

San Mateo County Shuttle Inventory and Analysis

Prepared for the
San Mateo County Transportation Authority



Prepared by

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June 2010

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1.0 INTRODUCTION

The San Mateo County Transportation Authority commissioned AECOM to compile an inventory of shuttle services operating in San Mateo County to establish existing conditions and shuttle performance in advance of the Measure A Local Shuttle call for projects. The inventory also allowed identification of potential duplication of services among shuttles and between shuttles and fixed-route buses. This information will assist with Measure A shuttle program project funding decisions.

The shuttle inventory includes shuttles offered by a variety of service providers and operators, including the San Mateo County Transit District, the Peninsula Traffic Congestion Relief Alliance, and individual cities. Shuttles funded by private employers but operated by public entities were included; however, shuttles operated by private suppliers, such as Bauer Transportation, were not. The inventory includes shuttles with operations extending into neighboring San Francisco and Santa Clara County, when San Mateo county destinations are connected to transit stations across the county line.

An inventory of forty shuttle services was compiled electronically into an *Excel* spreadsheet file comprised of two worksheets. Shuttle routes are listed in the rows of the spreadsheet, and attributes, characteristics, and other data for each service in the columns. The Summary Worksheet contains data most useful for assessing shuttle performance and future needs. The Comprehensive Worksheet includes this data plus other information regarding shuttle management and funding. References in this report refer to the Summary Worksheet, which is included in Appendix A.

Along with the spreadsheet inventory, shuttle data was entered into a Geographic Information System (GIS), allowing shuttle routes to be mapped and compared with each other, other transit services, and geographic features of San Mateo County. The overview base map and eight numbered maps included in this report (Figures 1-9) provide an overview of the extent and nature of current services and show the GIS data used to assess the county's shuttle services. These findings should be considered a preliminary analysis of locations where there may be the opportunity to add or modify shuttle service, or better integrate shuttle service with fixed route bus service. The expected ridership demand and cost-effectiveness of new services or service modifications suggested in this report have not been assessed in detail; a quantitative assessment of the feasibility of service expansion or changes would be required prior to their recommendation and implementation. In particular, the upcoming SamTrans Comprehensive Operations Analysis (COA) may address the relationship between shuttles and fixed-route bus services.

2.0 INSTITUTIONAL OVERVIEW

The following overview is provided to describe several entities that are mentioned throughout this document, each of which has a role in supporting shuttle services in San Mateo County.

The **Alliance** refers to the **Peninsula Traffic Congestion Relief Alliance**, a joint powers authority dedicated to implementing transportation demand management programs in San Mateo County and providing alternatives to single-occupant auto travel, including shuttles.

The **City/County Association of Governments in San Mateo County (C/CAG)** acts as San Mateo County's Congestion Management Agency (CMA) and coordinates planning and transportation in the County.

SamTrans refers to the bus and paratransit service operated in San Mateo County by the **San Mateo County Transit District**. This body appoints a member to the **Peninsula Corridor Joint Powers Board (PCJPB)**, along with other agencies of San Mateo County and neighboring San Francisco and Santa Clara County. The PCJPB is the governing body for **Caltrain**, the commuter rail line operating between San Francisco, San Mateo and Santa Clara Counties, which itself is managed by SamTrans. Most of the

countywide shuttle network is managed by SamTrans and the PCJPB, and connects Caltrain riders to jobs and other activity centers.

The **San Mateo County Transportation Authority (SMCTA)** administers sales tax collected for transportation projects and programs in San Mateo County and is governed by a board representing the County, cities and the San Mateo County Transit District. SamTrans is the managing agency for SMCTA.

The **Bay Area Air Quality Management District (BAAQMD)** is the regional agency that administers the Transportation Fund for Clean Air (TFCA). TFCA funds are used to support a number of shuttles in San Mateo County. Some TFCA funds are distributed directly by the BAAQMD, and some are channeled through local congestion management agencies, which is C/CAG in San Mateo County.

3.0 GEOGRAPHICAL OVERVIEW

The “Shuttle Base Map” (**Figure 1**) provides an overview of the entire county with all forty shuttle services shown. As the map illustrates, services are concentrated in the heavily-populated “bayside” portion of the county, where most of the county’s cities traverse the Caltrain corridor. Accordingly, most shuttles act as commuter services connecting workplaces with the Caltrain line (shown in red) and to a lesser extent, BART (blue). The Caltrain and BART rail systems and the SamTrans bus network form the backbone of the county’s transit system.

Eight additional maps focus in on the bayside portion of the county from north to south as described below. Each map is identified by the Caltrain and/or BART station(s) serving the area shown.

Figure 2: Bayshore Caltrain Station; Balboa Park and Daly City BART Stations

This map covers shuttles operating in Daly City, Colma, and Brisbane, and connecting to Balboa Park BART and Bayshore Caltrain stations across the county line in San Francisco. Shuttles in this area connect Seton Medical Center in Daly City with BART; residential areas of Brisbane with BART and Caltrain; and office buildings at Sierra Point in Brisbane with BART.

Figure 3: South San Francisco Caltrain and BART Stations

This map covers shuttles operating in South San Francisco, where a concentration of office buildings is located at Oyster Point between U.S. 101 and San Francisco Bay and north of San Francisco International Airport. Shuttles circulate through this employment center, which includes the Genentech campuses, and connects it with BART and Caltrain.

Figure 4: San Bruno BART Station

This map covers the Bayhill BART shuttle, connecting shopping and office buildings in the Bayhill area of San Bruno with San Bruno BART Station.

Figure 5: Millbrae BART Station; Millbrae, Broadway and Burlingame Caltrain Stations

This map covers shuttles operating in Millbrae and Burlingame. These connect the bayside areas of Burlingame, the Broadway shopping district, and residential areas of Burlingame with the BART/Caltrain station in Millbrae.

Figure 6: Hillsdale and Hayward Park Caltrain Station

This map covers shuttles operating in San Mateo and Foster City. Along with serving residential areas of both cities, shuttles connect the Lincoln Centre, Mariners Island, Campus Drive and Norfolk areas with Caltrain. In addition, one shuttle service connects northern Foster City with BART and Caltrain at Millbrae.

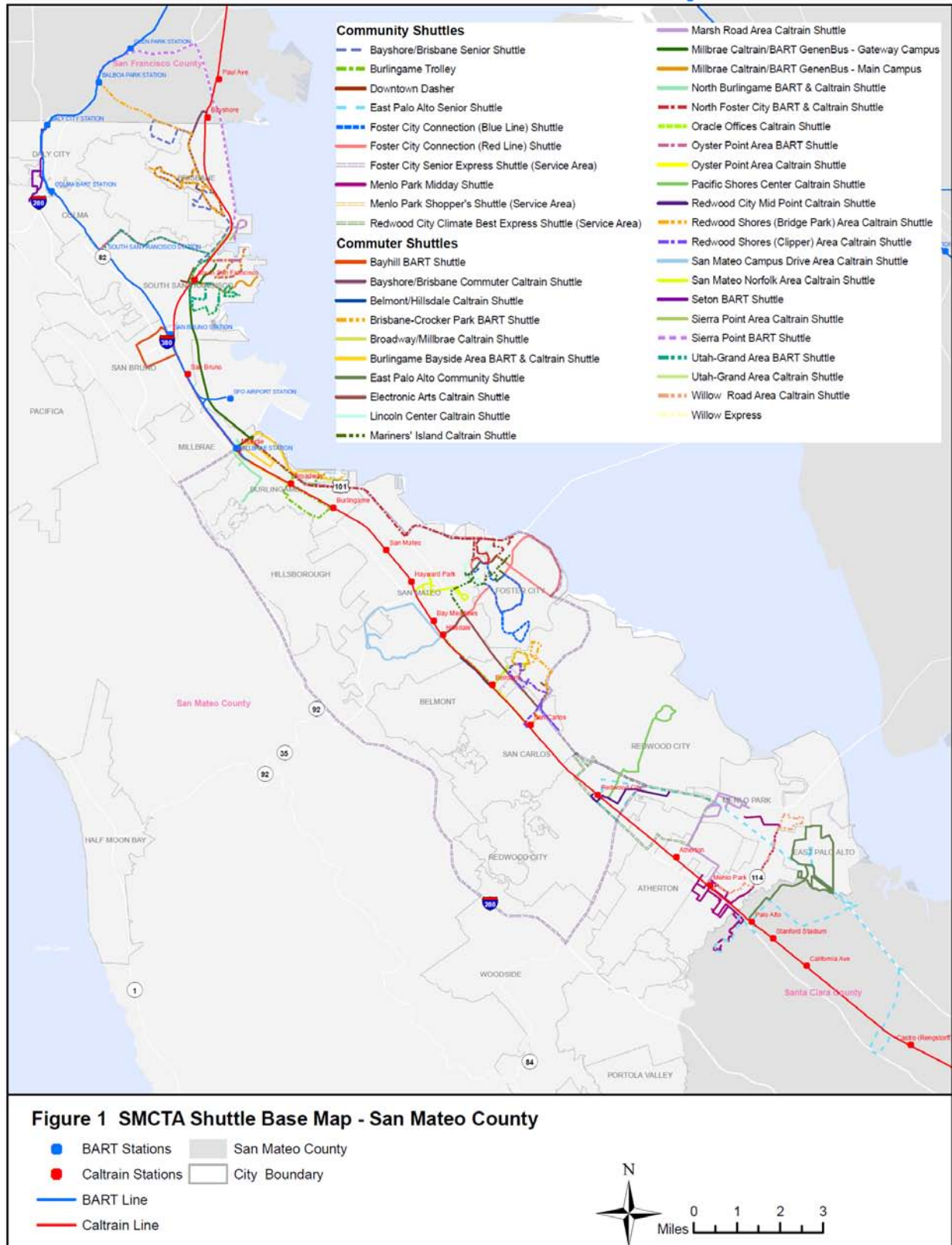


Figure 1
SMCTA Shuttle Base Map – San Mateo County

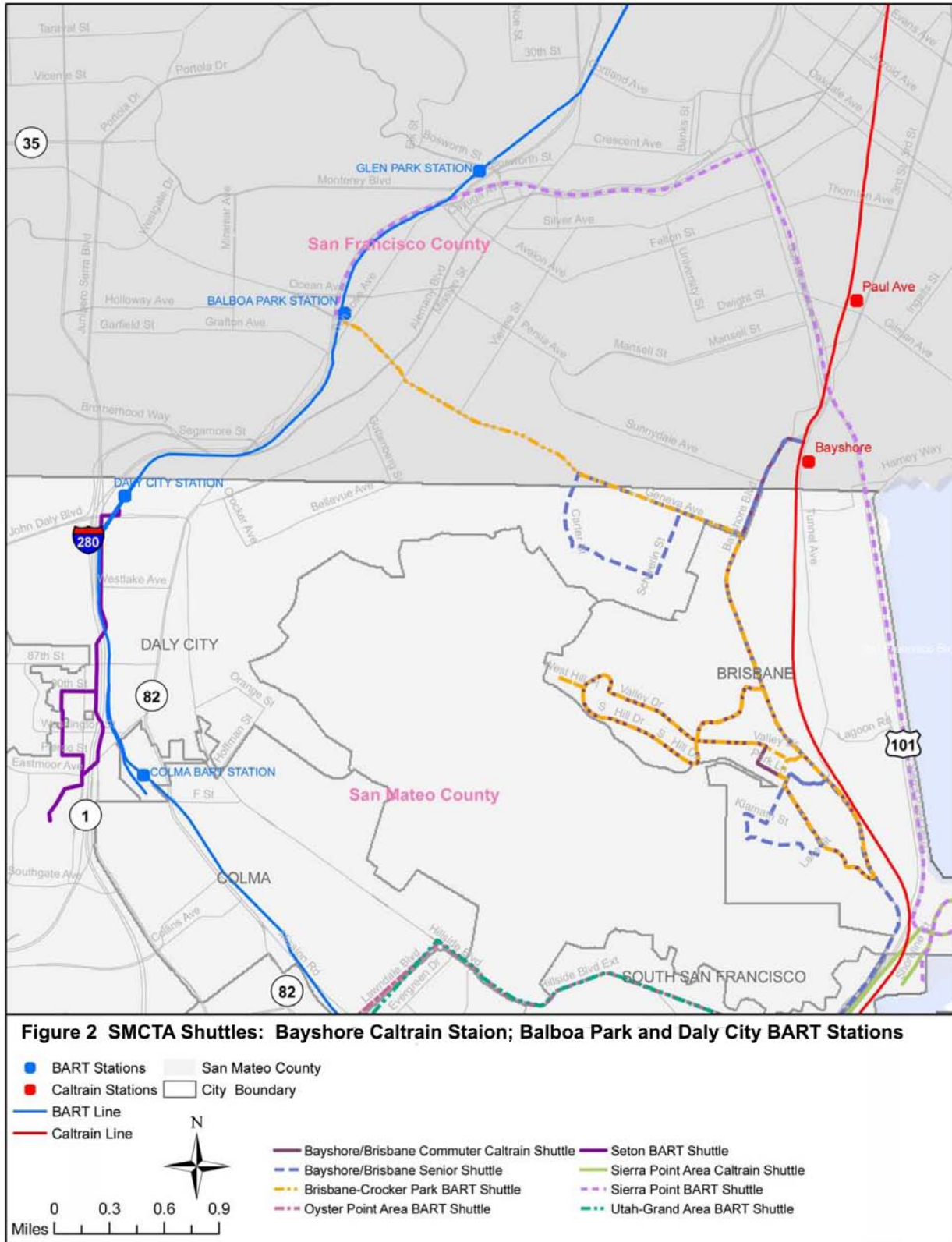


Figure 2
SMCTA Shuttles: Bayshore Caltrain Station; Balboa Park and Daly City BART Stations

