ATTACHMENT II
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Prepared for

HAYWARD

Hayward Shuttle Connector Feasibility Study

April 2017

Report for the
Hayward Transit Connector Feasibility Study

Prepared for:
City of Hayward

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April 2017

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EXECUTIVE SUMMARY

The City of Hayward, through the General Plan, Climate Action Plan, and the Economic Development Strategic Plan, has established goals for providing more multimodal transportation options, reducing greenhouse gas emissions, and improving the economic vitality of the City. To achieve these goals, the City has identified the need to develop a shuttle service that would serve major activity centers to existing regional transit assets in the area (i.e. BART) and provide better and more convenient options to connect residents and employees to their jobs.

The City conducted an outreach process to local residents and employers and also analyzed existing transit service coverage and local demographics data to identify three geographic areas that currently have low transit service levels and a high propensity to utilize transit. An extensive screening process that involved input from key stakeholders, a Technical Advisory Committee, and City staff was used to screen an initial shortlist of eight routes in the study areas to four routes recommended for further analysis by the City Council. These four routes were pared down to one final route for near-term implementation: the Winton Hybrid Loop route. The primary goal of the chosen route is to provide first/last-mile connections to regional transit at Hayward BART Station. A second route serving the South Industrial Area has been selected for potential future implementation. Other routes identified as part of this study may be further evaluated through future studies as local conditions change.

The Winton Hybrid Loop route would operate at a 15-minute headway between 8 AM and 6 PM on weekdays. It would begin at Hayward BART Station and connect the following destinations:

- Lincoln Landing Proposed Mixed-Use Development,
- Maple and Main Proposed Mixed-Use Development,
- Hayward Hall of Justice and Alameda County Government Complex,
- Southland Mall,
- West Industrial Area,
- Life Chiropractic College, and
- Chabot College.

The preferred model for managing the shuttle program is a fully-contracted shuttle service model, i.e. a "turnkey" model. In this model, the City would hire a private contractor to operate and maintain the shuttle rather than providing the service directly with City employees. The Winton Hybrid Loop would have a start-up cost of around $66,000-72,000 and annual operations costs of around $1.05 million, which equates to approximately $100 per revenue hour (or $84 per revenue hour when the management component is

removed). These costs are based on conservative estimates of the effort and resources required to provide the service. Flexible, non-traditional shuttle operators may be able to provide the service at a lower cost. Recommended funding sources for the shuttle include grant funding from the Alameda County Transportation Commission (ACTC) and Bay Area Air Quality Management District (BAAQMD) grants, as well as contributions from developers and the Hall of Justice. The estimated weekday ridership is approximately 630 passengers, which is roughly comparable to the San Leandro Links Shuttle (~700 per day). This equates to around 14 riders per service hour.

The chosen route would serve the same locations as the existing Alameda County employee shuttle route, such as the Hayward BART station and the Hayward Hall of Justice, but also serve additional destinations such as Southland Mall, Chabot College, and the West Industrial Area.

The shuttle route would help the City to reach the emission reduction and multimodal transportation goals identified in the Climate Action Plan and General Plan, because the implementation of additional transit service in the City would encourage commuters and residents of Hayward to utilize an alternative mode of transportation, thereby reducing Single Occupant Vehicle (SOV) use and overall vehicle emissions. The development of this study also achieved one of the City's economic development goals, which is to study transit and amenity needs for employees in the City's industrial areas and develop an implementation plan based on the recommendations from the study.

The recommended next steps are to close funding gaps and launch the procurement process for the shuttle service by preparing and releasing the request for proposals (RFP) from turnkey operators. In addition, while not in the selected study areas, the Jackson Triangle area of Hayward has high levels of transit likelihood since the area has a large number of zero-auto, low-income households, but low levels of transit utility (i.e. low levels of high-quality transit service). Therefore, it is recommended that this area should be studied in further detail by the City as a candidate for future shuttle service options.

