



FINAL SAR 02-2

STRATEGIC ANALYSIS REPORT

on Balboa Park BART Station Area Parking and Fast Pass

Initiated by Commissioner Sandoval
Adopted by the Authority on March 18, 2003

TABLE OF CONTENTS

I. Introduction	1
II. Background	2
III. Strategic Analysis	4
A. Parking Assessment	4
B. Potential Solutions	6
IV. Recommendations/Next Steps	10
V. Bibliography/Sources Consulted	11
VI. Authority Staff Credits	11

I. INTRODUCTION

Purpose of Document

This Strategic Analysis Report (SAR) provides the SFCTA Board with a brief but comprehensive analysis of the apparent on-street parking problem in the Balboa Park BART Station Area, which is perceived to be partly attributable to BART patrons parking in the area, making it difficult for residents and others to find parking, and to evaluate the effectiveness of extending use of the MUNI Fast Pass on BART to include the Daly City BART station as a means of alleviating the parking problem at the Balboa Park Station. This Strategic Analysis Report (SAR) highlights for the Board the significance of these issues in areas of SFCTA jurisdiction, and identifies implications for future policy decisions by the Board in its capacity as administrator of Proposition B sales tax funds and as Congestion Management Agency for San Francisco. Every effort was made to make this a fact-driven document that avoids speculation and leaves judgment to the reader. Designed to inform policy-level decision-making, its abbreviated length (only 11 pages plus exhibits) optimizes this document's usefulness to Authority Board members. Technical discussion has been condensed, and only the facts essential to outline the pol-

icy-level issues are included. Additional information is available from the sources cited, or by calling Maria Lombardo, Deputy Director, at (415) 522-4802.

Summary

The Balboa Park BART Station Area Parking and Fast Pass SAR was initiated at the request of Commissioner Sandoval to address complaints by his constituents that commuters park in the Balboa Park BART Station area, making it difficult for residents and others to find parking. He asked that the Authority specifically consider the feasibility and effectiveness of extending the use of the Muni Fast Pass to the Daly City BART Station in addressing the parking problem in the Balboa Park Station area. Neither BART nor the City provides any dedicated parking at the Balboa Park BART Station; but, there is unmetered on street parking available on many of the surrounding streets. Data from previous BART studies indicate that approximately 1,560 Balboa Park BART patrons park on the surrounding streets, including many coming from origins in San Mateo County. One possible explanation for this phenomenon is that commuters, who might otherwise use the Daly City or Colma BART Stations, are driving to Balboa Park to take advantage of the MUNI Fast Pass, which can be used for unlimited trips on BART between Balboa Park and Embarcadero stations. Since BART does not offer a discounted monthly pass, use of the Fast Pass results in a significant cost savings for passengers. Extending use of the MUNI Fast Pass to the Daly City BART station has been proposed as a way to reduce the number of people driving into Balboa Park to use BART since it eliminates the financial incentive. This SAR investigates the impact of that policy change on transit ridership, traffic volumes, and parking supply and demand in the vicinity of both the Balboa Park and Daly City Stations. It also examines the potential financial impact of such a change on BART, MUNI, and SamTrans. The basis for the Fast Pass analysis is a study completed by BART which estimates the ridership and financial impacts of the Fast Pass extension. BART's findings suggest that extending Fast Pass to Daly City could potentially eliminate around 600 vehicle trips into the Balboa Park area, and add over 3,000 vehicles trips to Daly City, resulting from trips shifted from Balboa Park and Colma, and from induced demand at Daly City. However, our analysis of current parking demand at Daly City BART indicate that the forecasted shift in vehicle trips to Daly City would not happen since there simply isn't sufficient parking capacity to absorb the new trips. Thus, we conclude that at this time, extending the Fast Pass to Daly City would not be an effective means of alleviating the BART-related parking problems at Balboa Park. Other options to alleviate parking problems in the Balboa Park area exist, such as parking demand management or targeted transit service enhancements. Actions such as these can reduce auto trips to the area and more effectively support long-term planning goals for the Balboa Park area such as increased density and more integrated transit services. With the opening of the BART SFO extension and the upcoming implementation of parking charges at Daly City BART, we anticipate that the BART-related parking may increase in Balboa Park, creating yet another

reason to consider near-term parking management strategies and transit improvements. Extending the Fast Pass to Daly City may need to be considered further if the parking demand is reduced at Daly City, or for other policy reasons such as a desire to create a more seamless transit system for passengers. However, the policy change would likely result in significant costs to the affected transit operators; particularly BART which could lose around \$2.5 million in revenue per year from the change. However, it should be noted that with the opening of the SFO extension in early 2003, significant BART ridership changes may occur, a prospect that introduces uncertainty into any predictions about the effect of such a policy change.

II. BACKGROUND



This section reviews transportation studies, plans and other materials that provide information relevant to the Balboa Park BART Station area and the proposal to extend use of the Fast Pass to Daly City BART.

BART Extension to SFO/Millbrae EIR/EIS (June 1996)

The BART SFO Extension includes four new stations south of Colma, which is currently an end of the line station. The South San Francisco, San Bruno, and Millbrae Stations will add 5,300 new parking spaces. No parking spaces will be provided at the airport station. The EIR/EIS states that the extension will reduce parking demand at existing San Mateo County BART stations (Daly City and Colma). The prediction of reduced demand at line ends following the opening of line extensions is borne out by experience with previous extensions. However, the high existing level of demand for parking at Daly City and Colma stations, together with the fact that the airport connection will generate a substantial number of southbound trips, suggest that the reduction in parking demand may be less than that experienced with previous extensions. Further complicating the ability to forecast the ridership and travel behavior changes that will result from the opening of the extension are the prolonged economic downturn, the impacts of September 11 on the aviation industry, and the introduction of parking charges and reserved parking at BART stations. The SFO Extension is expected to open in mid 2003, and to result in nearly 70,000 new BART trips by 2010.

