

INTRODUCTION

Purpose of the Study

The Balboa Park Station Capacity Study included an engineering feasibility analysis and supporting studies to refine the long-range vision presented in the Balboa Park Station Area Plan (the adopted area plan developed through the Better Neighborhoods Program). It also assesses other proposals suggested in recent years by the BART *Comprehensive Station Area Plan* and by other public agencies and individuals. Its focus is on moving short-range and mid-range projects consistent with that vision toward funding and implementation. This *Study Final Report* provides additional information for investment decisions, but is not intended as a policy document to be adopted by the SFMTA Board of Directors or another policy body.

Scope and Goals

The study focuses especially on the BART/Muni transit station/yard functions and site plans, including potential joint development projects. The study emphasizes:

- improving the transfer connections and access to the station and stops;
- enhancing safety and passenger amenities;
- reducing negative impacts of transportation facilities; and
- supporting a vibrant community.

The study includes findings about existing and forecast conditions and preliminary recommendations for improvements through 20 years into the future in several areas, including:

- Transit customer amenities;
- Accessibility;
- Muni light rail service operations;
- Pedestrian/bicycle/transit improvements on Geneva and Ocean avenues;
- Development of a transit village;
- Freeway circulation;
- Parking; and
- Light rail and historic streetcar maintenance and storage.

For selected “fast track” projects that can be implemented within the next several years, the study provides concept plans, preliminary cost estimates, project descriptions, and proposed schedules.

It also describes the outreach efforts undertaken in developing findings and recommendations. Finally, it provides an implementation element, including a funding strategy, proposed prioritization and preliminary environmental assessment. It also lays out the recommended next steps.

Relationship to Other Plans

The study builds upon several other station area projects and is coordinated with other ongoing projects:

The Balboa Park Station Area Plan was adopted as the official neighborhood land use and circulation plan by the Board of Supervisors in 2009. Developed by the SF Planning Department's Better Neighborhoods Program, it discussed the need to improve connectivity and passenger amenities around the station through the creation of a "transit station neighborhood." It proposed a number of major changes to the station area, including: a transit village on the Upper Yard and BART kiss & ride site (near the southwest corner of the Geneva/San Jose intersection), decking over I-280 between Geneva and Ocean to improve station access and reduce freeway impacts and reconfiguring the Geneva and Ocean freeway ramps.

BART's Comprehensive Station Plan (2002) provided a vision for the station generally consistent with the City's Station Area Plan. However, it focused particularly on BART access improvements such as improving the connection to Ocean Avenue.

The SFMTA's Balboa Park Station Pedestrian and Bicycle Connection Project (recently completed) identified and prioritized improvements for pedestrians and cyclists that can be implemented in the short and medium-term. It was the primary basis for obtaining over \$700,000 in Safe Routes to Transit implementation funding. The recommended improvements are now being designed and implemented.

The SFMTA's Geneva Corridor Transit Preferential Streets Study (recently completed) analyzed a range of potential short and mid-term improvement measures consistent with Geneva Avenue's other long-term development plans. Coordinating with other planning efforts and community groups, the SFMTA is working with the community and stakeholders to develop a consensus that will help secure additional improvement grants for the corridor. The recommendations primarily call for bus bulb-outs and signal improvements (but no separate lanes) to reduce transit travel times and improve reliability.

STUDY PROCEDURES

Technical

The study was conducted by a consultant team led by Jacobs, a transportation planning and engineering firm with significant experience on similar studies in the station area and throughout the U.S. The team included specialists in transit facilities and service planning (CHS Consulting Group), bicycle/pedestrian/traffic analysis (Fehr & Peers Transportation Consultants), and civil/structural engineering (MSA Design & Consulting, Inc.). The consultant team was managed by the SFMTA Sustainable Streets Division, with active participation of other SFMTA divisions, and several agency partners. Community review and input was also an important element.

The study started with analysis of: (1) passenger station access and transfer needs; (2) light rail vehicles (and historic streetcar) storage and maintenance needs; and (3) parking conditions. The consultant team then reviewed the feasibility of key transportation proposals from the Balboa Park Station Area Plan and other short-range to long-range options. Feasibility analysis included: impacts on safety, accessibility, service quality and passenger convenience; potential environmental impacts; engineering issues; and cost considerations. Concept plans were prepared for short-range, mid-range and long-range timeframes. Consultants then conducted a more intensive evaluation of “fast track” improvement options (those that could be implemented within the next 2-5 years with a cost less than \$5 million).

