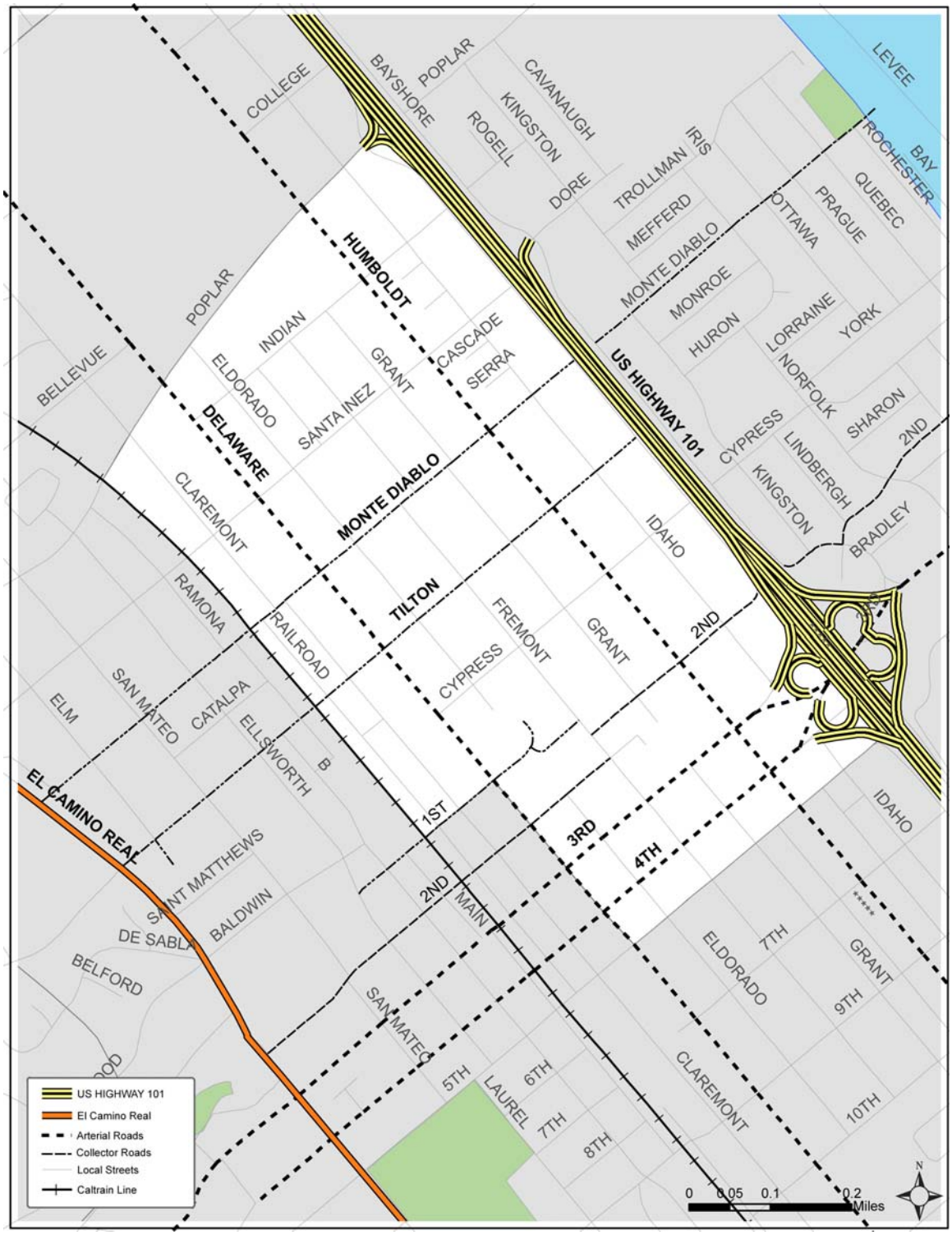
CHAPTER 2 - TRANSPORTATION

2.1 Regional and Local Road Access

The project area, consisting of 0.47 square miles, is bordered by U.S. Highway 101 on its northeastern side and by Poplar Avenue on its northwestern side. Poplar Avenue is considered a main arterial road, defined by the City of San Mateo General Plan as a road that links residential and commercial districts, and that serves relatively short through-traffic needs. Other main arterial roads serving the project area are 3rd and 4th Avenues, Delaware Street, and Humboldt Street, all of which run through the project area (Map 8). The project area also includes several collector roads, defined as roads linking residential districts to arterial roads, but not intended for through-traffic. The collectors that run through the project area are Monte Diablo Avenue, Tilton Avenue, 1st and 2nd Avenues, and Amphlett Boulevard. All other roads within the project area are considered local roads.

Map 8: Roadway Classifications in the Study Area



2.2 Level of Service for Traffic

The level of traffic congestion is measured by Level of Service (LOS) using a ratio of the volume of traffic to the capacity of the roadway. The range in LOS is from A to F, with LOS A characterized as free flowing traffic conditions and progressing to LOS F or "bottleneck" situations. According to the City of San Mateo General Plan, the level of service (LOS) in 2005 for Humboldt Street intersecting with Poplar, 3rd, and 4th Avenues during both AM and PM peak hours was B, C, and B, respectively. Also in 2005, the LOS for Delaware Street intersecting with Poplar, 3rd, 4th, and 5th Avenues during AM peak hours was C, C, B, and B, respectively. During PM peak hours, the LOS for Delaware Street intersecting with 4th Avenue was downgraded from B to C.

2.3 Transit Service Overview

The City of San Mateo is served by two major transit systems: SamTrans and Caltrain. SamTrans operates five routes that serve the project area; two of these are "Caltrain Connection" routes, two are "Express Service" routes, and one is a "Community Service" route that operates only on school days. Also serving the project area is SamTrans' paratransit service, Redi-Wheels, which provides transit service to passengers who cannot independently ride regular SamTrans buses. Just adjacent to the project area, the San Mateo Caltrain Station provides service every half an hour on weekdays and hourly on weekends. There are currently no community shuttles that serve the project area.

2.4 SamTrans Service and Ridership

The project area is served by four SamTrans routes: 53, 250, 292, and the express route KX (Map 9). The express routes serve the project area by stopping at U.S. Highway 101 and 3rd Avenue on the border of the project area. Express Route KX runs on a 60-minute daily schedule from 5:21 AM to 10:30 PM on weekdays, 6 AM to 9 PM on weekends.

The other three SamTrans routes have more local stops within the project area. Route 292 runs through the project area via Delaware Street on a 30-minute daily schedule, with service hours from 4:45 AM to 12:45 AM on weekdays, 5 AM to 12:45 AM on weekends. Route 250 also runs on a 30-minute daily schedule, and serves the project area via 1st, 3rd, and 4th Avenues. It operates from 6 AM to 10 PM on weekdays, 7 AM to 6 PM on Saturdays, and 9 AM to 5:30 PM on Sundays. Route 53 is a limited service route that runs through the project area along Delaware Street, and operates only on school days during the school year, from 7 to 8 AM and from 1 to 3 PM.

Table 2 on page 29 shows the service area and schedules for each route.