1998 BART Station Profile Survey (August 1999) and

2002 Bicycle Access and Parking Plan Volume 1

(August 2002)

BART's 1998 Station Profile Survey was conducted in the fall of 1998. Over 40,000 BART weekday customers returned questionnaires, and the results were used to analyze the customer market at each of the 39 stations. The survey looked at information such as the transportation mode riders use to get to and from BART stations, trip purpose, trip origin, and type of BART ticket used (e.g. regular BART ticket, MUNI Fast Pass, etc.). The

2002 Bicycle Access and Parking Plan builds on the station profile survey and contains further information on station access, total ridership, and station area characteristics.

According to the bicycle access plan, Balboa Park BART Station is the fifth busiest station in the BART system in terms of daily entries (13,584), with only the four Market Street stations having more daily entries. The access mode split for Balboa Park is typical of an urban station, with no BART provided parking: 52% bus/transit, 28% car (including carpool and drop-offs), 20% walk and 1% bike.

The other two BART stations relevant to this SAR are Daly City and Colma, which are located in more suburban settings and provided substantial amounts of parking for BART patrons, 2,075 and 2,491 spaces respectively. The mode split for trips to the Daly City station is 20% bus/transit, 66% car, 13% walk and 1% other. The mode split for trips to the Colma Station is 19% bus/transit, 76% car, 5% walk and 1% other.

According to the 1998 Station Profile Survey, Balboa Park Station has the highest level of Fast Pass usage - 71% versus the next highest station, which is Glen Park at 60%. This data combined with maps of home origins of Balboa Park BART patrons (Exhibits 2 and 3) provides evidence that the financial incentive offered by Fast Pass use on BART is attracting BART patrons from a larger commuter shed that includes part of San Mateo county. In other words, people who could more easily travel to the Daly City or Colma BART Stations appear to be traveling to the Balboa Park BART Station to take advantage of the Fast Pass discount.

BART Balboa Park Station Comprehensive Plan

(September 2002)

BART has recently begun the development of comprehensive station plans that contain three components: access to the station, access through the station, and joint development opportunities. The ultimate goal of the plans is to increase ridership by improving access to and through the stations and by encouraging the location of transit-oriented development around the stations. The Balboa Park plan is one of the first comprehensive station plans completed by BART. This plan sets out a vision for the Balboa Park station to help realize its potential as a transportation hub and as a neighborhood center. This plan was developed in tandem with the City Planning Department's Better Neighborhoods program for the area. The plan identifies a number of access issues at the station, including long wait times to pass through fare gates, poor links between BART and MUNI at the station, and poor pedestrian access to key destinations, such as City College. The plan does mention that some BART riders are parking in the neighborhood, but does not directly address the magnitude of the spillover problem or what should be done to alleviate it. The plan proposes a number of improvements to the station itself, such as increased fare gate and stair capacity,

improved access from the south side of Geneva Avenue, a new Ocean Avenue entrance, and overall improvement for non-auto based access modes. The fare gate and stairway capacity expansions are already under construction, other improvements are conceptual in nature and/or depend on implementation by other agencies.

Planning Department's Draft Balboa Park Station

Area Plan (October 2002)

The primary focus of the Better Neighborhoods effort is to facilitate long-range planning in some of the city's transit-served neighborhoods, while encouraging the development of more housing to address the city's current and projected need for housing. The Balboa Park Station Area Plan encompasses the area immediately surrounding the BART station, also including the City College campus and the Ocean Avenue neighborhood commercial district to the west.

The draft plan proposes changing zoning in the area and building transit oriented development on publicly and privately owned land adjacent to the BART station and along Ocean Avenue. This would result in added residential density around Balboa Park and a revitalized Ocean Avenue commercial corridor. Overall, the plan envisions adding 2,000 - 3,000 residential units, 80,000 square feet of commercial space and 20,000 square feet of cultural and institutional space over the next 20 years. The plan also makes transportation-related recommendations intended to support existing and proposed land uses and to free up land so that it could be developed for other purposes. The transportation recommendations include, but are not limited to proposals such as bus boarding islands, improved pedestrian crossings, safer drop-off areas for transit passengers, and more ambitious undertakings like redesigning the Balboa Park BART Station to allow easier BART/Muni bus/LRV transfers.

The plan also makes a number of parking policy recommendations for the area, both to address existing issues and to support proposed land use and transportation changes. These include eliminating minimum parking requirements for new development, making more efficient use of existing off-street parking, and prioritizing on street parking for residents, shoppers, and non-commute transit trips by expanding residential permit zones and metering and ensuring adequate enforcement. The plan also recommends further study of ways to increase residential parking permit fees to bring them in line with market-rate parking charges and suggests eliminating the availability of on-street parking permits for occupants of new developments in order to reduce neighborhood opposition to increased housing density.

Authority's SAR on Transit in the Outer Mission (May 2002)

Adopted by the Authority Board May of 2002, this SAR assesses transit needs in the Outer Mission and looks at potential

improvements to address these needs. The SAR focuses on the area roughly defined by the I-280 freeway, the county line, and McLaren Park. One important fact pointed out in the study is that the Outer Mission has relatively high rates of car ownership in comparison to the city as a whole (84% of households vs. 69% of households citywide). The SAR also found that while MUNI route coverage and scheduled service were good in the Outer Mission, schedule adherence was poor. The SAR further noted that since the Outer Mission is so far from downtown, unreliable transit service has a more significant impact than in other parts of the city. This would support the phenomena of Outer Mission residents driving to Balboa Park BART station to park, rather than deal with unreliable transit service to BART.

The SAR also found that except for the 88, which runs only during the peak, there is no direct bus service in the Mission corridor from south of Geneva to the Balboa Park BART Station, and Muni's 14 service terminates about a quarter mile short of the Daly City BART Station. Because of this gap in transit service, BART riders may be driving to these stations to avoid multiple bus transfers.

