhances the non-motorized experience on Street F, with street space dedicated to pedestrians and bikes east of the parcels 8 and 9 garage entrances. With loading on either side of Street A, there is no longer space for the Class II bike lane shown in Alternative 1, making the bicycle network slightly less attractive to users. Multi-modal connectivity is otherwise similar to Alternative 1. There is no direct sightline between the Caltrain Station and Bayshore Boulevard.

Alternative 3

This concept focuses on improving efficiency and convenience by locating the passenger loading area adjacent to the Caltrain platform and adding a Class I shared-use path along Sunnydale Avenue. The distance between the platform and a pick-up/drop-off is nominal for southbound Caltrain passengers; transferring between those modes does not require crossing a street for access. The station loop road also allows for more public space adjacent to the Caltrain platform. It offers a superior sense of place compared to Alternatives 1 and 2. Pedestrian and bicycle access to Bayshore Boulevard is direct and simple along the Class I shared-use path. Facility users can see the Caltrain platform from Bayshore Boulevard, and vice versa. Under this alternative, unlike the others, Facility users can access the Caltrain platform two ways: from the paseo/Street F or Sunnydale Avenue.

Alternative 4

Similar to Alternative 3, this concept enhances multi-modal connectivity by providing a one-way loop for efficient and convenient station circulation. Passenger loading is adjacent to the Caltrain platform. The "tear drop" design of the Facility offers the largest amount of space for public serving uses, and together with attractive landscaping inside the station loop road this alternative

would offer the greatest sense of place among the four concepts. Pedestrian and bicycle access to Bayshore Boulevard is direct and simple along the Class I shared-use path.

Vehicular Access

The metrics evaluated for vehicular access are shown in Figure 26. The defining strengths or weaknesses of each alternative follow.

Figure 26 Vehicular Access Metrics

Metric	Description	Benchmark	Performance Characteristic	Alt 1	Alt 2	Alt 3	Alt 4
Width of access lane	in feet	X		●	●	◑	◑
Length of passenger loading and drop-off zone	in feet	X		◑	◑	◑	◑
Internal roadway conflict and congestion potential	Potential for conflict between vehicles and all modes	X		○	○	◑	●
Route directness (in private vehicle)	Number of turns from Bayshore to Caltrain Station		X	◑	◑	●	●

There are three benchmark metrics identified in this category:

- Curb-to-curb roadway width requires a 20-foot minimum, set by the San Francisco Fire Department. But the design and ease of movement among modes in each alternative helps to dictate whether and where wider lanes might be desirable. The Multi-Modal Facility roadways were designed to be consistent with the OSSMP and to meet the minimum standard.
- Passenger loading is a high priority facility element. The longer the passenger loading zone, the more flexibility the Facility will have in accommodating a range of Caltrain service types. The desired minimum standard is 170 feet, or approximately eight vehicles. Since passenger loading/unloading at key transit stations often occurs where it is most convenient for the driver, it is imperative to encourage loading in designated areas by making those areas convenient and easily accessible zones.
- Internal roadway conflict potential is a qualitative metric (in lieu of microsimulation) that seeks to identify the alternatives that provide the most efficient circulation amongst all modes. In addition to station-bound traffic, each alternative maintains parcel 8 and 9 garage access, with varying degrees of mixing between the two types of traffic based on Multi-Modal Facility design.

Route directness is being reported as a performance characteristic to help identify which alternatives are most easily accessible from Bayshore Boulevard.

Alternative 1

Alternative 1 maintains at least a 26-foot wide lane throughout the facility. This concept moves the passenger loading zone to Street A to eliminate conflicts in the cul-de-sac. However, the cul-de-sac provides the most proximate area to load/unload Caltrain passengers and those motorists

together with shuttles, private vehicle ingress/egress from the garages of Schlage Lock parcels 8 and 9, and bicycles creates the greatest conflict potential of the four alternatives. Similar to pedestrians and bicyclists, motorists do not have a direct sightline to the Caltrain platform under Alternative 1.

Alternative 2

With no designated turnaround, Street F becomes ingress/egress only for parcels 8 and 9; all loading/unloading would occur on Street A. Shuttles would load on the eastside curb and private vehicles would load on the west side. Since shuttles would be active primarily during peak weekday periods, private vehicles could also use the curb space northbound on Street A. Additional passenger loading could occur, if demand warrants, north of Street F. Thus, this alternative has the most flexibility and space for passenger loading among the four alternatives.

Since Street A would accommodate passenger loading, shuttle loading, and local Schlage Lock trips there is potential for vehicular conflict; however, the northbound shuttle and southbound private vehicle loading areas help spread out the activity to help mitigate this concern. Similar to pedestrians and bicyclists, motorists do not have a direct sightline to the Caltrain platform under Alternative 2.

Alternative 3

This alternative is flexible from a vehicular access standpoint as the portion of the station loop road between Street F and Street A was designed specifically to enhance multi-modal access. It maintains an access way of at least 22 feet and traffic can circulate bi-directionally for station access. The primary passenger loading area is adjacent to the Caltrain platform and meets the minimum standard of 170 feet. The project team has identified optional passenger loading across from the designated area to accommodate additional demand, if warranted. Since the station loop road serves the Facility exclusively and passengers can access the platform without crossing streets, the conflict potential is minimized compared to Alternatives 1 and 2.

Alternative 4

Similar to Alternative 3, this concept includes a station loop road designed specifically to facilitate Caltrain transfers. The tear-drop design has a smaller radius than the loop in Alternative 3 and its interior would contain landscaping rather than developable land. Its one-way design provides an 11-foot travel lane with nine feet of mountable "grasscrete" in order to meet the minimum access lane width of 20 feet for fire access while minimizing the every-day need for space. Passenger loading would occur adjacent to the Caltrain platform with 200 feet designated but could be increased with a commensurate reduction in center landscaping. The one-way travel results in the lowest conflict potential of the four alternatives. On the curve adjacent to the Caltrain platform the lane width is 20 feet, which would allow for unobstructed circulation even if private vehicles are double-parked in front of the station.

Policy and Implementation Considerations

The metrics evaluated for policy and implementation considerations are shown in Figure 27. The defining strengths or weaknesses of each alternative follow.

Figure 27 Policy and Implementation Considerations Metrics

Metric	Description	Benchmark	Performance Characteristic	Alt 1	Alt 2	Alt 3	Alt 4
Size of development parcel footprint	In square feet	X		◑	●	◑	●
Development Potential	Based on street frontage and accessibility to the Caltrain Station and Bayshore Boulevard (qualitative)	X		◑	○	◑	●
Ease of implementation	Based on process and design considerations (qualitative)	X		●	◑	◑	◑
Consistency with Schlage Lock Plan	How consistent is the alternative with the original Schlage Lock Plan?		X	◑	●	○	●
Consistency with planning/design policy	Consistency with Phase 1 and regional plans and TOD guidelines		X	○	◑	●	●
Cost (i.e. 12% design)	Order of magnitude		X	●	●	◑	◑
Extent of facility sited in Brisbane	Original plans to stay within the SF City Limits preferred		X	●	●	◑	◑

The benchmark metrics in this category include:

- The developable size of the Schlage Lock parcels 8 and 9 with the inclusion of the facility alternative as designed. Generally, the better the Facility the larger the land area it will consume.
- The development potential, which is a qualitative assessment of synergy between mixed-use development and the Facility itself.
- The ease of implementation takes into account process and design considerations, such as whether the approval, construction, and maintenance would be a multi-jurisdictional effort.

Other metrics reported include each alternative's consistency with Schlage Lock's approved plan, consistency with regional plans and policies,[16] order of magnitude cost, and the estimated square footage of the Multi-Modal Facility that would fall within the City of Brisbane.

Alternative 1

This concept is completely contained within the City/County of San Francisco. In order to accommodate multi-modal activity, the cul-de-sac reduces the amount of developable land on

[16] Regional plans and policies reviewed for consistency are documented in the *Phase I Memo, Appendix A: Data Collection* (Stantec, December 2015).

parcels 8 and 9. The cul-de-sac does provide greater development potential than Alternative 2 and would be easy to implement, relative to the other alternatives.

With regards to the other policy and implementation performance characteristics, Alternative 1 could be implemented at a relatively low order of magnitude cost and is consistent with an interim proposal by the Schlage Lock developers. However, compared to the other alternatives, the cul-de-sac it is not as consistent with regional design policy guidelines that are meant to ensure multi-modal facilities are sustainable and efficient.

Alternative 2

This concept is also completely contained within the City/County of San Francisco. With the removal of the cul-de-sac in favor of placing all passenger loading onto Street A, this alternative maximizes the amount of developable land on parcels 8 and 9. However, a consequence of removing the cul-de-sac is a negative impact on development potential along the Street A since street-fronting residential uses would be less desirable in front of passenger loading zones. It would be easy to implement, since Street F east of Street A is most consistent with the original Schlage Open Space Streetscape Master Plan (OSSMP). However, this alternative deviates from the original OSSMP in that Sunnydale Avenue would not connect directly to the Caltrain station and curbs on Street A would prioritize multi-modal operations.

Similar to Alternative 1, Alternative 2 could be implemented at a relatively low order of magnitude cost.

Alternative 3

This alternative expands the Multi-Modal Facility footprint with the creation of a station loop road. With this design, the amount of developable land on parcel 9 is reduced compared to the other alternatives. It also encroaches into the City of Brisbane (approximately 26,000 square feet). From a development potential perspective, this alternative removes Facility elements from Street A, allowing for curb use more consistent with residential building frontages. With its new street network, wider sidewalks, and plaza in the southeast corner, this alternative would have the highest construction costs.

This alternative has more implementation challenges than the other three alternatives, because it includes new streets, reduces developable land on parcel 9, and would require coordination and agreement with the City of Brisbane and the Brisbane Baylands landowner. It is less consistent with the Schlage Lock site plan than the other three alternatives but is consistent with regional guidelines, by including elements such as direct sightlines, expanding the street grid, and street space dedicated to solely to the Multi-Modal Facility and its users.

Alternative 4

This Facility concept is almost fully located outside of San Francisco City and County lines (41,000 square feet) and would offer the most developable land on parcels 8 and 9. Thus it is consistent with the Schlage Lock site plan but this concept would trade developable land is Schlage Lock with developable land on the Brisbane Baylands site. However, the multi-modal access, amenity and circulation benefits it would offer to potential future development in Brisbane is justifiable. Similar to Alternative 3, this alternative removes facility elements from Street A, allowing for curb uses more consistent with residential areas and moves them to Sunnydale Avenue. This alternative requires coordination and agreement with the City of Brisbane and the Brisbane Baylands landowner, and has several implementation challenges similar to Alternative 3. This alternative would have a higher cost of construction than

Alternatives 1 and 2, and depending on construction costs of the roadway, could surpass Alternative 3 as the most expensive.

It is consistent with regional guidelines, including direct sightlines, convenient pedestrian and bicycle connections, and street space dedicated to solely to the Multi-Modal Facility and its users.

Multi-Modal Evaluation Summary

This evaluation found that none of the alternatives have a fatal flaw with regards to transit operations and performance, multi-modal connectivity, vehicular access, or policy and implementation considerations as evaluated. However, significant differences between the alternatives manifested among certain performance characteristics.

Regarding the potential for conflict and internal roadway congestion between vehicles and other modes, Alternatives 1 and 2 were deemed "deficient," while Alternative 3 was "satisfactory" and Alternative 4 received an "ideal" score. Alternatives 1 and 2 were also "deficient" when evaluated for their walking distance to Geneva-Harney BRT, Muni Metro, and Muni routes 9, 9R, and SamTrans 292 while Alternatives 3 and 4 both received "satisfactory" scores.

Alternatives 3 and 4, with their expanded footprint and new, multi-modal streets would require construction in the City of Brisbane, requiring significant coordination and contractual agreements. Alternatives 1 and 2 could be constructed at a much lower order of magnitude cost and would be easier to implement than Alternatives 3 and 4.

However, Alternatives 3 and 4 consistently ranked higher than Alternatives 1 and 2 in operations, functionality, non-motorized connectivity, and consistency with regional guidelines. Alternatives 3 and 4 provide a greater sense of place and offer more land area for Facility elements such as shelters, waiting area/benches, landscaping, wayfinding, kiosks, etc. since they connect directly to the southbound Caltrain platform.

TECHNICAL FEASIBILITY ASSESSMENT

The project team also analyzed the feasibility of all four Multi-Modal Facility concepts to determine opportunities, constraints, and any fatal flaws with respect to the following key technical considerations:

- Grades and geotechnical considerations
- Order of magnitude cost estimates for Multi-Modal Facility elements
- Potential utility conflicts with relation to underground utilities and loading factors for Multi-Modal Facility elements
- Waiting and walking areas
- Ability to expand to accommodate other transportation uses and increased demand

Since the alternatives have much in common and include the same set of required Multi-Modal Facility elements, the feasibility assessment focused on areas where differences in the alternatives were significant. Specific refinements for each alternative were also considered as part of this review.

Feasibility Assessment Results and Findings

The following sections detail the findings for each alternative as it relates to the areas of analysis listed above. Opportunities and challenges for each alternative are the centerpiece of this feasibility assessment, and are noted for each alternative.

Grades and Geotechnical Considerations

The four alternatives' site layouts were analyzed with respect to the grading plan in the proposed Schlage Lock Plan to determine if any fatal flaws existed with any new roadway layouts and Multi-Modal Facility designs. The elevation of the existing Caltrain platform is slightly lower than the planned Schlage Lock site, and grading up to the desired height needed to be considered.

The street configuration and access to the Bayshore Caltrain station in Alternative 1 are nearly the same as Schlage Lock's proposed Phase I construction drawings. The fundamental difference is the need for a larger cul-de-sac radius. Due to these consistencies, grading or geotechnical conflicts are not anticipated. Since Alternative 2 is also largely consistent with the Alternative 1 and Schlage Lock's proposed Phase I drawings, it is assumed that grading will not be an issue for this Alternative either.

Alternative 3 contains a roadway alignment that is different from the other alternatives by creating a parallel roadway adjacent to the Caltrain platform. Because the Caltrain platform is lower than parcel 9 to the west, a cross-sloped roadway will need to be constructed to match the desired height of the block. If the cross slope is too great, a stepped entrance may have to be created at parcel 9 to accommodate the elevation gain to the ground level of the building.

The grading in Alternative 4 will be similar to that of Alternative 3 along Sunnydale Avenue. Because these designs move across City limits, site grading efforts would need to consider the placement of retaining walls per Schlage Lock's proposed design.

Potential Utility Conflicts and Vehicle Loading Factors

The alternatives were evaluated with respect to any changes in the Schlage Lock Plan that may cause issues or concerns with the proposed underground utility plan as well as examined the feasibility of accommodating Multi-Modal Facility loading on the physical roadbed. It was determined that all alternatives are not expected to alter the existing Schlage Lock Plan's roadway alignment significantly enough to require complete redesign of future underground utilities. Alternatives 3 and 4 contain additional roadway segments and blocks which will require additional utilities underground, but are not expected to conflict with the Schlage Lock Plan utilities and may introduce additional opportunities for tie-ins beneath the new block segments.