Map 9: SamTrans Fixed Routes Serving North Central San Mateo

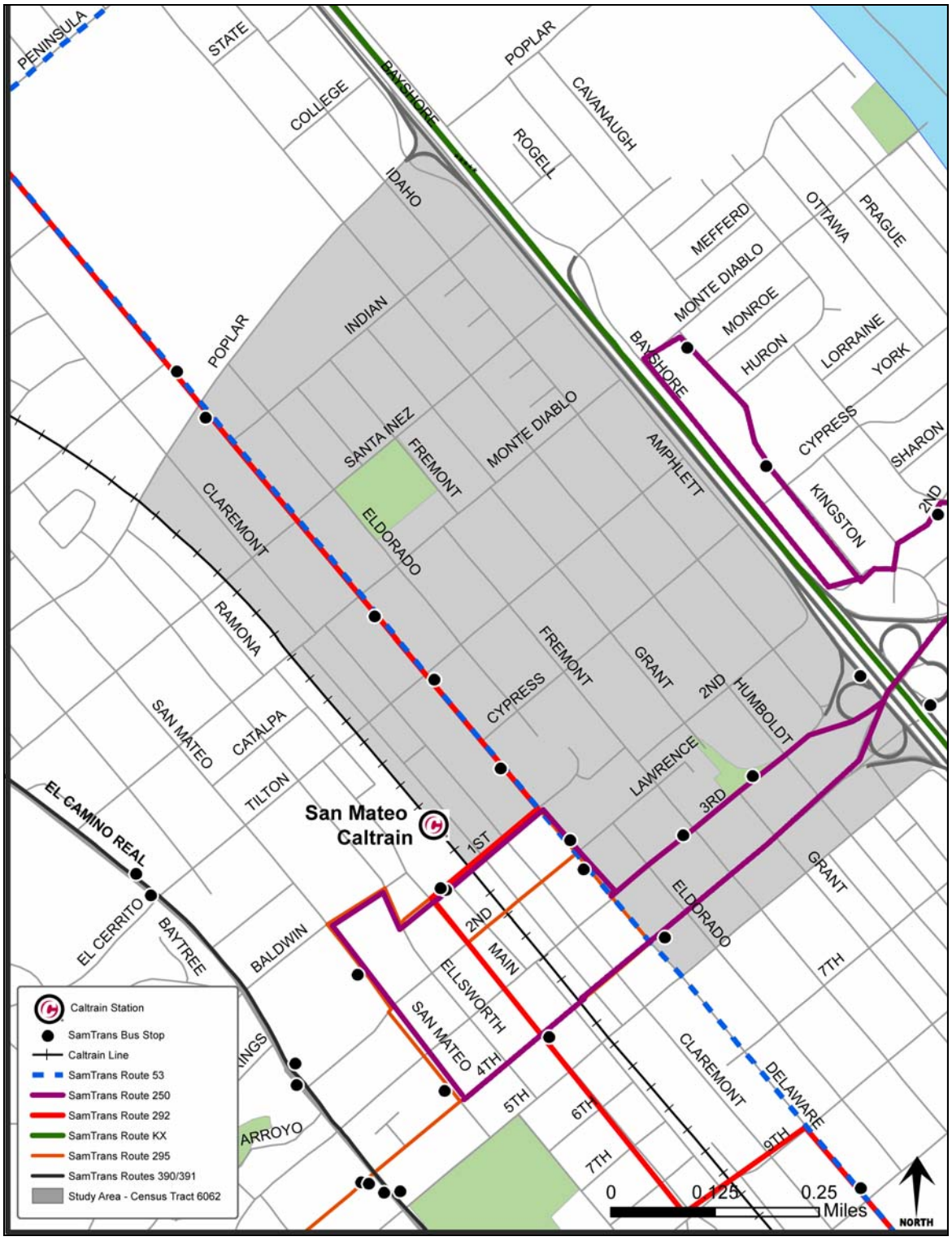


Table 2: SamTrans Routes Serving the Project Area

	SamTrans Route 53	SamTrans Route 250	SamTrans Route 292	Express Route KX
Service Areas	- Laurelwood Ctr - Crystal Springs Ctr - Highlands Rec. Ctr - College of SM	- College of SM - Aragon HS - Senior Ctr - Beresford Rec. Ctr - Hillsdale HS, Ctr - Marina Plaza - Shoreview Ctr - SM Caltrain	- San Francisco - SFO - Brisbane - So. San Francisco - Burlingame - Caltrain - Mills Hospital - Hillsdale Ctr	- San Francisco - San Mateo - Belmont - San Carlos - Redwood City - Menlo Park - Palo Alto
Service in Project Area	Delaware St	1st, 3rd, 4th Aves	Delaware St & 1st Ave	U.S. Highway 101 at 3rd Ave
Schedule	School days only, morning & afternoon service, "Community Service" route	Daily, 30 minute frequency	Daily, 30 minute frequency	Daily, 30 minute frequency

Ridership for SamTrans routes serving the project area was analyzed according to the following bus stops:

Route 53

East toward Peninsula/Humboldt:
- Delaware St at 2nd Ave
- Delaware St at Tilton Ave
- Delaware St at Bellevue Ave

West toward Borel Square:
- Delaware St at Poplar Ave
- Delaware St at Monte Diablo Ave
- Delaware St at Cypress Ave
- Delaware St at 2nd Ave

Route 250

East toward San Mateo Caltrain:
- 3rd Ave at Humboldt St
- 3rd Ave at Fremont St
- 1st Ave at B St

West toward the College of San Mateo:
- 1st Ave at B St
- 4th Ave at Delaware St
- 4th Ave at Grant St

Route 292

North toward San Francisco:
- 1st Ave at Main St
- Delaware St at Tilton Ave
- Delaware St at Monte Diablo Ave
- Delaware St at Bellevue Ave

South toward San Mateo:
- Delaware St at Poplar Ave
- Delaware St at Monte Diablo Ave
- Delaware St at Cypress Ave
- 1st Ave at Main St

Express Route KX

North toward San Francisco:
- U.S. Highway 101 at 3rd Ave

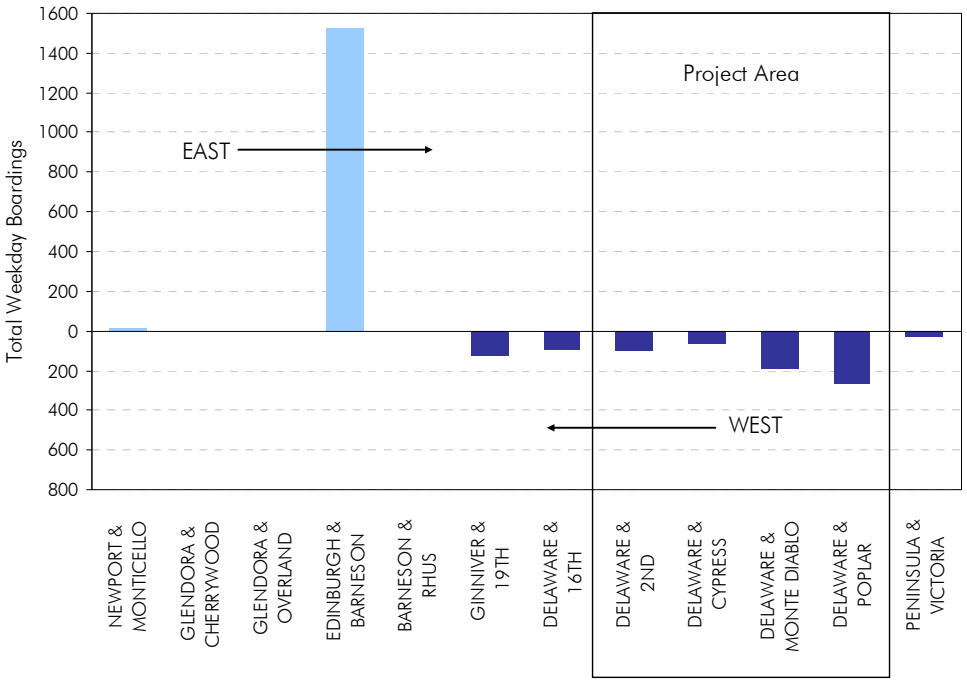
South toward Palo Alto:
- U.S. Highway 101 at 3rd Ave

In the following sections, the ridership for these routes is analyzed by individual route in terms of boardings and fare classifications, and then presented in summary maps.

Route 53

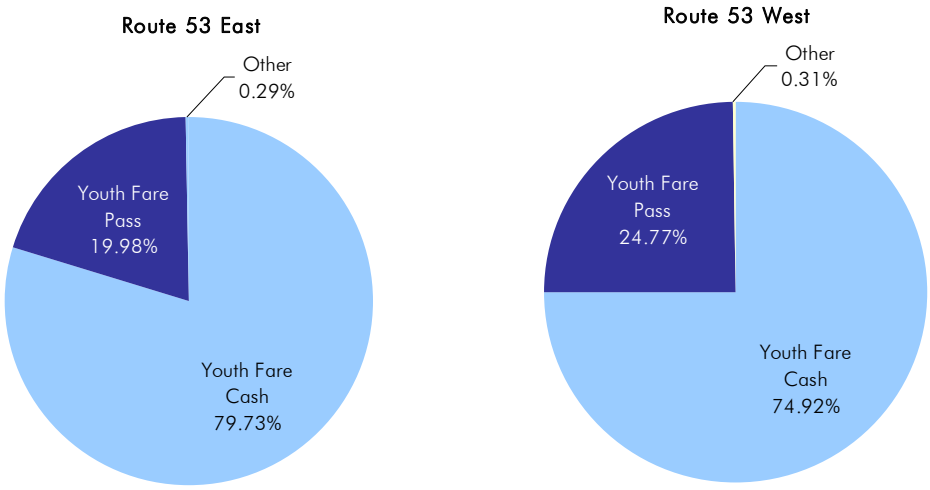
Ridership data suggests that the main use of SamTrans Route 53 is service to and from Borel Middle School in San Mateo. On its eastbound school day afternoon trips in May of 2009, Route 53 had a total of 1,525 boardings, with 1,512 (99%) of these boardings occurring at the bus stop by Borel Middle School (Figure 8). On its westbound morning trips during the same month, the route had a total of 884 boardings, with all boarding locations occurring before the Borel Middle School stop. Popular boarding locations included Delaware Street and Poplar Avenue with 266 boardings (30%), Delaware Street and Monte Diablo Avenue with 186 boardings (21%), and Ginniver Street and 19th Avenue with 128 boardings (14%). A total of 624 westbound boardings occurred within the project area, accounting for 71% of all westbound boardings for the route.