1 INTRODUCTION

This report presents the results of a feasibility study for implementing shuttles to provide direct transit connections between passenger rail stations (BART and Amtrak) and areas with low levels of transit service in the City of Hayward. These include the industrial areas in the west and south parts of the City, the Cannery Area, the Upper B Street, Mission Foothills neighborhoods and educational institutions, such as Cal State East Bay. The Transit Connector Feasibility Study developed shuttle route options to serve these areas based on outreach to employees, employers and residents, and analysis of existing and proposed conditions. The best performing routes were advanced through implementation planning activities including the development of an operating plan, funding approach and institutional structure to deliver and operate the system. This section provides an overview of the project including background, City goals for implementing shuttle service and the study areas.

The study is being funded through two Caltrans Planning Grants—one focused on the Cannery Area, California State University, East Bay and adjacent neighborhoods and another focused on the industrial areas

1.1 STUDY BACKGROUND

During a series of neighborhood outreach meetings conducted in the summer of 2015 to ascertain the demand by residents for connections to regional transit, the City of Hayward received input and suggestions that a shuttle service to connect residents to BART was desired in several neighborhood areas including the Cannery neighborhood, Upper B Street neighborhood, Fairway Park neighborhood and Mission/Foothill neighborhood. Also, through ongoing regular contact with existing employers and businesses considering locating in the industrial districts of the City, economic development staff learned that providing better transit access to BART and Amtrak for employees was needed to help existing businesses and attract new ones to the area. In response, Hayward City Council directed staff to develop a plan of action to respond to this community input. The staff determined that a feasibility study was warranted, applied for and received a grant to conduct the current work effort.

The City of Hayward has a moderately strong network of existing transit services and transit infrastructure in the form of two BART stations, an Amtrak station with commuter and intercity service and AC Transit bus services. These services are mostly focused within a north-south corridor generally bounded by Hesperian Boulevard on the west and Mission Boulevard on the east and are most concentrated between downtown and Industrial Boulevard. Areas outside of these corridors are less well served by existing transit, making it difficult to take advantage of the regional connectivity offered by BART and Amtrak and Transbay AC Transit

bus services. Additionally, in a few locations, the rail corridors act as barriers to connectivity to regional services due to the limited crossings.

Based on the input from the residential and business communities and the limitations of the existing transit service levels, the City of Hayward has identified the need to determine if another type of transit service, namely shuttle service, could be used to improve connections in areas that are outside of walking distance to BART and Amtrak and where existing bus service is less frequent and/or too focused on serving key corridors to address more local needs for transit connectivity.

1.2 CITY GOALS

The City of Hayward's goals for shuttle service include reducing greenhouse gas emissions, leveraging existing transit assets and providing transportation options for employers, employees and residents. These goals are based on policies and goals established in the following planning documents: the Hayward Climate Action Plan, the General Plan, and the City Economic Development Strategic Plan, which are discussed below.

1.2.1 Hayward Climate Action Plan

In 2009, the City adopted the Hayward Climate Action Plan, which set goals of progressive reductions in emission over time as follows:

- 12.5 percent below 2005 levels by 2020
- 82.5 percent below 2005 levels by 2050

Since transportation-related emissions account for approximately one third of the total, a key approach to achieving these reductions was to reduce vehicle miles traveled as articulated in Strategy 1 from the plan:

> *Transportation and Land Use: Reduce Vehicle Miles Traveled. The goal of Strategy 1 is to reduce vehicle miles traveled (VMT) by encouraging residents to use alternative modes of transit, by improving the effectiveness of the transportation circulation system, and through land-use and zoning mechanisms. In the context of this report, alternative mode of transit means any mode that is not driving alone. This could include walking, biking, carpooling, or riding public transit.*

Additionally, Strategy 9 calls for engaging the community in the process of achieving emissions reduction targets. Based on this policy background, the City has identified the following specific goals for a shuttle service in Hayward.

- Reduce the number of single-occupancy vehicle (SOV) commuters by providing convenient alternative options;
- Strengthen connectivity of residences, industry and colleges to BART, Amtrak, AC Transit and Downtown Hayward; and
- Help businesses and residents meet their transit travel needs.