Technical Advisory Committee

The study was supported by two Technical Advisory Committees: an internal SFMTA group and an interagency group. Each met at least five times. They provided technical input and review from a wide range of perspectives. The SFMTA TAC included representatives of the following Agency sections: Accessible Services, Transit Operations, Safety, Capital Planning, Real Estate, Grants and Construction/Engineering.

The interagency TAC included representatives of BART, the San Francisco County Transportation Authority, San Francisco Planning Department, San Francisco Public Works Department and the Geneva Car barn and Powerhouse Youth Arts Center Project. City College was also invited.

Additional smaller meetings were held focused on specialized questions, such as transit operational issues and the development of the Balboa Park Station Area Plan.

Community Outreach

Community outreach focused on several meetings and SFMTA website pages. Two major community meetings were held at Lick Wilmerding High School. The May 19, 2010 meeting focused on “fast track” projects, while the October 6, 2010 meeting covered mid/long-range improvements. Staff also presented at the December 11, 2010 meeting of the District 11 Neighborhood Council.

These venues provided important feedback on community priorities. They also showed that earlier planning efforts are starting to bear fruit in physical changes like BART’s Westside Walkway, which opened in April 2011.

STUDY FINDINGS AND PRELIMINARY RECOMMENDATIONS

Existing and Future Conditions: Needs Assessment

The Balboa Park station complex, adjacent to the interchange of I-280 and Geneva Avenue, is a key regional and local hub. The BART station is the southernmost in the City of San Francisco. With over 15,000 daily passenger boardings, it is the busiest in the BART system outside of downtown San Francisco (BART Station Profile Survey,

2008). In addition to BART, three Muni light rail lines (J, K, and M) serve the station. Over 2,700 customers board these lines daily. Several bus lines also serve the station. Almost 6,900 patrons board Muni buses each day at the North and South Geneva Transit Plazas, more boardings than at some entire rail stations (TEP, 2008). There is no passenger parking, and the passenger drop-off (kiss and ride) areas are inconvenient, especially for freeway travelers.

In general, the station area suffers from hosting so many major functions in a small area. Different modes compete uncomfortably for space. The station complex squeezes a BART station, several bus/light rail stops and transit storage/maintenance facilities next to a freeway interchange, all in the middle of a lively neighborhood. The proximity of several schools, a major community college campus and a regional park further underscores the value of developing a true transit neighborhood.

The needs assessment focuses on significant problems in passenger facilities, safety, accessibility, light rail vehicle storage/maintenance and integration with the neighborhood. (An overview of study findings and preliminary recommendations is presented in Table 1.)

Station Area Passenger Needs

Station access and intermodal transfers are hindered by such problems as significant distances between major stops, minimal wayfinding signage and inadequate lighting. Safety and access issues focus on inaccessible stops in the street or near narrow walkways, as well as missing or below-standard curb ramps. These problems are especially significant considering that the station is one of the major transfer hubs in the entire San Francisco Bay Area.

Customer amenities and station aesthetics are below the level at many BART stations with lower activity. For example, the bus loading areas on Geneva have minimal weather protection and no real time bus or train arrival information.

Recommendations focused on improving the light rail transit and bus stops, improving both the experience of waiting to board and walking between stops. They would also enhance access to the station complex by walking, bicycling, transit and auto.

Transit Operations on Geneva and Ocean Avenues

Bus operations on Geneva Avenue are hampered by friction with passenger loading, freeway entrance/exit movements, and kiss and ride entrance/exit movements. Improvements are needed also to meet the expected increase in bus service on Geneva including potential bus rapid transit (BRT). The Geneva Avenue Transit Preferential Street (TPS) Study has developed complementary recommendations that would reduce transit travel times.

Shifting some bus service from Geneva to Ocean (as recommended by the Transit Effectiveness Project) could improve Muni efficiency by reducing travel times. While this would take advantage of improved BART access from Ocean via the Westside

Walkway, it requires new and improved bus stops near that location. There is no westbound stop near the station and the eastbound stop has no facilities.

Light Rail Storage and Maintenance

In order to meet significant population and employment growth and to limit auto use, the SFMTA needs to increase light rail service, and accordingly storage and maintenance facilities. The SFMTA is planning a major light rail extension, the Central Subway, and increased service on existing lines, which will require a major fleet increase. The Green Yard (northwest of the Geneva/San Jose intersection) has insufficient space to accommodate future forecast needs for light rail. The Geneva Yard (southeast of the Geneva/San Jose intersection) can accommodate the daily historic streetcar needs, but not the special service fleet or the inactive streetcars in need of repair.