Figure 8: Route 53 - Total Weekday Boardings, Eastbound and Westbound



Traveling eastbound during May of 2009, only 0.29% of all weekday boardings were by non-youth fares (Figure 9). The remaining 99.71% of eastbound boardings were split among youth fares paying in cash (79.73%) and by pass (19.98%). Traveling westbound, boardings were still overwhelmingly paid by youth fares. Specifically, 74.92% paid a youth fare in cash, 24.77% paid a youth fare by pass, and only 0.31% paid a non-youth fare. The fare classifications for each stop in the project area were very similar to those just discussed.

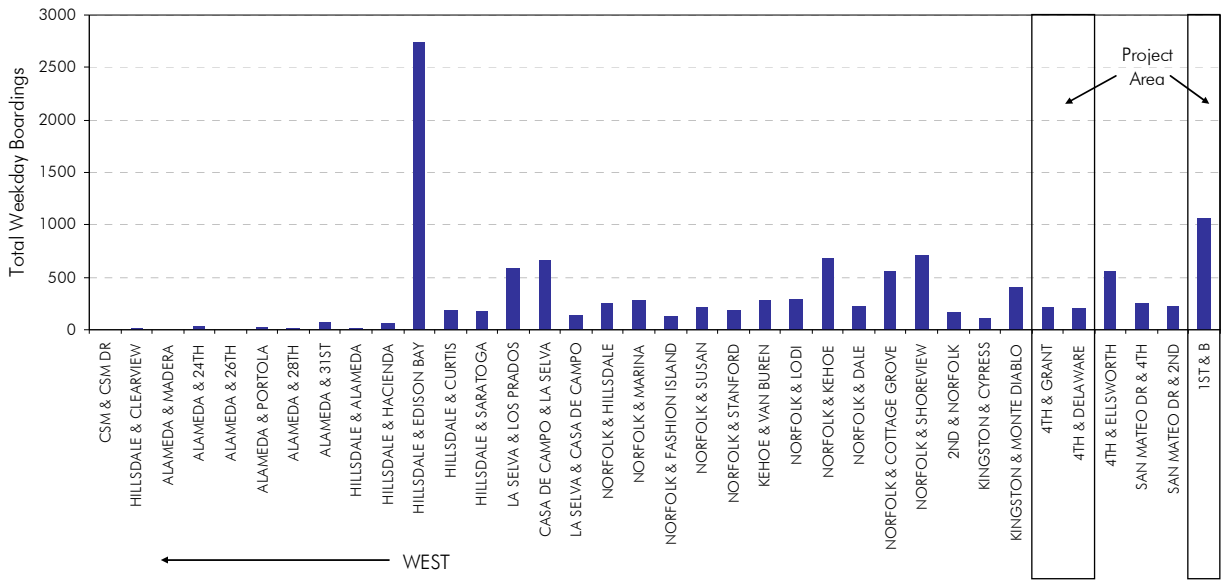
Figure 9: Route 53 Fare Classification - East and West



Route 250

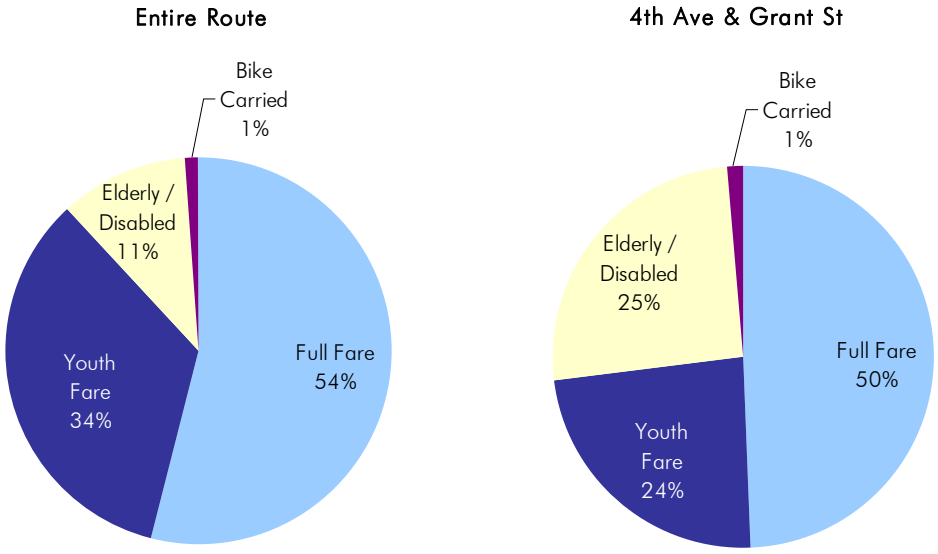
In its westbound direction, with destinations including Hillsdale Shopping Center and the College of San Mateo, SamTrans Route 250 had a total of 11,818 weekday boardings during May of 2009. Popular boarding locations were Hillsdale Shopping Center with 2,741 boardings (23%) and the San Mateo Caltrain Station at 1st Avenue and B Street with 1,069 boardings (9%), as shown in Figure 10. Although the bus stop at the San Mateo Caltrain Station is not located within the project area, it is less than one block from the project area's southwestern border, making it a stop that may serve project area residents. Including this stop, Route 250 has three westbound stops serving the project area. During May of 2009, these stops accounted for 1,490 (13%) of all westbound boardings for the route.

Figure 10: Route 250 - Total Weekday Boardings, Westbound



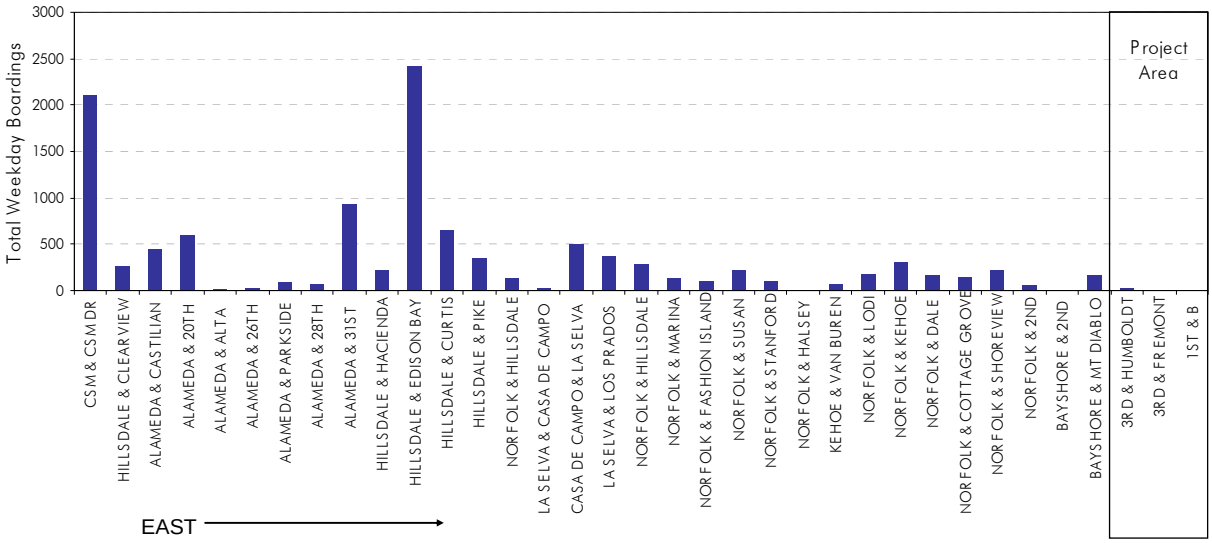
Of all westbound weekday boardings for Route 250, 11% paid a senior or disabled fare, while a more substantial 25% of the passengers boarding at 4th Avenue and Grant Street in the project area paid this fare (Figure 11). 34% of all westbound boardings paid a youth fare, compared to a lesser 24% of boardings at 4th Avenue and Grant Street. Overall, the three westbound stops within the project area had a greater percentage of elderly or disabled passengers, a smaller percentage of youth passengers, and similar percentages of adult and bike passengers.