The shuttle service would help the City to reach the emission reduction goals in the Climate Action Plan. This is because the implementation of additional transit service in the area would encourage commuters and residents of Hayward to utilize an alternative mode of transportation, thereby reducing SOV use and overall vehicle emissions.

1.2.2 General Plan

Adopted in 2014, the City's General Plan establishes goals (and related policies) for the City to pursue over the next several decades in areas such as land use, housing, mobility, and education. The General Plan includes three mobility goals that are relevant to this study. Goal M-1 relates to providing a multimodal system for the residents and employees of Hayward:

> *Provide a comprehensive, integrated, and connected network of transportation facilities and services for all modes of travel*

Policies under this goal include measures such as promoting the development of desirable multimodal transportation options, enhancing multimodal connections throughout the city, and encouraging the implementation of bicycle, walking, and transit amenities.

Goal M-2 relates to regional transportation services and connections:

> *Connect Hayward to regional and adjacent communities' transportation networks and reduce the impacts of regional through traffic in Hayward*

Policies under this goal include measures such as coordinating local planning efforts with regional agencies (such as Caltrans, MTC, ACTC, etc.), and working with regional transportation agencies (e.g. AC Transit, BART) to assess transit options and provide regional transportation connects.

Goal M-7 relates to improving transit options to meet Hayward's needs:

> *Improve coordination among public agencies and transit providers to meet public transit needs and provide greater mobility*

Policies related to the goal include supporting connections between transit stops and other modal facilities, coordinating with BART and AC Transit to expand service where opportunities arise, and connect major activity centers to regional rail connections (Amtrak and BART).

The shuttle service evaluated in this study would help to achieve all three of these goals. The shuttle would provide an additional multimodal transportation option to commuters and residents, it would connect to regional transit providers such as BART, and would provide station-area amenities to enhance pedestrian access to transit.

1.2.3 City Economic Development Strategic Plan

Published in 2014, the Economic Development Strategic Plan outlines goals and strategies for achieving those goals in order to enhance the economic vitality of the City. The Plan identifies the following Work Task (IS1.F) that is relevant to this study:

> *Complete a transit and amenity needs assessment for employees in the industrial areas and create an implementation plan based on recommendations*

This study achieves this task since, as will be discussed in further detail below, transit and amenity needs for three study areas are evaluated and an implementation plan is prepared for the selected transit route.

1.3 STUDY AREAS

Three separate study areas were identified for consideration of shuttle routes. These areas were selected by the City based on neighborhood outreach meetings conducted in 2015 and through ongoing contact with local employers and businesses considering locating in the City. These areas represent particular opportunities to increase transit mode share by providing direct transit connectivity between passenger rail stations (BART and Amtrak) and areas that are currently underserved by transit. These areas are shown in **Figure 1-1**. A brief description of each area is provided below.