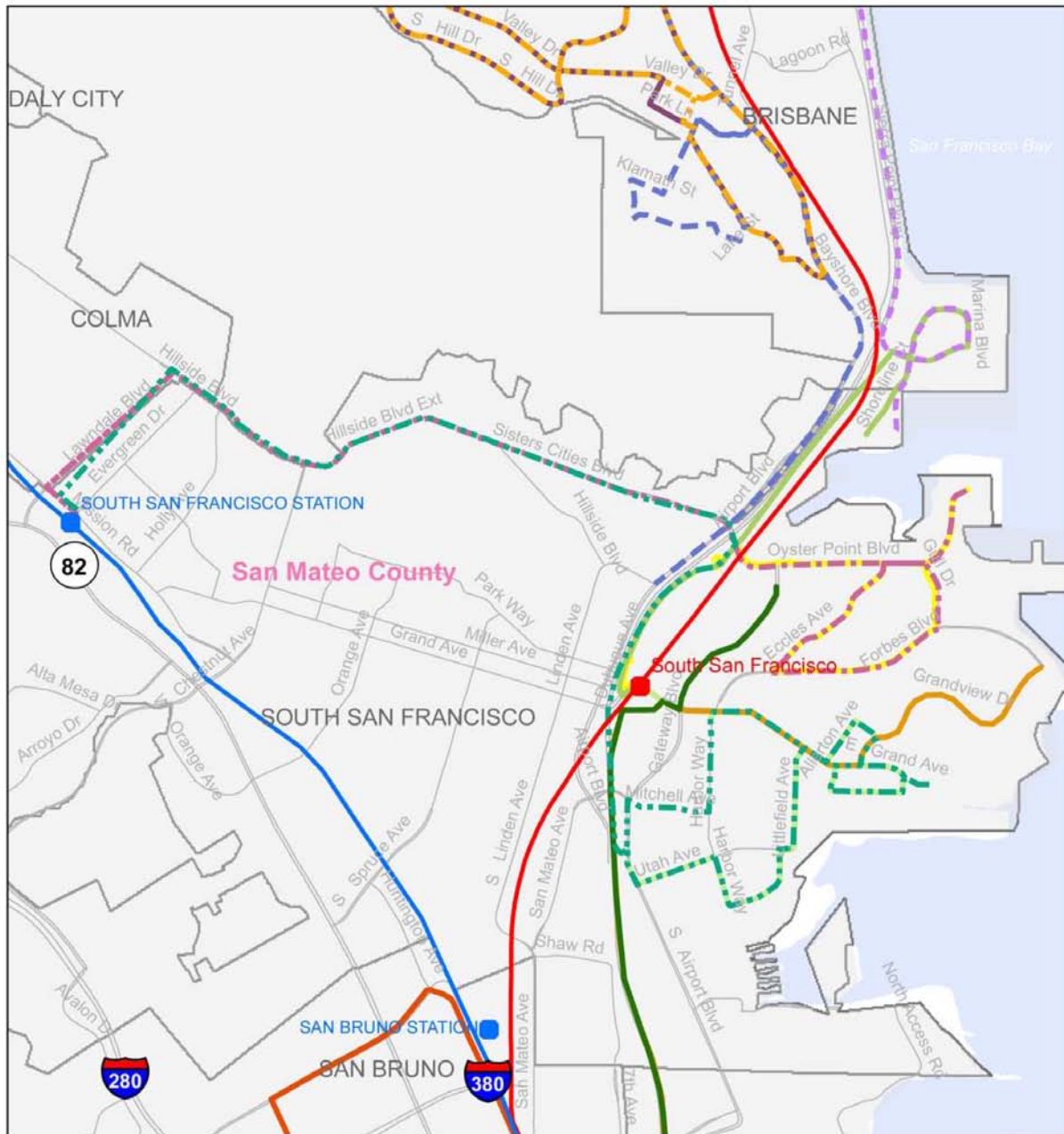


Figure 3 SMCTA Shuttles: South San Francisco Caltrain and BART Stations

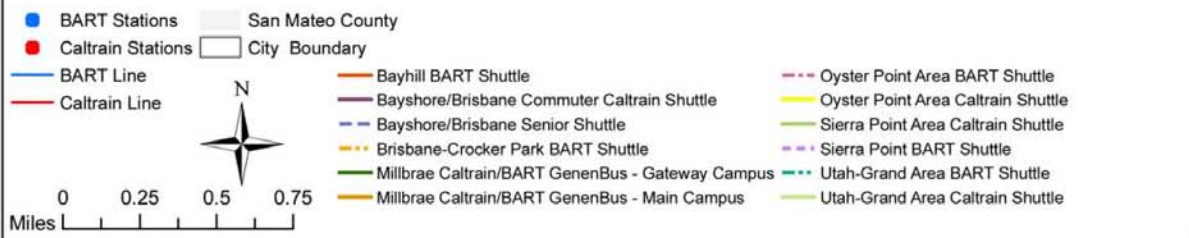


Figure 3 SMCTA Shuttles: South San Francisco Caltrain and BART Stations

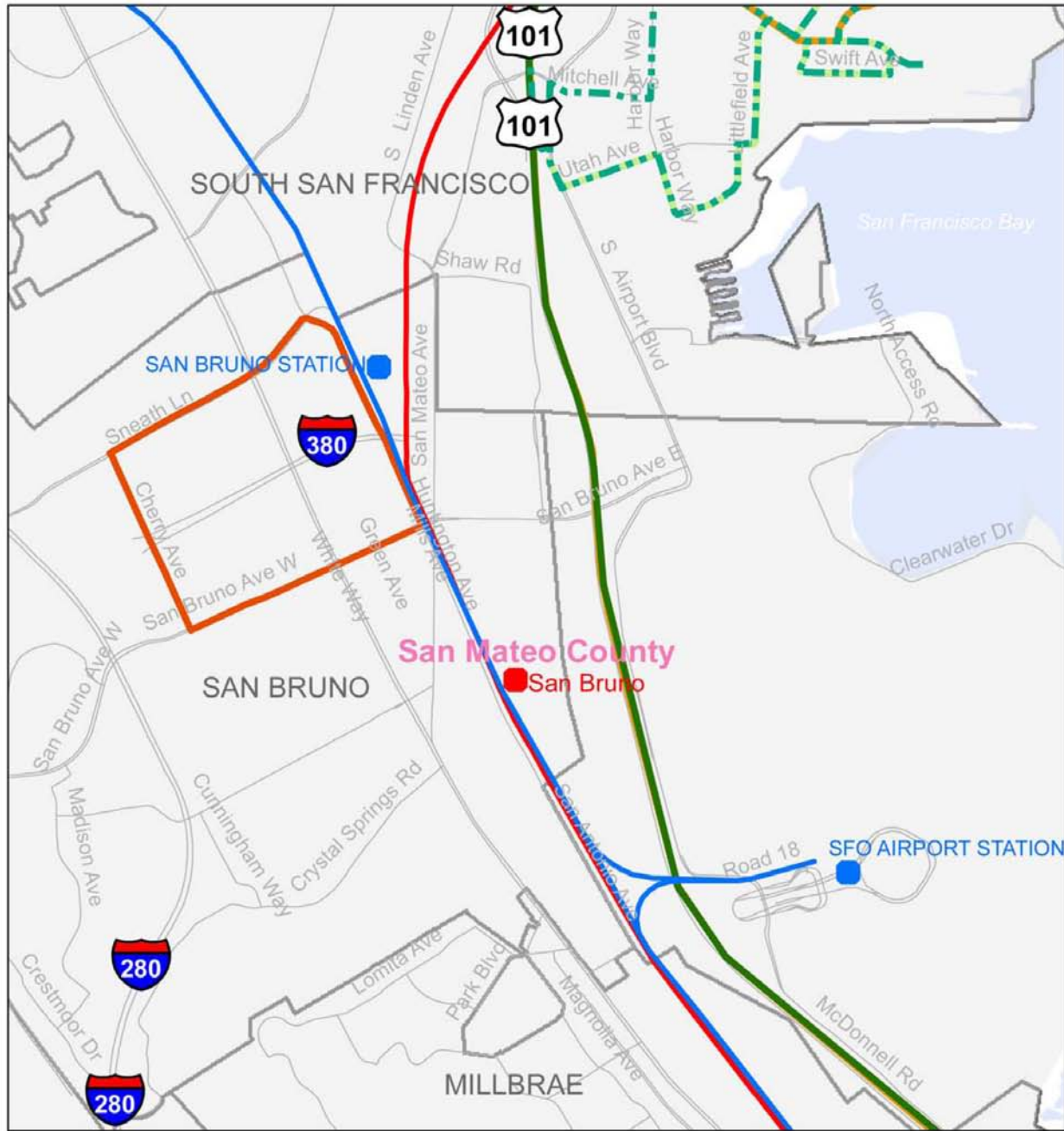
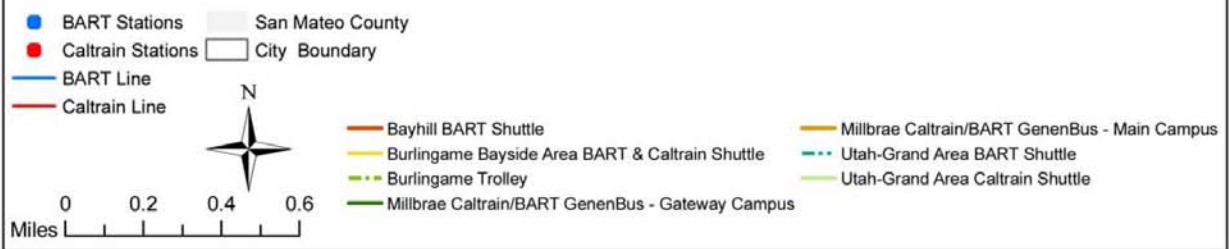
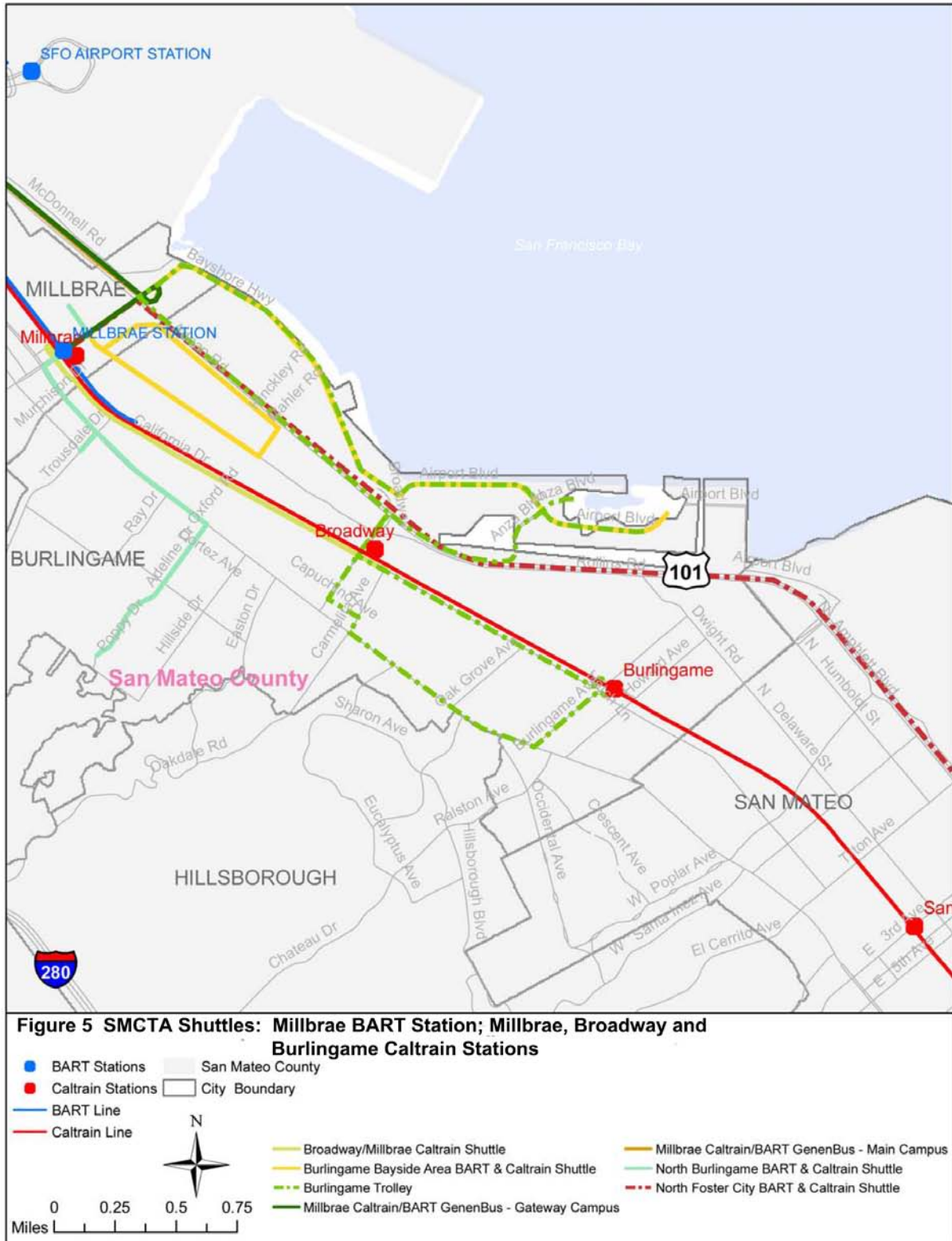