Several other SAR recommendations focus on improving transit connections to BART such as providing real time transit information and encouraging MUNI to give priority to improving the schedule reliability of routes that connect to BART.

III. STRATEGIC ANALYSIS



A. Parking Assessment

This SAR was initiated to address the issue of BART patrons parking in the Balboa Park BART Station area, making it difficult for residents and others to find parking, and specifically to consider the effectiveness of extending the use of the Muni Fast Pass to the Daly City BART Station in addressing the parking problem in the Balboa Park Station area. The first step toward addressing these key issues is to better understand the nature and severity of the parking problem in the station area. For the purposes of this SAR, the study area is focused on the ½ mile surrounding the Balboa Park BART Station, which encompasses the maximum distance that people are likely to walk to a commuter rail station (Exhibit 1).

Most parking problems can be boiled down to tradeoffs between supply and demand. The Balboa Park area has a number of major trip attractors, including the BART station, San Francisco City College's Phelan campus, three MUNI maintenance and storage yards, and several middle and high schools.

The Outer Mission retail district is also located just ½ mile to the east of the station area. All combined, these destinations have the potential to generate large numbers of vehicle trips. There is no dedicated parking provided for Balboa Park BART patrons, and the only off-street parking of any significance is that provided by City College for its employees and students and by MUNI for its employees at the Geneva, Green, and Upper Yard facilities. Thus, BART patrons who drive to the station will be competing for on-street parking spaces along with other users such as residents, City College employees and students, Muni employees, and others (e.g. shoppers, merchants, etc.). In the sections that follow, we briefly discuss on-street parking occupancy rates and the competing demands for on-street parking in the Balboa Park Station Area.

Occupancy Rates

As part of the Planning Department's Better Neighborhoods effort a consultant counted on-street parking supply and occupancy in the Balboa Park station area on March 12 2001, between 12 and 2 p.m. In the area extending to about ¼ mile north, south and east of the station and about 1 mile west (along the Ocean Avenue commercial district) the consultants counted 4,683 on-street spaces. Overall occupancy was about 75%, but varied widely within the area. For instance, the residential streets south of the Ocean Avenue commercial district were at nearly 100% capacity, while those to the north had excess capacity. In the area immediately adjacent to the BART station on Ocean Avenue between Phelan and San Jose, there were 80 unrestricted spaces, and 72% of these were occupied. On Geneva between Phelan and San Jose there were 59 unrestricted spaces and 86% of these were occupied.

In November 2002, the Authority conducted a windshield survey of cars parked on-street within a ½ mile of the Balboa Park Station. The consultant survey team again observed relatively high parking occupancy. It seems safe to conclude that while usage is not 100%, the occupancy rate is sufficiently high that people looking to park may need to spend some time looking for a space and/or may have to park farther from their destination.

BART Patrons

As mentioned earlier, the access mode split for BART passengers at Balboa Park Station is characteristic of an urban station, with nearly 70% of AM peak period riders arriving by transit, foot or bike, 18% being dropped off, 9% driving alone and 5% carpooling. Since neither BART nor the City provides any dedicated parking for BART patrons, all those accessing BART by driving alone or carpooling are most likely parking on the streets surrounding the station. Using BART's data for the number of daily station entries, access mode share, and occupancy rate of 1.2 passengers per vehicle, there could be up to 1,560 vehicle trips coming into the station area and parking to use BART.

Using the results from the 1998 Station Profile Survey, BART mapped the home origins of BART patrons who park at the

"...84% OF OUTER MISSION HOUSEHOLDS OWN ONE OR MORE VEHICLES VERSUS 69% CITYWIDE."

Balboa Park Station. As shown in Exhibit 2, the origins are located in San Francisco (e.g. Balboa Park, the Outer Mission, southwest San Francisco, the Sunset, Bayview Hunters Point) and in San Mateo County as far south as Millbrae. Clearly, BART patrons are contributing to the on-street parking problem at Balboa Park. From the map of origins, it is also clear that some of these BART patrons' home origins are much closer to Colma or Daly City BART, which makes it likely that some are parking at Balboa Park to take advantage of the Fast Pass discount. It is also possible that some BART patrons may find it easier to park at Balboa Park than at Daly City or Colma Stations, where parking demand is so high that the stations fill up very early. Lending further support to the incentive offered by the Fast Pass, is the map of home origins of all riders entering Balboa Park BART (Exhibit 3). There is a large cluster of origins that are actually closer to the Daly City BART station than the Balboa Park BART station. It is possible that some riders may not want to travel in the opposite direction if their destination is toward downtown San Francisco, but it is also likely that a significant number of riders are choosing Balboa Park BART over Daly City BART because of the Fast Pass.

Residents

Much of the station area is surrounded by residential uses, with the exception of the northwest quadrant, which is largely taken up by City College. The ability of residents to find on-street parking has been an issue in the past and the residents responded by requesting the creation of a residential parking permit area. As shown in Exhibit 1, portions of the ½ mile station area are within the Department of Parking and Traffic's (DPT) Area V Residential Parking Permit Area. Most of the streets in Area V have a 2-hour parking limit between 8 a.m. to 6 p.m. on weekdays, except for vehicles with an Area V permit. There are several blocks in the Ocean Avenue commercial district that have metered parking.

In the Balboa Park area there is an average of over 1.5 vehicles per household compared to a citywide average of less than 1.1 vehicles per household. There are approximately 18,000 people living within ½ mile of the station, or about 5,800 households, yielding an estimated 8,850 automobiles. Based on a standard of 1 off-street space per dwelling unit, there would be a demand for over 3,000 on-street spaces from these residents.