The Upper Yard is a satellite LRV storage facility southwest of the Geneva/San Jose intersection. It has until recently been used for overnight LRV storage and for staging M-line pullouts that do not need to travel through the Geneva/San Jose intersection during the peak hours. It will be critical to help absorb the needs when tracks are replaced in the Green Yard. It also provides operational flexibility of increasing importance as the fleet grows.

Operational and space efficiency improvements are identified in this Final Report. However, these are insufficient to substitute for major facility expansions and enhancements, focused especially on the Muni Metro East light rail facility.

Transit Village Redevelopment

The station area presents the opportunity for meeting broader community needs (such as affordable housing) while boosting transit ridership and revenue. The immediate BART station area has virtually no passenger services or shops, like dry cleaning. The long-standing transit storage/maintenance yards are less than ideal neighbors for a residential neighborhood, although they provide critical support for the growing light rail and historic streetcar fleets. Their long range role will be determined in a Strategic Real Estate and Facilities Plan to be developed shortly, with expected completion by early 2013.

Freeway Circulation

Freeway entrance/exit movements interfere with pedestrian, bicycle and transit access to the station. The I-280 freeway itself divides the neighborhood. Additional study of these issues is expected in the Transportation Authority's upcoming Balboa Park Partnership Study, which is expected to start in early 2012.

Parking Conditions

The Balboa Park BART Station provides no passenger parking. Most of the on-street parking near the station is in residential neighborhoods with Residential Permit Parking. On average only about 55% or less of the parking in RPP areas is occupied during

weekday midday periods, suggesting that spillover parking in these areas is minimal. However, in the area northeast of the Ocean/San Jose intersection about 87-90% of the spaces are occupied during weekday midday periods. Unrestricted parking next to Balboa Park typically fills early in weekday mornings, although it is uncertain whether this is from BART commuters or City College/school students and employees.

Recommendations

Recommendations (summarized in Table 1) focus on improving the light rail transit and bus stops, improving both the experience of waiting to board and walking between stops. They would also enhance access to the station complex by walking, bicycling, transit and auto.

Recommended measures would also improve the station, stops and storage/maintenance facilities as neighbors.

Some of the key Balboa Park Station Area Plan recommendations were not found to be feasible or at least not likely within the next 20 years. In particular, decking the I-280 freeway between Ocean and Geneva Avenues, although likely beneficial to the neighborhood and to station access, would likely cost upwards of \$1 billion (and would be a regional-scale project similar to the Doyle Drive rebuild). Decking over the Green light rail maintenance/storage yard would be extremely difficult due partly to the clearance needed over the overhead wires, the limited street frontage and the need to keep the facility operating during extended construction.

In a couple of cases, it was not possible to analyze the feasibility and impacts of potential recommendations conclusively because of the complexity of the issues. Therefore, additional analysis is needed to: (1) determine the detailed costs and benefits of extending the M-line across Geneva Avenue in the short/mid-range and (2) determine whether some of the overhead contact system poles that create “pinch points” on the J/K walkway near the Geneva/San Jose northwest corner can be moved (and replaced with mast arm poles).

NEXT STEPS: FUNDING AND IMPLEMENTATION

The study is expected to conclude with informational presentations to the SFMTA Board of Directors and possibly other policy boards. Additional outreach will be conducted as needed.

The study aims for a smooth, quick transition into the funding and implementation phase. Accordingly, the Final Report emphasizes Fast Track projects that can be implemented quickly due to their relatively low cost (under \$5 million) and limited environmental review needs. The Final Report also outlines a funding strategy that aims to continue the record of success in matching improvement projects with suitable funding sources. Implementation should also be smoothed by having a standing TAC to facilitate interagency coordination. Funding could be provided by the Transportation Authority’s Caltrans Partnership grant.

The proposed funding strategy calls for reserving roughly half of the \$2.4 million in Prop K “Balboa Park Intermodal Improvements” funds (Expenditure Program 13) for required local match and preliminary design for promising regional/state/federal grants such as Transportation for Livable Communities (TLC) and Safe Routes to Transit. It also calls for consideration of programming additional Prop K EP 13 funding during the FY 2013-2018 period, for which the Strategic Plan currently shows no funding. It also notes the potential to take advantage of innovative funding sources and student talent for special projects, given the proximity of City College, Lick Wilmerding High and the Geneva Car Barn and Powerhouse project.