Shuttle loading areas would ideally need to be constructed with appropriate concrete bus pads to endure the load of shuttle operations over time. These concrete pads are the same type as the ones used at Muni stops and some general purpose vehicle parking lanes. Typically, an eight- to nine-foot concrete pad is constructed adjacent to the curb where the heavy vehicle will stop and start. The feasibility analysis concluded that concrete bus pads can be constructed at the shuttle loading areas for each alternative, including any passenger loading areas that may warrant them to withstand heavy vehicle use. Curved roadway segments where frequent shuttle stopping may occur can also be constructed in this manner.

Waiting and Walking Areas

Alternative 1 provides a relatively short walking distance for shuttle passengers from the cul-de-sac loading area, while people utilizing the passenger loading area will need to walk further if they are dropped off on Street A. The single access point at the end of the cul-de-sac constrains access and creates a longer journey for people walking and biking from west of Bayshore Boulevard. The physical constraints of the access way itself may also create an undesirable place to walk, depending on the footprint of parcel 8, its frontage, and pathway design elements. This alternative provides the least amount of sidewalk space for waiting areas and amenities like

seating, bicycle parking, and a bike share station. Due to these constraints, some Multi-Modal Facility elements may be less substantial than in other alternatives.

In Alternative 2, the walking distances are longer and waiting areas for both vehicle and shuttle passenger loading are less desirable than in Alternative 1. In addition, the walking and biking routes to the Caltrain platform require walking around a building block in an indirect path from Sunnydale Avenue, as in Alternative 1. When compared to the cul-de-sac in Alternative 1, the additional pedestrian and shared spaces in Alternative 2 can accommodate more Multi-Modal Facility amenities, such as seating, bicycle parking, and bike share pods. The additional space, however, is not at the Caltrain station itself and may be an undesirable waiting area for Caltrain passengers.

A more open transition between the roadway and the Caltrain platform is introduced in Alternative 3, as opposed to the constrained access ways in Alternatives 1 and 2. This alternative provides unconstrained access to Caltrain from Sunnydale Avenue, all points along the loop road. Alternative 3 offers the most direct access for people walking and biking from Bayshore Boulevard through a proposed mixed-use path on Sunnydale Avenue. Because of the new loop road's curve to the north at the Caltrain Station, a large section of open sidewalk space can be utilized for the required Multi-Modal Facility elements, such as bicycle parking, waiting areas, and a bike share pod.

Alternative 4 also provides the same direct access as Alternative 3 for people walking and biking from Bayshore Boulevard and to the west through a proposed mixed use path on Sunnydale Avenue. The location of both the shuttle loading and passenger loading offer a close proximity to the Caltrain platform. Access via Street F and the east side of parcel 8 will remain, providing access for pedestrians and cyclists from the north. The end of the "tear drop" loading area provides an open transition between the roadway and the Caltrain platform, and allows for the greatest amount of sidewalk space for waiting areas and placement of Multi-Modal Facility elements.

Ability to Accommodate Increased Demand

Alternative 1 differs from the other alternatives in that the cul-de-sac shuttle bays can only support three independent loading operations. This could become a capacity issue in the future if there is an increase in shuttle demand. Operationally, the future placement of potential parking garage access points in the cul-de-sac may create conflicts during peak hours when general purpose traffic is mixed with the 3 shuttle bays. There may also be delays during the peak hours at the Street A and Street F intersection with shuttles and garage traffic exiting along with passenger loading, however it is not anticipated to be significant. Another constraint in Alternative 1 is the ability to expand the Multi-Modal Facility to accommodate increased demand. Limited public space is available to install additional amenities such as bicycle parking, bus shelters, and seating. There are few locations to repurpose for additional shuttle loading curb space if needed, all of which are designated for on-street parking. The building footprint set against a narrow access point to the Caltrain station provides further constraint that cannot be expanded in the future if needed.

Alternative 2 also contains a design that causes the building on parcel 8 to constrain an already narrow access point to the Caltrain station, and limits further expansion of the Facility or its elements in the future. There is some, but limited, curb space on Street A that can be repurposed for additional shuttle or passenger loading if future demand warrants it. Because of the separated, bi-directional passenger loading and shuttle operations in comparison to Alternative 1, traffic operations are not anticipated to create conflicts if there is increased demand.

Alternative 3's plaza feature at the southeast corner of the Multi-Modal Facility offers more open space for street amenities and their expansion if necessary. Because this space is adjacent to the Caltrain platform, it would be easier to swap out different features as demand dictates in the future. An example of this would be adding additional bike share infrastructure or seating. Expansion of curb space for additional passenger loading and shuttle loading operations would be as challenging as Alternatives 1 and 2, and would likely take from on-street parking planned on Street A. It is important to note that Alternative 3 creates new curb space for passenger loading and shuttle operations, so the net change if expansion is necessary would be less severe than in Alternatives 1 and 2.

The "tear drop" feature in Alternative 4 contains a similar amount of space for expansion of multimodal amenities as demand warrants, however allocating additional curb space for additional passenger loading or shuttle operations may require space to be taken from planned on-street parking on Street A. The planned curb space for passenger loading and shuttle operations is technically on the same side of the roadway on the same street and gives the unique opportunity to adjust the proportion of curb space allocated to passenger loading and shuttle operations as demand changes over time.

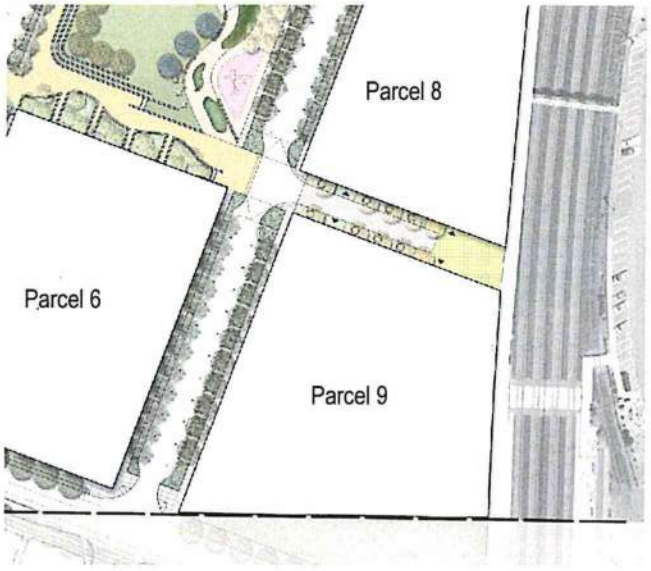
Development Yield Comparison

Each alternative yields a different amount of developable area surrounding the Multi-Modal Facility. A summary of each parcel's developable area by alternative can be found in Figure 28 below. The values are an approximation and will ultimately vary based on final designs, sidewalk widths and other easements. A reference of parcel numbers from the site developer can be seen in Figure 29 below.

Figure 28 Developable Area Comparison

Parcel	Alternative			
	1	2	3	4
8	31,800	36,400	38,900	38,900
9	51,900	58,100	47,900	55,900
Approximate total square footage of developable space	83,700	94,500	86,700	94,700

Figure 29 Blocks Immediately Around Facility



Conceptual Cost Estimate

A planning-level cost estimate was created to highlight the differences in costs associates with construction of the four alternatives. The layout of the cost estimate separates out the costs of construction line items that are common to all four alternatives and those that are specific to each individual alternative.

Because the Multi-Modal Facility is located on the southeast corner of the Schlage Lock site, only the costs surrounding the Facility are listed in the estimate in Figure 30 below. The itemized list contains elements located from Street B on the west to the Bayshore Caltrain Station on the east, and the City Limits (or edge of site) on the south to Street F on the north. The exception to these limits is the pedestrian and bicycle pathway along Sunnydale Avenue from Bayshore Boulevard to the Caltrain Station. It is assumed that any roadway and utility construction outside of the Multi-Modal Facility area will be constructed in the same manner for all four alternatives. Site grading for the entire site is assumed to be completed with similar effort for all four alternatives regardless of the roadway layout and is also not listed in the cost estimate.

The conceptual cost estimate shows many similarities in the alternatives. This is expected, as the Multi-Modal Facility requirements determined during the planning phase of this project set minimum criteria for amenities that were placed in the site plan for each alternative. Special attention was given to allow for adequate street and sidewalk space for these features, and the cost estimate reflects the estimated maximum number of each item that would be allowed to be placed given the space provided for each alternative. The overall cost of Alternatives 1 and 2 are lower partly because of the lack of space available to provide as many required Multi-Modal Facility elements as in Alternatives 3 and 4.

A major component that causes the cost of Alternatives 3 and 4 to be higher is the mixed-use path from Bayshore Boulevard to the Caltrain Station. This feature is an enhancement to the bicycle network over traditional bicycle lanes, and its cost could be offset by constructing a narrower street without bicycle lanes on Sunnydale Avenue. Note that roadway construction costs were not included as part of this analysis, so the offsetting cost is not calculated as part of the proposed mixed-use path in Alternatives 3 and 4.

Figure 30 Bayshore Multi-Modal Facility Conceptual Cost Estimate

ITEM	ALTERNATIVE	UNIT	QUANTITY	UNIT COST	TOTAL COST
Bike racks	1	EA	10	$650	$6,500
	2	EA	10	$650	$6,500
	3	EA	20	$650	$13,000
	4	EA	20	$650	$13,000
Bike lockers, on-demand	1	EA	10	$8,000	$80,000
	2	EA	10	$8,000	$80,000
	3	EA	20	$8,000	$160,000
	4	EA	20	$8,000	$160,000
Bus shelters	1	EA	3	$25,000	$75,000
	2	EA	4	$25,000	$100,000
	3	EA	4	$25,000	$100,000
	4	EA	4	$25,000	$100,000
Enhanced lighting around Multi-Modal Facility	1	LF	1310	$450	$589,500
	2	LF	1310	$450	$589,500
	3	LF	1290	$450	$580,500
	4	LF	1390	$450	$625,500
Conduit for Multi-Modal Facility lighting	1	LF	2390	$60	$143,400
	2	LF	2390	$60	$143,400
	3	LF	2580	$60	$154,800
	4	LF	2490	$60	$149,400
Pedestrian and bicycle pathway on Sunnydale	3	SF	8000	$60	$480,000
	4	SF	8000	$60	$480,000
Wayfinding signage (materials)	All	EA	15	$500	$7,500
Information kiosk (digital)	All	EA	1	$5,000	$5,000
Bikeshare station	All	LS	--	--	--
Grasscrete (Alt. 4 only)	4	SF	4500	$10	$45,000
Enhanced Planted Median (Alt. 4 only)	4	LS	--	--	$200,000

Figure 31 Bayshore Multi-Modal Facility Conceptual Cost Estimate

MULTIMODAL FACILITIES SUBTOTAL	1	$906,900
	2	$931,900
	3	$1,500,800
	4	$1,785,400
MULTIMODAL FACILITIES + MARKUPS (30%)	1	$1,178,970
	2	$1,211,470
	3	$1,951,040
	4	$2,321,020
ROADWAY COST ESTIMATE	1	$4,000,000
	2	$4,000,000
	3	$4,500,000
	4	$4,500,000
ROADWAY + MM FACILITIES + MM MARKUPS	1	$5,179,000
	2	$5,211,000
	3	$6,451,000
	4	$6,821,000
TOTAL COST (W/ SOFT COSTS)	1	**$6,379,000**
	2	**$6,411,000**
	3	**$7,801,000**
	4	**$8,171,000**

5 FACILITY AND AREA CONNECTIVITY ASSESSMENT

Regardless of the alternative chosen as the preferred design, the design process must also address access and connectivity issues between Study Area land uses, connecting transit, and the Multi-Modal Facility. This section qualitatively assesses these issues and makes high-level recommendations to enhance access and connectivity to, from, and around the Bayshore Caltrain Station. The preferred location for the Bayshore Multi-Modal Facility can be found in Figure 16.

NON-MOTORIZED CONNECTIVITY ASSESSMENT: BARRIERS AND OPPORTUNITIES

As the neighborhood and southeast San Francisco grows, walking and biking connections to a future Multi-Modal Facility are essential to creating transportation choices for existing residents and future households. For the purposes of this assessment, access to land uses surrounding the Multi-Modal Facility are framed under cardinal directions relative to the Facility including:

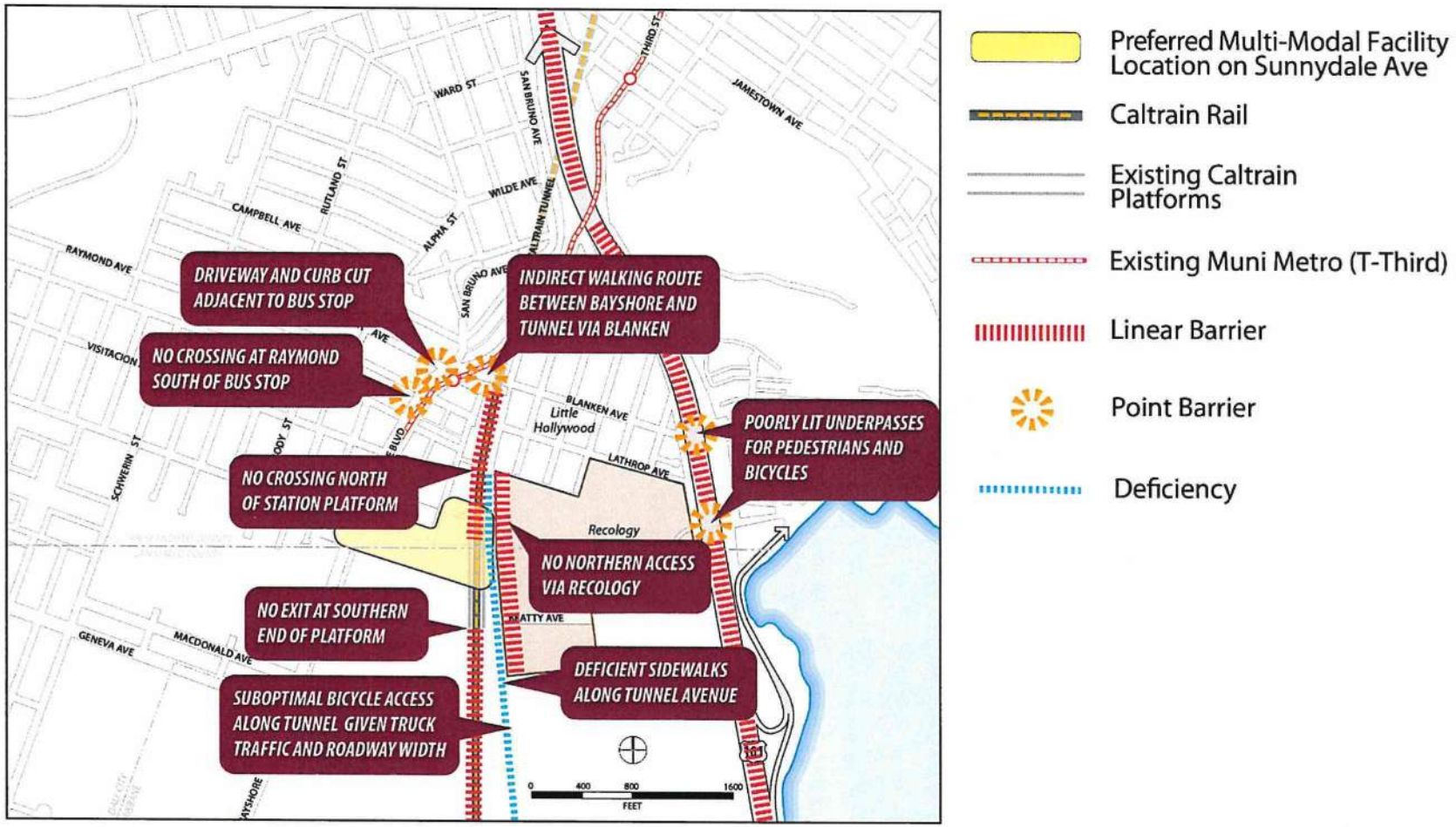
- Existing residences to the **west** of Bayshore Boulevard (i.e. the Visitacion Valley neighborhood);
- Potential commercial areas to the **south** of the City-County line (i.e. the Brisbane Baylands project) and the Brisbane commercial core located on Bayshore Boulevard;
- Existing residences and employment to the **east** of Tunnel Avenue and Bayshore Boulevard (i.e. Recology, Executive Park, and Candlestick Point); and
- Existing residences to the **north** of Arleta Avenue and Blanken Avenue (i.e. the Little Hollywood neighborhood).