South Study Area

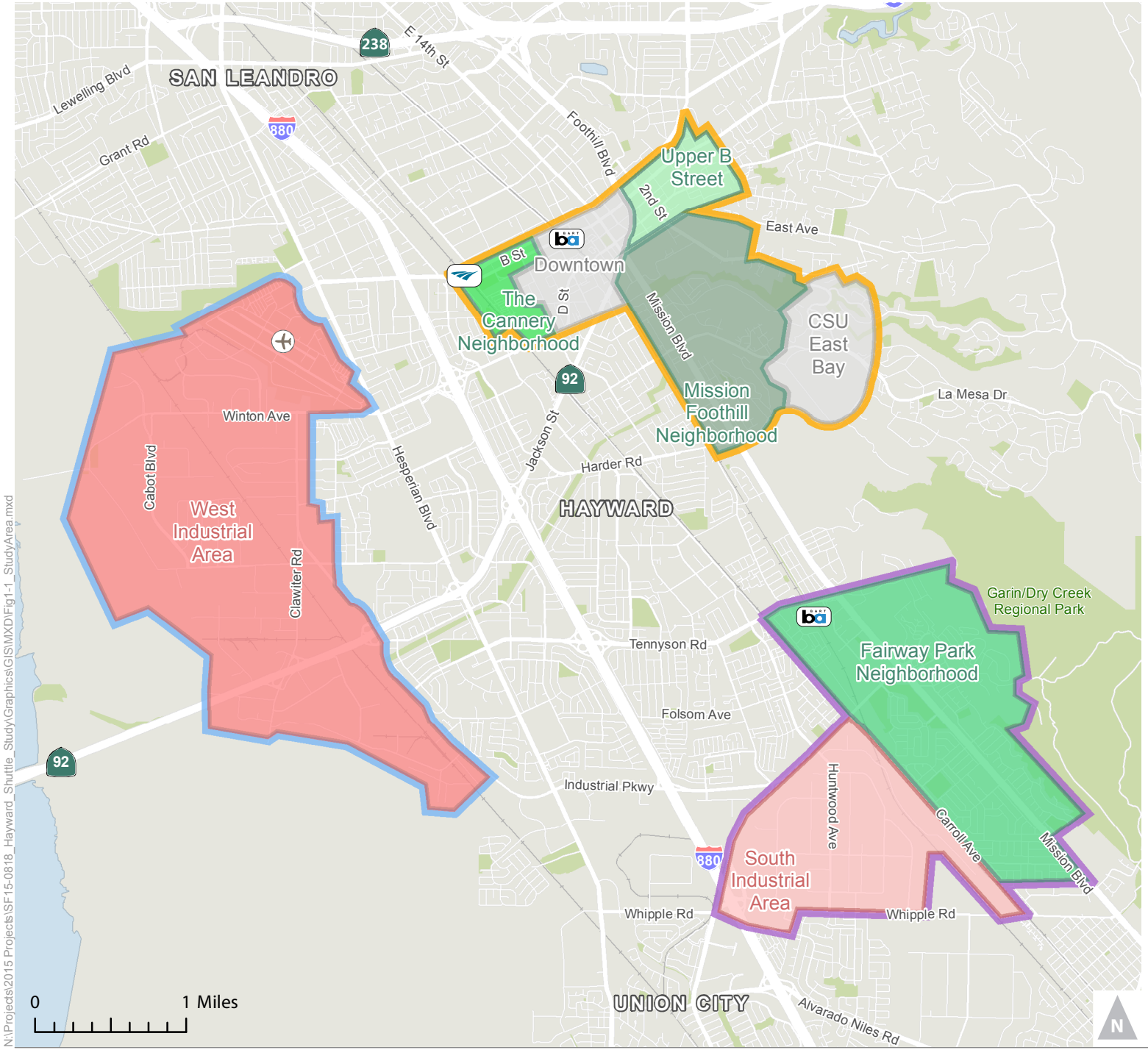
This study area covers the industrial district in the southern area of Hayward and the Fairway Park neighborhood. The southern industrial district is the largest employment center in Hayward. It is bounded by Tennyson Road on the north, the City boundary on the east, Whipple Road on the south and the Amtrak railroad corridor and Industrial Parkway on the west. It includes the South Hayward BART station.

West Study Area

The West Study Area covers the industrial district west of I-880. Its northern boundary is the Skywest Golf Course. On the east it is bounded by Clawiter Road and Industrial Boulevard. It extends south to Arden Road and on the east it is bounded by the salt ponds and wetlands adjacent to the San Francisco Bay. This study area includes the Hayward Executive Airport.

North Study Area

This study area covers the Cannery, Upper B Street and Mission Foothills neighborhoods, portions of downtown Hayward, and California State University, East Bay. It is bounded by A Street on the north, 7th Street and the City boundary on the east, Harder Road on the south and the BART line, West Winton Avenue and the Amtrak line on the west. It includes the Hayward BART and Amtrak stations.