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

STUDY FINDINGS AND RECOMMENDATIONS

ISSUE	KEY FINDINGS	RECOMMENDATIONS
<p>Customer Amenities and Information</p>	<p>Lack of wayfinding and transit arrival information.</p> <p>Limited weather protection at Geneva bus loading areas, although they are used by as many passengers as at some rail stations.</p> <p>Lighting levels could be improved in some areas.</p>	<p>Short-Range “Fast Track” (High Priority) Project: Pursue dedicated sales tax (Prop K) funding for design of Geneva transit plaza improvements plus lighting and wayfinding improvements in the station area (bounded by Ocean, Geneva and San Jose). (BART has begun design of Geneva transit plaza wayfinding, real time transit signs and lighting improvements, while SFMTA has requested Prop K design funding for Geneva canopies and other lighting and wayfinding improvements.)</p>
<p>Geneva Ave. Transit Operations</p>	<p>Freeway-related traffic and kiss & ride activity interfere with transit operations.</p>	<p>Short-Range: Synchronize signals (Completed City/Caltrans coordination).</p> <p>Reconfigure westbound lanes approaching and in front of station and over I-280 bridge to reduce congestion and facilitate buses leaving stops with wider northern sidewalk (high priority project)</p> <p>Upcoming SFCTA Balboa Park Circulation Study should review proposals to:</p> <ul style="list-style-type: none"> • Reconfigure kiss & ride (to eliminate exits and entrances on Geneva) and • Straighten curbs in bus loading areas and provide wider sidewalks (Prop K design funds requested)

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

ISSUE	KEY FINDINGS	RECOMMENDATIONS
<p>Ocean Ave. Transit and Bike Facilities</p>	<p>Until recently there was no convenient, accessible walkway between BART station and Ocean Ave., leading to pedestrians walking next to light rail tracks, but an accessible connection to the J/K boarding area is still needed.</p> <p>Adopted SFMTA Bike Plan includes bike lanes on Ocean Ave. (critical east-west link with City College, schools, SFSU).</p> <p>SFMTA Transit Effectiveness Project recommends moving some bus service from Geneva to Ocean Ave.</p>	<p>Long-Range: Complete bike lanes between Alemany and Phelan (replacing City College pedestrian bridge to facilitate this).</p> <p>Allow buses to use light rail track lane westbound (<i>like on Market St.</i>).</p> <p>Short-Range: Recently completed: BART Westside Walkway and mid-block station entrance significantly improves connection to Ocean Ave. for BART passengers, but the Eastside Connection pedestrian bridge needed to connect the Westside Walkway to the J/K loading area.</p> <p>Recently completed: Crosswalks (and pedestrian countdown signals) from station across Ocean at I-280.</p> <p>Recently completed: Westbound bike lane on Ocean Avenue between San Jose Avenue and the existing I-280 southbound off-ramp.</p> <p>Provide new westbound bus stop at station.</p> <p>Improve Ocean/Geneva/Phelan for pedestrians.</p>

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

ISSUE	KEY FINDINGS	RECOMMENDATIONS
<p>Muni Light Rail Routes and Stops</p>	<p>Station area is too crowded, with transit station/stop and maintenance facilities, plus a freeway interchange, in the middle of a lively neighborhood with multiple schools and City College.</p> <p>Transit stops have significant safety, accessibility and convenience issues. For example:</p> <ul style="list-style-type: none"> • M-line final northbound stop is inaccessible, in the street about 400 feet from BART station entrance. • J and K boarding is convenient to BART, but adjacent walkway is narrow, inaccessible. 	<p>Mid to Long-Range: Run M-line from Embarcadero to SFSU/Parkmerced, eventually to Daly City BART, at least on one branch, consistent with original TEP recommendation.</p> <p>Provide accessible, convenient K-line boarding near BART mezzanine entrance.</p> <p>Short-Range: Following are largely funded, in preliminary design:</p> <ul style="list-style-type: none"> • Provide Eastside Connection – pedestrian bridge from BART Westside Walkway over BART station box to J/K boarding area. • Close off walkway next to tracks near Ocean Ave. • Move J/K boarding to new accessible platform on San Jose Ave. • Upgrade existing J/K accessible boarding platform next to BART and convert to drop-off only. <p>Analyze potential to move final northbound M-line stop to north side of San Jose & Geneva Ave. intersection. Provide accessible boarding platforms in both directions. (Prop K funding requested for analysis as high priority.)</p> <p>Improve walkway from BART to San Jose Ave. and eliminate “pinch points” where feasible. (Prop K funding requested for design as high priority)</p>