This qualitative assessment looks at access to the various land uses and land use types to the west, south, east, and north of the Multi-Modal Facility location and recommends improvements that increase convenience, comfort, and safety for non-motorized modes, such as walking and biking.

The development of the Schlage Lock street network provides opportunities for greater walkability to and around the Multi-Modal Facility. However, the existing area surrounding the facility site still presents many barriers to the convenience, comfort, and safety of users who will be walking and biking to the Facility. These barriers, as shown in Figure 32, consist of linear barriers (such as wide and high-speed rights-of-way and property fences), point barriers (such as dangerous intersections), and deficiencies (such as non-existent or currently dilapidated sidewalks).

The barriers and opportunities for Facility access via non-motorized transportation are described below and are categorized by the direction of travel to and from the Multi-Modal Facility site.

Figure 32 Barriers for Pedestrian and Bicycle Access



Access from West

Barriers

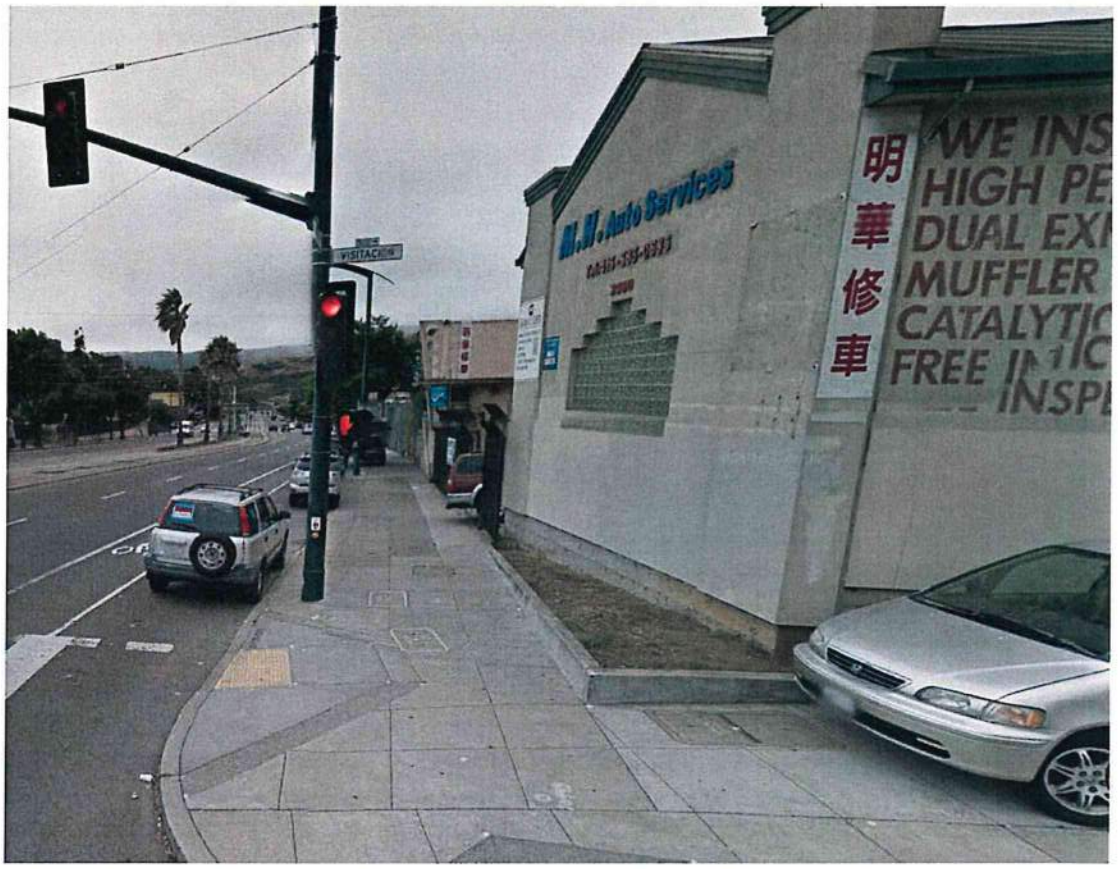
- In general, connections to points west require crossing Bayshore Boulevard (as well as the right-of-way for the T-Third light rail line). As shown in Figure 33, Bayshore Boulevard is a busy corridor for many vehicles, some of which are travelling at speeds over the limit of 35 miles per hour.
- Overall, the pedestrian experience up and down Bayshore Boulevard is lacking in appeal, and faces many safety compromises in the form of curb cuts for businesses ingress and egress, as well as encroachment of vehicles on the sidewalk space besides auto-oriented businesses along the west side of Bayshore Boulevard near Visitacion Avenue (see Figure 34).

Figure 33 Bayshore Boulevard facing north towards Blanken Avenue[17]



[17] Source: Nelson\Nygaard (all NN pictures taken in September 2016)

Figure 34 Bayshore Boulevard facing south from Visitacion Avenue[18]



- There is little comfort for pedestrians or safe sense of enclosure due to a lack of active pedestrian-oriented storefronts. Amenities are lacking along the street frontage zone, such as benches, planters, and short-term bicycle racks.
- Although they are clearly marked in the roadway, the bicycle facilities along Bayshore Boulevard, also pictured in Figure 33 and Figure 34 above, lack physical protection from vehicular traffic, as well as parked and stopping vehicles (both legally and illegally).

Opportunities

- The Bayshore Boulevard corridor, and approaches from the west may benefit from for more clearly marked and protected bicycle lanes, especially upon approach to major transit nodes.
- Immediately to the west of Bayshore Boulevard, connections can be easily made with the commercial corridor of Leland Avenue (pictured in Figure 35). The crossing with Leland is the only signalized crossing of Bayshore Boulevard between Arleta Avenue and Visitacion Avenue.
- The block of Leland Avenue immediately west of Bayshore is a positive example of recently designed streetscaping standards that provide accessible paths of travel, safe and

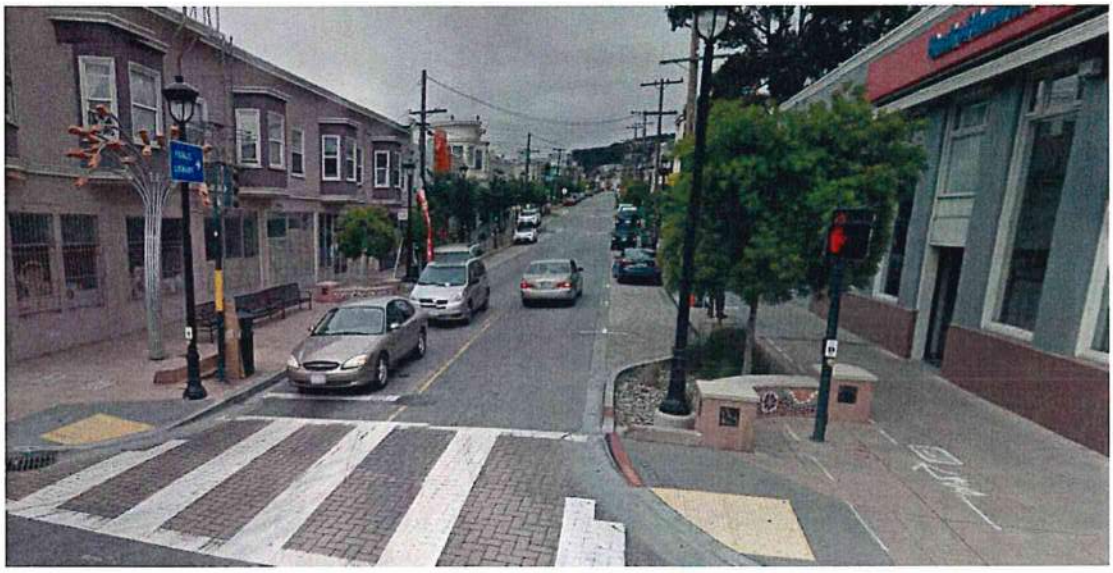
[18] Source: Google (All pictures taken in 2016)

convenient on-street bicycle parking, effective drainage, clearly designated and metered on-street parking, human-scaled street lighting, street trees, seating areas, public art, and textured crosswalks for greater driver awareness of pedestrians (pictured in Figure 36).

Figure 35 Leland Avenue facing northwest from Bayshore Boulevard[19]



Figure 36 Leland Avenue facing west from Bayshore Boulevard[20]



Access from South

Barriers

- Tunnel Avenue, south of the City-County line, lacks complete sidewalks on either side, as evidenced in Figure 37.

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[19] Source: Nelson\Nygaard

[20] Source: Google

Figure 37 Tunnel Avenue, facing north towards City-County line[21]



Opportunities

- Multi-Modal Facility users could use Tunnel Avenue or Bayshore Boulevard to access the Facility from points south—particularly the City of Brisbane's commercial district via Bayshore Boulevard. Tunnel Avenue is also a Class III bike route and provides the direct bicycle access to central Brisbane via Old County Road and the Bay Trail via Lagoon Road and Sierra Point Parkway.
- The west side of Bayshore Boulevard has pedestrian infrastructure stretching as far south as the Brisbane City limit, just past the intersection with Geneva Avenue.
- The most tangible bicycle infrastructure surrounding the site is a Class II on-street marked bicycle lane along Bayshore Boulevard. This is a logical opportunity for additional marked and protected lanes to provide lateral connections, wayfinding signage oriented to bicycle routes and major transit nodes, and possible changes in textures/paint to encourage greater driver awareness of non-motorized travelers for safety purposes.

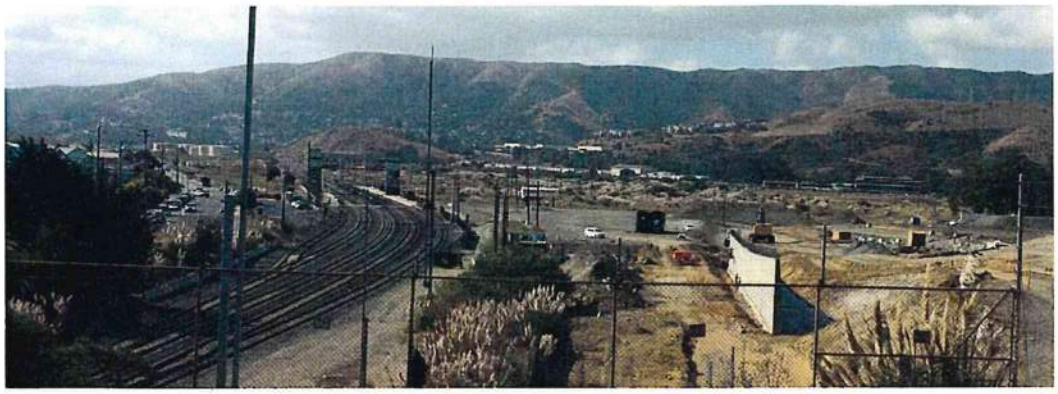
Access from East

Barriers

- The greatest challenge of accessing the Facility site from the east is the self-evident barrier caused by the railroad right-of-way (pictured in Figure 38). To cross the tracks, one must either use the Caltrain pedestrian bridge (constructed in 2004) to the south, or walk north to Blanken Avenue. If one were to take the Blanken Avenue route from the facility site, their route would be an indirect one (which is described in the section detailing northern access north below).

[21] Source: Google

Figure 38 Caltrain Right-of-Way Facing South from Blanken Avenue[22]



- Immediately adjacent to the existing Caltrain station platform, along the parking spaces serving the station (shown in Figure 39), the pedestrian facilities have a path of travel that is barely sufficient for Americans with Disabilities Act (ADA) standards. The constrained path of travel, caused by the placement of utility poles and protective fencing, could be easily subject to blockage by foreign objects or debris.

Figure 39 Caltrain station parking lot facing south toward platform[23]



- Beyond the immediate station, a key access need to and from the east includes Executive Park. Getting to that location, however, necessitates crossing the US-101 (also known as the Bayshore Freeway).
- Although there is a Class III signed bicycle route providing access from points east beyond the US-101 overpass to the station via Alana Way and Beatty Avenue (which is also the most direct route between the Caltrain station entrance and Executive Park), it appears that there are no visible markings or protections for bicyclists.
- Additionally, there are non-existent sidewalks along the Alana Way underpass, as shown in Figure 40, as well as along Beatty Avenue, shown in Figure 41.

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[22] Source: Nelson\Nygaard

[23] Source: Nelson\Nygaard

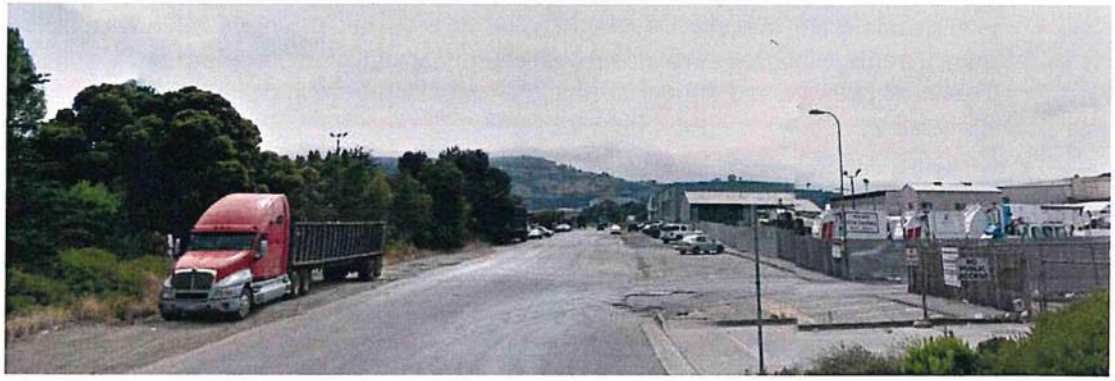
Opportunities

- The Alana Way and Beatty Avenue segment, which is technically part of Bicycle Route #805, was identified in the 2009 San Francisco Bicycle Plan as a "long-term bicycle improvement project."