Legend

Transit

- Amtrak Station
- Bay Area Rapid Transit

Study Areas

- West Study Area
- North Study Area
- South Study Area

Employment Areas

- South Industrial Area
- West Industrial Area
- Other Areas

Residential Areas

- Fairway Park Neighborhood
- Mission Foothill Neighborhood
- The Cannery Neighborhood
- Upper B Street

- Parks

Figure 1-1
Study Areas

2 EXISTING CONDITIONS

This chapter describes the existing land use and transit context in the selected study areas. Land use conditions are presented in the context of population, employment, and current development plans for each area. Transit conditions are presented through a discussion of the location and type of service provided, ridership, and quantitative measures of transit likelihood and utility.

2.1 LAND USE CONDITIONS

In this section we begin with a presentation of current demographic conditions, in terms of residential and job locations within the study areas. Following this, we present a comprehensive review of planned developments and changes to land use within our study areas from five contemporary plans. Taken together, these findings serve to identify specific promising locations within the study areas for which shuttle service could be targeted.

2.1.1 Population

The population of Hayward is approximately 144,000 people[1], making it the sixth largest city by population in the Bay Area and the third largest city in Alameda County.

The City of Hayward has a population density similar to neighboring Fremont. The average population density in Hayward is approximately 15 people per acre[2], which is similar to nearby Fremont (at 16 people per acre). By comparison, Oakland averages 24 people per acre and San Francisco averages 50 people per acre. Residential development in the City of Hayward is almost exclusively low-rise and single-family in nature, and as such most residential areas are around 5-20 persons per acre. There are pockets of multi-family townhome and mobile home residential development, which both have a higher-than-average population density.

The three study areas contain a population of approximately 45,900 people, which is around 32 percent of the total population of Hayward. A summary of population data is shown below in **Table 2-1**. A map of population density is shown in **Figure 2-1**.

[1] U.S. Census, 2010
[2] Smart Location Database, Environmental Protection Agency (EPA). Table D1B "Population Density, People per acre on unprotected land"
The Smart Location Database is a database that summarizes various land use, demographic and built environment characteristics.

TABLE 2-1: POPULATION AND EMPLOYMENT DATA										
	Area		HH[1]	Pop.[2]	Emp.[3]	Service Pop.[4]	Pop per HH	HH density	Pop. density	Emp. density
	acres	sq mi						per ac	per ac	per ac
West Study Area	2,900	4.5	-[5]	-[5]	15,900	15,900	-	-	-	5.5
South Study Area	2,300	3.6	11,300	18,700	10,200	28,900	1.7	4.9	8.1	4.4
North Study Area	1,800	2.8	10,400	23,700	7,700	31,400	2.3	5.8	13.2	4.3
3 Study Areas	**7,000**	**10.9**	**27,800**	**45,900**	**33,800**	**76,200**	**1.7**	**3.1**	**6.1**	**4.8**
City of Hayward	**29,000**	**46.0**	**75,400**	**144,200**	**84,300**	**228,500**	**1.9**	**2.6**	**5.0**	**2.9**

Notes:
1. Household derived from US Census 2010
2. Population derived from US Census 2010
3. Employment derived from US Census Longitudinal Employer-Household Dynamics (LEHD) 2010
4. Service population is an indicator of the size of the overall total transit market, and is the sum of population and employment
5. Population within the West Study Area is negligible

Source: All data from EPA Smart Location Database, 2010

According to ABAG[3], housing units in Hayward are projected to grow by 30 percent between 2010 and 2040. It is anticipated that population in Hayward will increase by approximately 49 percent or approximately 71,000 people and employment will increase by approximately 32 percent or nearly 27,000 jobs by 2040[4]. With this projected increase in population and employment, there is a clear opportunity to support growth through improving access to transit and jobs within Hayward. A summary of projected population and employment growth is shown in **Table 2-2**.