Figure 4 SMCTA Shuttle: San Bruno BART Station



**Figure 4
SMCTA Shuttles: San Bruno BART Station**



**Figure 5
SMCTA Shuttles: Millbrae BART Station;
Millbrae, Broadway and Burlingame Caltrain Stations**

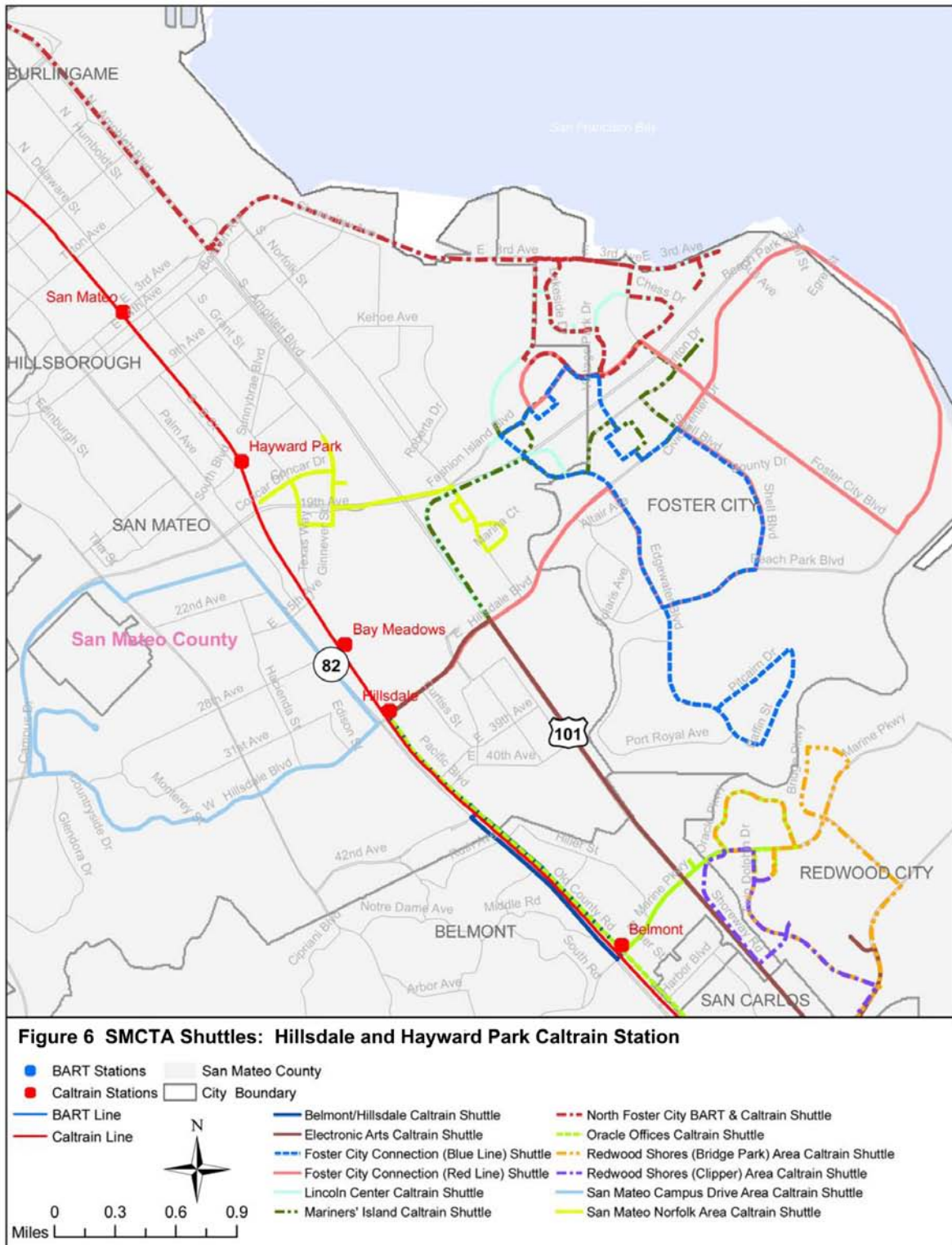


Figure 6
SMCTA Shuttles: Hillsdale and Hayward Park Caltrain Stations

Figure 7: Hillsdale, Belmont and San Carlos Caltrain Stations

This map covers shuttles serving Belmont, San Carlos and the Redwood Shores area of Redwood City. These include a shuttle between Hillsdale and Belmont Caltrain stations, and shuttles between Caltrain and the Electronic Arts and Oracle campuses and the Bridge Parkway and Twin Dolphin Drive areas of Redwood Shores.

Figure 8: Redwood City Caltrain Station

This map covers shuttles operating in Redwood City. These include a senior shuttle connecting East Palo Alto to Redwood City, and a shuttle connecting the Pacific Shores Center campus with Caltrain.

Figure 9: Menlo Park and Palo Alto Caltrain Stations

This map covers shuttles operating in Atherton, Menlo Park, and East Palo Alto, and across the county line in Palo Alto. These include shuttles serving residential areas of the three cities, connecting them to Palo Alto's downtown business and shopping district and Caltrain station. Shuttles also connect Menlo Park's Marsh Road and Willow Road office parks with Caltrain.

4.0 SHUTTLE INVENTORY OVERVIEW

As stated previously, data on each shuttle occupies a row of the shuttle inventory spreadsheet. To facilitate easier referencing, each shuttle is assigned a number (appearing in Column A). Rather than an alphabetical system, the shuttles are numbered roughly in geographical order (from north to south) within the following groups:

Commuter Caltrain Shuttles – shuttles connecting employment centers with Caltrain stations

Commuter Caltrain/BART Shuttles – shuttles connecting employment centers with Millbrae Caltrain/BART Station; also included is the Brisbane - Crocker Park BART Shuttle, which connects to both Caltrain (at Bayshore Station) and BART (at Balboa Park Station)

Commuter BART Shuttles – shuttles connecting employment centers with BART stations

Community Shuttles – shuttles with a service focus other than commuters

The entire listing of shuttles is provided in **Table 1**, along with the rail station(s) or activity centers serviced. As evidenced by the maps, this listing shows that most of shuttles are oriented to rail stations and circulate to office parks and other employment centers offset from the BART and Caltrain lines.

Table 1
Shuttle Inventory

Commuter Caltrain Shuttles		
1	Bayshore / Brisbane Commuter Caltrain Shuttle	Bayshore Caltrain Station
2	Oyster Point Area Caltrain Shuttle	South San Francisco Caltrain Station
3	Utah-Grand Area Caltrain Shuttle	South San Francisco Caltrain Station
4	Sierra Point Area Caltrain Shuttle	South San Francisco Caltrain Station
5	San Mateo Norfolk Area Caltrain Shuttle	<i>Hayward Park Caltrain Station</i>
6	Belmont / Hillsdale Caltrain Shuttle	Belmont and Hillsdale Caltrain Stations
7	San Mateo Campus Drive Area Caltrain Shuttle	<i>Hillsdale Caltrain Station</i>
8	Lincoln Centre Caltrain Shuttle	<i>Hillsdale Caltrain Station</i>

9	Mariners Island Caltrain Shuttle	<i>Hillsdale Caltrain Station</i>
10	Foster City Connections (Red Line) Shuttle	<i>Hillsdale Caltrain Station</i>
11	Oracle Offices Caltrain Shuttle	Hillsdale and San Carlos Caltrain Stations
12	Electronic Arts Caltrain Shuttle	Hillsdale and San Carlos Caltrain Stations
13	Redwood Shores (Bridge Park) Area Caltrain Shuttle	<i>San Carlos Caltrain Station</i>
14	Redwood Shores (Clipper) Area Caltrain Shuttle	<i>San Carlos Caltrain Station</i>
15	Pacific Shores Center Caltrain Shuttle	<i>Redwood City Caltrain Station</i>
16	Redwood City Mid-Point Caltrain Shuttle	<i>Redwood City Caltrain Station</i>
17	Marsh Road Area Caltrain Shuttle	<i>Menlo Park Caltrain Station</i>
18	Menlo Park Midday Shuttle	Menlo Park Caltrain Station
19	Willow Road Area Caltrain Shuttle	<i>Menlo Park Caltrain Station</i>
20	East Palo Alto Community Shuttle	<i>Palo Alto Caltrain Station</i>

Commuter Caltrain/BART Shuttles

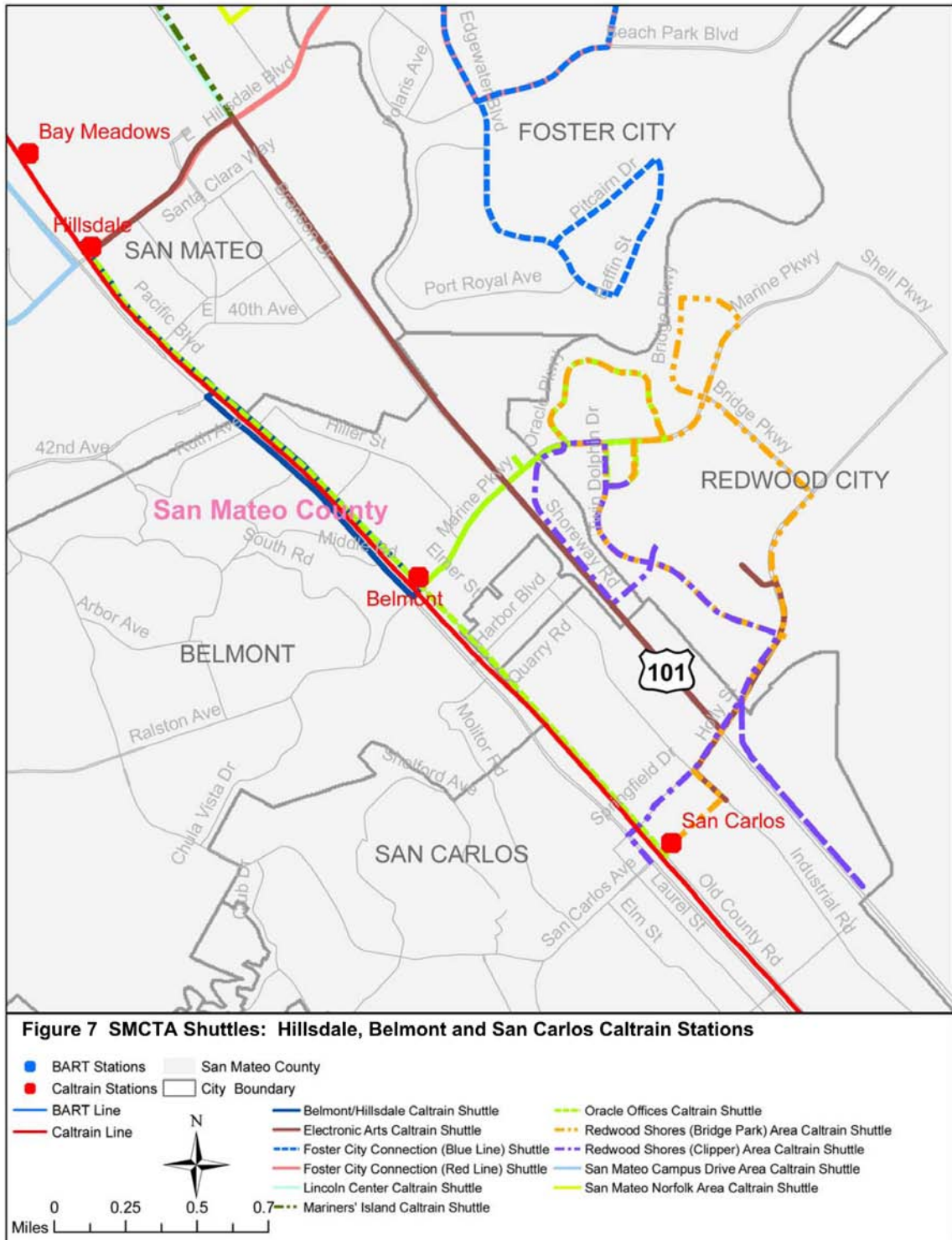
21	Brisbane – Crocker Park BART Shuttle	Balboa Park BART and Bayshore Caltrain Stations
22	Broadway/Millbrae Caltrain Shuttle	Broadway Caltrain and Millbrae Caltrain/BART Stations
23	Burlingame Bayside Area BART and Caltrain Shuttle	<i>Millbrae Caltrain/BART Station</i>
24	North Burlingame BART and Caltrain Shuttle	<i>Millbrae Caltrain/BART Station</i>
25	North Foster City BART and Caltrain Shuttle	<i>Millbrae Caltrain/BART Station</i>
26	Millbrae Caltrain/BART GenenBus – Gateway Campus	<i>Millbrae Caltrain/BART Station</i>
27	Millbrae Caltrain/BART GenenBus-Main Campus	Millbrae Caltrain/BART Station

Commuter BART Shuttles

28	Sierra Point BART Shuttle	<i>Balboa Park BART Station</i>
29	Seton BART Shuttle	Daly City BART Station
30	Oyster Point Area BART Shuttle	<i>South San Francisco BART Station</i>
31	Utah-Grand Area BART Shuttle	South San Francisco BART Station
32	Bayhill BART Shuttle	<i>San Bruno BART Station</i>

Community Shuttles

33	Bayshore / Brisbane Senior Shuttle	<i>Bayshore Caltrain Station</i>
34	Burlingame Trolley	SFO Area Hotels to Downtown Burlingame, Burlingame Ave. Caltrain
35	Foster City Connections (Blue Line) Shuttle	<i>Greater Foster City Area (Connects to Red Line Shuttle)</i>
36	Foster City Senior Express Shuttle	Millbrae BART (N), RWC Kaiser (S), San Mateo Br. (E) & Hwy 280 (W)
37	Redwood City Climate Best Express Shuttle	Eastern RWC, Veteran's Memorial Sr. Center & Woodside Plaza
38	Menlo Park Shopper's Shuttle	Sharon Heights Safeway, Stanford Shopping Center & Downtown Menlo Park
39	East Palo Alto Senior Shuttle	Eastern RWC, Veteran's Memorial Sr. Center & Woodside Plaza
40	South San Francisco Downtown Dasher	South San Francisco, East of U.S. 101 Business Parks to Downtown