Figure 40 Alana Way under the US-101 overpass facing east[24]



Figure 41 Beatty Avenue facing west towards the Bayshore Station[25]



Access from North

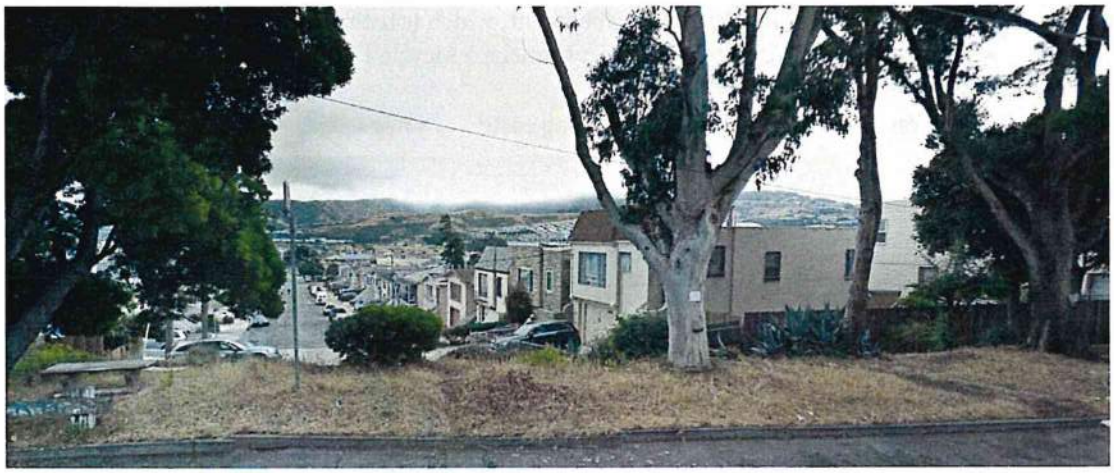
Barriers

- US-101, Recology site, and the topography stretching from the Excelsior District, through McClaren Park, and Candlestick Point all act as major barriers for access from the north and portions of Little Hollywood. Pedestrians and bicycles coming from the north are essentially forced onto Bayshore Boulevard or Tunnel Avenue to access the Schlage Lock Development or the Bayshore Caltrain Station. There are some shortcuts at dead ends in the street grid that allow non-motorized passage; however, like in Figure 42, these paths of travel are not paved or ramped, and are therefore not accessible to contemporary standards.

[24] Source: Google

[25] Source: Google

Figure 42 Hester Avenue facing south towards Wheeler and Blanken Avenues[26]



- To get to the Facility site walking south along Bayshore, one will have to cross Bayshore Boulevard. In all likelihood, the crossing may occur at the intersection involving Blanken Avenue. This intersection has an irregular design, complex signal timing, multiple transit routes, and the site of multiple pedestrian collisions (as detailed in the safety section below). Additionally, the current sidewalk conditions of Blanken Avenue between Bayshore Boulevard and Tunnel Avenue, shown in Figure 43, are uneven and inaccessible.
- Without a design improvement in the Schlage Lock street grid (see below) people would be forced to turn west onto Raymond Avenue until Bayshore Boulevard, and then backtrack (or decide to take an eastern route walking up Tunnel Avenue altogether). This is inconvenient to some walking routes that terminate in Little Hollywood.

Figure 43 Blanken Avenue facing west toward Bayshore Boulevard[27]



[26] Source: Google

[27] Source: Nelson\Nygaard

Opportunities

- The most direct path to the facility site from the north is currently not included in the plans for the Schlage Lock development. If space permits, there could be a direct pedestrian connection through a public space from the corner of Street A and Raymond Avenue to Blanken Avenue (pictured in Figure 16), parallel to the railroad right-of-way and coordinated with any public space adjacent to the old office building. Alternatively, the pedestrian connection could be negotiated with the owner of the adjacent parcel.

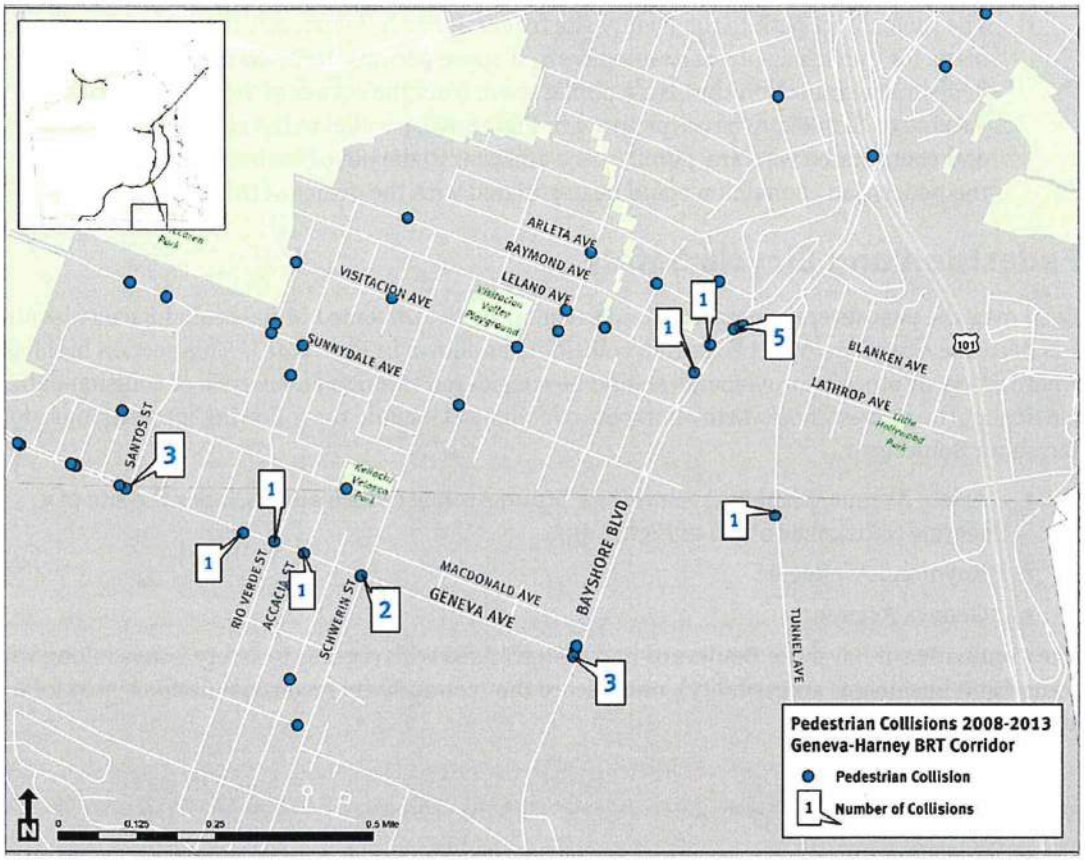
Pedestrian and Bicycle Safety

Even over the past several years, the area surrounding the preferred Multi-Modal Facility location has been the site of multiple pedestrian collisions (as shown in Figure 44). This section highlights where safety or other improvements should be considered through an analysis of collision data. In particular, the nearest, noteworthy hotspots of collisions include the following intersections along Bayshore Boulevard:

- Arleta Avenue/Blanken Avenue/San Bruno Avenue (which also includes the site of a bicycle collision as noted in Figure 45)
- Raymond Avenue
- Geneva Avenue

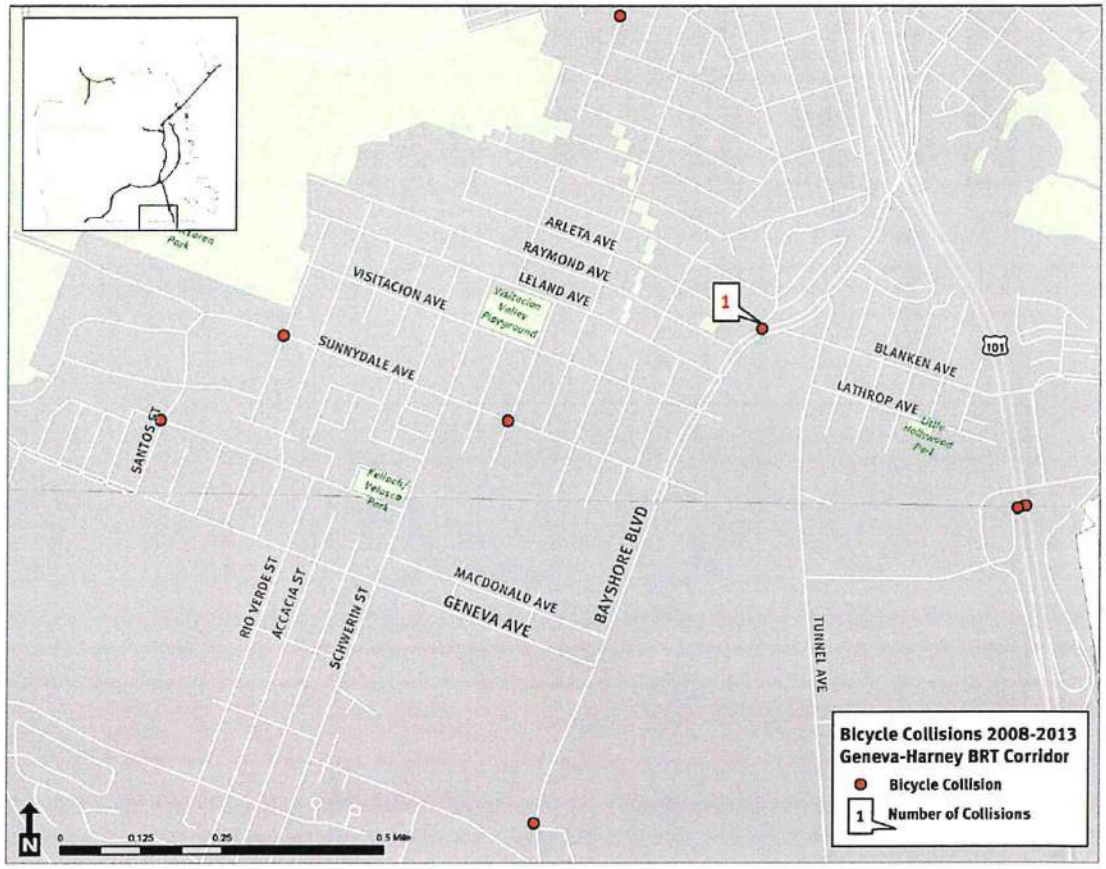
The dominance of Bayshore Boulevard in the Study Area with regards to safety issues (along with transit and businesses accessibility), underscore the "connectivity recommendations" that follow at the end of this section.

Figure 44 Pedestrian Collisions 2008-2013[28]



[28] Geneva-Harney BRT Feasibility Report, 29.

Figure 45 Bicycle Collisions 2008-2013[29]



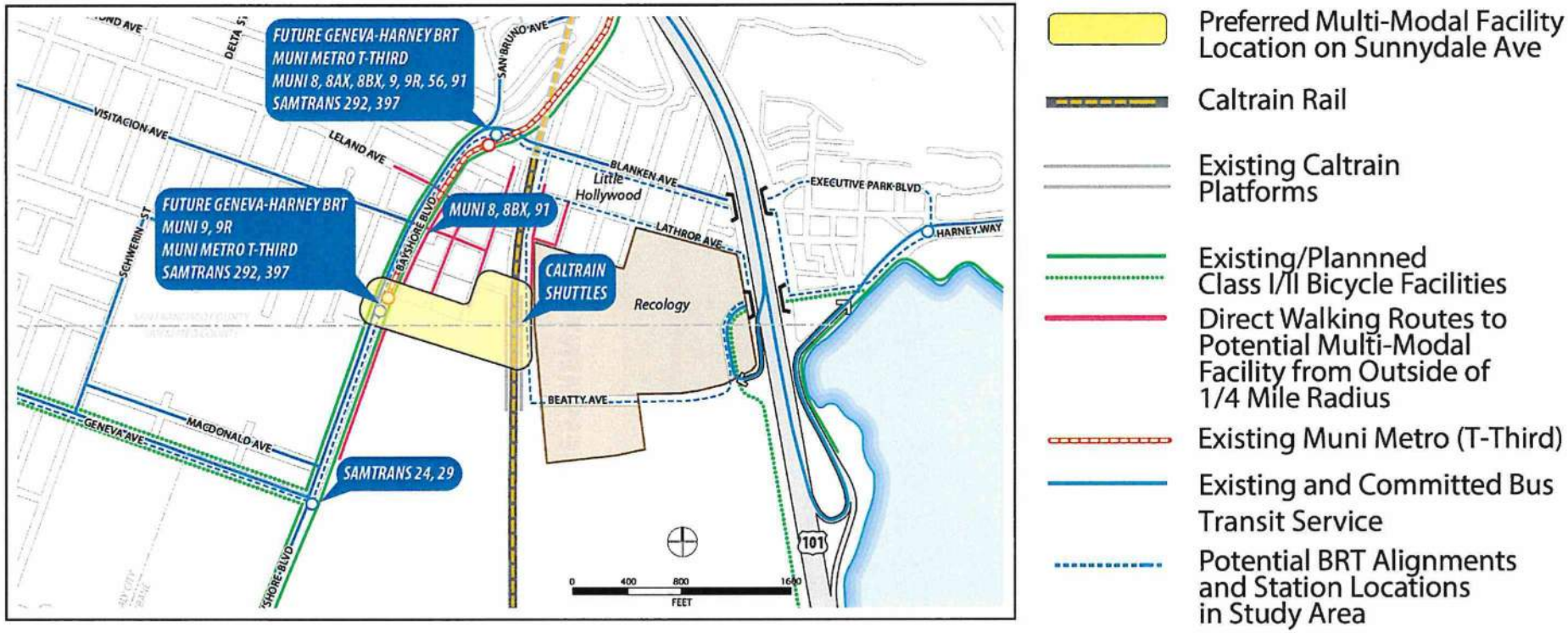
TRANSIT CONNECTIVITY ASSESSMENT

Walkability is a critical component of a successful transit system, since every transit trip begins or ends with a walk trip. Transit improvements are highly influenced by safe, convenient, and proximate walking connections between the Multi-Modal Facility and key transit services, such as the future Geneva-Harney BRT. The following assessment looks at the existing barriers and opportunities regarding access to transit to the west, south, east, and north of the Multi-Modal Facility location. Consideration is given to many factors, including the design of the bus stops and intersections, the ease of transferring between services, and the context of where service will see tangible improvements and frequency.

As shown in Figure 46, the closest stops for each transit route serving the facility site are not all in one place. This design supports efficient transit operations, however it requires extra consideration or travel time on behalf of the transit rider transferring between stops.

[29] Geneva-Harney BRT Feasibility Report, 31.