[3] Association of Bay Area Governments, Final Forecast of Jobs, Population and Housing (July 2013) (http://onebayarea.org/pdf/final_supplemental_reports/FINAL_PBA_Forecast_of_Jobs_Population_and_Housing.pdf)
[4] Alameda County Transportation Commission Travel Demand Model

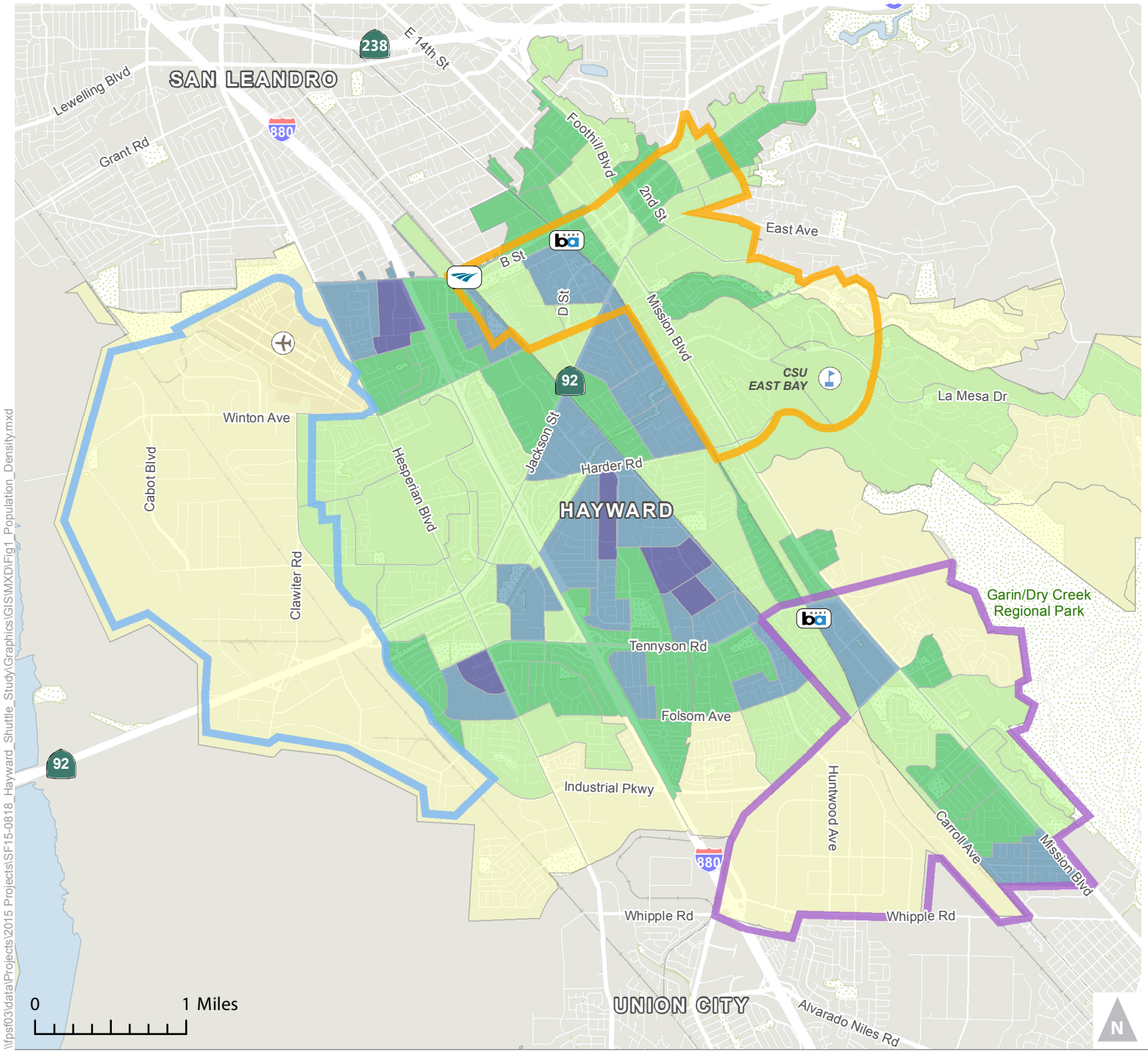
TABLE 2-2: POPULATION AND EMPLOYMENT GROWTH (2010 TO 2040)						
	Growth 2010-2040			Growth as percentage of 2010		
	HH	Pop.	Emp.	HH	Pop.	Emp.
West Study Area	-	-	-100	-	-	-1%
South Study Area	1,900	7,000	-700	17%	37%	-7%
North Study Area	6,700	18,300	20,400	64%	77%	265%
Study Area Total	**8,600**	**25,300**	**19,600**	**40%**	**60%**	**58%**
City of Hayward	**22,600**	**71,200**	**26,900**	**30%**	**49%**	**32%**
Source: MTC Travel Demand Model						