**Figure 7
SMCTA Shuttles Hillsdale, Belmont and Santa Carlos Caltrain Stations**

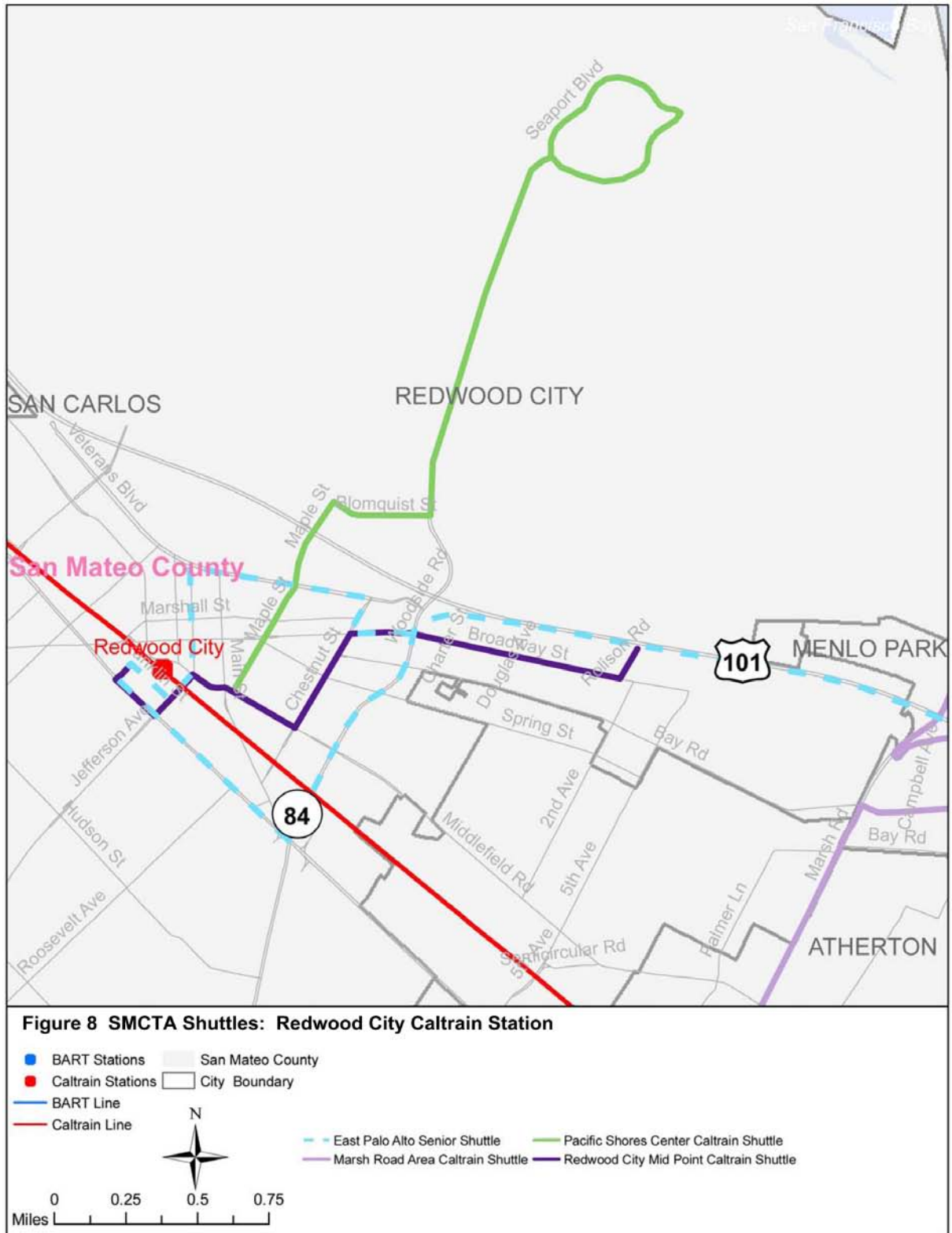


Figure 8
SMCTA Shuttles: Redwood City Caltrain Station

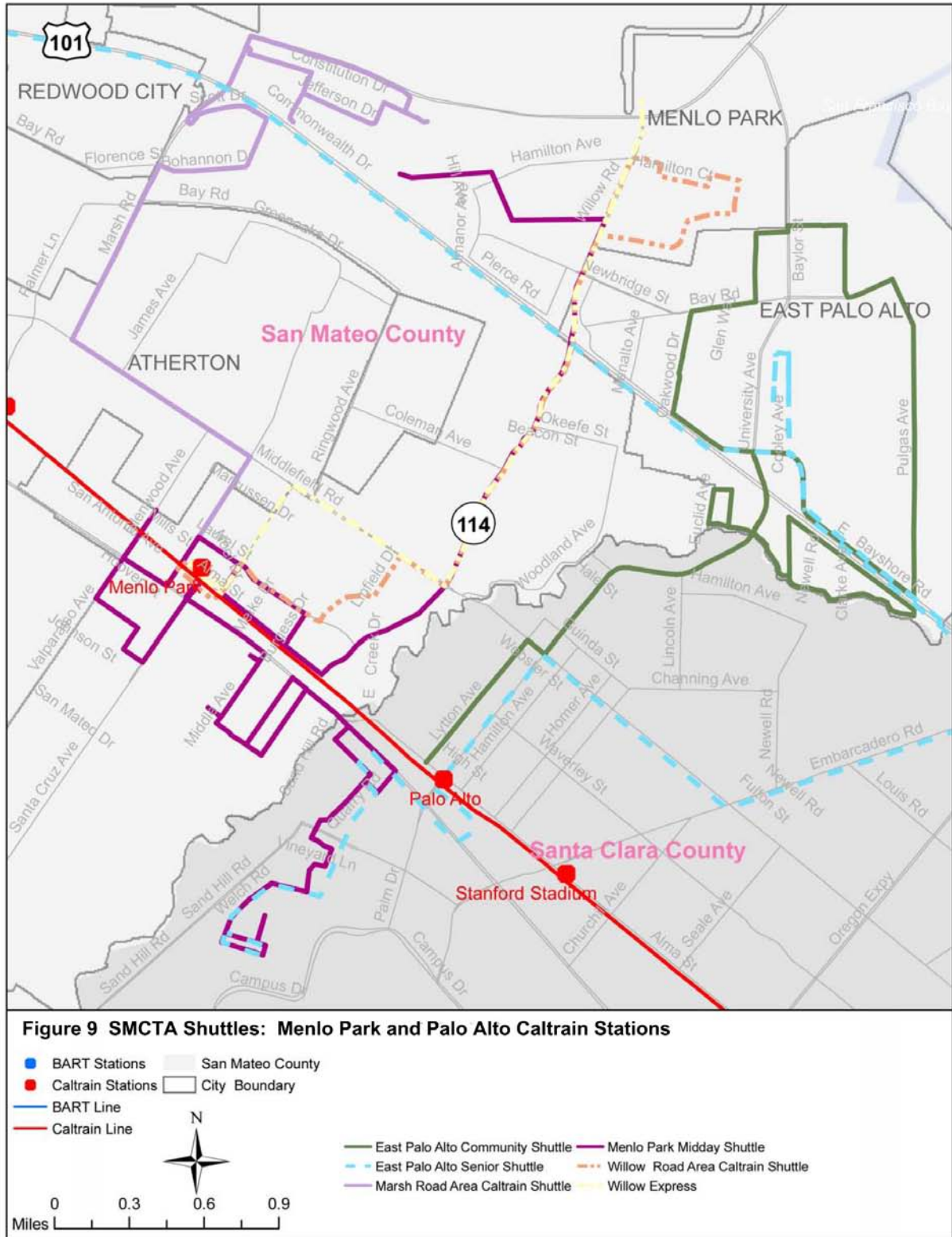


Figure 9
SMCTA Shuttles: Menlo Park and Palo Alto Caltrain Stations

4.1 Shuttle Names and Purpose

With varying histories and different service markets, there is no consistent naming convention among the shuttles. Most names include “Caltrain” or “BART” along with the specific area the shuttle connects with these rail systems. In a few cases, colors are used (as in the Foster City Connections Blue Line and Red Line shuttles) or a branding name (such as the South San Francisco Downtown Dasher). The name given on the shuttle schedule is provided in Column B, and corresponds to the names in **Table 1** and in the Summary Worksheet of the spreadsheet file. Nearly all shuttles have an alternate name, typically a reformulated or abbreviated version of the name on the schedule. Still a third name may be used in the shuttle ridership reports produced by the Alliance or Caltrain. These are compiled in the Comprehensive Worksheet of the spreadsheet file.

Service Purpose (Column C). As opposed to standard, fixed-route transit services, which may be characterized as providing an all-purpose service to the general public, shuttles are typically developed to meet a specific need. They may serve a business or shopping district, act as a community circulator, carry commuters from regional rail stations to jobs, or provide mobility for seniors. A large proportion of the services are commuter shuttles (63%), but there are also a number of community shuttles (27%) and a few specifically intended for seniors (10%).

4.2 Shuttle Institutional Structure and Funding

The institutional structure of the shuttles in San Mateo County can be rather complicated. A shuttle may be administered or managed by one entity, but its operations contracted out to another. Shuttle funding may come from various sources, and often relies on partnerships between agencies. For a particular shuttle, these roles may change over time. The spreadsheet lays out the nuances of the institutional structures of the shuttles, indicating what entity is responsible for particular roles associated with providing the shuttle service.

Lead Organization (Column D) bears responsibility for major policy decisions regarding the shuttle, such as service expansions or cuts. The Lead Organization often, but not always, applies for funds to operate the shuttle, and sometimes partners with another organization that is eligible to receive funding. Lead Organizations are involved with the following activities:

- originating the service concept and operating method (fixed route, route deviation, dial-a-ride);
- setting service policies (hours and frequency of operation, service area and route, stop locations);
- developing funding and administrative partnerships;
- seeking and applying for funds; and
- contracting the shuttle service from a vendor.

Caltrain is the Lead Organization for 40 percent of the shuttles. Cities are the lead for the next-highest percentage (24 percent). The Alliance is the Lead Organization for 22 percent, while the private sector is the lead for 14 percent of the shuttle services.

Administration / Managed By (Column E) identifies the entity responsible for administrative roles associated with the shuttle, such as planning, marketing, budgeting, service oversight, and evaluation. Shuttles are typically administered by nonprofit organizations, public transit agencies, or local governments. Among the shuttles, many are contracted and administered by the same entity – which for the majority of the shuttles is Caltrain or the Alliance. In a number of cases, however, the Alliance manages a shuttle contracted out by Caltrain or by a city. The Alliance manages 53 percent of the

shuttles, Caltrain manages another 26 percent, cities manage 12 percent, and 9 percent are managed by private sector entities.

Funded By (Column F) identifies the organization(s) which provide(s) the funds to operate the shuttle. The participation of each organization in the funding is indicated in **Funding Sources** (Column G), along with any non-organizational funding streams (e.g. grant programs and developer fees). The most common organizations providing shuttle funding are countywide or regional agencies such as the SMCTA, C/CAG, BAAQMD, Caltrain and SamTrans. Fifty-two percent of the shuttles have funding contributed by employers, and 41 percent have funding from individual cities. The particular composition of funding sources and their proportion vary considerably among the shuttles, as shown in **Table 2**. This reflects the diverse nature of the shuttles, which operate in different cities, serve different employers, and have different funding eligibility profiles.

Table 2
Shuttle Funding Matrix

	Service Name	Funded By (Organization)	Funding Sources (Grant Programs, etc.)
1	Bayshore/Brisbane Commuter Caltrain Shuttle	SMCTA	SMCTA @ 50%, C/CAG @ 50%
2	Oyster Point Area Caltrain Shuttle	SMCTA, C/CAG, Employers	SMCTA @ 65%, C/CAG @ 9%, Employers @ 26%
3	Utah-Grand Area Caltrain Shuttle	SMCTA, C/CAG, Employers	SMCTA @ 60%, C/CAG @ 8%, Employers @ 32%
4	Sierra Point Area Caltrain Shuttle	SMCTA, San Mateo, Employers	JPB @ 16%, AB434 @ 37%, Employers @ 47%
5	San Mateo Norfolk Area Caltrain Shuttle	SMCTA, San Mateo	SMCTA @ 75%, San Mateo Redevelopment funds @ 25%
6	Belmont / Hillsdale Caltrain Shuttle	SMCTA	SMCTA @ 100%
7	San Mateo Campus Drive Area Caltrain Shuttle	SMCTA, San Mateo	SMCTA @ 75%, San Mateo Redevelopment funds @ 25%
8	Lincoln Centre Caltrain Shuttle	SMCTA, Employers	SMCTA @ 75%, Employers @ 25%
9	Mariners Island Caltrain Shuttle	SMCTA, San Mateo, Employers	JPB @ 38%, AB434 @ 37%, Employers @ 25%
10	Foster City Connections Shuttle - Red Line	C/CAG, Foster City	C/CAG @ 50%, Foster City Enterprise Fund @ 50%
11	Oracle Offices Caltrain Shuttle	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%
12	Electronic Arts Caltrain Shuttle	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%
13	Redwood Shores (Bridge Park) Area Caltrain Shuttle	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%
14	Redwood Shores (Clipper) Area Caltrain Shuttle	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%