City College

City College's Phelan campus currently has around 30,000 registered students. The college itself controls about 2,200 spaces, and of these over 600 are typically reserved for faculty and staff. The demand for parking exceeds supply during certain hours, resulting in parking spillover in the area around the college. The City College Police Department receives frequent complaints from neighbors regarding spillover parking. The police chief also observed that parking demand far exceeds the supply, perhaps by two or three times the 3,500 student parking permits that the college currently sells. The permits are sold on a first-come, first-

served basis and the cost of the permits is relatively inexpensive.

Using information from City College, we mapped by zip code the residences of San Francisco residents who are students at City College. As Exhibit 4 shows, the origins are located throughout the City. Some of the origins would require at least one transfer on MUNI and potential travel times of up to an hour to reach City College. Students coming from these origins may be more likely to drive to the college. Similarly, over 3,200 students reside in San Mateo County and 1,600 in Alameda County. It is unlikely that all of these students live in close proximity to a BART line or transbay bus route; so some of these students likely drive to City College, as well.

While City College did not have data available on the access mode of its staff and students, we can make some assumptions about the level of demand for on-street parking for City College users. For example, if just 20% of the registered students drive on a given day (a fairly conservative assumption), this would result in around 6,000 daily vehicle trips. Even with a relatively high parking turnover assumption of 50%, this would leave a deficit of 1,500 parking spaces.

Muni Employees

MUNI's Green, Geneva and Upper Yard facilities, located at the intersection of San Jose and Geneva Avenues, are immediately adjacent to the Balboa Park BART Station. MUNI's facilities serve as the current base for repair and storage of all of MUNI's light rail and historic streetcar vehicles. There are currently about 540 employees working at these facilities. MUNI controls about 280 off-street parking spaces in the area (25 of which are used for storage) and about 35 reserved on-street parking spaces along Geneva and San Jose. The on-street parking spaces were granted to MUNI by DPT in 1998, due to reduced off-street parking in one of the yards and because of the difficulty in finding available on street parking because of early working hours when transit is often not a viable option for many MUNI employees. The on-street spaces are subject to annual approval by DPT.

Assuming that the spaces are fully utilized and assuming 1 occupant per vehicle per parking space, this roughly corresponds to a drive alone mode split of 58% for MUNI employees at these facilities. Given their proximity to the BART station, the on-street spaces reserved for MUNI employees would otherwise be prime spaces to reserve for non-commute (e.g. mid-day) BART trips, such as for Balboa Park or Outer Mission residents who may need to shop or run errands downtown.

Others

Some of the other trip generators which may be utilizing on-street parking in the Balboa Park Station area include Lick-Wilmerding High School, Balboa High, Riordan High and James Denman Middle School, which together have over 3,000 students and probably several hundred employees. These schools could easily attract another few hundred parkers in the area throughout

¹ 1990 U.S. Census

the day.

Balboa Park, located north of the BART station, may also contribute to on-street parking demand. Last, though certainly not least, the neighborhood commercial areas on Ocean Avenue and Mission Street are likely to attract some auto trips throughout the day, from employees, patrons, and service providers.

Windshield Survey

On November 14, 2002, the Authority conducted a windshield survey of cars parked within a 1/2 mile of the Daly City and Balboa Park BART Stations (See Exhibits 1 and 5 for the survey areas and Exhibit 6 for the surveys). The goal of the survey at Balboa Park was to provide some additional observed data to help quantify the relative contribution of the various trip attractors (e.g. BART, residents, City College, etc.) to the on-street parking demand in the station area and identify those who might switch to Daly City BART if the Fast Pass were extended to that station. The Daly City survey was intended to provide a baseline of current on-street parking demand, which would provide input to the assessment of the impacts on Daly City of the proposed Fast Pass extension.

Balboa Park results are statistically significant, but Daly City results are not statistically significant; thus, we are concentrating on the Balboa Park results.

There were 2,000 surveys distributed in the Balboa Park station area, including all on street parking spaces within a 1/4 mile of the BART station and most of the spaces within a 1/2 mile of the station. Due to an underestimate of the number of surveys needed, a few streets greater than a 1/4 mile from the station were not surveyed. These were mainly streets near Mission Street with 2-hour time limits. These areas are unlikely to have many BART riders given the distance from the station, the 2-hour time limit,

Percent	Reason for Parking in Balboa Park Station Area
39%	To ride BART
37%	Live in the Area
10%	Work in the Area
8%	Other
6%	Attend class at City College
100%	Total

and the pedestrian barriers such as topography between the parking spaces and the BART Station. Based on 166 surveys returned, the main reasons provided for parking in the station area are shown below:

By applying the percentages to the total number of surveys distributed (2,000), the data indicates that approximately 720 to 840 on-street parkers were BART patrons and 680 to 800 on-street

parkers were Balboa Park residents. However, a closer look at the home zip codes of the BART parkers shows that 33% are also Balboa Park residents. This is shown most clearly in Exhibit 6b, which is a map of the home zip codes of BART patrons who park in the Balboa Park Station area. The results closely correspond to BART's 1998 Station Profile Survey (Exhibit 2).

"...OF THOSE BART PATRONS WHO PARK AT BALBOA PARK STATION, NEARLY HALF (41.4%) DRIVE IN FROM CITIES SOUTH OF THE COUNTY LINE, A THIRD (33.3%) LIVE IN BALBOA PARK, WHILE A QUARTER (25.3%) LIVE IN OTHER PARTS OF SAN FRANCISCO."

Specifically, the windshield survey results showed that of those BART patrons who park at Balboa Park station, nearly half (41.4%) drive in from cities south of the San Francisco county line, a third (33.3%) live in Balboa Park, while a quarter (25.3%) live in other parts of San Francisco.