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

ISSUE	KEY FINDINGS	RECOMMENDATIONS
Freeway Interchange	<p>Adopted neighborhood plan supports decking over freeway and providing a single point urban interchange (SPUI).</p> <p>Deck completely over the freeway within less than 20 years appears infeasible due to significant cost and would need to be coordinated with freeway reconstruction.</p>	<p>Long-Range: Refine and analyze proposal for elevated roadway between I-280 and BART's Westside Walkway, with short kiss & ride facility, to be coordinated with Ocean and Geneva bridge replacement.</p> <p>Consider interchange reconfiguration as part of long-range area circulation plan (beyond 20 years).</p> <p>Both recommendations will be studied in upcoming SFCTA Balboa Park Circulation Study.</p>

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

ISSUE	KEY FINDINGS	RECOMMENDATIONS
<p>Transit-Oriented Development</p>	<p>Muni Upper Yard and Muni Green Yard provide opportunities for supporting neighborhood revitalization and reducing transit facility impacts.</p> <p>Adopted neighborhood plan includes policies to convert Upper Yard/BART kiss & ride to transit village and to consider decks above Muni Green Yard.</p> <p>While Upper Yard transit village is desirable, it is not feasible to give up this critical light rail vehicle (LRV) storage/staging facility in the short-term, and feasibility in the longer term is uncertain. SFMTA needs significant facility upgrades elsewhere to support current and future needs.</p> <p>Decking over the entire Green Yard appears infeasible.</p>	<p><i>Mid to Long-Range:</i> Upper Yard transit village would be valuable, but a comprehensive real estate and facilities study must be completed to determine whether the Upper Yard can be redeveloped. Even if the Upper Yard could be reused, the SFMTA would need funding for compensatory light rail maintenance facility and access upgrades.</p> <p>Kiss & ride should be incorporated into design of transit village (i.e., build over a reconfigured kiss & ride).</p> <p>Provide retail frontage between north Geneva transit plaza and Green Annex Building.</p>

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

ISSUE	KEY FINDINGS	RECOMMENDATIONS
<p>Other Accessibility Concerns</p>	<p>Curb ramps are missing or below standard at some key locations.</p> <p>There is no elevator near the kiss & ride location (south of Geneva) and no convenient auto loading near elevator (north of Geneva).</p> <p>Difficult for pedestrians to cross Geneva at Howth or to cross I-280 ramp intersections on Ocean.</p>	<p>Long-Range: Kiss & ride on new elevated roadway would help accessibility.</p> <p>Straighten out I-280 southbound off-ramp to T intersection at Ocean (eliminate high-speed merge)</p> <p>Short to Mid-Range: Install or improve curb ramps (High priority; BART recently completed curb ramps across kiss & ride driveway, with Prop K funds requested for additional locations).</p> <p>Funded: Straighten crosswalk across Geneva near I-280 and station, recently repaved.</p> <p>Install elevator south of Geneva to BART mezzanine level (per BART plans).</p> <p>Funded: Traffic/pedestrian signal at Geneva/Howth.</p> <p>Install flashing beacon and warning sign at I-280 southbound off-ramp (High priority: Prop K funds requested for design).</p>

Balboa Park Station Capacity and Conceptual Engineering Study

Executive Summary

ISSUE	KEY FINDINGS	RECOMMENDATIONS
Transit Storage/ Maintenance Facilities	<p>The light rail fleet is expected to grow significantly over the next 10-20 years, just to meet forecast SF population and employment growth.</p> <p>While the efficiency of facilities can be improved, it is not feasible to eliminate or move major part of facilities in short/mid-term.</p>	<p>Short to Mid-Range: To use facilities more efficiently: Charge employees for parking (implemented).</p> <p>Relocate spare parts and repair wrecked light rail vehicles.</p> <p>With seismic strengthening of Geneva Office Building, use adjacent tracks at Geneva Yard.</p> <p>Improve capacity and access to Muni Metro East.</p> <p>Provide supplemental LRV/historic storage/staging facilities.</p>
Parking	<p>Average occupancy rate in Residential Permit Parking (RPP) areas during day below 56% vs. 86-90% outside RPP zones. BART patrons do not seem to be intruding on the RPP zones, but an estimated 500+ park throughout the non-RPP areas. Residents of the non-RPP area closest to the station have not exercised their majority option to convert to RPP.</p>	<p>Study parking management options focused on park and commercial frontage. As part of an upcoming citywide review of RPP and on-street parking policies, possibly study parking benefit districts (which may sell a limited number of daytime RPP permits to commuters and use additional funds for neighborhood improvements).</p> <p>Extending Fast Pass use on BART to Daly City part of study that is underway.</p>