	Service Name	Funded By (Organization)	Funding Sources (Grant Programs, etc.)
15	Pacific Shores Center Caltrain Shuttle	SMCTA, Employers	SMCTA @ 75%, Employers @ 25%
16	Redwood City Mid-Point Caltrain Shuttle	C/CAG, TFCA, Redwood City, Employers	C/CAG @ 33%, TFCA @ 15%, City 25%, Developer Fees @ 27%
17	Marsh Road Area Caltrain Shuttle	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%
18	Menlo Park Midday Shuttle	City of Menlo Park, C/CAG	City of Menlo Park
19	Willow Road Area Caltrain Shuttle	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%
20	East Palo Alto Community Shuttle	SMCTA	SMCTA
21	Brisbane - Crocker Park BART Shuttle	SamTrans, SMCTA, Employers	SamTrans @ 11%, TFCA @ 28%, SMCTA @ 32%, Employers @ 29%
22	Broadway / Millbrae Shuttle (Caltrain)	SMCTA	SMCTA @ 100%
23	Burlingame Bayside Area BART and Caltrain Shuttle	SMCTA, Burlingame	SMCTA @ 75%, Burlingame General Fund @ 25%
24	North Burlingame BART & Caltrain Shuttle	C/CAG, Burlingame, Employers	C/CAG @ 50%, Employers @ 50%
25	North Foster City BART & Caltrain Shuttle	SamTrans, Employers	SamTrans @ 21%, TFCA @ 54%, Employers @ 25%
26	Millbrae Caltrain/BART GenenBus - Gateway Campus	JPB, Employers	JPB @ 75%, Employers @ 25%
27	Millbrae Caltrain/BART GenenBus - Main Campus	JPB, Employers	JPB @ 75%, Employers @ 25%
28	Sierra Point BART Shuttle	SamTrans, TFCA, Employers	SamTrans @ 13%, TFCA @ 32%, Employers @ 55%
29	Seton Shuttle (BART)	SamTrans, Seton	SamTrans @ 13%, TFCA @ 32%, Employers @ 55%
30	Oyster Point Area BART Shuttle	SamTrans, C/CAG, Employers	SamTrans @ 13%, TFCA @ 34%, C/CAG @ 23%, Employers @ 30%
31	Utah-Grand Area BART Shuttle	SamTrans, C/CAG, Employers	SamTrans @ 13%, TFCA @ 34%, C/CAG @ 22%, Employers @ 31%
32	Bayhill BART Shuttle	SamTrans, GAP	SamTrans @ 13%, TFCA @ 32%, Employers @ 55%

	Service Name	Funded By (Organization)	Funding Sources (Grant Programs, etc.)
33	Bayshore/Brisbane Senior Shuttle	SMCTA, C/CAG	SamTrans, SMCTA, with the cooperation of Daly City, Brisbane, BAAQMD and CCAG (pilot program)
34	Burlingame Trolley	Hotel Group	N/A
35	Foster City Connections Shuttle - Blue Line	C/CAG, Foster City	C/CAG @ 50%, Foster City Enterprise Fund @ 50%
36	Foster City Senior Express Shuttle	Foster City	City Recreation Funds, usage fees, farebox
37	Redwood City Climate Best Express Shuttle	C/CAG, MTC Lifeline, Redwood City	C/CAG @ 57%, Lifeline @ 43%
38	Menlo Park Shopper's Shuttle	City of Menlo Park	City of Menlo Park @ 100%
39	East Palo Alto Senior Shuttle	City of Palo Alto, C/CAG	City of Palo Alto @ 50%, C/CAG @ 50%
40	South San Francisco Downtown Dasher	City of South San Francisco	City Redevelopment Funds @ 100%

Source: Interviews and correspondence with shuttle management staff, Fall 2009

4.3 Shuttle Performance

Various metrics used to evaluate shuttle performance are of interest to funding agencies, policy makers, and advisory groups. As outlined in SamTrans' *Community Transit Planning and Funding Guidebook*, these can be used to:

- identify if a shuttle is meeting goals and objectives set for the service;
- determine whether funding provided for the shuttle is a worthwhile investment;
- isolate factors contributing to the shuttle's performance; and
- evaluate the performance of contract providers.

Data for the following performance indicators is collected in the spreadsheet, and summarized in **Table 3**. This data was used for additional analysis of shuttle performance as described in Section 5 of this report.

Operating Costs (Column H). This total reflects the 2008-9 Fiscal Year, except where noted. The annual cost of operating a shuttle ranges from about \$50,000 to over \$200,000, with most in the \$100,000 to \$150,000 range.

Farebox Recovery (Column I). This metric divides fare revenue by operating cost, providing a measure of how fares collected relate to the actual cost of providing the shuttle service. In cases where fares are not collected, an "equivalent farebox ratio" (EFR) is used, assuming a hypothetical \$1 fare collected for each passenger. Among the shuttles, farebox recovery or EFR ranges from a low of about 5% to a high of 40%. This corresponds well to the figures presented in the *Community Transit Planning and Funding Guidebook* of 30 to 40% for services in dense corridors and 5% to 10% for community shuttles.

Cost per Passenger (Column J). This metric divides operating cost by the number of passengers served, providing a measure of service effectiveness. The cost per passenger ranges from just under \$3 to over

\$30 among the shuttles; however, for most the per-passenger costs remains below \$10. SamTrans has set standards for shuttles at \$10 per passenger at the start of service, dropping to \$4 after the second year of service for commuter shuttles, and \$6 for community shuttles. C/CAG has set \$6 per passenger as the benchmark for fixed-route services, and \$15 for door-to-door services.

Average Cost per Hour (Column K). This metric divides operating cost by the number of hours of service provided by the vehicles operating the service. Among the shuttles, this figure ranges from just under \$50 to nearly \$120, with most under \$70.

Average Daily Boardings, Total Daily Service Hours and Boardings per Service Hour (Columns L-N). Average Daily Boardings is the principal indicator for ridership and ranges from below 10 to between 200 and 300 boardings per day. The number of boardings, however, is affected by the amount of service provided, which ranges among the shuttles between 3 and nearly 19 hours. Commuter shuttle operation is typically confined to morning and afternoon commute periods, while a community shuttle may operate throughout the workday and into the evening. Seventy-five percent of the shuttles only operate during weekday peak periods. Twenty-five percent are midday shuttles, and only three percent operate on weekends.

Boardings per Service Hour provides an effective measure of a shuttle's productivity. This figure ranges between 1.5 to over 25. C/CAG sets a performance standard of 10 passengers per hour, which most of the shuttles approach or surpass. Commuter shuttles are typically more productive than community shuttles, flexible route or dial-a-ride services.

Performance Measures / Targets (Column O). SamTrans/Caltrain and C/CAG benchmarks apply to shuttles according to which entities fund them. SamTrans/Caltrain sets an EFR of at least 25% and a cost per passenger under \$4 over a two-year benchmarking period (in one case, the benchmarks apply over a one-year period and the EFR is relaxed to 20% and the cost per passenger to under \$5). C/CAG sets benchmarks of under \$6 per passenger and 10 passengers per hour.

Table 3
Shuttle Performance Matrix

	Service Name	Farebox Recovery (FR) or Equivalent FR (EFR)	Cost Per Passenger	Boardings Per Service Hour	Performance Measures / Targets
1	Bayshore/Brisbane Commuter Caltrain Shuttle	9.9%	\$ 10.26	8.1	SamTrans/Caltrain 12-mo. Benchmarks: >20% EFR, <\$5 CPP
2	Oyster Point Area Caltrain Shuttle	21.4%	\$ 4.73	11.4	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
3	Utah-Grand Area Caltrain Shuttle			8.6	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
4	Sierra Point Area Caltrain Shuttle	33.0%	\$ 3.06	17.9	N/A
5	San Mateo Norfolk Area Caltrain Shuttle	11.40%	\$ 8.77	7.5	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
6	Belmont / Hillsdale Caltrain Shuttle	24.3%	\$ 4.12	13.8	N/A
7	San Mateo Campus Drive Area Caltrain Shuttle	15.6%	\$ 6.44	10.2	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP

	Service Name	Farebox Recovery (FR) or Equivalent FR (EFR)	Cost Per Passenger	Boardings Per Service Hour	Performance Measures / Targets
8	Lincoln Centre Caltrain Shuttle	54.2%	\$ 1.88	23.5	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
9	Mariners Island Caltrain Shuttle	59.5%	\$ 1.82	25.7	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
10	Foster City Connections Shuttle - Red Line	34.0%	\$ 2.94	23.5	C/CAG Benchmarks: <\$6 CPP, >10 riders/hr.
11	Oracle Offices Caltrain Shuttle	19.8%	\$ 5.15	14.5	N/A
12	Electronic Arts Caltrain Shuttle	59.8%	\$ 3.11	32.3	N/A
13	Redwood Shores (Bridge Park) Area Caltrain Shuttle	23.8%	\$ 4.30	17.9	N/A
14	Redwood Shores (Clipper) Area Caltrain Shuttle				
15	Pacific Shores Center Caltrain Shuttle	59.6%	\$ 1.73	23.3	N/A
16	Redwood City Mid-Point Caltrain Shuttle	15.6%	\$ 6.39	9.8	C/CAG Benchmarks: <\$6 CPP, >10 riders/hr.
17	Marsh Road Area Caltrain Shuttle	51.5%	\$ 1.99	20.6	N/A
18	Menlo Park Midday Shuttle	N/A	\$ 5.76	8.3	N/A
19	Willow Road Area Caltrain Shuttle	37.0%	\$ 2.73	15.3	N/A
20	East Palo Alto Community Shuttle	11.5%	\$ 8.99	6.2	N/A
21	Brisbane - Crocker Park BART Shuttle	31.7%	\$ 3.22	17.8	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
22	Broadway / Millbrae Shuttle (Caltrain)	21.6%	\$ 4.69	12.4	N/A
23	Burlingame Bayside Area BART and Caltrain Shuttle	31.9%	\$ 3.16	22.7	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
24	North Burlingame BART & Caltrain Shuttle	32.3%	\$ 3.17	9.0	C/CAG Benchmarks: <\$6 CPP, >10 riders/hr.
25	North Foster City BART & Caltrain Shuttle	20.8%	\$ 4.81	13.1	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
26	Millbrae Caltrain/BART GenenBus - Gateway Campus	17.5%	\$ 5.72	14.9	N/A
27	Millbrae Caltrain/BART GenenBus - Main Campus	29.7%	\$ 3.37	22.9	
28	Sierra Point BART Shuttle	35.6%	\$ 2.86	39.7	N/A
29	Seton Shuttle (BART)	43.2%	\$ 2.32	13.4	N/A
30	Oyster Point Area BART Shuttle	43.4%	\$ 2.32	11.3	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP

	Service Name	Farebox Recovery (FR) or Equivalent FR (EFR)	Cost Per Passenger	Boardings Per Service Hour	Performance Measures / Targets
31	Utah-Grand Area BART Shuttle	17.5%	\$ 5.77	8.9	SamTrans/Caltrain 24-mo. Benchmarks: >25% EFR, <\$4 CPP
32	Bayhill BART Shuttle	31.7%	\$ 3.22	40.4	N/A
33	Bayshore/Brisbane Senior Shuttle	5.7%	\$ 19.97	10.4	N/A
34	Burlingame Trolley	22.2%	\$ 4.50	12.3	N/A
35	Foster City Connections Shuttle - Blue Line	28.6%	\$ 3.49	15.8	C/CAG Benchmarks: <\$6 CPP, >10 riders/hr.
36	Foster City Senior Express Shuttle	19.5%	\$ 30.73	1.5	N/A
37	Redwood City Climate Best Express Shuttle	5.8%	\$ 17.16	3.7	C/CAG Benchmarks: <\$15 CPP
38	Menlo Park Shopper's Shuttle	N/A	\$ 28.11	2.4	N/A
39	East Palo Alto Senior Shuttle	18.3%	\$ 23.74	1.0	N/A
40	South San Francisco Downtown Dasher	N/A	\$ 5.00	N/A	N/A – not grant funded

Source: Interviews and correspondence with shuttle management staff, Fall 2009

4.4 Shuttle Service Characteristics

The Shuttle inventory includes various elements that describe and characterize the service provided by each shuttle. These elements are those of most interest to the actual shuttle riders, and include the following:

- **Days/Hours of Operation** (Column P). As would be expected, the commuter shuttles operate weekdays during peak periods only. Community shuttles, on the other hand, are typically limited to the midday hours between the peak periods. Some offer weekend service as well.
- **Service Frequency** (Column Q). Shuttle frequency ranges from 10 to 60 minutes among the shuttles, with half-hourly service the most common. On-demand services may not hold to a specific frequency.
- **Service Area** (Column R) indicates the primary city or cities served by the shuttle, which were discussed earlier in the Geographical Overview.

4.5 Additional Information

The following information is included in the Comprehensive Worksheet of the spreadsheet file:

Vendor refers to the entity responsible for the actual day-to-day operation of a shuttle, including operations, maintenance, scheduling and labor management. Vendors provide these services under contract, and may be private companies or non-profit organizations. Depending on the contract, the vendor may be responsible for operating facilities, fuel, vehicles, and other equipment. Most of the shuttles are operated by Parking Company of America; four are operated by Compass Transportation; and a few by other vendors.

Fares. Due to how the shuttles are funded, their typical use in combination with a paid transit trip, and the administrative requirements and expense of collecting fares, fares are not always collected. For services that do require payment, prepaid monthly passes and punch cards (in the case of the Foster City Senior Express Shuttle) are sold. Employers may participate in a shuttle program, providing passes to employees or making them available at reduced cost; multi-month discounts may apply. For shuttles offering monthly passes, these range in cost between \$100 and \$130 – corresponding to about \$2.50 - \$3.25 per ride based on weekday, roundtrip travel. By comparison, Caltrain fares to and from San Mateo County stations range between \$2.50 and \$9.50.

Eligibility Criteria. Because shuttles are designed and funded to meet certain goals, and may be restricted from providing a service competing with fixed-route transit service, riders may be required to meet certain eligibility requirements. However, this is the exception, not the rule; the South San Francisco Downtown Dasher is restricted to those with workplaces in South San Francisco east of U.S. 101, while the Foster City Senior Express Shuttle requires riders to be at least 55 years of age.

Service Type. Most of the shuttles are fixed-route services, operating a specific route and stopping at designated locations as a typical bus transit route. A few are “dial-a-ride” services, for which routing and stops are determined entirely or primarily in response to passenger requests. The South San Francisco Downtown Dasher provides service analogous to a taxi.

Major Destinations describes the transit hubs, employment and activity centers, and other important points served by each shuttle. **Route/Schedule Information** provides a hyperlink to internet sources providing this information.

Shuttle services are typically operated by smaller vehicles than those used for standard, fixed-route transit services. **Vehicles Used** indicates the number of vehicles used to provide the service and their capacity. **Vehicle Owned By** and **Vehicle Maintained by** typically correspond to the vendor, which for many of the shuttles is Parking Company of America. For a few services, the vehicle owner is the SFO Airporter.

The spreadsheet also lists additional information available about each shuttle and where it can be sourced. These include **Rider Surveys**, which are conducted by SamTrans/Caltrain and the Alliance.