Figure 11: Route 250 Westbound Fare Classification - Entire Route vs. 4th Ave & Grant St



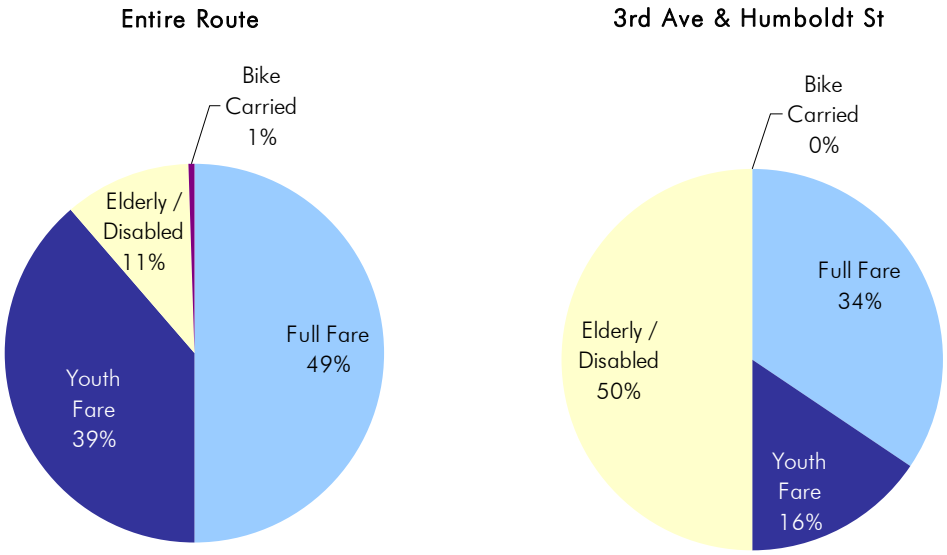
Since the eastbound direction of the route ends in the project area, it is logical that there were very few boardings at the three stops within the project area for this direction. 3rd Avenue and Humboldt Street was the only stop within the project area to experience eastbound boardings, with 28 during May of 2009. Of the 11,483 total eastbound weekday boardings, common boarding locations included Hillsdale Shopping Center with 2,427 boardings (21%), the College of San Mateo with 2,103 boardings (18%), and Hillsdale High School at Alameda de las Pulgas and 31st Avenue with 936 boardings (8%), as shown in Figure 12.

Figure 12: Route 250 - Total Weekday Boardings, Eastbound



Of the eastbound weekday boardings at 3rd Avenue and Humboldt Street in the project area, 50% paid a senior or disabled fare, compared to 11% of all eastbound boardings for the route (Figure 13). 16% of the 3rd Avenue and Humboldt Street boardings paid a youth fare and 34% paid a full fare, compared to 39% and 49% of all eastbound boardings paying youth and full fares, respectively.

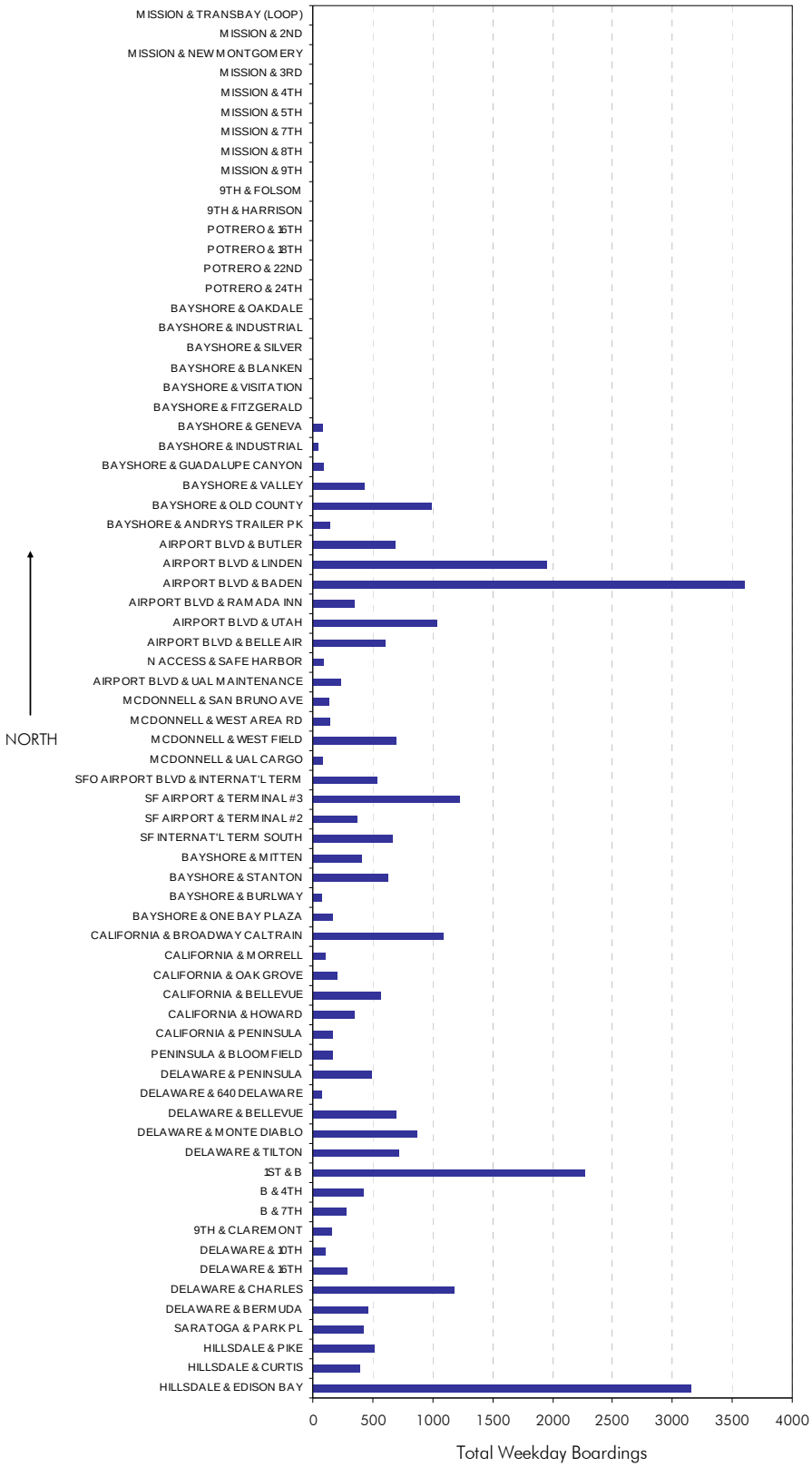
Figure 13: Route 250 Eastbound Fare Classification - Entire Route vs. 3rd Ave & Humboldt St