Based on the survey results, the number of BART parkers in the Balboa Park station area (39%), who drive in from areas south of the county line (41.4%), and who also own a Fast Pass (42%) is about 130 based on 2000 parked cars in the survey area. This is the group of BART patron parkers who would most likely be enticed to switch to Daly City if the Fast Pass were extended, but the number is very small. Even if our estimate is off by 100% and there were available parking spaces at Daly City, it is clear the extending the Fast Pass to Daly City would not be very effective at resolving the parking problems at Balboa Park.

B. Potential Solutions

There are a number of possible solutions to address the parking problems in the Balboa Park area. As part of the Board-approved scope for this SAR, we were specifically directed to evaluate the effectiveness of extending the use of the MUNI Fast Pass to the Daly City BART Station. In this section, we first evaluate the Fast Pass extension and then consider other possible solutions such as parking management and transit improvements.

Extending Fast Pass to Daly City BART

Under the current BART-MUNI Fast Pass agreement, holders of MUNI's \$35 monthly pass not only are allowed unlimited trips on MUNI, but are also allowed unlimited trips on BART within San Francisco between Embarcadero and Balboa Park Stations. For someone who rides BART 40-50 times per month, this would translate to savings of \$15-25 per month on BART tickets. For people commuting from San Mateo County, using a Fast Pass at Balboa Park instead of boarding at Daly City or Colma saves around \$45-65 per month, or \$635-900 per year. The larger savings for these trips is partly a result of the longer distance on BART and partly due to a surcharge for crossing into San Mateo County, which is built into the fare structure. Thus, the BART-MUNI Fast Pass agreement offers a real financial incentive for some people to use Balboa Park BART Station rather than Daly

¹ 1990 U.S. Census

City or Colma Stations. Extending use of the Fast Pass to Daly City BART would eliminate the financial incentive to go to Balboa Park for riders who could otherwise more easily board at Daly City. The BART fares increased January 1, 2003, should make this incentive even stronger.

In response to a request from a BART Director, BART staff prepared an analysis of likely ridership and financial impacts of the proposed Fast Pass extension on BART, Muni, and SamTrans. The analysis was completed in March 2000, and updated in April 2002. Since the BART analysis directly coincides with the Fast Pass extension proposal considered in this SAR, we have used the BART analysis as the basis for our analysis of the Fast Pass extension.

Ridership and Travel Behavior Changes

BART's analysis assumed that extension of the Fast Pass to

BART Station	Change in Daily Trips	Notes
Balboa Park	-1,200	Shift to Daly City
Colma	-3,400	Shift to Daly City
Daly City	6,053	Shift from Balboa Park and Colma, plus induced trips at Daly City

Daly City BART would primarily impact Balboa Park, Daly City, and Colma Stations. Thus, the first step in BART's analysis was to estimate the change in ridership and fare payment type (i.e., regular BART ticket versus Fast Pass). BART forecast the following shifts in ridership as a result of the Fast Pass extension:

At Balboa Park, the BART study assumed that at most 30% of current Fast Pass users might switch to Daly City, based on the assumption that the people who would likely switch to Daly City would satisfy all three of the following criteria:

- travel by BART three or more times per week to downtown San Francisco and currently use the Fast Pass (with this travel pattern the Fast Pass results in a cost savings for the BART rider over the regular, full BART fare);
- currently travel by car to the Balboa Park Station (i.e., people who walk, bike, or take transit to Balboa Park would be unlikely to switch to Daly City); and
- have home origins that are closer to Daly City BART than Balboa Park BART.

Using this approach, BART estimated that 1,200 weekday trips would switch to Daly City (in 2005 after the SFO Extension opens BART estimated 1,192 trips shifting).

Similarly, at Colma the BART analysis assumed that those patrons likely to switch to Daly City to use the Fast Pass would 1) currently pay full BART fare versus discounted fares such as the senior fare, and 2) travel to San Francisco BART stations three or more days per week. It was assumed that the switch would be independent of access mode. Based on these assumptions, BART estimated 3,400 weekday trips switching from Colma to Daly City to use the Fast Pass (2,676 trips in 2005).

At Daly City, it was estimated that all of those riders who currently travel to San Francisco more than 3 times per week and who do not use discount tickets (e.g. senior or student tickets) would switch to Fast Pass use to receive the significant discount on the full BART fare. BART also estimated that the reduced fare would stimulate a certain number of new trips (induced demand). The result of these assumptions is a shift of 8,454 existing full-fare weekday trips to Fast Pass use, and 1,453 induced weekday Fast Pass trips (8,954 and 1,541 in 2005). The total number of new trips at Daly City (6,053) is comprised of the trips shifted from Balboa Park (1,200) and Colma (3,400), plus induced trips at Daly City (1,453).

Overall, BART's approach to forecasting the likely shift in ridership due to the Fast Pass extension is sound, except for two points. First, BART's analysis only assumes that those who currently travel to Balboa Park by car (drive alone or carpool) might switch to Daly City. By comparing the origins of Balboa Park riders who park (Exhibit 2) versus origins of all Balboa Park riders regardless of access mode (Exhibit 3), it appears likely that some people are currently traveling to Balboa Park by transit even though they live closer to Daly City. It is reasonable to assume that some people who can take MUNI's 28 or 54, both of which serve Daly City BART, might switch stations. Also, some people may choose to walk to BART, though the current access to the station is not particularly pedestrian friendly. It should be noted that BART's assumption that only people who travel to Balboa Park by car may switch to Daly City, is sufficient to evaluate the effectiveness of the Fast Pass extension in terms of reducing the parking problem at Balboa Park, though it under estimates the financial impacts on the transit operators (see following sections). The second area where we believe the BART analysis falls short is in that the lack of parking at Daly City BART station isn't fully taken into account. This is a key point since our analysis indicates that parking is in such high demand at Daly City BART that the ridership shifts forecast by BART could not materialize under current conditions. This is discussed further in the section below.