5.0 PERFORMANCE BENCHMARKS

Performance measures are basic quantities such as ridership or operating cost, while a *performance indicator* is calculated from performance measures, such as operating cost per passenger. These measures and indicators are compared with *performance benchmarks*, which are minimum or maximum values representing acceptable performance, or set as a goal or target for improving service.

Performance measures and indicators can be used to determine whether a shuttle fulfills criteria established by funding partners and allow a shuttle’s performance to be compared with others. In San Mateo County, several types of performance benchmarks have been developed and applied by various shuttle funding and management agencies. The types of benchmarks and the shuttles to which they apply are described in the sections below. Since there are different criteria for determining when a benchmark applies, some shuttles fall under more than one set of benchmarks, and other shuttles do not fall under any benchmarks. The following calculation of performance benchmarks was developed by AECOM using the performance measures collected in the shuttle inventory. For SamTrans, these should be used as a set of guidelines only.

5.1 C/CAG Benchmarks

C/CAG has established efficiency standards for shuttle services receiving C/CAG funding. Eleven shuttles in the inventory receive some portion of their funding from C/CAG, ranging from 8% of the funds required for the Oyster Point and Utah-Grand Area Caltrain Shuttles to 57% for the Redwood City On-Demand Shuttle.

C/CAG benchmarks specify that the operating cost per passenger should not exceed \$6 on fixed-route services and \$15 on door-to-door services. In addition, fixed-route services should serve at least 10 passengers per revenue hour and door-to-door services should serve at least 2 passengers per revenue hour. Finally, fixed-route services should have a maximum operating cost per revenue hour under \$50. **Table 4** reports the C/CAG performance benchmarks AECOM calculated from the inventory data for the C/CAG-funded shuttles. Of the shuttles named, all but the Redwood City Climate Best Express Shuttle are fixed-route services.

Table 4
C/CAG Benchmarks for C/CAG-Funded Shuttles

Shuttle	Cost per Passenger	Boardings per Service Hour	Operating Cost per Hour
Bayshore/Brisbane Commuter Caltrain Shuttle	\$10.26	8.1	\$60.46
Oyster Point Area Caltrain Shuttle	\$4.73	11.4	\$62.43
Utah-Grand Area Caltrain Shuttle	\$4.73	8.6	\$62.52
Foster City Connections Red Line Shuttle	\$2.94	23.5	\$49.84
Redwood City Mid-Point Caltrain Shuttle	\$6.39	9.8	\$62.90
North Burlingame BART and Caltrain Shuttle	\$3.17	9.0	\$54.19
Oyster Point Area BART Shuttle	\$2.32	11.3	\$63.19
Utah-Grand Area BART Shuttle	\$5.77	8.9	\$62.88
Foster City Connections Blue Line Shuttle	\$3.49	15.8	\$55.06
Redwood City Climate Best Express Shuttle	\$17.16	3.7	\$62.69
East Palo Alto Senior Shuttle	\$23.74	1.0	\$37.38

Source: AECOM from shuttle inventory data, Fall 2009

Performance indicators not meeting the benchmark are marked in bold. Only two shuttles meet the benchmark for operating cost per hour. Considering only the other two performance indicators, the cost per passenger and the boardings per service hour, four of the shuttles meet both benchmarks; three do not meet either benchmark, and four meet one but not the other. However, in most cases where the benchmark is not being met, performance is only somewhat short of the goal. Exceptions are the cost per passenger of the Bayshore/Brisbane Commuter Caltrain Shuttle (at \$10.26, considerably higher than the benchmark of \$6), and both parameters of the East Palo Alto Senior Shuttle (\$23.74 per passenger is substantially greater than the benchmark of \$15, and one boarding per hour is half of the standard for on-demand service).

5.2 SamTrans Benchmarks

SamTrans has, in practice, established a guideline set of standards for shuttle service, which the Alliance has used for the employer-based shuttles it manages. Some Alliance-managed shuttles also receive

C/CAG funding and are therefore listed among the C/CAG-funded shuttles profiled in Section 5.1; in effect, two sets of benchmarks apply to these services. These shuttles are the Bayshore/Brisbane Commuter Caltrain Shuttle, the Oyster Point Area Caltrain and BART Shuttles, the Utah-Grand Area Caltrain and BART Shuttles, the Redwood City Mid-Point Caltrain Shuttle, and the North Burlingame BART and Caltrain Shuttle.

While not officially adopted, SamTrans benchmarks are set as goals to be achieved over the first two years after a shuttle service is implemented. The cost-per-passenger indicator is common to both C/CAG and SamTrans standards; additionally, SamTrans uses an “equivalent farebox ratio” (EFR) benchmark. This practice originated with a local law requiring that all transit services be evaluated with respect to the proportion of their operating costs that is covered by farebox revenues. Because shuttles typically do not charge a fare, the EFR is used. This indicator assumes a hypothetical \$1 fare and is thus calculated by dividing ridership by cost.

At service inception, the SamTrans standard is a cost per passenger of \$10, reducing to \$4 after the second year of service. The EFR at the start of service should be at least 10%, increasing to 25% by the end of the second year of service. **Table 5** reports the performance benchmarks calculated by AECOM from the inventory data for the Alliance-managed commuter shuttles, applying the two-year targets across all shuttles.

Performance indicators not meeting the benchmark are marked in bold. Six of the shuttles meet both benchmarks, while eight do not meet either benchmark. In four of the cases where both benchmarks are not being met, performance is only somewhat short of the goal.

Table 5
SamTrans Benchmarks for Alliance-Managed Commuter Shuttles

Shuttle	Cost per Passenger	Equivalent Farebox Ratio
Bayshore/Brisbane Commuter Caltrain Shuttle	\$10.26	9.9%
Oyster Point Area Caltrain Shuttle	\$4.73	21.4%
Utah-Grand Area Caltrain Shuttle	\$4.73	21.4%
San Mateo Norfolk Area Caltrain Shuttle	\$8.77	11.4%
San Mateo Campus Drive Area Caltrain Shuttle	\$6.44	15.6%
Lincoln Centre Caltrain Shuttle	\$1.88	54.2%
Mariners Island Caltrain Shuttle	\$1.82	59.5%
Redwood City Mid-Point Caltrain Shuttle	\$6.39	15.6%
Brisbane-Crocker Park BART Shuttle	\$3.22	31.7%
Burlingame Bayside Area BART and Caltrain Shuttle	\$3.16	31.9%
North Burlingame BART and Caltrain Shuttle	\$3.17	32.3%
North Foster City BART and Caltrain Shuttle	\$4.81	20.8%
Oyster Point Area BART Shuttle	\$2.32	43.4%
Utah-Grand Area BART Shuttle	\$5.77	17.5%

Source: AECOM from shuttle inventory data, 2009

5.3 Benchmarks Applied to Remaining Shuttles

About half of the shuttles in the inventory either do not receive C/CAG funding or are not managed by the Alliance, and therefore are not included in Tables 4 and 5 above. To further explore the potential application of the C/CAG and SamTrans benchmarks, they were calculated by AECOM for the remainder of the shuttles from data collected in the shuttle inventory. **Table 6** presents boardings per service hour, cost per passenger, and EFR for each of these shuttles.

Performance indicators not meeting a minimum benchmark (i.e., boardings per hour of at least 10 for fixed-route services, 2 for on-demand services; cost per passenger less than \$6 for fixed-route services, \$15 for on-demand services; and an EFR of at least 25%) are marked in bold. Three of the shuttles do not meet any of the three benchmarks, one does not meet two, and eight shuttles do not meet one benchmark each. The majority of these twelve shuttles are “community” shuttles as opposed to “commuter” shuttles. Community shuttles are generally intended to serve a greater social purpose and thus would not be held to the same standard as shuttles designed to bring commuters to their jobs. The five that are commuter shuttles all fail to meet the EFR benchmark, but not by much, and this their only missed benchmark.

Table 6
Remaining Shuttles with C/CAG and SamTrans Performance Indicators

Shuttle (*indicates an on-demand shuttle)	Boardings per Service Hour	Cost per Passenger	Equivalent Farebox Ratio
Sierra Point Area Caltrain Shuttle	17.9	\$3.06	33.0%
Belmont/Hillsdale Caltrain Shuttle	13.8	\$4.12	24.3%
Oracle Offices Caltrain Shuttle	14.5	\$5.15	19.8%
Electronic Arts Caltrain Shuttle	32.3	\$3.11	59.8%
Redwood Shores Caltrain Shuttles (Bridge Park and Clipper Areas)	17.9	\$4.30	23.8%
Pacific Shores Center Caltrain Shuttle	23.3	\$1.73	59.6%
Marsh Road Area Caltrain Shuttle	20.6	\$1.99	51.5%
Menlo Park Midday Shuttle	8.3	\$5.76	N/A
Willow Road Area Caltrain Shuttle	15.3	\$2.73	37.0%
East Palo Alto Community Shuttle	6.2	\$8.99	11.5%
Broadway/Millbrae Shuttle	12.4	\$4.69	21.6%
Sierra Point BART Shuttle	39.7	\$2.86	35.6%
Bayhill BART Shuttle	40.4	\$3.22	31.7%
Bayshore/Brisbane Senior Shuttle*	10.4	\$19.97	5.7%
Burlingame Trolley	12.3	\$4.50	22.2%
Foster City Senior Express Shuttle*	1.5	\$30.73	19.5%
Menlo Park Shopper's Shuttle*	2.4	\$28.11	N/A
East Palo Alto Senior Shuttle	1.0	\$23.74	18.3%

Source: AECOM, 2009

6.0 SERVICE ANALYSIS

As noted in the introduction to this report, the shuttle routes were entered in a GIS database that allowed identification of potential duplication of service, potential gaps in service and potential overlaps between shuttles and fixed-route buses. When comparing commuter shuttles and fixed-route bus, it is important to note the different operating characteristics inherent in the two types of service. Commuter shuttles usually provide non-stop service between a regional rail station and an employment center. Fixed-route buses typically make stops every 3 to 4 blocks. In addition, a fixed bus route can carry a much higher volume of passengers greater distances. Shuttles may travel “door to door” to a destination, providing a faster trip for commuters making the last link of their journey to work. Shuttles may have the flexibility to wait for commuter rail connections (e.g. BART or Caltrain) to arrive, while fixed-route buses must leave rail stations whether a train is late or not in order to stay on schedule for the rest of the bus route.

Shuttle services in San Mateo County are concentrated in the heavily-populated El Camino Real / Caltrain / US 101 corridor in the eastern “bayside” section of the county. SamTrans fixed-route bus services are also concentrated in this area; however, SamTrans also extends into areas of the county that currently have little or no shuttle service. These include the western “coastside” section of the county; the northwestern corner of the county along the I-280 corridor; and the “hillside” neighborhoods of cities all along the “bayside” corridor, which generally lie west of El Camino Real. **Figure 10** shows the county’s shuttle services (green for commuter shuttles, pink for community shuttles) superimposed over the SamTrans route network (in grey). The analysis below was based on examining “zoomed-in” versions of the GIS maps as they appeared on a computer screen. Some simple examples of these zoomed-in maps appear in the discussion below, but the actual analysis was done on a computer screen where details are more visible.

6.1 Analysis of Potential Shuttle and Bus Service Overlaps

Generally, there are only a few locations in San Mateo County where shuttle and bus services overlap, with most occurring during the peak periods only. Identifying overlapping services is more complicated

than just noting that two routes operate on the same street. There can be differences in stop locations, schedules, and the time of day the routes operate. Shuttle and bus routes operating in the same area often meet different needs -- shuttle routes typically make fewer stops than standard bus routes, deviate from the major corridors that buses operate on, and deviate from their schedule to wait for late trains. Most shuttles operate only on weekdays during the morning and evening peak periods (with some exceptions noted below), while standard bus routes typically operate all day and on weekends.

The following analysis is based on SamTrans service following the December 2009 service reductions. Service overlaps are listed below in geographical order from north to south. While it is common for *portions* of shuttle and bus routes to share the same route, the following represent cases where there is overlap along the *majority* of the route in question. All of the shuttles considered below operate only during the weekday peak periods, with the exception of the Foster City Connections Shuttles (which also operate middays), the East Palo Alto Senior Shuttle (which only operates middays), and the East Palo Alto Community Shuttle (which also operates on weekends). Community bus routes (designated by two-digit route numbers) are not included in the analysis. These routes were not included because they are typically designed to serve school trips and only make a few runs at times near the start and end of the school day.

Where overlaps occur, there may be opportunities to reconfigure the shuttle and/or bus route to provide more efficient service, differentiate the two services from a marketing perspective, or combine the two services into a single bus route or a single shuttle route.