Route 292

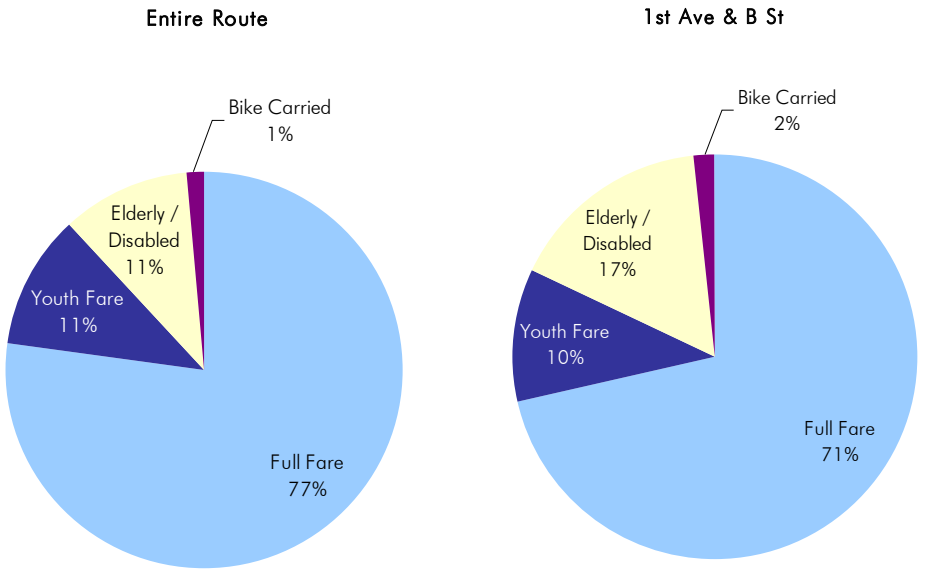
In its northbound direction, SamTrans Route 292 had a total of 30,551 weekday boardings during May of 2009 (Figure 14). The locations with the highest number of boardings for that month were the intersection at Airport Boulevard and Baden Avenue in South San Francisco with 3,598 boardings (12%), Hillsdale Shopping Center with 3,153 boardings (10%), and the San Mateo Caltrain Station at 1st Avenue and B Street with 2,273 boardings (7%). 4,554 boardings occurred in the project area, accounting for 15% of all northbound weekday boardings for the route.

Figure 14: Route 292 - Total Weekday Boardings, Northbound



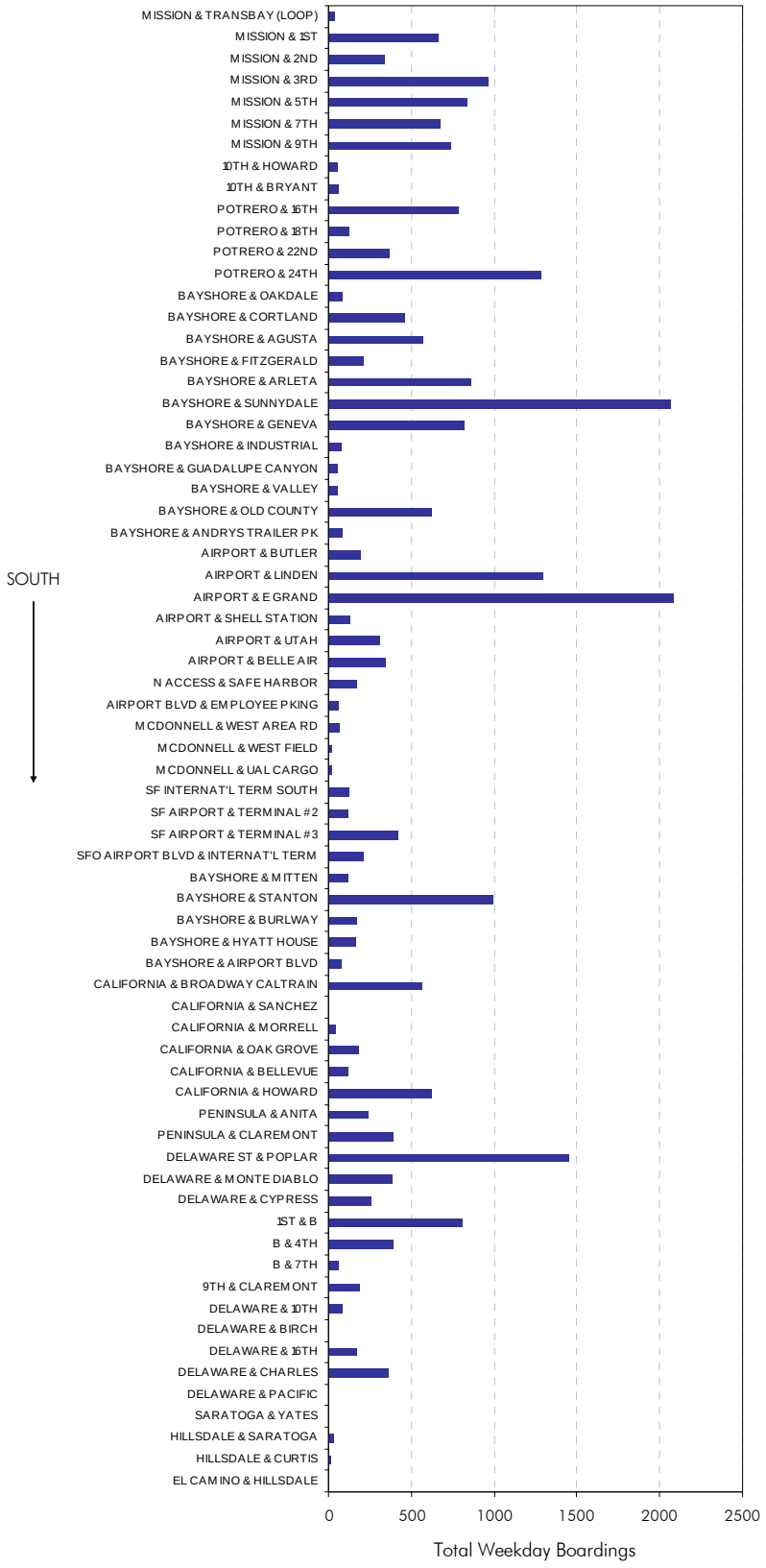
While 11% of all northbound weekday boardings for Route 292 paid a senior or disabled fare during May of 2009, a greater 17% of boardings at the 1st Avenue and B Street stop, which lies just outside the project area, paid this fare (Figure 15). There was also a greater percentage of bicycle carriers at 1st Avenue and B Street during this month with 2% of boardings, compared to 1% of all northbound weekday boardings for the route. Full and youth fares were less frequent at this stop than for the entire route, with 71% and 10% at the stop compared to 77% and 11% for the entire route in full and youth fares, respectively.

Figure 15: Route 292 Northbound Fare Classification - Entire Route vs. 1st Ave & B St



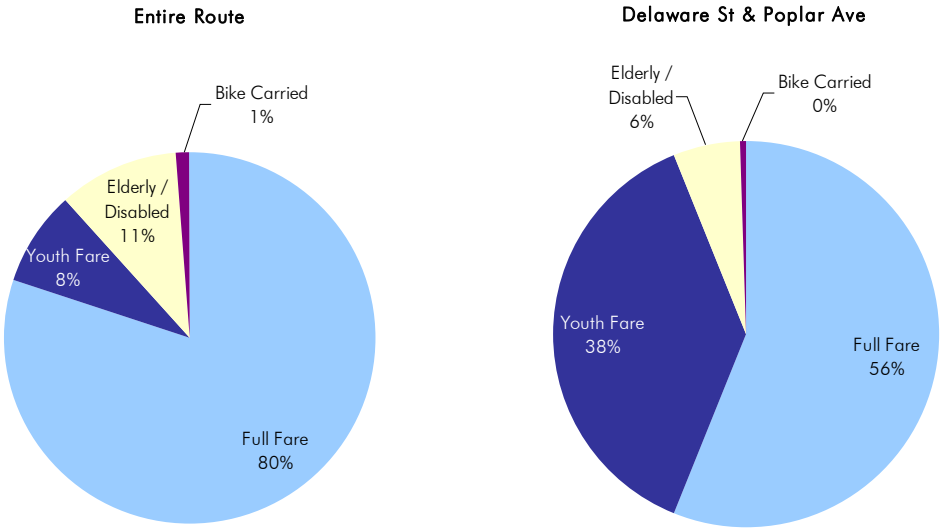
In its southbound direction, the route had a total of 26,454 weekday boardings during May of 2009 (Figure 16). Of these boardings, 2,082 (8%) occurred at Airport Boulevard and Grand Avenue, 2,066 (8%) occurred at Bayshore Boulevard and Sunnydale Avenue, 1,450 (5%) occurred at Delaware Street and Poplar Avenue in the project area, and 1,296 occurred at Airport Boulevard and Linden Avenue. 2,895 (11%) of all southbound weekday boardings occurred among the four stops in the project area.