Figure 46 Transit Stops Proximate to Multi-Modal Facility Along Bayshore Boulevard



From the West

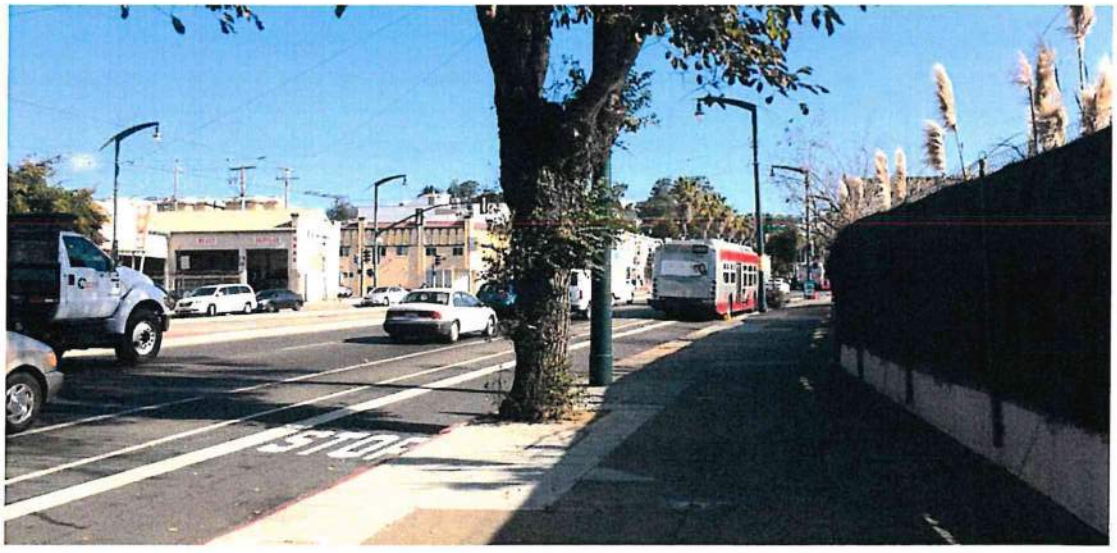
Barriers

- Southbound bus stops are not consolidated at a single location along Bayshore Boulevard between Sunnydale and Visitacion Avenues.
- Buses going towards Balboa Park BART (the 9 series of Muni buses) turn west onto Sunnydale and stop, while buses going southbound stop on the far side of Sunnydale Avenue.

Opportunities

- The preferred Facility location along Sunnydale Avenue requires that safe and accessible non-motorized routes within the rights-of-way of Sunnyvale Avenue, Visitacion Avenue, and Bayshore Boulevard (sidewalk and median included) to all external stops and stations is critical.
- The existing and planned regional transit stop (served by future Geneva-Harney BRT) along Bayshore Boulevard between Sunnydale and Visitacion Avenues will be the closest point of access for many people approaching from the west and will serving the majority of connecting transit services.
- The straight alignment and on-street parking restrictions along Bayshore Boulevard ensures ample room for buses to stop and, if just north of Sunnydale Avenue, layover between runs (see space for both vehicles and waiting passengers in Figure 47).
- The northbound transit boarding areas (on Bayshore Boulevard) are currently being planned with the developer of Schlage Lock and should be built when adjacent parcels are developed.

Figure 47 Bayshore Boulevard facing north towards Visitacion Avenue[30]



[30] Source: Nelson\Nygaard

From the South

Barriers

- Currently, the southbound sidewalks along Bayshore Boulevard are not continuous on both sides, which is a barrier to reaching Geneva Avenue and points south within San Mateo County.

Opportunities

- After Sunnydale Avenue, the next major transit stop in the Study Area planned to serve the Geneva-Harney BRT line is at the intersection of Bayshore Boulevard and Geneva Avenue.

From the East

Barriers

- The main barriers involving any eastern access are the multiple rail rights of-way (Figure 48).

Opportunities

- It will be important to monitor activity on the Caltrain overpass stairwells and elevators for congestion during peak travel times as people access multiple transit and shuttle services on the east side.
- Making a connection to Geneva-Harney BRT service on the eastern side of the Caltrain Station will be preferable for some people using the Multi-Modal Facility, but it ultimately depends on the final alignment of the BRT project.

Figure 48 Tunnel Avenue facing north at Beatty Avenue[31]



[31] Source: Google

From the North

Barriers

- At San Bruno and Bayshore, the northbound bus stop is placed on an incline of over 5% along San Bruno Avenue between a westbound curve in the road and its eventual merger with Bayshore Boulevard. The stop's estimated "red curb" length of 90 feet, may be too short for 60-foot articulated buses to efficiently and effectively pull in and out of the stop.[32]
- The estimated "red curb" length of the reciprocal southbound bus stop is approximately 105 feet. However, about 60 feet from the point of curvature, there is a two-way driveway that directly serves the 7-Eleven convenience store at 2200 Bayshore Boulevard. This may cause a point of conflict between traffic on Bayshore Boulevard, but it also endangers people walking along the roadway or waiting for the bus.
- There may not be sufficient space for two buses stopping consecutively in the southbound stop, as is the case during weekday peak travel times (the policy for a farside stop accommodating consecutive 60-foot buses is a minimum of 165 feet). In Figure 49, a bus has no choice but to stop directly in the crosswalk, blocking the views of drivers on Arleta Avenue, and compromising the ability of pedestrians to safely cross Bayshore Boulevard and access the facility.
- Passengers disembarking the T-Third light rail at Arleta Station may currently be inclined to cross Arleta Avenue in the median of Bayshore Boulevard in hopes of reaching the southern side of the intersection—and in turn, the southbound bus stop along Bayshore Boulevard (Figure 50).

Figure 49 Bayshore Boulevard facing west, just south of Arleta/Blanken[33]



[32] http://nacto.org/wp-content/uploads/2016/05/1-7_Tanner-Transit-Stop-Spacing-Location-and-Infrastructure_2015.pdf; Muni policy sets a typical length of 100 feet for farside 60-foot bus stops

[33] Source: Nelson\Nygaard

Figure 50 Bayshore Boulevard facing west, just north of Arleta/Blanken[34]



Opportunities

- Currently, more transit riders use the stops at the Arleta/Blanken/San Bruno/Bayshore Boulevard intersection than any other location in the Study Area.
- The T-Third Muni Metro stop ("Arleta Station") meets pedestrian accessibility standards.

[34] Source: Nelson\Nygaard

MULTI-MODAL FACILITY CONNECTIVITY RECOMMENDATIONS

The previous sections highlighted a number of barriers and opportunities to accessing neighborhoods and transit in the Study Area. In light of this assessment, the following recommendations are made to improve access to transit and to a potential Bayshore Multi-Modal Facility:

Figure 51 Recommended Improvements for Facility and Study Area Access

Improvement and Location	Details of Necessary Infrastructure and Improvements	Transit Connections Supported
West of Facility		
Enhance pedestrian safety, convenience, and aesthetic improvements along Bayshore Boulevard between Geneva Avenue and Arleta Avenue	High visibility crosswalks and pavement markings, bulbouts, sidewalk re-surfacing, short-term bicycle parking racks and other items that protect pedestrians while providing a greater sense of enclosure and caution for all transportation modes.	• Geneva-Harney BRT • Muni 8, 8X, 9, 9R • Muni Metro (T-Third) • SamTrans 24, 29, 292, 397
South of Facility		
Rehabilitate sidewalk connections along Bayshore Boulevard and Tunnel Avenue on both sides of the City-County border.	ADA accessible sidewalk facilities, including a sufficiently wide and level path of travel, with detectable panels and ramps at all curb cuts	• Geneva-Harney BRT • SamTrans 24, 29
East of Facility		
Improve non-motorized connections between to Executive Park via Beatty Avenue and Alana Way	ADA accessible sidewalk facilities, and buffered or protected bicycle facilities (which are currently planned) along Alana Way	• Geneva-Harney BRT
Monitor usage of existing pedestrian bridge and vertical circulation	N/A	• Caltrain • Shuttles
North of Facility		
Reconfigure the intersection of Blanken/Arleta/Bayshore/San Bruno to enhance safety and accommodate expanded BRT service.	Signal timing improvements, high-visibility crosswalks, automatic pedestrian signal actuation, automatic bus and light rail signal priority, bulbouts for both pedestrians and bus stops	• Muni 8, 8X, 9, 9R, 56 • Muni Metro (T-Third)
Open a direct pedestrian access route running due north from the facility to Blanken Avenue, parallel to the railroad right of way and coordinated with any public space adjacent to the old office building.	ADA accessible sidewalk facilities, including a sufficiently wide and level path of travel for both bicycles and pedestrians – plus sufficient protections from railroad right-of-way	• Muni 8, 8X, 9, 9R, 56 • Muni Metro (T-Third)

6 ECONOMIC DEVELOPMENT ASSESSMENT

The Bayshore Multi-Modal Facility will help spur economic activity in the surrounding neighborhoods and promote mixed-use, transit-oriented development by providing better regional transit service and attracting new travelers, residents and businesses to the area. This section provides an economic development assessment of the surrounding area and neighborhoods.

DEMOGRAPHIC AND SOCIOECONOMIC CHARACTERISTICS OF SURROUNDING NEIGHBORHOODS

The Bayshore Multi-Modal Facility is proposed to be primarily located in the Visitacion Valley neighborhood of San Francisco. Visitacion Valley is a largely residential neighborhood with retail use concentrated along Leland Avenue and Bayshore Boulevard, which is one of San Francisco's "Invest in Neighborhoods" commercial corridors. The neighborhood is currently served by the T-Third Muni Metro line and by major bus routes along Bayshore Boulevard and Geneva Avenue. The surrounding Sunnydale, Little Hollywood, and Portola neighborhoods are also located near the Bayshore Multi-Modal Facility and will be affected by it:

- Sunnydale is located in the southwest portion of Visitacion Valley next to McLaren Park. In addition to the large Sunnydale public housing complex that consists of about 800 existing housing units, Sunnydale currently has 29,000 square feet of community facilities and three small playgrounds to serve local residents.
- Little Hollywood is San Francisco's smallest neighborhood, sandwiched between Bayshore Boulevard and US-101. Little Hollywood is largely a residential area with single-family homes. It is adjacent to industrial uses such as the Recology Solid Waste Disposal Facility and the closed Schlage Lock Factory, which is currently being redeveloped into a mixed-use project.
- Portola is a largely residential neighborhood located to the north of Visitacion Valley, between McLaren Park and US-101. The majority of retail use in Portola is located along San Bruno Avenue and includes a mix of neighborhood servicing businesses such as bakeries, restaurants, grocery stores and pharmacies.

Visitacion Valley, Sunnydale, Little Hollywood and Portola are located in San Francisco's zip code 94134, which is one of the city's most diverse areas, housing a mix of Asian, African American, Latino, and Caucasian households. Figure 52 further below compares the socio-economic conditions in this zip code with that of San Francisco as a whole. Over half of its residents are born outside of the United States and speak a language other than English at home. Homeownership and families with children are much higher than the citywide average. However, compared to San Francisco, it has a lower median household income, higher unemployment rate and larger proportion of families below the poverty level. As further discussed below, new residential and commercial development is proposed for Schlage Lock and Sunnydale Hope SF, which are proposed to significantly increase the number of residents and retail businesses within the surrounding area.

Figure 52 Socioeconomic Characteristics of Surrounding Neighborhoods

Category	Surrounding Neighborhoods 94134		Bayview-Hunters Point 94124		San Francisco	
	Number	Percent	Number	Percent	Number	Percent
Population	44,500		36,936		865,913	
By Race						
White	6,772	15%	4,846	13%	413,022	48%
African American	3,450	8%	9,973	27%	45,709	5%
Asian	25,922	58%	12,355	33%	297,202	34%
Other Race	8,356	19%	9,762	26%	109,980	13%
By Ethnicity and Single Race						
Hispanic/Latino	9,938	22%	10,585	29%	134,855	16%
Not Hispanic/Latino	34,562	78%	26,351	71%	731,058	84%
Language Spoken at Home						
Speak Only English at Home	13,228	32%	16,786	49%	460,487	56%
Speak Language Other than English at Home	31,272	69%	20,150	51%	405,426	44%
Education Attainment						
Population 25+ with Less Than High School Graduation	8,664	27%	6,909	28%	92,011	13%
Households	12,302		10,569		375,195	
Average Household Size	3.59		3.46		2.24	
Households, People < 18	4,940	40%	4,645	44%	68,635	18%
Families	9,458		7,835		163,154	
Families Below Poverty	1,101	12%	1,554	20%	13,279	8%
Median Household Income	$65,814		$55,560		$84,160	
Business and Employment						
Civilian Labor Force Unemployed	11.69%		14.73%		7.35%	
Employed Civilian 16+ Population in White Collar Occupation	11,033	52%	7,735	47%	352,173	72%
Employed Civilian 16+ Population in Blue Collar Occupation	3,935	18%	3,949	24%	45,148	9%
Number of Business Establishments, 2014	349		1,202		33,189	
Paid employees for pay period including March 12, 2014	3,541		20,274		573,297	
Transit						
Workers by Travel Time to Work	19,623		14,904		435,480	
Average Commute (in minutes) Workers Worked Away	36		35		35	

Source: The San Francisco Health Improvement Partnership (SFHIP), U.S. Census Bureau American FactFinder:

ENVIRONMENTAL JUSTICE (EJ)

The proposed Bayshore Multi-Modal Facility will benefit surrounding areas by providing them with improved access to the Bay Area's rapid transit systems to better reach employment, retail, and other opportunities. As a result, the surrounding neighborhoods will become more accessible and environmentally sustainable—important goals for the three adjacent cities and key planning features for developments in the surrounding PDAs. In addition, the improvements will provide better accessibility and help improve the quality of life of local residents, many of whom live in disadvantaged communities (Communities of Concern and/or Environmental Justice Communities).

Environmental Justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. However, a significant amount of research has shown that minorities and low-income communities are disproportionately exposed to environmental harms and risks, as they often suffer from inadequate public infrastructure and poor transportation access.

Communities of Concern (CoCs) are defined by ABAG as those communities having concentrations four or more factors such as limited English proficiency, zero-vehicle households, seniors, population with a disability, single-parent families, cost-burdened renters, or communities with concentrations of both low-income and minority populations.[35] Although the neighborhoods surrounding the Bayshore Multi-Modal Facility have not been specifically identified as CoCs by ABAG, they meet four of the CoC criteria as shown in Figure 53 below.[36]

Figure 53 Surrounding Neighborhoods Meet Key Criteria for Communities of Concern[37]

Disadvantaged Factor	Concentration Threshold	Surrounding Neighborhoods (Zip Code 94134)
Minority Population	70%	85%
Limited English Proficiency Population	20%	69%
Zero-Vehicle Households	10%	15%
Cost-burdened Renters	15%	26%

In addition, the feasibility study for the proposed Geneva-Harney BRT Line reveals that over half of the Geneva-Harney Corridor residents are Asian, followed by Hispanic or Latino populations, which represent a quarter of the population. The Geneva-Harney Corridor encompasses Hunters Point Shipyard, Candlestick Point, Sunnydale, Visitation Valley, the Excelsior, Mission Terrace and parts of San Mateo County—a far greater area than the Bayshore Multi-Modal Facility. However, the Bayshore Multi-Modal Facility is essential to connecting future BRT passengers in these neighborhoods to destinations throughout San Francisco and the region.