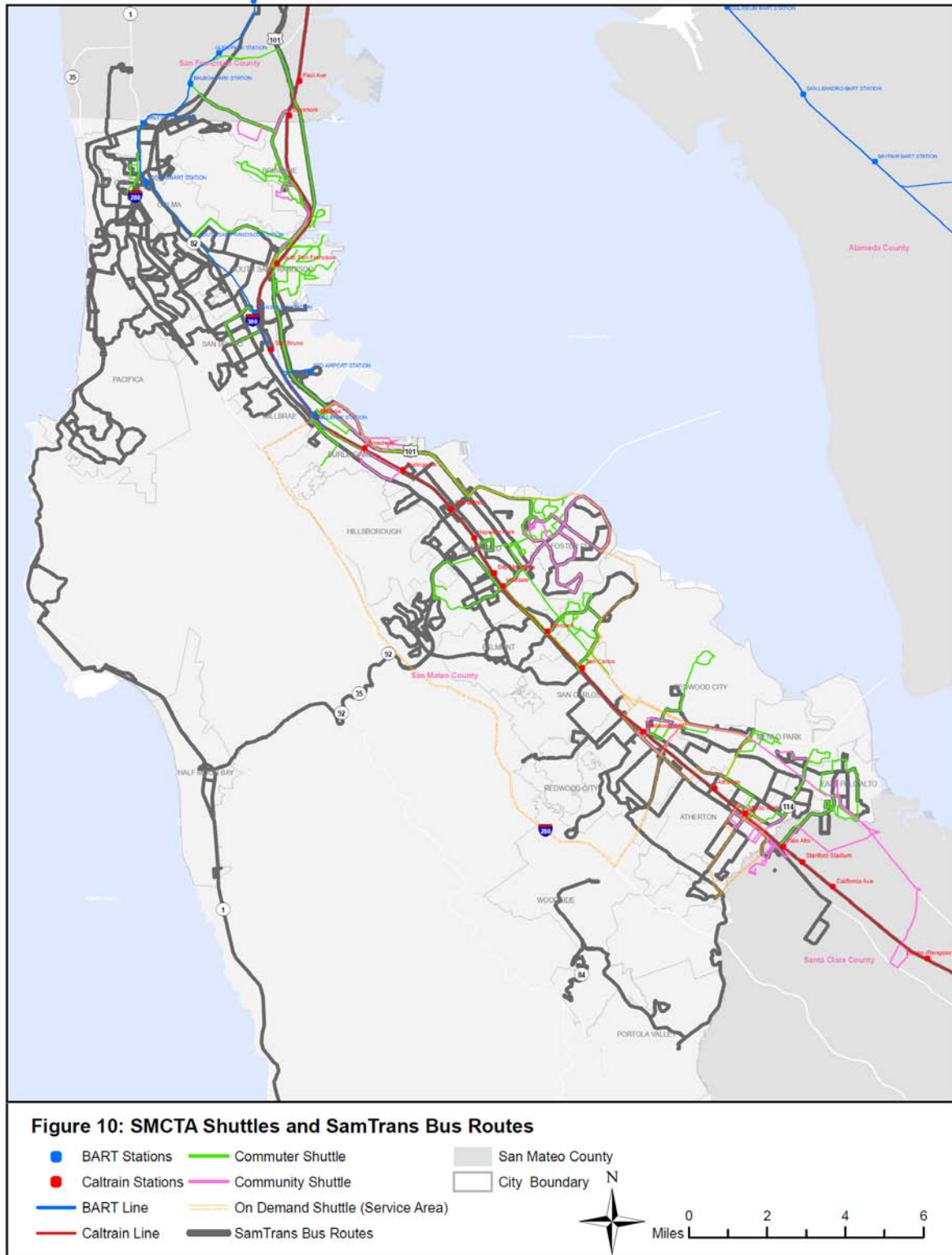


Figure 10
SMCTA Shuttles and SamTrans Bus Routes

North San Mateo County

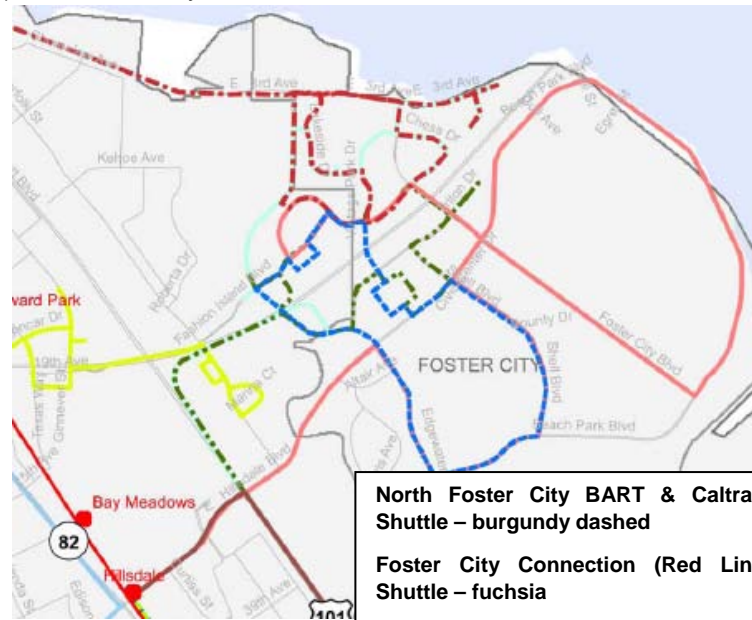
Seton BART Shuttle / SamTrans Route 121 – both connect Seton Medical Center with Daly City BART Station, but the shuttle route (shown in purple) is more direct. Though Route 121 (not shown) connects to the much closer Colma BART Station as well, the shuttle service to Daly City BART station provides riders with the opportunity to directly board Fremont and Dublin/Pleasanton trains which do not serve the Colma station. Shuttle service is provided more frequently (as often as every 20 minutes, versus bus service at half-hour intervals); but the shuttle only operates during AM peak, afternoon and PM peak periods.



Central San Mateo County

North Foster City BART & Caltrain Shuttle / SamTrans Route 359 – both connect Millbrae BART/Caltrain Station with Foster City, though Route 359 (not shown) serves a larger area of Foster City, and not only the northern part of the city served by the shuttle. While both services operate during the AM peak and PM peak periods only, Route 359 service is provided twice as frequently (every half hour) than the hourly shuttle service. Route 359 is a new service that began December 2009.

Foster City Connection (Red Line) Shuttle / SamTrans Route 251 – the shuttle and bus (not shown) share the same route; however the bus makes fewer stops. Both services are provided at the same frequency (hourly), though the bus service day begins at the start of the AM peak period and continues through the PM peak period, while the shuttle operates midday only.



North Foster City BART & Caltrain Shuttle – burgundy dashed
Foster City Connection (Red Line) Shuttle – fuchsia

Belmont/Hillsdale Caltrain Shuttle / SamTrans Route 262 – both the shuttle and bus routes connect Hillsdale and Belmont Caltrain stations, though the shuttle is somewhat more direct and operates nonstop. Shuttle service is provided more frequently (every 20 minutes, versus bus service at hourly intervals), but during AM peak and PM peak periods only. The shuttle has been part of a pilot program to ease parking congestion at the adjacent Hillsdale station.

Redwood Shores (Bridge Park) Area Caltrain Shuttle / SamTrans Route 260 – this shuttle and bus overlap over parts of their routes, though the shuttle provides more direct service to office buildings on Twin Dolphin Drive and Oracle Parkway.

South San Mateo County

East Palo Alto Senior Shuttle / SamTrans Routes 281, 296, 297 – the shuttle operates on three distinct routes, depending on the day of the week. Routes 281 and 297 connect East Palo Alto with Palo Alto

Caltrain Station and Stanford Shopping Center, as does the senior shuttle on Mondays and Thursdays. Routes 296 and 297 connect East Palo Alto with Redwood City Caltrain Station, as does the senior shuttle on Tuesdays and Fridays. The shuttle is operated two or three times each midday, while Routes 281 and 296 operate throughout the day at half-hour intervals and Route 297 service is provided on two morning and two afternoon trips.

Willow Road Area Caltrain Shuttle / SamTrans Route 296 – the shuttle route overlaps with the bus route, except for the shuttle’s loop on O’Brien Drive and Adams and Hamilton Courts. The shuttle service is only operated twice in the AM peak period and twice in the PM peak period.

East Palo Alto Community Shuttle / SamTrans 280 – the shuttle and bus overlap over much of their routes, both of which connect East Palo Alto with Palo Alto Caltrain Station. Both services are provided at the same frequency (hourly), though the bus service day begins at the start of the AM peak period and continues through the PM peak period, while the shuttle operates during the peak periods only.

6.2 Analysis of Potential Shuttle Service Duplication

In addition to the analysis of shuttle/bus service overlaps discussed above, service duplication among shuttle routes was also investigated. **Generally, there is very little duplication among shuttle routes.** Only four cases of were identified where two shuttles were serving the same area. With the exception of the Burlingame Trolley, all of these shuttles operate during the AM peak period and PM peak period only; thus, they share the same operating windows as well as the same routing described. Where shuttles overlap, there may be potential to consolidate the routes into one shuttle or differentiate and focus the two services.

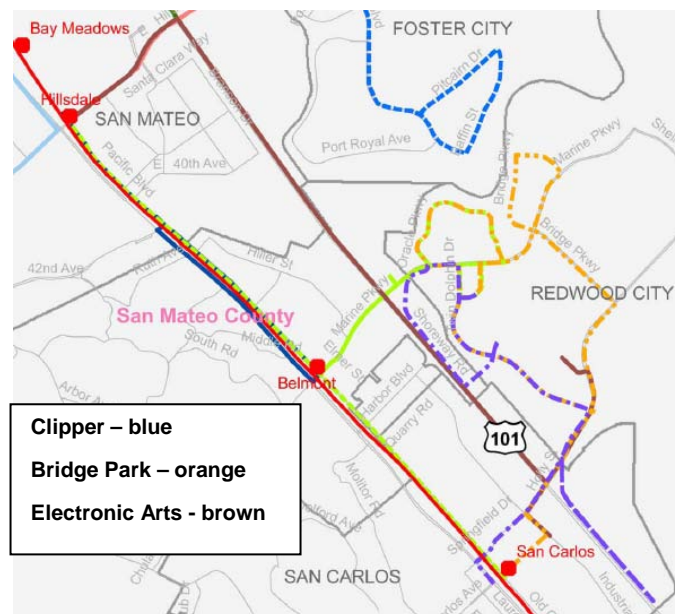
Central San Mateo County

Burlingame Bayside Area BART & Caltrain Shuttle / Burlingame Trolley – both of these shuttles share the same route on Bayshore Highway and Airport Boulevard in the section of Burlingame east of US 101, where numerous hotel properties and recreational amenities are located. The BART & Caltrain Shuttle operates during the peak periods only, while the Trolley operates midday and in the evening.

Lincoln Center Caltrain Shuttle / Mariners’ Island Caltrain Shuttle – both of these shuttles serve the Mariner’s Island area of Foster City, each with a somewhat different route.

Redwood Shores (Bridge Park) Area Caltrain Shuttle / Redwood Shores (Clipper) Area Caltrain Shuttle – both of these shuttles serve office buildings along Twin Dolphin Drive; the Clipper Shuttle differs only in making a loop along Shoreway Road.

Redwood Shores (Bridge Park) Area Caltrain Shuttle / Electronic Arts Caltrain Shuttle – both of these shuttles provide service between San Carlos Caltrain Station and Electronic Arts headquarters; however, the Electronic Arts shuttle also serves Hillsdale Caltrain Station, which provides riders with



access to more regional transit service such as Caltrain Baby Bullets and buses to the Coastsides and East Bay.

7.0 SUMMARY

The inventory described in this report covers forty separate shuttle routes that operate in San Mateo County. Most are commuter shuttles connecting regional rail stations with employment centers, but others serve community and senior mobility needs. The primary operators are Caltrain, the Alliance, and individual cities. The most common funding organizations are SCMTA, C/CAG, TFCA, Caltrain and SamTrans, along with employers and individual cities. Funding shares vary widely and most shuttles have multiple funding sources.

C/CAG has set performance benchmarks for the shuttles they fund. SamTrans has established performance benchmarks that the Alliance has used to evaluate the employer-based shuttles that they manage. When the data from the inventory was used to evaluate shuttle performance against these benchmarks, many of the shuttles met at least some of the benchmarks.

Most of the County's densely populated areas have shuttle service. There are few overlaps of shuttle and fixed-route bus service, and very little duplication among shuttle routes. Where overlaps occur, the shuttles are generally providing specialized service for commuters that cannot be easily provided by a fixed-route bus, such as waiting for a late train.

REFERENCE NOTES

1. The shuttle inventory was developed from previous inventories assembled by SamTrans staff, review of shuttle websites, and telephone interviews and email correspondence with staff at agencies that manage shuttles operating in San Mateo County, such as SamTrans and the Alliance.

2. Reports consulted included the following:

Community Transit Planning and Funding Guidebook, San Mateo County Transit District, Senior Mobility Initiative, March 2009

Final DRAFT White Paper: Advocating a Leadership Role for the San Mateo County Transit District in Community Transit, September 2007

Peninsula Traffic Congestion Relief Alliance – Measure A TSM Program Marketing/Outreach Activity Report for the 2nd Quarter Ending December 31, 2007

San Mateo County Transportation Authority Strategic Plan 2009-2013

Appendix A - Shuttle Inventory – Summary Worksheet

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
#	Service Name (as listed on Schedule)	Service Purpose	Lead Organization	Administration / Managed By	Funded By (Organization)	Funding Sources (Grant Programs, etc.)	Operating Costs FY 08/09 Total	Farebox Recovery (FR) or Equivalent ER/(EFR)	Cost Per Passenger	Average Cost/Hour	Average Daily Boardings	Total Daily Service Hours	Boardings Per Service Hour	Performance Measures / Targets	Days/Hours of Operation	Service Frequency	Service Area (City and Route)
Commuter Caltrain Shuttles																	
1	Bayshore/Brisbane Commuter Caltrain Shuttle	Commuter	Caltrain	Alliance	SMCTA	SMCTA @ 50%, CCAG @ 50%	\$86,371	9.9%	\$10.26	\$60.46	45	5.58	8.1	SamTrans/Caltrain 12 mo Benchmarks: >20% EFR, <\$5 CPP	M-F: am/pm peaks	60 min	Brisbane/Daly City
2	Oyster Point Area Caltrain Shuttle	Commuter	Alliance	Alliance	SMCTA, C/CAG, Employers	SMCTA @ 65%, CCAG @ 9%, Employers @ 26%	\$109,951	21.4%	\$4.73	\$62.43	156	6.88	11.4	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	30 min	South San Francisco
3	Utah-Grand Area Caltrain Shuttle	Commuter	Alliance	Alliance	SMCTA, C/CAG, Employers	SMCTA @ 60%, CCAG @ 8%, Employers @ 32%	\$125,649			\$62.52		7.85	8.6	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	30 min	South San Francisco
4	Sierra Point Area Caltrain Shuttle	Commuter	Sierra Point Employers	Sierra Point Employers	SMCTA, San Mateo, Employers	JPB @ 16%, AB434 @ 37%, Employers @ 47%	\$82,700			33.0%		\$3.06	\$56.46	74	4.13	17.9	N/A
5	San Mateo Norfolk Area Caltrain Shuttle	Commuter, Residential	Caltrain	Alliance	SMCTA, San Mateo	SMCTA @ 75%, San Mateo Redevelopment funds @ 25%	\$100,651	11.4%	\$8.77	\$64.99	45	6.05	7.5	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	60 min	San Mateo
6	Belmont / Hillsdale Caltrain Shuttle	Commuter	Caltrain	Caltrain	SMCTA	SMCTA @ 100%	\$96,127	24.3%	\$4.12	\$69.28	75	5.42	13.8	N/A	M-F: am/pm peaks	15 min	Belmont / San Mateo
7	San Mateo Campus Drive Area Caltrain Shuttle	Commuter	Caltrain	Alliance	SMCTA, San Mateo	SMCTA @ 75%, San Mateo Redevelopment funds @ 25%	\$100,103	15.6%	\$6.44	\$64.95	61	6.02	10.2	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	30 - 45 min	San Mateo
8	Lincoln Centre Caltrain Shuttle	Commuter	Caltrain	Alliance	SMCTA, Employers	SMCTA @ 75%, Employers @ 25%	\$107,205	54.2%	\$1.88	\$64.93	156	6.45	23.5	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	30 - 45 min	Foster City