Figure 16: Route 292 - Total Weekday Boardings, Southbound



At the Delaware Street and Poplar Avenue stop in the project area, there was a much greater percentage of youth fares for southbound passengers than for the entire southbound Route 292; 38% of boardings at the stop paid a youth fare compared to only 8% of all southbound boardings (Figure 17). This difference may be due in part to the close proximity of San Mateo High School to the stop. There was smaller percentage of all other fares at the Delaware Street and Poplar Avenue stop compared to the entire southbound route.

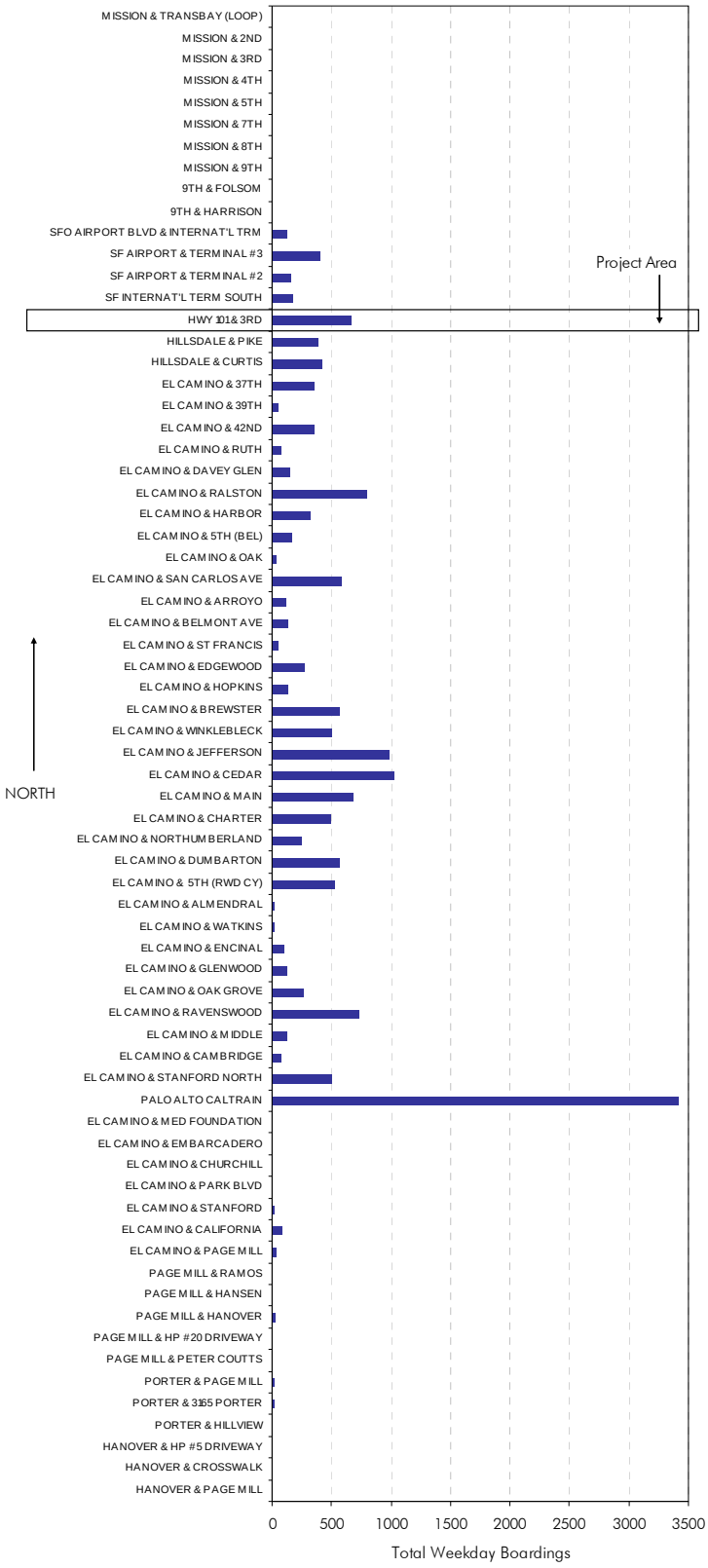
Figure 17: Route 292 Southbound Fare Classification - Entire Route vs. Delaware St & Poplar Ave



Express Route KX

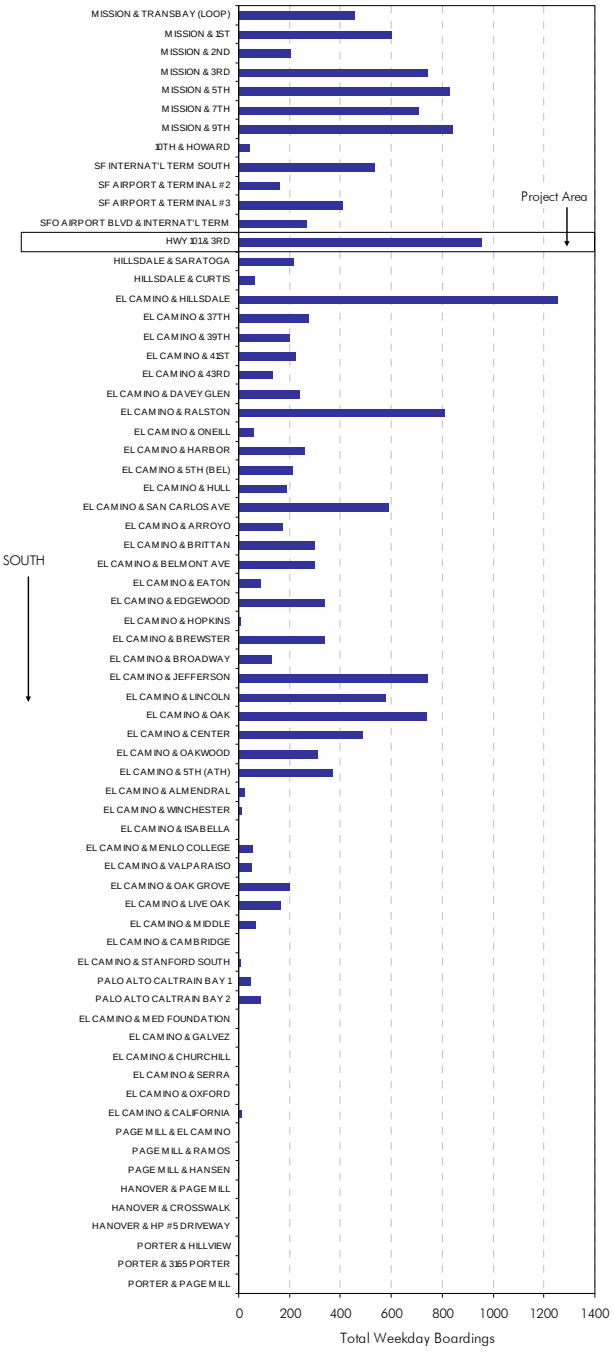
Traveling northbound, SamTrans Express Route KX experienced a total of 17,249 weekday boardings during May of 2009 (Figure 18). The greatest number of boardings occurred at the Palo Alto Caltrain Station with 3,423 boardings (20%), followed by the stop at El Camino Real and Cedar Street with 1,024 boardings (6%) and the stop at El Camino Real and Jefferson Avenue with 981 boardings (6%). The stop serving the project area for this route – the stop at U.S. Highway 101 and 3rd Avenue – experienced 666 (4%) of these northbound boardings.

Figure 18: Express Route KX - Total Weekday Boardings, Northbound



Traveling southbound, the route experienced 17,150 total weekday boardings during May of 2009 (Figure 19). The locations with the most boardings for that month were El Camino Real and Hillsdale Boulevard with 1,255 boardings (7%), U.S. Highway 101 and 3rd Avenue – the stop that serves the project area for this route – with 959 boardings (6%), Mission Street and 9th and 5th Streets with 842 and 830 boardings (5%) respectively, and El Camino Real and Ralston Avenue with 810 boardings (5%).

Figure 19: Express Route KX - Total Weekday Boardings, Southbound



2.5 Redi-Wheels Paratransit Service and Use

Redi-Wheels is SamTrans' paratransit service and is available for disabled passengers who cannot independently ride regular SamTrans buses some or all of the time. Redi-Coast is the paratransit service on the coastside of the county. Rides must be scheduled ahead of time.