The Institute of Transportation Engineers (ITE), through a resource called "*A Toolbox for Alleviating Traffic Congestion*,"[5] publishes recommendations for minimum densities to support transit service, shown in **Table 2-3** below. Hayward's average persons per household is 3.21, per the US Census[6]. Therefore, a residential density of around 15 persons per acre would be needed to support local bus service, a density of around 21 persons per acre would be needed to support intermediate bus service, and a density of 45 persons per acre would be needed to support frequent bus service. As can be seen in **Figure 2-1,** there are some pockets of the North Study Area that meet the "local service" threshold. In addition, large parts of the South Study Area to the west of Mission Boulevard, one pocket in the North Study Area to the southwest of the Hayward BART Station, and two pockets near the South Hayward BART station meet the "intermediate service" threshold. While the population densities within the study areas do not generally meet benchmarks for frequent transit service, these areas identified above should serve as the focus for residential first-mile/last-mile service.

[5] Institute of Transportation Engineers (ITE). 1989. *A Toolbox for Alleviating Traffic Congestion*

[6] U.S. Census Bureau. 2015. *State and County QuickFacts*. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Census of Governments

TABLE 2-3: ITE MINIMUM DENSITIES FOR TRANSIT SERVICE			
Service Type	Headway (min)	Residential Density (DU per acre)	Population Density (persons per acre)
Local Service	60	5	15
Intermediate Service	30	7	21
Frequent Service	10	15	45
Source: Institute of Transportation Engineers (ITE). 1989. *A Toolbox for Alleviating Traffic Congestion*			



Legend

Transit

- Amtrak Station
- Bay Area Rapid Transit

Study Areas

- West Study Area
- North Study Area
- South Study Area

Population Density (ppl/acre)

- 0 - 5
- 5 - 15
- 15 - 20
- 20 - 35
- > 35
- Parks

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Source: EPA Smart Location Database, 2015