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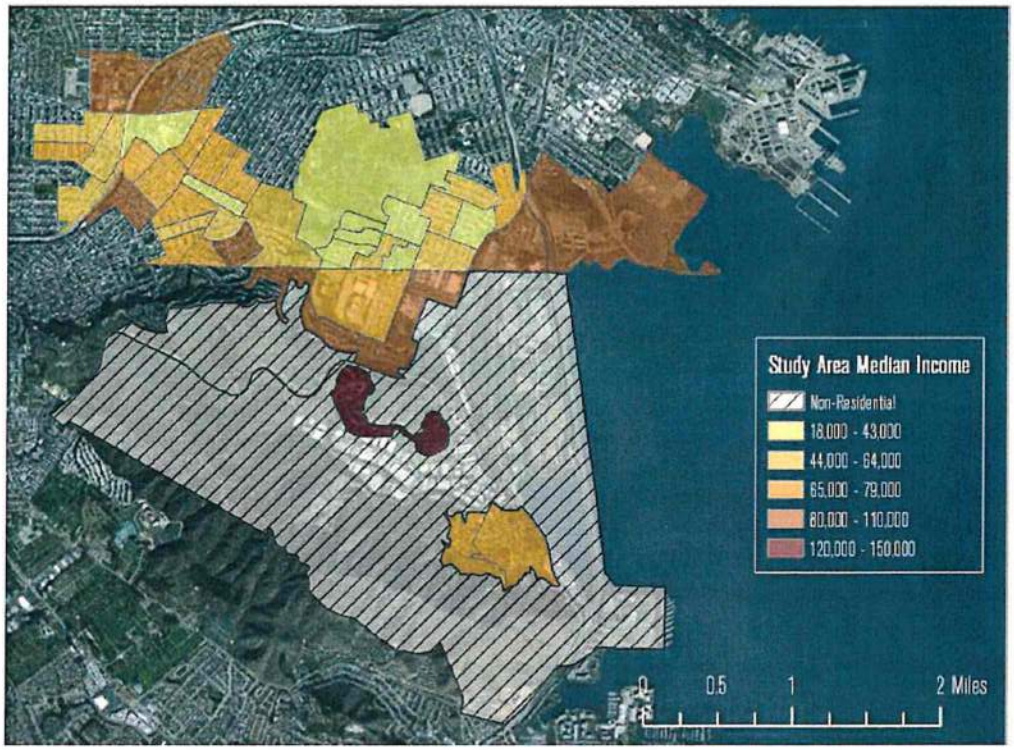
[35] Plan Bay Area Equity Analysis Report, Appendix A: Detailed Methodology

[36] ABAG has analyzed and designated larger areas in San Francisco as Communities of Concern.

[37] Source: The San Francisco Health Improvement Partnership, U.S. Census Bureau, 2015-2019 Consolidated Plan OMB Control No: 2506-0117 (exp. 7/31/2015)

As shown in Figure 54 (taken from the Geneva-Harney Feasibility Study), median household incomes vary from $18,000 to $150,000, with the higher income areas to the south of Geneva Avenue in Daly City and Brisbane and lower income areas north of Geneva Avenue, near San Francisco's Sunnydale housing projects. The neighborhoods surrounding the Bayshore Multi-Modal Facility have high concentrations of both low-income and minority populations, who stand to benefit from the Bayshore Multi-Modal Facility and the resulting improved transit connections.

Figure 54 Income Distribution on the Geneva-Harney Corridor[38]



CoCs are key components of Plan Bay Area, which tackles issues such as housing a growing population while accommodating transportation needs, and reducing greenhouse gas emissions. The Bayshore Multi-Modal Facility will help fulfill Plan Bay Area goals by promoting safe and easy travel to surrounding neighborhoods (which included CoCs) and the broader region by providing improved access to a variety of public transit systems at a single, convenient location.

As discussed above, the Study Area of the Bayshore Multi-Modal Facility has high concentrations of both minority and low-income populations. The existing conditions in these communities do not include many of the basic amenities necessary to make them an attractive space for transit, pedestrian and bicycle use. Narrow sidewalks, large retaining walls, chain link fences and minimal landscaping make the area unsafe and unpleasant to travel through by foot or bicycle. As described further in Section F, the surrounding neighborhoods have much poorer transit and bike access, and they are not as walkable when compared to San Francisco as a whole.

San Francisco's EJ Program is committed to promoting a healthy, safe environment in San Francisco's most vulnerable communities, and the City's EJ program has particularly focused on improving the quality of life for residents in the southeast part of San Francisco where the

[38] Source: Geneva-Harney BRT Feasibility Study, 19.

Bayshore Facility and the Study Area are located. The proposed Bayshore Multi-Modal Facility will help achieve San Francisco's environmental justice goals by improving transportation accessibility, promoting healthier and safer neighborhoods, and enhancing economic growth in the following ways:

- Provide high quality and safe environments at transit stops and along bikeways, sidewalks and crosswalks.
- Help secure safer and more direct transit connections to surrounding neighborhoods and the region than would otherwise occur. (In particular, Schlage Lock's Phase I plan does not include a Multi-Modal Facility or street connections to the Caltrain Station, and the timing of subsequent phases is uncertain. This could result in a lack of Multi-Modal Facility connections indefinitely.)
- By improving transit accessibility, encourage new employment and housing in the surrounding area, which will help spur business and improve the local retail climate.
- Connect surrounding residents with major employment centers in downtown San Francisco and along the US-101 corridor by providing them a faster and safer access to the Bay Area's rapid transit system.
- As a public project, the construction of the Bayshore Multi-Modal Facility will offer prevailing wages.

MARKET ASSESSMENT

While the Bayshore Multi-Modal Facility will benefit the broader Bay Area region by improving regional transportation access, it could particularly benefit local businesses, as well as those residents who live or work nearby. Therefore, it is important to take a closer look at the market conditions in the Visitacion Valley where the Bayshore Multi-Modal Facility is located.

As described in Section 3 (Existing and Future Conditions), Visitacion Valley is a predominantly residential neighborhood with a concentration of retail business along Leland Avenue and Bayshore Boulevard and a few industrial uses to the south. The majority of business establishments along the Leland Avenue corridor are small retail businesses, such as restaurants, salons and dry-cleaners, along with a post office, public library and bank. Retail spaces along Leland Avenue have traditionally experienced relatively high vacancy rates (for example, a 23% vacancy rate in 2012).[39] Bayshore Boulevard has a concentration of auto-oriented businesses, including gas stations and auto services that line its western frontage.

Given the lack of retail businesses in Visitacion Valley, 90% of spending by neighborhood residents, or $160 million annually, was estimated to be spent by local residents on businesses outside the Visitacion Valley neighborhood in 2010. This finding is confirmed by a study conducted by the San Francisco Office of Economic and Workforce Development that indicates all retail businesses except lawn and garden supplies show significant retail leakage and do not capture much local household retail demand.

However, these market conditions are poised for a substantial change due to the significant amount of new development that has been approved and will bring a substantial number of new residents and businesses to the surrounding areas. The following section provides a brief

[39] Invest in Neighborhoods San Francisco – Visitacion Valley Leland Avenue and Bayshore Boulevard Neighborhood Profile, San Francisco Office of Economic and Workforce Development, February 2013.

overview of these major development projects and the amount of projected housing and employment that they each will generate.

IMPACTS ON EXISTING BUSINESS AND LIVABILITY

Transportation access to a neighborhood plays a vital role in enhancing its livability and desirability as a place to live, work and visit. As evidenced in American Planning Association's May 2014 research report, more and more, residents and businesses are choosing locations based on their accessibility as measured by their walk, transit, and bike scores:

"When asked what would strengthen their local economy, two-thirds believe that investing in schools, transportation choice, walkability and key community features is the best way. For both Millennials and Active Boomers, including those living in today's suburbs, walkability is high in demand."

Currently, the transit, pedestrian, and bicycle facilities in the neighborhoods surrounding the Bayshore Multi-Modal Facility do not score well according to national metrics that rank accessibility on a scale of 1 to 100, with 100 being the highest ranked. San Francisco as a whole is one of the most transit friendly and walkable cities in the United States, second only to New York, and many of San Francisco's eastern neighborhoods achieve scores in the 90th %ile for walkability and transit access. The neighborhoods surrounding the Bayshore Multi-Modal Facility, however, have significantly lower scores, reflective of their limited transit and bike access and inadequate pedestrian amenities (see Figure 55).

Figure 55 Walk, Transit, and Bike Scores for the Surrounding Neighborhoods[40]

Neighborhood	Walk Score	Transit Score	Bike Score
San Francisco City	*86*	*80*	*75*
Vistiacion Valley	67	68	50
Little Hollywood	66	69	56
Sunnydale	58	62	43
Candlestick Point	47	64	36
Hunters Point	47	57	38
Bayshore, Daly City	53	Unavailable	12
Baylands, Brisbane	12	9	Unavailable

People currently use Geneva Avenue, Sunnydale Avenue, Bayshore Boulevard, and Leland Avenue to drive, walk, bike, and ride transit. In addition, Geneva Avenue is a key goods-movement corridor for trucks connecting a broad swath of San Francisco to two freeways: I-280 and US-101.

These streets are not designed to accommodate vehicular and pedestrian traffic in a safe way. Narrow sidewalks, lack of bicycle lanes, large retaining walls, chain link fences, and minimal landscaping make the area unsafe and unpleasant to travel through by foot or bicycle. However, the Bayshore Multi-Modal Facility will improve transit, bicycle, and pedestrian safety as well as connectivity.

[40] Source: www.redfin.com and www.walkscore.com

With new walkable developments, redesigned streets, and additional transportation services coming to the area, the Bayshore Multi-Modal Facility will help enhance overall transportation effectiveness and improve the quality of life and desirability of surrounding neighborhoods, which will in turn promote business activity. Specifically, the Bayshore Multi-Modal Facility will improve access to local businesses and residential neighborhoods, by enhancing connections to transit and making it easier for people to get to local businesses, shops, and services.

7 FUNDING AND NEXT STEPS

The Bayshore Multi-Modal Facility Study coincides with various stages of development in and around the San Mateo/San Francisco Bi-County area. It considers the timeline for projects such as the Geneva-Harney BRT (targeting 2022) and the Geneva Avenue Extension and Harney Interchange (estimated to be completed by 2035), as well as several possible land-use scenarios for the Brisbane Baylands in the long term. This Study identified Multi-Modal Facility *elements* that can be utilized in the short-, mid- and/or long-term development horizons. The four Multi-Modal Facility *concepts* evaluated by this Study incorporate these elements in four different ways for implementation in the mid term (2022-2035). Coordinating a Multi-Modal Facility now, at the outset of the Schlage development, can avoid costly interim solutions, support a higher level of Caltrain service at Bayshore station based on ridership potential, and increase access to BRT service as soon as it is implemented in 2022.

Figure 56 Timeline of Planned Transportation in the Bi-County Area

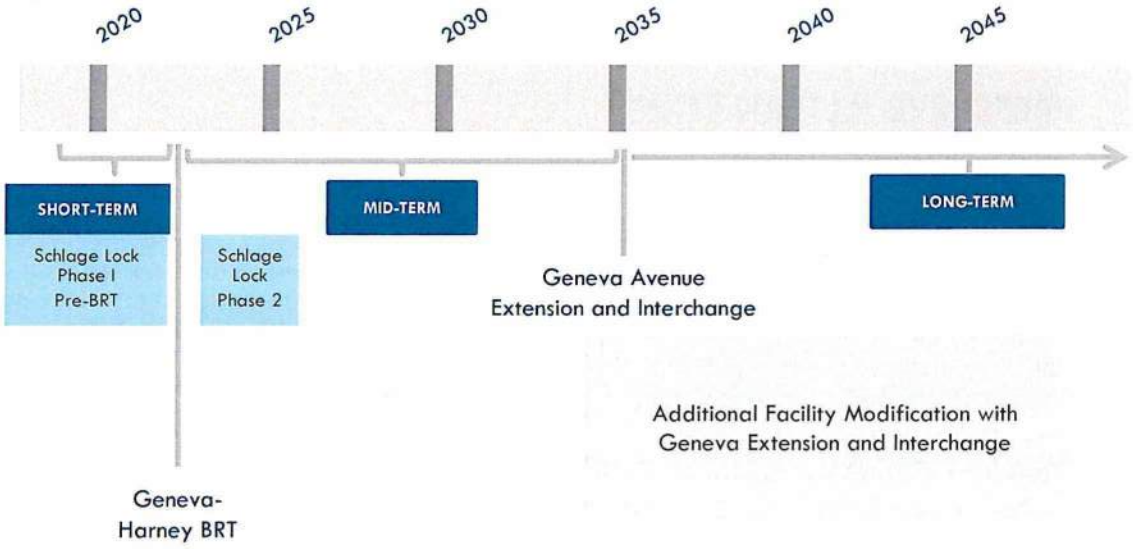


Figure 56 shows the expected timeline for related projects in the Bi-County area within the short, medium, and long terms. The SFCTA Bi-County Transportation Study (2013) identified the three transportation projects (Geneva Harney BRT, Geneva Avenue Extension, and re-configuring the Bayshore Intermodal Station area) as priority projects. It called for implementing the BRT and station-area improvements in the 10-year timeframe (roughly 2020) and in concert with surrounding land uses.

LAND USE CONTEXT

Recently, the California High Speed Rail Authority (CHSRA) began their environmental analysis to provide high-speed rail service between the central valley and San Francisco. The document will analyze the potential for locating a storage and light maintenance facility (LMF) in Brisbane. If Brisbane is chosen for an LMF, the elements identified in this Bayshore Multi-Modal Facility study may be relocated in the long term to better serve residents, employees and transit riders in the Bi-County area. But, as more information is not available at this time (April 2017), a potential

LMF in Brisbane was not included in this analysis. Further analysis of the preferred location of MM Facility elements may be necessary as the Brisbane Baylands EIR/S and CHSRA Draft EIR/S processes continue.

In coordinating the transportation improvements needed to serve the Bi-County residents and workforce, the Bi-County Study also reviewed existing land use and future development options in the area. While the Brisbane Baylands EIR/S is still under review, Bi-County planning has intensified and many of the projects on both sides of the county line have progressed, some into design and construction, since the 2013 Bi-County Study was completed.

Chapter 3 of this Multi-Modal Facility Study summarized the current phasing and magnitude of development in the Bi-County area. Candlestick Point/Hunters Point Shipyard Phase I is complete and is embarking on Phase II. Schlage Lock is the most immediate and integral development site to a Multi-Modal Facility. Phase I of the Schlage Lock development (under review as of April 2017) includes three parcels (containing six buildings) in the northern part of the site, as well as a pedestrian connection to the west side of the Bayshore Caltrain Station. Phase I of the Schlage Lock site presents a singular opportunity to implement some or all of the Bayshore Multi-Modal Facility elements in time to support Geneva-Harney BRT and related multi-modal connections in the mid-term.

PREFERRED ALTERNATIVE

All of the alternatives provided and reviewed were determined to be viable designs for the Multi-Modal Facility. Alternatives 3 and 4 provided the most connectivity for all transportation users and ranked relatively higher in the evaluation (See Chapter 4 for the performance criteria and evaluation of the four alternatives). However, between Alternatives 3 and 4 there are trade-offs with respect to the Schlage Lock street network design, land use, and implementability. With an understanding that specific elements of the Bayshore Multi-Modal Facility may be relocated if land use and transit conditions change, this memo recommends Bayshore Multi-Modal Facility Concept Alternative 4 for the mid-term.

MULTI-MODAL FACILITY IMPLEMENTATION PROCESS

The City and Bi-County coalition must work in concert with adjacent development teams to finalize a funding and implementation plan for a Multi-Modal Facility. Initial investments can deliver enhanced, multi-modal access improvements to the Bayshore Caltrain Station Area in the near term, coinciding with the initial Phase (1A) of the Schlage Lock development. With proactive coordination, even if a short environmental assessment is required, the mid-term and long-term investments can be realized within 5-10 years.