There are currently 1,207 registered Redi-Wheels riders living in the City of San Mateo, which represents 18% of San Mateo County's 6,651 eligible passengers. In the month of June 2009, there were 4,094 arranged trips through Redi-Wheels originating in the City of San Mateo, with 1,592 (39%) of these trips having a destination still within the City of San Mateo. Other common destinations originating in the City of San Mateo were Senior Focus in Burlingame (an adult day health program) with 347 trips (8% of total trips), Mills Hospital in San Mateo with 135 trips (3% of total trips), and San Carlos Adult Day Care with 127 trips (3% of total trips).

Redi-Wheels use by residents of the project area is somewhat low on a per capita basis. Of the 4,094 Redi-Wheels trips occurring in the City of San Mateo in June 2009, 286 trips (7%) originated in the project area. Popular destinations included the Redwood City Kaiser Medical Center, Mills Hospital in San Mateo, the San Mateo Dialysis Center, the Martin Luther King, Jr. Center, and the San Bruno Senior Center.

2.6 Caltrain Service and Ridership

The closest Caltrain station to the residents of the project area is the San Mateo Caltrain Station, located on First Avenue near its intersection with Main Street. To travel to this Caltrain Station via public transit, residents of the project area can take SamTrans Route 292 from Delaware Street or SamTrans Route 250 from Humboldt Street.

Southbound Travel

According to a Caltrain study in 2001, an average of 367 Caltrain riders travel southbound from the San Mateo Station during AM peak hours on an average weekday (Figure 20). Of these 367 riders, 60 (16%) of them disembark at the Redwood City Station, while 51 (14%) disembark at the Palo Alto Station and 36 (10%) disembark at the Menlo Park Station. The next most popular disembarking stations are at Mountain View, San Carlos, Belmont, and California Avenue, with 30 (8%), 26 (7%), 22 (6%), and 22 of the San Mateo southbound AM riders, respectively. During AM peak hours, 119 southbound riders from the northern stations disembark at the San Mateo Station.

Traveling southbound during weekday PM peak hours, an average of 189 passengers board at the San Mateo Station (Figure 21). Of these 189 riders, 26 (14%) of them disembark at the Redwood City Station, while 24 (13%) disembark at the Menlo Park Station and 23 (12%) disembark at the Palo Alto Station. After these top stations, the most popular stations where riders disembark are Atherton and Mountain View, with 19 (10%) and 18 riders disembarking at these stations, respectively. During PM peak hours, 337 southbound riders from the northern stations disembark at the San Mateo Station.

Northbound Travel

There are nine Caltrain stations north of the San Mateo Station. During weekday AM peak hours, an overwhelming majority of the northbound riders boarding at the San Mateo Station disembark at the 4th & King Station. Specifically, an average of 240 (82%) of the 293 northbound riders travel to the 4th & King Station, while the next most popular station where northbound riders disembark is at the South San Francisco Station, accounting for 19 (7%) of the riders. An average of 187 northbound riders originating from stations to the south disembark at the San Mateo Station during AM peak hours.

During weekday PM peak hours, an average of 80 (52%) of the 156 northbound riders boarding at the San Mateo Station travel to the 4th & King Station, while 18 (11%) of the northbound riders travel to the San Bruno Station, 16 (10%) travel to the 22nd Street Station, and 12 (8%) travel to the Burlingame Station. On average, 332 northbound riders from the southern stations disembark at the San Mateo Station during PM peak hours.

Figure 20: Caltrain Destinations - AM Peak

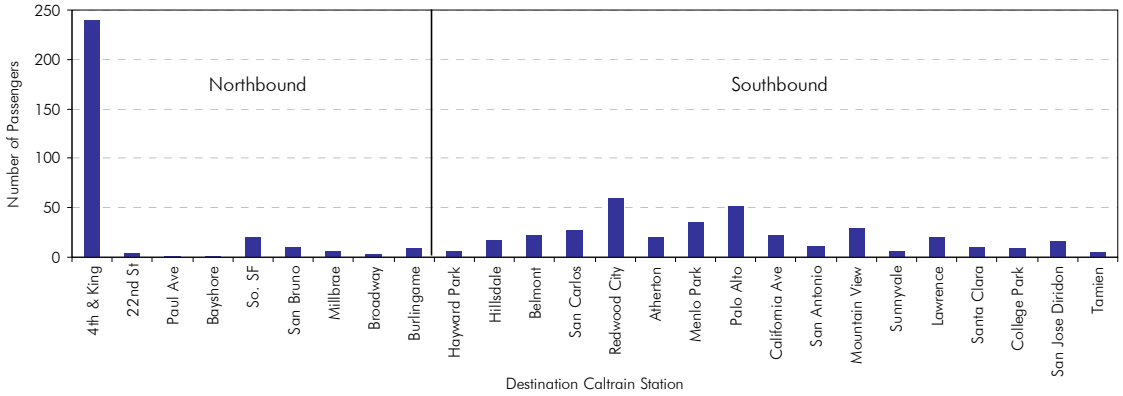
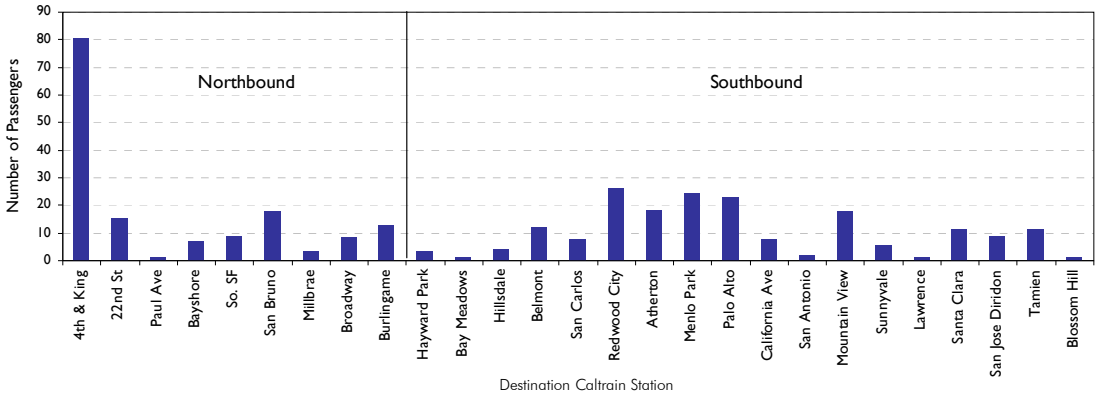


Figure 21: Caltrain Destinations - PM Peak



Station Access

According to a Caltrain Station Access Study in 2003, automobile access to the San Mateo Caltrain Station includes access from parked automobiles and automobile drop off. Parking at the station is located in two lots – a surface lot, with a capacity of 73 vehicles, and an underground lot, with a capacity of 164 vehicles. There is also an auto pick-up and drop-off area at the station.

Non-automobile access to the station includes fixed route transit, walking, and bicycling. The nearest bus stop is less than 500 feet from the train platform, located just west of the station on First Avenue. However, there is no shelter at this stop. Buses do not currently enter the San Mateo Caltrain Station; however, if fixed route transit were planned to enter the San Mateo Station in the future, there is a large arcade on the west side of the station that would provide shelter for waiting passengers.

According to the 2008 Caltrain Bicycle Parking and Access Plan, primary bicycle access to the San Mateo Caltrain Station is from First Avenue, which is at the opposite end of the station from the bicycle car. There is a fence that borders the station on its eastern side, preventing bicyclists and pedestrians from accessing the station directly from the project area. In regards to bicycle parking and storage, bicycle racks and rentable bicycle lockers are available at the station, although the racks are not easily accessible due to their close proximity to a wall.