Impact on Parking

Using BART ridership data from February 2002 and access mode split from BART's 1998 Station Profile Survey, we calculated the current parking demand and resulting deficits at the Balboa Park (1,560 vehicles), Daly City (1,181), and Colma (1,430) BART Stations (Exhibit 7). These figures suggest that parking demand is already exceeding capacity, and the overflow vehicles are parking

on street or in other lots in the station areas. Unrestricted parking at both Daly City and Colma typically fills by 7:30 AM on weekdays, indicating further that there is a parking crunch at these stations. At the Balboa Park Station there is no BART provided parking nor any off street lots that can be used for BART parking; therefore, the 1,560 "spillover" vehicles must be parking on the streets in the station area.

Exhibit 8 takes the ridership shifts that BART forecast would occur as a result of the Fast Pass extension to Daly City and applies them to the current BART parking deficits at Balboa Park, Colma, and Daly City Stations. As the table shows, in order for these ridership changes to materialize, Daly City would have to absorb over 2,000 new vehicle trips when BART parking is already essentially at capacity. This suggests two things. First, extending the Fast Pass to Daly City would likely increase parking demand at Daly City, possibly causing the parking structure to fill up even earlier. Second, the ridership changes forecast by BART would not fully materialize under current conditions, as there is simply not the capacity at Daly City to accommodate this many additional vehicles.

This analysis also shows that BART's forecast of an estimated reduction of 500 vehicle trips/parked cars at Balboa Park is not likely to occur, since there is no way to ensure that these individuals would be able to find parking at Daly City. Any available parking spaces would probably at best be distributed proportionally between three groups: new riders at Daly City, riders switching from Colma and riders switching from Balboa Park. Based on the ridership changes discussed above, diverted auto trips from Balboa Park represent only around 20% of total potential increased demand from auto trips diverted to Daly City (see Exhibit 8). As an example, assuming that Daly City could accommodate an additional 500 vehicles per day in dedicated BART parking and on local streets (a generous assumption, given existing demand), then only around 100 vehicles from Balboa Park might be accommodated. This means that under the current conditions of high parking demand at Daly City BART station, extending the Fast Pass to Daly City would not be an effective means of reducing parking at Balboa Park Station. Furthermore, given that BART ridership is forecasted to keep increasing in the long term, especially with the opening of the SFO extension, station area parking will likely continue to be a problem. In addition, the upcoming implementation of parking charges at the SFO extension stations, and almost certainly at Daly City, combined with the January 2003 BART fare increase, will serve to make the Fast Pass an even more financially attractive option for BART riders willing to travel to Balboa Park Station.

Current Financial Arrangements

Although our analysis indicates that extending the Fast Pass would not be an effective means of alleviating the parking problem at Balboa Park BART Station, we will briefly review the existing financial arrangements between BART, MUNI and SamTrans that would potentially be affected by this policy change since it

may be that extending the Fast Pass is a viable option to achieve other goals (e.g. providing a more seamless transit system for passengers) or under other conditions.

Under the existing Fast Pass agreement, MUNI reimburses BART at the rate of \$0.76 for each Fast Pass ride on BART. In 2001-02, MUNI paid BART about \$8.7 million in reimbursements. Another agreement between BART and MUNI relates to BART riders who exit at the Daly City station. These riders can obtain a free two-part transfer to ride on MUNI, which is valid for three days after exiting. BART reimburses MUNI at a rate of \$0.70 per transfer. In 2000 BART paid MUNI a total of \$194,000

“...THE REVENUE LOSS TO BART WOULD BE ABOUT \$4.8 MILLION IN 2002 AND \$2.5 MILLION IN 2005 [AFTER THE SFO EXTENSION OPENS]

per year for these transfers. The third relevant financial agreement is the BART-SamTrans Colma Operating Agreement, under which BART pays to SamTrans any net operating surplus at Colma. BART currently pays SamTrans about \$1 million for operating surpluses. When the SFO extension opens this agreement will be expanded and SamTrans will be responsible for operating expenses at all of the new stations as well as Colma. Any surpluses will initially be used to pay down large debts for the capital costs of the extension.

The same agreement also stipulates that SamTrans and BART will split equally the net revenues from parking fees at extension stations. However, SamTrans will receive 100% of revenues from a SamTrans owned Park and Ride lot at Colma. Daly City Station is not part of the agreement. Net parking revenues from Daly City will go entirely to BART.

Financial Impact

Using BART's forecast ridership changes from the Fast Pass extension, all three impacted transit operators - BART, MUNI, and SamTrans - would suffer a financial loss (Exhibit 9). Using BART's ridership assumptions, we calculated the net revenue loss to BART would be about \$4.8 million in 2002 and \$2.5 million in 2005. The cost to MUNI from new Fast Pass trips would also increase by about \$200,000 in each of these years. This figure is based on the payment from MUNI to BART for all new weekday Fast Pass trips (13,307 in 2002) at \$0.76 per trip, minus the revenue to MUNI from the sale of additional Fast Passes (about 6,500 per month in 2002, assuming 2 weekday trips per Fast Pass holder), at \$35 per month. If MUNI's proposal for increased fares and Fast Pass prices is approved, the net cost to MUNI would be reduced. The estimated payment from BART to SamTrans under the Colma operating agreement would increase by \$500,000 in 2002, but by 2005 it is estimated that SamTrans could lose up to \$1.7 million in 2005 from decreased ridership at Colma under the new SFO operating agreement. Although the estimated loss to MUNI would be minimal, the combined loss to all three transit operators is substantial.

¹ 1990 U.S. Census

Shifting ridership to Daly City from other San Mateo stations could also affect SamTrans in other ways. With the opening of the SFO extension, SamTrans plans to save costs by reducing some of its bus service to Daly City. Increasing the demand at Daly City could complicate this. Also, SamTrans could be further penalized if parking revenues at Colma and the extension stations were reduced as result of riders switching to Daly City.