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
#	Service Name (as listed on Schedule)	Service Purpose	Lead Organization	Administration / Managed By	Funded By (Organization)	Funding Sources (Grant Programs, etc.)	Operating Costs FY 08/09 Total	Farebox Recovery (FR) or Equivalent ER / EFR	Cost Per Passenger	Average Cost/Hour	Average Daily Boardings	Total Daily Service Hours	Boardings Per Service Hour	Performance Measures / Targets	Days/Hours of Operation	Service Frequency	Service Area (City and Route)
9	Mariners Island Caltrain Shuttle	Commuter	Caltrain	Alliance	SMCTA, San Mateo, Employers	JPB @ 38%, AB434 @ 37%, Employers @ 25%	\$117,290	59.5%	\$1.82	\$64.99	216	7.05	25.7	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	30 - 45 min	San Mateo/ Foster City
10	Foster City Connections Shuttle - Red Line	Residential, Shopping	Foster City	Alliance	C/CAG, Foster City	C/CAG @ 50%, Foster City Enterprise Fund @ 50%	\$153,097	34.0%	\$2.94	\$49.84	204	12.00	23.5	C/CAG Benchmarks: <\$6 CPP, >10 Rider/Hr	M-F: 9am - 3:30pm	60 min (30 min headways with 251 buses in each direction)	Foster City
11	Oracle Offices Caltrain Shuttle	Commuter	Caltrain	Caltrain	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%	\$175,188	19.8%	\$5.15	\$77.65	128	8.81	14.5	N/A	M-F: am/pm peaks	irregular, up to 60 min	San Carlos
12	Electronic Arts Caltrain Shuttle	Commuter	Electronic Arts	Electronic Arts	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%	\$88,168	59.8%	\$3.11	\$56.46	197	6.10	32.3	N/A	M-F: am/pm peaks	irregular, up to 60 min	San Carlos
13	Redwood Shores (Bridge Park) Area Caltrain Shuttle	Commuter	Caltrain	Caltrain	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%	\$221,927	23.8%	\$4.30	\$69.28	152	12.51	17.9	N/A	M-F: am/pm peaks	irregular, 30 - 60 min	San Carlos
14	Redwood Shores (Clipper) Area Caltrain Shuttle	Commuter	Caltrain	Caltrain	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%									M-F: am/pm peaks	irregular, 30 - 60 min	San Carlos
15	Pacific Shores Center Caltrain Shuttle	Commuter	Caltrain	Caltrain	SMCTA, Employers	SMCTA @ 75%, Employers @ 25%	\$166,283	59.6%	\$1.73	\$77.60	195	8.37	23.3	N/A	M-F: am/pm peaks	30 - 60 min	Redwood City
16	Redwood City Mid- Point Caltrain Shuttle	Commuter	Alliance	Alliance	C/CAG, TFCA, Redwood City, Employers	CCAG @ 33%, TFCA @ 15%, City @ 25%, Developer Fees @ 27%	\$94,529	15.6%	\$6.39	\$62.90	58	5.87	9.8	C/CAG Benchmarks: <\$6 CPP, >10 Rider/Hr	M-F: am/pm peaks	30 min	Redwood City

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17	Marsh Road Area Caltrain Shuttle	Commuter	Caltrain	Caltrain	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%	\$101,448	51.5%	\$1.99	\$60.07	136	6.60	20.6	N/A	M-F: am/pm peaks	irregular, up to 60 min	Menlo Park
18	Menlo Park Midday Shuttle	Senior, Residential, Shopping	City of Menlo Park	City of Menlo Park	City of Menlo Park, C/CAG	City of Menlo Park	\$144,024	N/A	\$5.76	\$47.94	83	6.24	8.3	N/A	M-F: 9:30am - 3:30pm	60 min	Menlo Park
19	Willow Road Area Caltrain Shuttle	Commuter	Caltrain	Caltrain	JPB, TFCA, Employers	JPB @ 38%, TFCA @ 37%, Employers @ 25%	\$106,354	37.0%	\$2.73	\$60.07	106	6.92	15.3	N/A	M-F: am/pm peaks	60 min	Menlo Park
20	East Palo Alto Community Shuttle	Community, Residential	City of East Palo Alto	Caltrain & City of East Palo Alto	SMCTA	SMCTA	\$134,490	11.5%	\$8.99	\$69.31	47	7.58	6.2	N/A	7 days: am/pm peaks	60 min	East Palo Alto
Commuter Caltrain/BART Shuttles																	
21	Brisbane - Crocker Park BART Shuttle	Commuter	Alliance	Alliance	SamTrans, SMCTA, Employers	SamTrans @ 11%, TFCA @ 28%, SMCTA @ 32%, Employers @ 29%	\$230,982	31.7%	\$3.22	\$48.25	182	18.70	17.8	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	10 - 30 min	Brisbane
22	Broadway / Millbrae Shuttle (Caltrain)	Connection Line	Caltrain	Caltrain	SMCTA	SMCTA @ 100%	\$120,532	21.6%	\$4.69	\$69.24	84	6.80	12.4	N/A	M-F: am/pm peaks	irregular, about 15 - 20 min	Burlingame
23	Burlingame Bayside Area BART and Caltrain Shuttle	Commuter	Caltrain	Alliance	SMCTA, Burlingame	SMCTA @ 75%, Burlingame General fund @ 25%	\$94,245	31.9%	\$3.16	\$65.04	125	5.66	22.7	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	30 min	Burlingame
24	North Burlingame BART & Caltrain Shuttle	Commuter, Community	Burlingame	Alliance	C/CAG, Burlingame, Employers	C/CAG @ 50%, Employers @ 50%	\$96,829	32.3%	\$3.17	\$54.19	61	6.98	9.0	C/CAG Benchmarks: <\$6 CPP, >10 Rider/Hr	M-F: am/pm peaks	30 min	Burlingame
25	North Foster City BART & Caltrain Shuttle	Commuter, Residential	Alliance	Alliance	SamTrans, Employers	SamTrans @ 21%, TFCA @ 54%, Employers @ 25%	\$95,768	20.8%	\$4.81	\$67.65	78	5.53	13.1	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	60 min	Foster City
26	Millbrae Caltrain/BART GenenBus - Gateway Campus	Commuter	Genentech	Genentech	JPB, Employers	JPB @ 75%, Employers @ 25%	\$345,358	17.5%	\$5.72	\$77.35	242	16.19	14.9	N/A	M-F: am/pm peaks	irregular, about 15 - 30 min	South San Francisco

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#	Service Name (as listed on Schedule)	Service Purpose	Lead Organization	Administration / Managed By	Funded By (Organization)	Funding Sources (Grant Programs, etc.)	Operating Costs FY 08/09 Total	Farebox Recovery (FR) or Equivalent ER/(EFR)	Cost Per Passenger	Average Cost/Hour	Average Daily Boardings	Total Daily Service Hours	Boardings Per Service Hour	Performance Measures / Targets	Days/Hours of Operation	Service Frequency	Service Area (City and Route)
27	Millbrae Caltrain/BART GenenBus - Main Campus	Commuter	Genentech	Genentech	JPB, Employers	JPB @ 75%, Employers @ 25%	\$378,872	29.7%	\$3.37	\$85.32	449	19.59	22.9		M-F: am/pm peaks	irregular, about 15 - 30 min	South San Francisco
Commuter BART Shuttles																	
28	Sierra Point BART Shuttle	Commuter	Sierra Point Employers	TFCA, SamTrans, ER	SamTrans, TFCA, Employers	SamTrans @ 13%, TFCA @ 32%, Employers @ 55%	\$234,056	35.6%	\$2.86	pending	164	4.13	39.7	N/A	M-F: am/pm peaks	irregular, 10 - 45 min	South San Francisco
29	Seton Shuttle (BART)	Commuter, Hospital	Seton	Seton	SamTrans, Seton	SamTrans @ 13%, TFCA @ 32%, Employers @ 55%	\$108,032	43.2%	\$2.32	\$78.33	161	12.00	13.4	pending	M-F: am/pm peaks	irregular, about 20 min	Daly City
30	Oyster Point Area BART Shuttle	Commuter	Alliance	Alliance	SamTrans, C/CAG, Employers	SamTrans @ 13%, TFCA @ 34%, CCAG @ 23%, Employers @ 30%	\$186,826	43.4%	\$2.32	\$63.19	146	11.55	11.3	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	15 - 30 min (to be revised every 30 min soon)	South San Francisco
31	Utah-Grand Area BART Shuttle	Commuter	Alliance	Alliance	SamTrans, C/CAG, Employers	SamTrans @ 13%, TFCA @ 34%, CCAG @ 22%, Employers @ 31%	\$199,441	17.5%	\$5.77	\$62.68	115	12.43	8.9	SamTrans/Caltrain 24 mo Benchmarks: >25% EFR, <\$4 CPP	M-F: am/pm peaks	15 - 30 min (to be revised every 30 min soon)	South San Francisco
32	Bayhill BART Shuttle	Commuter	GAP	GAP	SamTrans, GAP	SamTrans @ 13%, TFCA @ 32%, Employers @ 55%	\$135,132	31.7%	\$3.22	\$117.30	182	4.50	40.4	N/A	M-F: am/pm peaks	15 minutes	San Bruno
Community Shuttles																	
33	Bayshore/ Brisbane Senior Shuttle	Community	Caltrain	Caltrain	SMCTA, C/CAG	SamTrans, SMCTA, with the co-operation of Daly City, Brisbane, BAAQMD and CCAG (pilot program)	\$195,092 (FY 2010)	5.7%	\$19.97	\$69.28	114	11.00	10.4	N/A	M-F: 10am - 4pm	60 min (On Demand)	Brisbane

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
#	Service Name (as listed on Schedule)	Service Purpose	Lead Organization	Administration / Managed By	Funded By (Organization)	Funding Sources (Grant Programs, etc.)	Operating Costs FY 08/09 Total	Farebox Recovery (FR) or Equivalent ER / (EER)	Cost Per Passenger	Average Cost/Hour	Average Daily Boardings	Total Daily Service Hours	Boardings Per Service Hour	Performance Measures / Targets	Days/Hours of Operation	Service Frequency	Service Area (City and Route)
34	Burlingame Trolley	Shopper, Hotel	Hotel Group	Hotel Group 7/09	Hotel Group	N/A	\$186,125	22.2%	\$4.50	pending	91	9.25	12.3	N/A	M-Sat: 11:30am - 8pm	45 min	Burlingame
35	Foster City Connections Shuttle - Blue Line	Residential, Shopping	Foster City	Alliance	C/CAG, Foster City	C/CAG @ 50%, Foster City Enterprise Fund @ 50%	\$81,047	28.6%	\$3.49	\$55.06	91	5.75	15.8	C/CAG Benchmarks: <\$6 CPP, >10 Rider/Hr	M-F: 9am - 3:30pm	30 min	Foster City
36	Foster City Senior Express Shuttle	Senior, Misc. activity (D2D, local, charter)	Foster City	Foster City	Foster City	City Recreation Funds, usage fees; farebox	\$47,877	19.5%	\$30.73	pending	9.8	6.00	1.5	N/A	Tues: 9a - 3:30p Wed: 9a - 5p Thurs: 10a - 3:30p	On Demand	Primarily Foster City & San Mateo
37	Redwood City On Demand Community Shuttle	Senior, Residential, Social Services	Alliance	Alliance	C/CAG, MTC Lifeline, Redwood City	CCAG @ 57%, Lifeline @ 43%	\$96,291	5.8%	\$17.16	\$62.69	22	6.00	3.7	C/CAG Benchmarks: <\$15 CPP	Tues - Sat: 10am - 5pm	On Demand	Redwood City
38	Menlo Park Shopper's Shuttle	Senior, Residential, Shopping	City of Menlo Park	City of Menlo Park	City of Menlo Park	City of Menlo Park @ 100%	\$14,410	N/A	\$28.11	\$69.28	10	4.00	2.4	pending	Wed: 10am - 1:00pm	outbound pick up at 10 am; return trips at 12 pm and 1 pm	Menlo Park
39	East Palo Alto Senior Shuttle	Senior	City of East Palo Alto	City of East Palo Alto	City of Palo Alto, C/CAG	City of Palo Alto @ 50%, C/CAG @ 50%	\$147,830	18.3%	\$23.74	\$37.38	7.86	5.00	1.0	N/A	M,Tues, Thurs, F: 10am - 3pm Wed: 10am - 2pm	irregular, 1-3 trips	East Palo Alto to Redwood City, Palo Alto, Mountain View
40	South San Francisco Downtown Dasher	Midday Dining, Shopping	City of South San Francisco	Alliance	City of South San Francisco	City Redevelopment Funds @ 100%	\$6,000	N/A	\$5.00	N/A	3	N/A	N/A	N/A - not grant funded	M-F: 11am - 2pm	On Demand	South San Francisco