The following text describes issues or opportunities that should be addressed as this effort advances, so that the project reflects the best possible outcome for the intended users in a fiscally responsible, cost-effective manner. Finally, potential funding sources and next steps are identified.

Issues & Opportunities

Like many other projects in mature urban areas, the timing, coordination and delivery of several related initiatives will affect the effectiveness of the Bayshore Multi-Modal Facility. These characteristics can present challenges, but they are noted here to also highlight the opportunities that they present.

The most apparent issue and opportunity is the project's proximity to the San Francisco/San Mateo County line. Despite the challenges to coordinating between jurisdictions, the location can be used to leverage funding sources that are typically reserved for projects of regional significance. For example, the Multi-Modal Facility is located in the Bi-County Priority Development Area (PDA), providing an advantage in seeking regional funding such as the One Bay Area Grant (OBAG). Both public and private entities can see the benefit of collaboration and leveraged funds.

Some of the risks at this time for locating Multi-Modal Facility elements include the environmental remediation of soil in Brisbane, the Baylands review process, and potential high-speed rail light maintenance facility (LMF) plans in Brisbane that may affect ultimate buildout and location of Multi-Modal Facility elements. These risks could result in issues or opportunities as more information becomes available.

An additional opportunity exists in the momentum behind the Schlage Lock development site. If a Multi-Modal Facility concept can be coordinated with Schlage Lock's first phase, then the build-out of a facility can potentially be more time- and cost-efficient, as compared to building an interim solution in Phase I and rebuilding in a later phase. Executing the project with Phase I of Schlage Lock could help ensure it is ready before BRT service begins. Such coordination would leverage the Proposition K and Streets Bond funding dedicated to the Schlage Lock site, benefitting the Schlage Lock project, future residents, and transit access to existing neighborhoods.

There are also smaller and more localized conditions to address. A strong station area plan often includes ground floor activities that create safety through eyes on the street and comfort through amenities that cater to waiting passengers. The immediately adjacent land uses are contemplated as residential properties, which limit the potential for ground floor retail in buildings that face or line the path to the station. This might be addressed by having options for small-scale services (e.g. bike repair, second story offices, or ground floor accessory uses) near the station area or retail on Sunnydale Avenue, a potential for which the Schlage Lock Development Agreement allows (A grocery store is included in the plan to the north, on Leland Avenue).

FUNDING OPPORTUNITIES

Several funding opportunities for the Multi-Modal Facility, or Facility elements, exist. In estimating potential funds that could be dedicated to transportation improvements along the county line, the SFCTA Bi-County Transportation Study (2013) produced a list of prioritized transportation projects, including a Bayshore Station Re-Configuration. These projects would require dedicated funds to enhance the station, capital improvements like track work, station upgrades or relocation. However, it may be possible to dedicate some funds to access improvements like those contemplated in this study through additional discussions throughout project development.

In addition to the public funds available, the Fair Share Analysis envisions contributions from adjacent private developments benefitting from access improvements in the area. Some of the contributions from private developments may come in the form of direct funding or impact fees. However, it should be noted that the Schlage Lock developers have negotiated several capital improvements with city agencies, will provide pedestrian access, and will possibly dedicate additional developable land to transit access in ways that are consistent with the concepts in this Study. Given the timing of both projects, additional contributions would be focused on a later phase, if at all.

Local funds (see Figure 57), whether public or in-kind contributions, may be used to leverage additional regional or federal funds. Several programs offer opportunities to seek funding that are potentially relevant to this project, including the next cycle of One Bay Area Grants (OBAG), Active Transportation Program funds, Safe Routes to Transit, CMAQ, TIGER, and others. Depending upon the timeline for delivery, the mid- to long-term improvements might also be folded into a larger project, such as Geneva-Harney BRT or broader Bayshore Station improvements to make the project more attractive for regional and federal funds and/or increase the sphere of benefits. In either case, pursuing funds requires a discussion among the City family of agencies and Bi-County groups to coordinate the timeline for the project, as well as to increase the competitiveness of applications for funding.

Figure 57 Potential Funding Sources for a Bayshore Multi-Modal Facility or Facility Elements

Source	Amount	Potential Scope of Use
Prop K funds for Schlage pedestrian network	$2,000,000	Pedestrian network on-site (Access from Leland Avenue/ Bayshore Boulevard to Caltrain Station)
SFMTA Bond funding for Schlage street network	$1,500,000	Pedestrian access to transit and transit capital improvements
Prop K Bi-County (2017/18)	$500,000	Bi-County Project
Prop K Bi-County (2018/19)	$1,000,000	Bi-County Project
OBAG 2	TBD	Construction of Multi-Modal Facility, Call for Projects in April 2017, funds available in fall 2018
Prop K Ped Circ/Safety: Active Transportation Program Local Match (EP-40)	$300,000	Pedestrian and/or bicycle facilities
PDA Planning Grant	Estimated up to $750,000	Call for projects in June 2017, eligible for environmental or planning work in 2018

Sources: San Francisco Proposition K Sales Tax Expenditure Plans; Schlage Lock Development Agreement; One Bay Area Grant (OBAG, Round 2)

NEXT STEPS

Typically, the next step in advancing the design options for a project of this scale and character would include environmental clearance of the proposed plan. First, additional funding must be identified for further design, environmental analysis and construction. While Bayshore Caltrain Station pedestrian access has been included in the Schlage Lock plan, the recommended Concept Alternative 4 crosses the county line into the City of Brisbane. It is anticipated that additional analysis and an addendum (or a note to file) to the EIR/S for the Baylands or the High Speed Rail LMF would be required to develop a facility in Brisbane.

Following the conclusion of this Study, the City will continue conversations with the City of Brisbane and the California High Speed Rail Authority to clarify future milestones for their respective planning processes in the Brisbane Baylands. At the same time, Phase I of the Schlage Lock Development will move forward, including a pedestrian connection to the Bayshore Caltrain station from the west via Street A (Figure 14). If additional funding is identified by an agreed-upon deadline tied to the Schlage Lock development, the City and the developer of Schlage Lock will work to build a Multi-Modal Facility within Phase I in order to be ready before Geneva Harney BRT is operational.

8 APPENDICES

GLOSSARY OF TERMS AND ACRONYMS

ABAG: Association of Bay Area Governments

BART: Bay Area Rapid Transit

BRT: Bus Rapid Transit

CHSRA: California High Speed Rail Authority

CMAQ: Congestion Mitigation and Air Quality Management Program

CoCs: Communities of Concern

CP-HPS: Candlestick Point – Hunters Point Shipyard

EIR/EIS: Environmental Impact Report / Environmental Impact Statement

EJ: Environmental Justice

GHBRT: Geneva-Harney BRT

GHG: Greenhouse gases

LMF: Light maintenance facility for CHSRA

MTC: Metropolitan Transportation Commission

OBAG: One Bay Area Grant

OSSMP: Schlage Lock Development Open Space Streetscape Master Plan

SamTrans: San Mateo County Transit District

SFCTA: San Francisco County Transportation Authority

SFMTA: San Francisco Municipal Transportation Agency

SF Planning: City and County of San Francisco Planning Department

TIGER: Transportation Investment Generating Economic Recovery Discretionary Grant Program

TNCs: Transportation Network Companies

QUANTITATIVE DETAILS IN EVALUATION MEASURES

Quantifiable measures used to evaluate the four Alternatives are presented in the following figures, organized by the categories in the report.

Transit Operations & Performance

Alternatives 3 and 4 provide a significantly shorter walk to the Caltrain platform for pedestrians getting dropped off from employer or community shuttles, as shown in Figure A1.

All other transit connections are expected to take place along Bayshore Boulevard, which means that the distances pedestrians would have to walk to connect from the Caltrain platform are influenced greatly by whether or not their path is direct. Besides the northbound Muni stop that is north of the proposed paseo in the development, having a direct connection along Sunnydale Avenue, as in Alternatives 3 and 4, reduces the walking or biking distance to Bayshore Boulevard.

Figure A1 Proximity from Caltrain platform to connecting transit (in feet) – closest stop

Definition	Alt 1	Alt 2	Alt 3	Alt 4
Employer/community shuttles	225	435	30	70
Geneva-Harney BRT, Muni 9/9R, Muni Metro T-Third, SamTrans 292	1,065	1,070	890	885
Muni 8, 8BX, 9 Owl	1,275	1,285	1,305	1,290
Southbound Muni 9/9R	1,445	1,425	1,035	1,030

Multi-Modal Connectivity

Alternatives 3 and 4 provide a significantly shorter walk to the Caltrain platform for pedestrians getting dropped off at the passenger loading zone, as shown in Figure A2.

Figure A2 Proximity of passenger loading zone to Caltrain platform (in feet)

Definition	Alt 1	Alt 2	Alt 3	Alt 4
Walking distance from Caltrain platform to passenger loading zone	430	500	50	40
Distance from Caltrain platform to bicycle network	430	430	35	35

Vehicle Access

The length of the passenger loading zone was desired to be at least 170 feet, or the length of approximately eight cars. All alternatives met this criteria, but Alternative 3, with 140 feet more space than the others, was not ranked higher because it is not necessarily more ideal. The space could ultimately be programmed for something other than passenger pick up at full build out of the project.

All alternatives are consistent with width of the access lane required by the City of San Francisco Fire Department.

Figure A3 Convenience to Caltrain via Automobile (in feet)

Definition	Alt 1	Alt 2	Alt 3	Alt 4
Length of passenger loading zone	200	200	340	200
Width of access lane	26	26	22	20

Policy and Implementation Considerations Metrics

Although it is preferred that the alternatives are sited fully in the City and County of San Francisco, there is a benefit of having more room for development and accessibility for all users to the Caltrain Station on the Schlage Lock development site, and therefore was not considered a fatal flaw. The extent to which the facility is sited in Brisbane is shown in Figure A4. The breakdown of developable space by alternative is presented in Figure A5.

Figure A4 Extent of facility development sited in Brisbane (in square feet)

	Alt 1	Alt 2	Alt 3	Alt 4
Extent of facility located in Brisbane	0	0	26,321	41,386

Figure A5 Approximate total square footage of developable space

Block	Alt 1	Alt 2	Alt 3	Alt 4
11	31,800	36,400	38,900	38,900
12	51,900	58,100	47,900	55,900
Total	**83,700**	**94,500**	**86,700**	**94,700**

Each bullet represents one posted note or write-on board comment. Multiple ideas are represented by a semicolon.

COMMENTS FROM OPEN HOUSE

Board 1 – Welcome/Overview



Germane to Study

- None

Unrelated to Study

- None

Board 2 – Minimum Facility Requirements



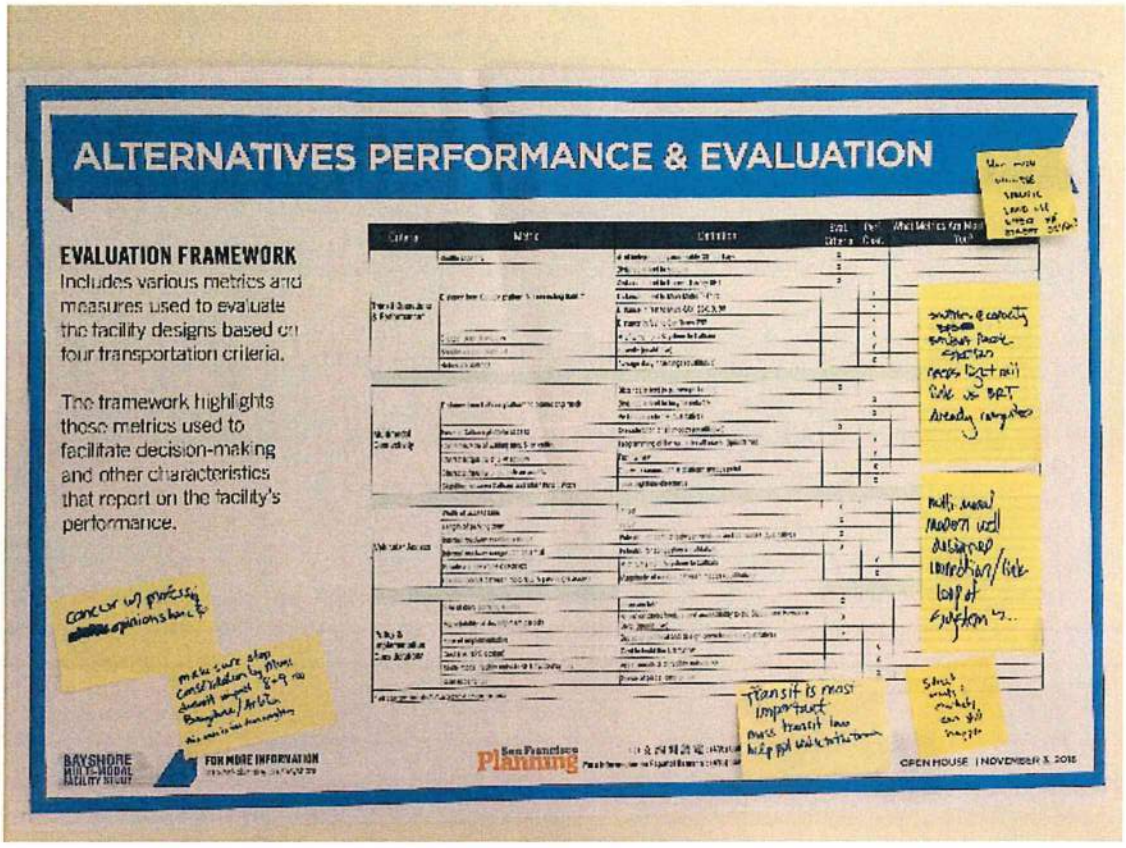
Germane to Study

- This is excellent; good technical solution and gives time to work on solutions; annex the piece of Baylands
- Wayfinding at pedestrian signal points in particular
- Access to police; Safety; Solar + lighting
- Add free shuttle transit to connections, Leland, work commute

Unrelated to Study

- HSR will clip the boundaries; EIR scoping report came out yesterday; Baylands street grid usable land on both sides
- Station will locate to the south; Geneva Ave will be realigned
- Fare and challenges of bus is making driving more appealing
- Traffic on Bayshore takes 30 minutes from Visitacion Valley to 101. FIX TRAFFIC.
- BART/Caltrain – I never take; serve transit, parking needs in this area
- Earlier hours for transit and shuttles; time lights to get more flow

Board 3 – Evaluation Framework



Germane to Study

- Concur with professional opinions here
- How much will the specific land use affect the street design?
- Street events and markets can still happen
- Muni transit is most important; mass transit lines help people walk to the train

Unrelated to Study

- Make sure stop consolidation by Muni doesn't impact 8 and 9 at Bayshore/Arleta; this area is far from everything
- Shuttles at capacity; Balboa Park Station needs light rail link vs BRT; already congested
- Multi-modal modern(?) well designed connection/link loop of systems