Realistically the only viable way to achieve extension of the Fast Pass will be one which more or less holds the transit operators financially harmless. This is even more significant now when the transit operators are starting to feel the impacts of a prolonged economic downturn and are forecasting increasing operating deficits and facing the potential of service reductions. In Exhibit 9, we included several scenarios that would produce revenues to help offset the loss to the transit operators from the Fast Pass extension. These include increasing BART's daily parking charge from \$2 to \$3 and increasing the amount that MUNI reimburses BART for each Fast Pass trip. The rationale for the latter variable is that the projected financial impact on MUNI is minimal and the Fast Pass reimbursement hasn't changed in years even though BART fares have increased several times. It should be pointed out that BART would likely lose a substantial number of San Francisco to San Francisco trips if the Fast Pass agreement were eliminated as many price sensitive riders would likely choose to just use MUNI instead of paying the full BART fare.

Certainly, the soon to be implemented BART parking charges offer a new revenue source that could help offset the losses to transit operators caused by the Fast Pass extension. SamTrans and BART have already approved parking charges at the four extension stations and at Colma BART has also approved parking charges at Daly City.

A simple calculation of potential revenues from parking fees in the West Bay show that these fees are indeed a promising source of revenue for BART and SamTrans. Assuming 25% of capacity is allocated to reserved monthly parking at \$63/month and that the rest is charged at a rate of \$2/day, the four SFO extension stations and Colma, operating at 100% occupancy, could be expected to generate gross revenue of about \$4.5 million per year during weekdays alone. Any parking revenues at these stations would be split evenly between BART and SamTrans, except for 800 park-and-ride spaces at Colma that belong solely to SamTrans and could generate revenue of about \$0.5 million per year. Daly City, using the same assumptions, could generate revenue of \$1.3 million per year, which would all go to BART. If parking charges were

increased to \$95/month for reserved and \$3/day for daily parking, this revenue would rise to nearly \$2 million.

Parking charges at Daly City would likely worsen the parking problem at Balboa Park, especially if the current Fast Pass agreement is not changed. Because of this, it seems reasonable that some of the parking revenues from Daly City be used to offset BART related parking problems at Balboa Park. This is supported by BART's parking policy, which encourages BART to use parking revenues to increase access by transit, bicycle, and foot.

"...AN ALTERNATIVE METHOD

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Parking Management

Strategies

An alternative method of addressing parking issues at Balboa Park would be to better manage the existing parking spaces, both on and off street. To begin with, the Area V Residential Parking Permit area could be extended to more thoroughly cover the area, particularly any streets that are primarily residential in nature, are not in the permit zone now, and that are also within walking distance of the BART station, City College, or any of the other major trip attractors. In areas where parking is perceived to be a problem but where it does not make sense to have residential parking (i.e. in non-residential areas), short-term parking meters could be installed to ensure higher rates of parking turnover. Both of these policies would need to be adequately enforced to ensure their effectiveness, and might require both capital investment in terms of signage and parking meters, and operating costs for enforcement and meter maintenance. A city agency such as DPT would need to take the lead on planning and implementing this option.

City College could also change the way its parking permits are distributed. These permits are currently sold on a first come, first served basis, which does not promote the most efficient use of existing parking. Permits should be distributed in a way that gives priority to those who need to drive due to special circumstances, live furthest away from campus or in transit inaccessible places. At UC Berkeley, priority is given to students and staff who live farther away from the campus. Another demand management strategy at the College and area schools might be to reserve spaces for carpools. City College should also be encouraged to actively promote use of MUNI and BART. Such a campaign could be done in conjunction with a discounted transit pass program like that used at UC Berkeley, administered through the College, MUNI, and/or BART. With enrollment in California's higher education system expected to rise steadily over the coming decade, City College should be encouraged to have a strategy to manage increasing transportation demand at its campuses and to increase the share of non-auto trips.

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Muni might also look at the parking situation with its employees at the maintenance and storage yards in the area. If there are ways to reduce this demand or utilize Muni off street parking more efficiently, these should be pursued. MUNI currently has on street parking reserved for its employees that might otherwise be used by short-term BART parkers, such as residents of the Balboa Park area needing to park and ride BART for shopping, errands or other non-commute purposes.

Other Strategies

Other measures could be taken to reduce the auto mode split to BART and other major attractors in the Balboa Park area. The most obvious is to make targeted transit service improvements. From the Authority's evaluation of transit service in the Outer Mission SAR, the single most effective improvement would be to improve the reliability of MUNI service. Similarly, instituting timed transfers at key locations such as Geneva and Mission and at the Balboa Park station and deploying real time transit information would contribute significantly toward making transit access to/from the Balboa Park station area more competitive with the automobile.

Another specific transit improvement that was also recommended in the Outer Mission SAR, is the extension of the 14-Mission to Daly City. This extension would close a MUNI service gap on the Mission Street corridor south of Geneva Avenue. There is no direct service from this area to the Balboa Park BART station, except for MUNI Route 88, which runs north on Mission to the station in the AM peak and the reverse direction in the PM peak. Currently, it can take as long as 45-minutes to get to the Balboa Park Station, particularly during the non-commute hours because of the unreliability of MUNI service and transfers from origins in this corridor. While the on-time performance of the 88 Line appears to be improving during commute hours (72.3% in August 2002 vs. 67.1% in March 2001), this still means that nearly 3 in 10 buses are more than 1 minute early or 4 minutes late. Extending the 14-Mission could reduce the parking demand due to BART riders who might otherwise choose to drive to Daly City or Balboa Park, something that may become more important when the BART SFO Extension opens in early 2003, with stations at the airport and other destinations in San Mateo county. Alternately, MUNI could work to improve timed transfers at Mission and Geneva or provide service on the 88 Line during the midday. The latter would only involve operating expenses, but that could be difficult to do in the short-term given MUNI's and the City's declining revenues from the General Fund.