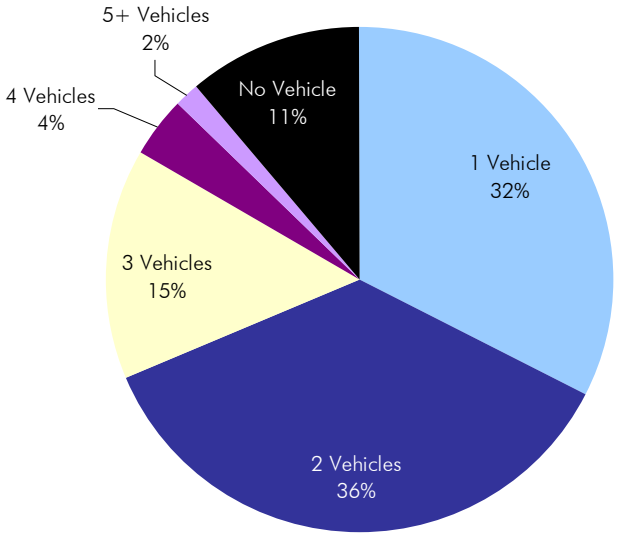
On an average weekday during AM peak hours, 57% of riders arrive at the San Mateo Caltrain Station by non-automobile modes. Specifically, 44% of riders arrive by foot, 7% by bicycle, and 6% by fixed route transit. The remaining 43% of riders arrive by automobile, with 30% of riders parking at the station and 13% getting dropped off.

By comparison, 92% of all egresses at the San Mateo Caltrain Station are by non-automobile modes. Specifically, 53% of riders walk, 12% bicycle, and 27% use fixed route transit to get from the station to their destination. This leaves 8% of riders who egress by automobile.

2.7 Vehicle Availability

Eleven percent (11%) of the households in the project area do not have access to a car (Figure 22), compared to 7% in the City of San Mateo and 6% in San Mateo County. Taking race into consideration, 10% (89) of the 868 Hispanic households in the project area do not have access to a car, while 19% (66) of the 347 Asian households and 53 (17%) of the 321 African American households do not have access to a car. Overall, 223 households in the project area do not have access to a car; 40% of those households are Hispanic, 30% are Asian, and 24% are African American.

Figure 22: Household Vehicle Availability in the Project Area

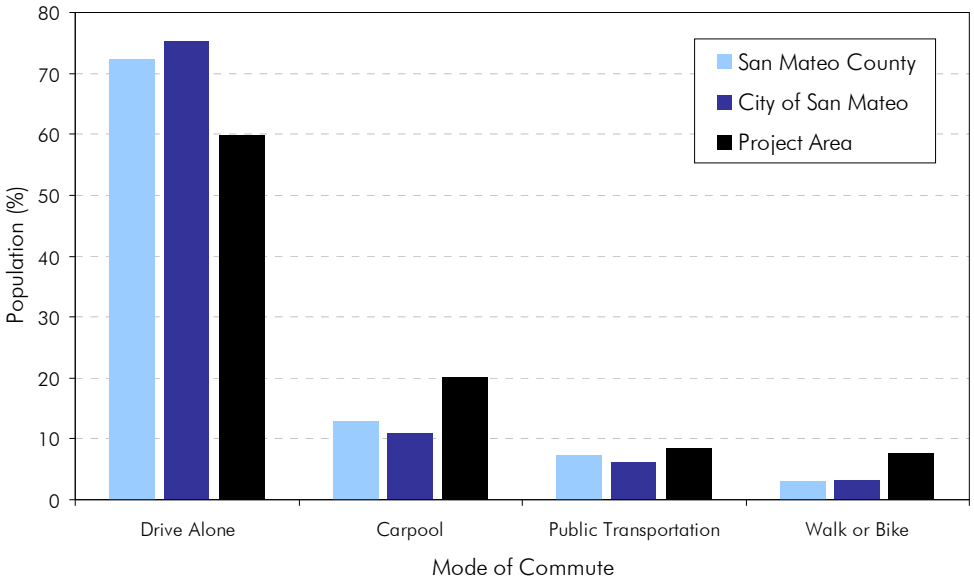


2.8 Mode of Commute

When traveling to work, the use of transportation alternatives other than driving alone is relatively high by residents of the project area (Figure 23). These residents have a relatively high carpool rate; at 20% (647 residents), there are nearly twice as many carpoolers in the project area than in the City (11%) and the County (13%). There is also a higher rate of public transit use in the project area. According to the 2000 U.S. Census, 9% (275 residents) of the residents in the project area use public transit for their work commute, while the City and County have 6% and 7% public transit commute use, respectively.

The number of workers driving alone to work is lower than in the City and County. Only 60% of workers living in the project area drive alone to work, while 74% of workers living in the City and 73% of workers living in the County drive alone to work. In addition, the rate of workers walking or biking to work from the project area is relatively high at 8%, compared to 3% in the City of San Mateo and 2% in the County.

Figure 23: Mode of Commute for the County, City, and Project Area



2.9 Time and Duration of Commute

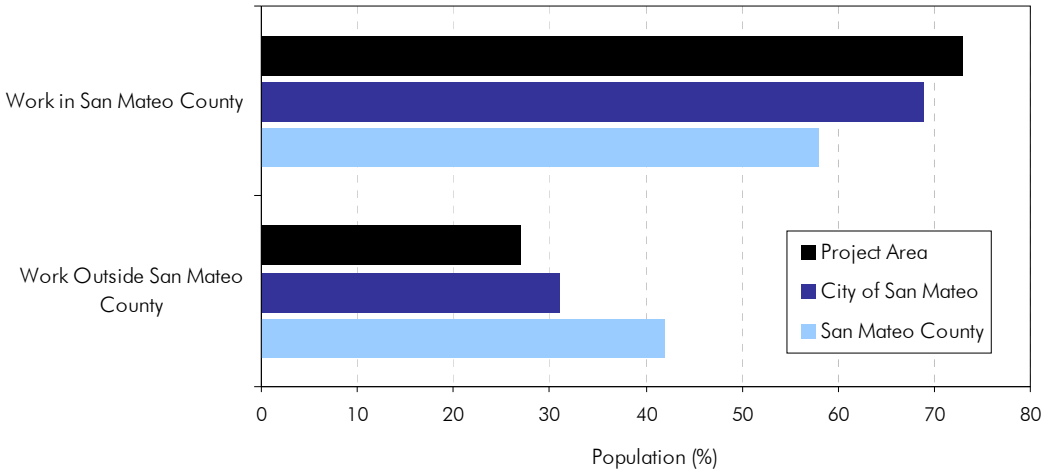
The majority of workers living in the project area begin their commute to work between 7:00 and 8:30 AM. Within that time span, 574 (18%) of the 1,310 workers who do not work at home leave between 7:00 and 7:30 AM, 329 workers (11%) leave between 7:30 and 8:00 AM, and 640 (20%) leave between 8:00 and 8:30 AM. Other commute times – from 8:30 AM to midnight and from midnight to 7:00 AM – are widely distributed. The most common commute times between 8:30 AM and midnight are the times from 9:00 to 10:00 AM, accounting for 223 (7%) of the 3,130 workers, and from 8:30 to 9:00 AM, accounting for 172 (5%) of the workers. The most common commute times between midnight and 7:00 AM are from midnight to 5:00 AM, accounting for 192 (6%) of the workers, and from 6:30 to 7:00 AM, accounting for 190 (6%) of the workers. 72 (2%) of workers living in the project area work at home.

The majority of residents in the project area have a commute duration of between 10 and 15 minutes; 665 (21%) of the 3,130 workers who do not work at home share this commute duration. The second most common commute duration is between 30 and 34 minutes, which accounts for 604 (19%) of the commuting workers in the project area. The average commute duration is 27 minutes, which is comparable to the City (25 minutes) and the County (27 minutes).

2.10 Place of Work

According to the 2000 U.S. Census, 27% (856) of workers over age 16 living in the project area work outside of San Mateo County. This percentage is less than that of the City (31%) and considerably less than that of the County (42%). Figure 24 below illustrates these percentages.

Figure 24: Place of Work for Residents of the Project Area, City, and County



2.11 Bicycle Amenities

Bikeways in the project area are shown in Map 10. Within the project area, there are Class III bikeways (on-street routes that are indicated only by signage and shared by bikes and motor vehicles) along Monte Diablo Avenue and Delaware Street. Lying just outside the project area, there is a Class I bikeway (a bike path providing a separated right of way for exclusive use of bicycles and pedestrians) leading over U.S. Highway 101 on Monte Diablo Ave, as well as a Class II bikeway (an on-street bike lane for one-way bike travel in each direction) heading southeast along Delaware Street starting at 4th Avenue. The City of San Mateo General Plan's Circulation Element (2009) proposes the designation of a Class III bikeway along Humboldt Street and along 2nd and 4th Avenues within the project area. There are no Class I or Class II bikeways within the project area.

Map 10: Bikeways Serving North Central San Mateo