Board 4 – Study Area Development Projects



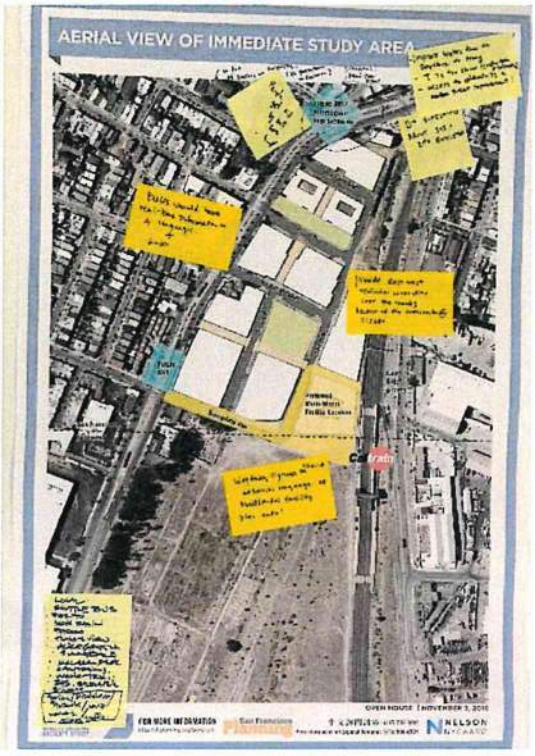
Germane to Study

- None

Unrelated to Study

- Secondary system: T-Line Bi-County extension to Brisbane, South San Francisco.
- Keep link Geneva to Bayview-Hunters Point; Blue arrow lights(?) direct simple connection; M-Line, J-Line loops around Bayview-Hunters Point to cargo wat(?) T-Line
- Cars are not the problem. Set traffic lights to improve "flow" for cars-buses-pedestrians; forcing red light on every block is no solution

Board 5 – Aerial View of Immediate Study Area (Contextual)





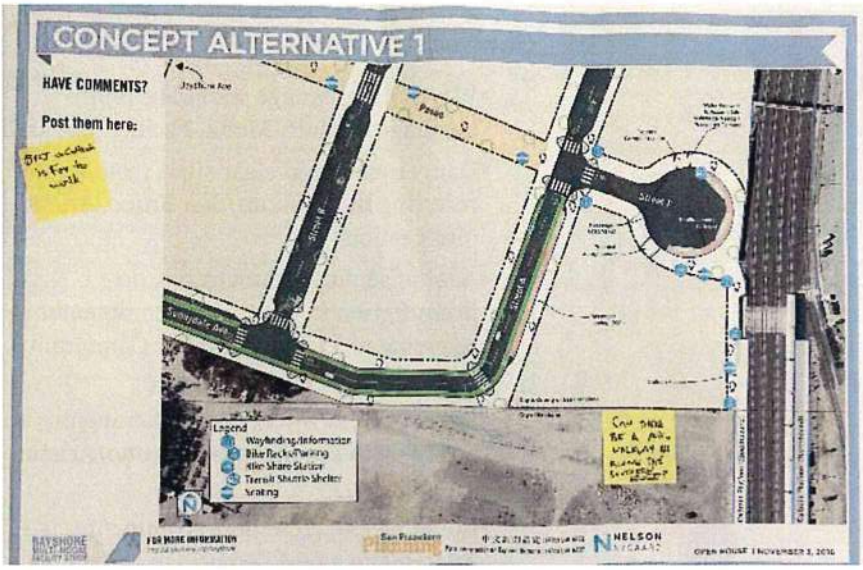
Germane to Study

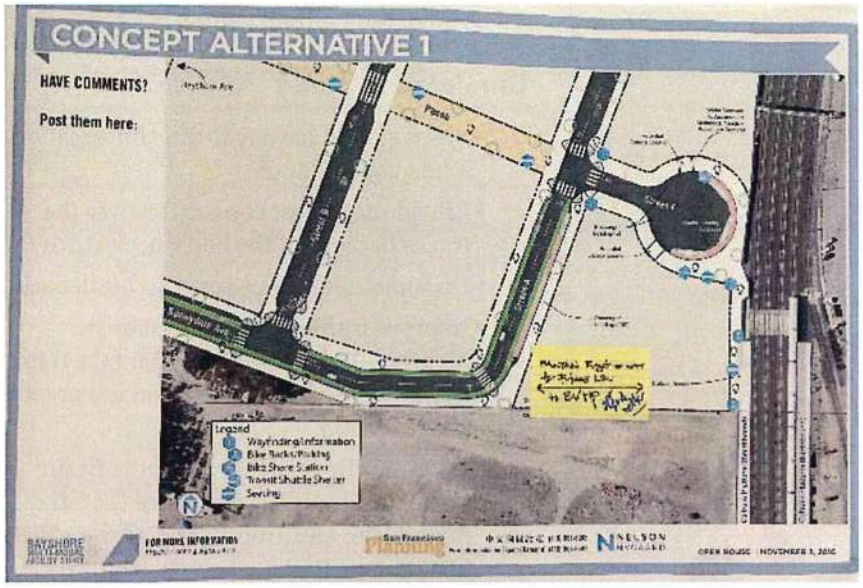
- Wayfinding signage should be multi-language at Multi-Modal Facility plus audio
- Dangerous! Need clear signs (commenter is referring to Bayshore/San Bruno/Arleta intersection)
- A lot of seniors at lunchtime; do presentation in Cantonese (commenter is referring to Visitacion Valley Community Center)
- People get hit by cars here (commenter is referring to Bayshore/San Bruno/Arleta intersection)
- Could people cross here (commenter is referring to a new ped bridge at the north end of the Caltrain station)

Unrelated to Study

- Buses should have real-time information in 4 languages + audio
- Provide east-west connection over the tracks because of the bottleneck at 101/280
- Do something about 101/280 bottleneck
- Improve traffic flow on Bayshore to highway; T is too slow! (rather take 8 to downtown); access to Caltrain is a great improvement
- Local shuttle bus: Pier 70; India Basin; Portrero; Hunter's view; Alice Griffith; Sunnydale; McLaren Park; Caltrain; Water taxi; Balboa Park Station/Balboa Park; Brisbane – for seniors, disabled, students, construction workers; relieves traffic
- Maintain access to existing utilities
- Important to maintain Muni flyover
- J+M+T links, loops, and connections; Future capacity needs for SF, Cow Palace, Prop O, Brisbane development.

Board 6 – Alternative 1





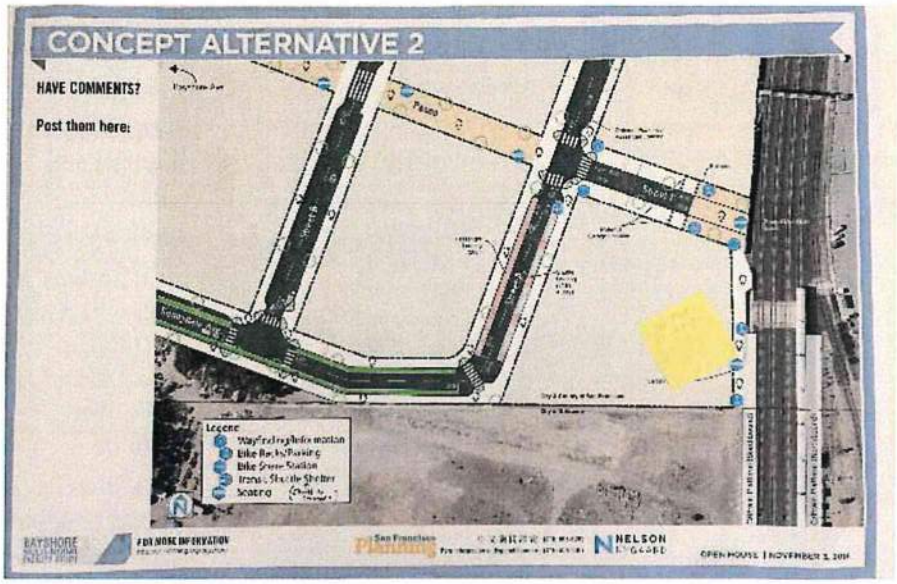
Germane to Study

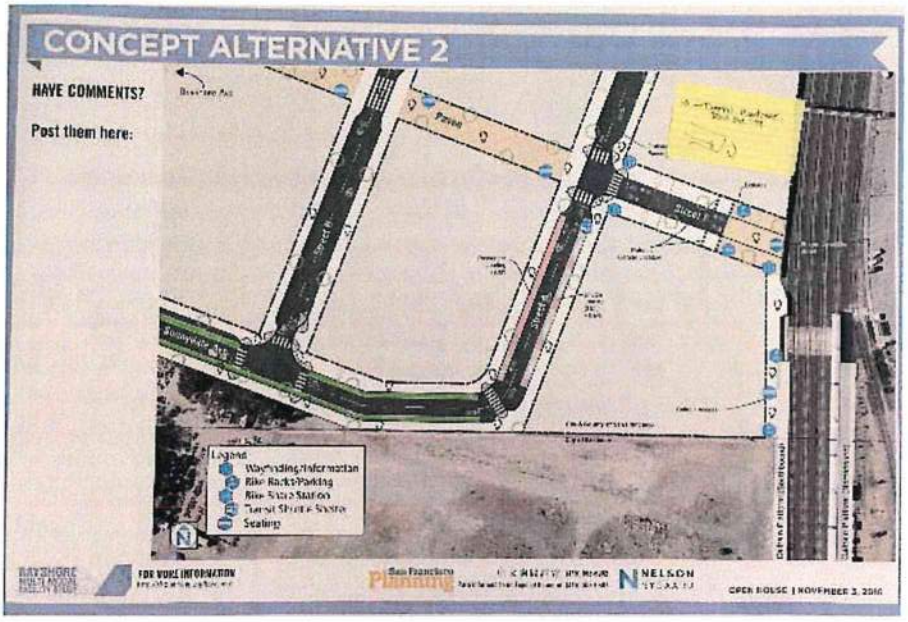
- BRT -> Caltrain is far to walk
- Can there be a path or walkway along the southern edge?
- Maintain right-of-way for future LRT to Bayview-Hunters Point; Option 3 and 4 better (commenter is referring to Sunnydale avenue)

Unrelated to Study

- None

Board 7 – Alternative 2





Germane to Study

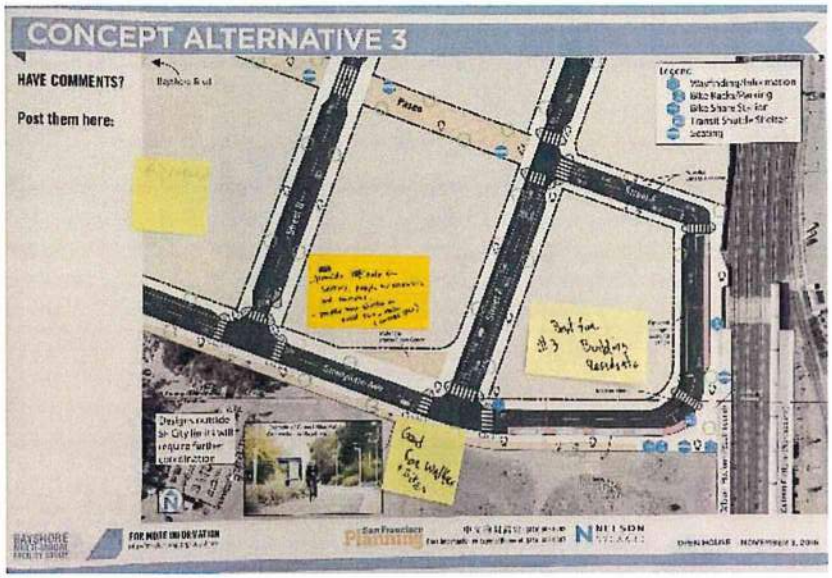
- Too far to walk
- No – traffic nightmare dead-end street

Unrelated to Study

- None

Board 8 – Alternative 3





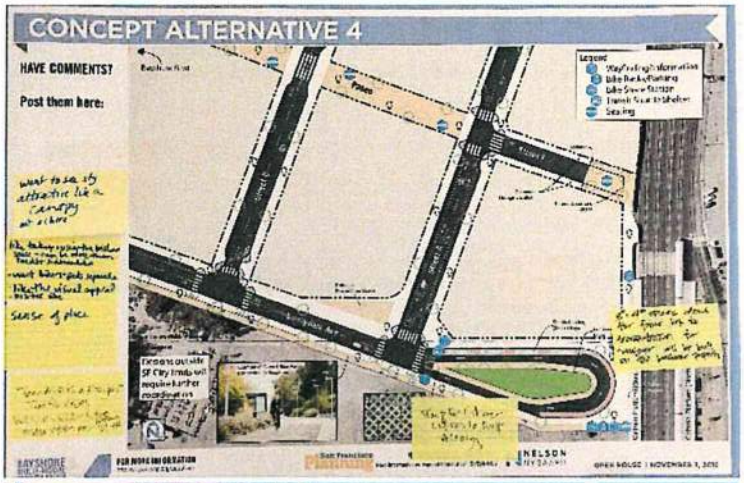
Germane to Study

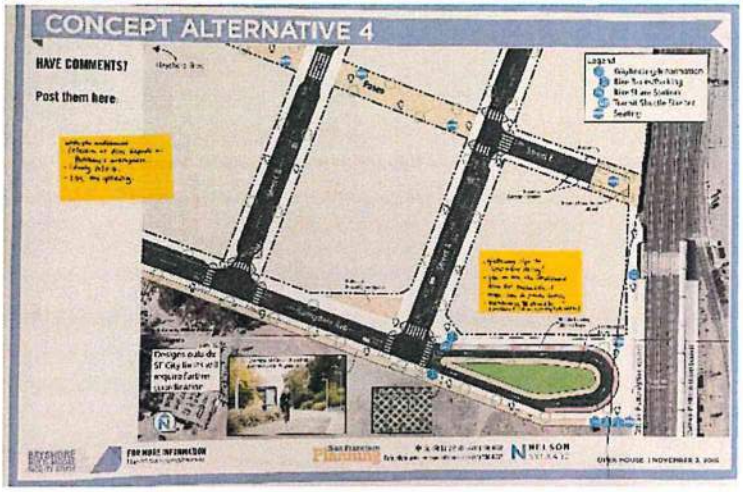
- #3 best circulation car and bike and walkers
- Agree #3
- 3 + 4 options: 3 deals with future link loop; 4 allows for bridge curve over Caltrain
- Alt 3 flows better x2 (assume that another commenter agreed with the original commenter)
- Any parking?
- #3 best for building residents
- Good for walkers and bikes
- Provide help for seniors, people with disabilities, and families; provide more shelter to avoid sun, rain (covered space)

Unrelated to Study

- None

Board 9 – Alternative 4





Germane to Study

- Want to see st(?Station?) attractive like a canopy not a chore
- Like taking and using the Brisbane space – can be more than roads and sidewalks; want bikers and peds separate; like the visual appeal; positive vibe
- Sense of place
- Teardrop is a pinch point – traffic issues – but gives a wider future bridge option over Caltrain/HSR
- Allows link over Caltrain to Bayview-Hunters Point, Recology
- 3rd and 4th options allow for future link to transportation for "whatever" will be built on the Brisbane property
- Selection of Alts depends on Brisbane's willingness; ideally Alt 4; like the greening
- Gateway sign to Visitacion Valley; plan to use the landscaped area for public life; make sure to provide covering(?); maintenance should be considered (e.g. sleeping in a shelter)

Unrelated to Study

- None