At an order of magnitude level, extending the 14-Mission may cost about \$6 million for trolley-bus wiring (\$8 million per two-way mile to electrify), and would add operation costs to the line

(~\$100/revenue vehicle hour), up to ~\$1.8 million annually assuming the extension would require an addition of 4 buses to the line (x 16 hours per day, x 290 weekdays/year). It would also be possible to extend the 14-Limited or 14-Express, both of which are motor coaches and would not involve the expense of the overhead wires. However, the level of service would not be as high since the limited and express routes don't operate at all times. Nevertheless, this option could be the short-term solution until trolley lines can be installed. Because extension of the 14 to Daly City BART would benefit residents of both counties, possibilities exist to share the capital and operating costs. The 14 is one of MUNI's candidate lines for expansion, and this service extension has already been recommended in a number of different documents, including the Authority's May 2002 Outer Mission SAR, BART's December 2002 Daly City Access Plan, Muni's Expansion Plan, and the Proposition B Expenditure Plan.

BART's Balboa Park Comprehensive Plan proposes to improve station capacity and access, easing fare-gate overloading and providing more convenient transfers and access to nearby destinations such as City College. The Planning Department's Better Neighborhoods Plan makes suggestions for overall improvements to land use and the physical environment to make it more transit, pedestrian, and bicycle friendly. In the longer term, these changes can dramatically influence travel behavior and improve the viability of non-auto modes for traveling in the Balboa Park area.



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IV. RECOMMENDATIONS AND NEXT STEPS

§ The Planning Department and DPT should work together to develop a parking management plan for the Balboa Park Station area that addresses the immediate concerns of residents, visitors, employees, and others and contains a longer-term component that complements the Better Neighborhoods vision for a more pedestrian, bicycle, transit friendly area with a higher density of land uses.

§ The Planning Department should continue to encourage Travel Demand Management (TDM) techniques as highlighted in the Draft Balboa Park Station Area Plan, with a particular emphasis on City College, one of the largest trip generators in the Balboa Park area.

§ The Authority should formally communicate to BART its desire to participate in discussions about the use of BART parking revenues generated at the Daly City Station, and specifically make it known that some of the revenues should be used to address spillover BART parking at Balboa Park, and to improve transit, bicycle, and pedestrian access to the Balboa Park and Daly City stations. Extension of MUNI's 14-Mission trolleybus route from its current terminus to the Daly City station is a prime candidate for receipt of parking revenues.

§ DPT and BART should consider conducting another

windshield survey in the Balboa Park BART Station area approximately one year after the BART SFO Extension opens and parking charges are implemented at Daly City and the San Mateo County extension stations. The survey can be compared to the one conducted for this SAR to help determine whether the demand for parking by BART patrons has increased in the Balboa Park area. This data would help determine how BART parking revenues should be used to address BART spillover parking at Balboa Park. Furthermore, this data should be shared with MUNI and the Planning Department for incorporation into their planning efforts.

§ In the short term, MUNI should survey its own employees at the Geneva, Green, and Upper Yard facilities to determine if TDM strategies could be used to eliminate the need for some or all of the 35 on-street parking spaces currently reserved for MUNI employees working at these facilities. DPT should convert any unneeded spaces to short term (e.g.: 4 to 5 hour), non-commute spaces that could be used by midday BART patrons or others who may need to park for a few hours in the Balboa Park Station area (e.g. City College students, people running errands, etc.). In the longer term, the opening of MUNI's Metro East should free up off-street spaces that are currently being used for storage at the Geneva/Green facilities.

§ The extension of the Fast Pass to Daly City should be revisited in conjunction with full deployment of Translink, the universal Smart Card for Bay Area transit. One of the opportunities afforded by Translink, which is still in the demonstration phase, is the ability for transit operators to renegotiate fare structures and transfer agreements with other operators to help provide passengers with a truly regional system. To date, neither the Metropolitan Transportation Commission nor the transit operators have focused on this aspect of Translink since the current focus is on the physical deployment of the technology and administrative agreements. In order to make the Fast Pass extension financially viable for BART, MUNI, and SamTrans, it will require a package of changes to offset the revenue loss. Such a package might include BART parking revenues, increasing the cost of the Fast Pass, creating a higher cost Fast Pass just for Daly City BART, increasing MUNI's payment to BART for each Fast Pass trip on BART, using BART parking revenues to pay for increased MUNI service to BART and increasing BART parking charges.

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Additional information was provided by BART, City College, the Department of Parking and Traffic, the Planning Department, the Municipal Transportation Agency (MUNI), and the San Mateo County Transit District (SamTrans). A special thanks goes to BART for funding half of the cost of the windshield survey and for its staff's close coordination and cooperation with the Authority on this SAR.

VI. AUTHORITY STAFF CREDITS

The Authority is indebted to a number of staff members for their contributions to making this SAR possible. Forest Atkinson, Transportation Planner, pulled all of the various pieces together, did most of the initial writing, and finalized the maps and surveys. Maria Lombardo, Deputy Director, acted as principal editor and overall coordinator of the SAR effort. David Chan, Senior Transportation Planner, researched the Fast Pass Agreement between Muni and BART. Fred Ridell, Manager of Planning, provided overall guidance, review, and input. Lilia Scott, Transportation Planner, created the maps and contributed to design of the windshield survey. Nancy Schneider, Senior Transportation Planner, took the lead on designing the windshield survey and assisted with analysis of the ridership effects of the Fast Pass extension proposal. Ying Smith, Countywide Plan Manager, contributed to survey design. Andrew Kluter (Intern) assisted with data collection, research on parking management strategies, and financial impacts of the Fast Pass extension proposal. James Andrew, Clerk of the Board, prepared the final layout of the SAR for publication.

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