Figure 2-1
Population Density

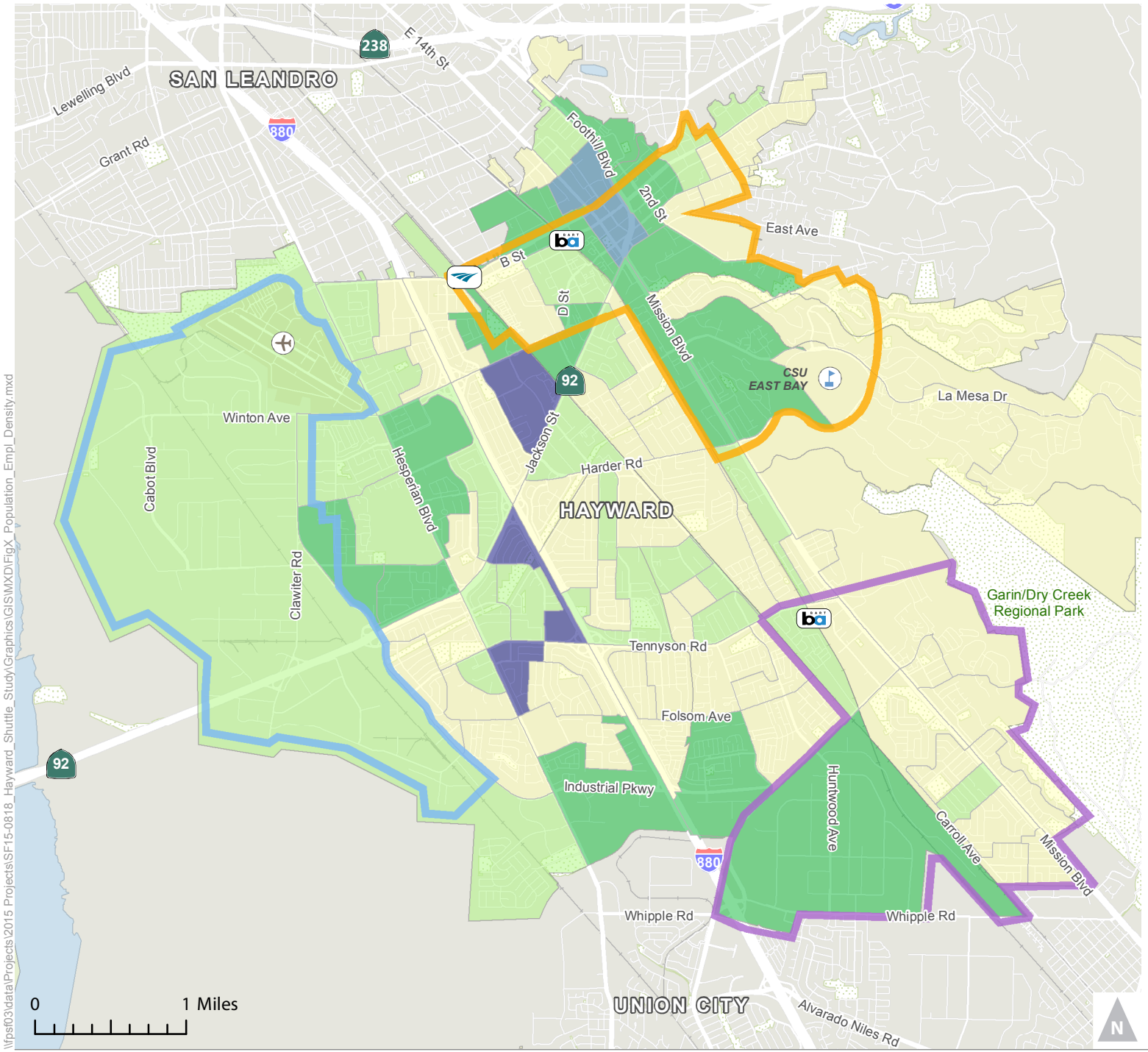
2.1.2 Employment

Hayward's employment centers are to a large extent contained within the three study areas. The study areas contain 40 percent of Hayward's 84,000 jobs[7]. Major industries in Hayward include (in order of number of employees): health care and social assistance, manufacturing, educational services, wholesale trade, and retail trade[8]. The majority of manufacturing, wholesale and resale trade jobs within Hayward are located within the South Study Area and West Study Area. Jobs in health care and social assistance are centered around the Saint Rose Hospital in central Hayward near I-880/Tennyson Road, which is not within any of the study areas. The largest concentration of educational services jobs in Hayward is at and around the California State University East Bay campus, located East of Mission Boulevard on Hayward Boulevard, within the "North Study Area."

Employment density is measured by the number of jobs per acre. The West Study Area has a total of 15,900 jobs and averages 6 jobs per acre, distributed fairly uniformly. The North Study Area has a total of 7,700 jobs and averages 4 jobs per acre (concentrated on the Downtown area, but also along Mission Boulevard). The South Study Area has a total of 10,200 jobs and averages 4 jobs per acre (concentrated almost entirely to the west of the railroad tracks/Carroll Avenue)[9]. The net density of the industrial areas within the South Study Area is fairly similar to the West Study Area at about 8 jobs per acre. A summary of employment data is shown in the previous section in **Table 2-1**. Employment density for the City of Hayward is shown in **Figure 2-2**, below.

According to ABAG, employment in Hayward is projected to grow by 32 percent between 2010 and 2040. It is anticipated that most of this will occur in the North Study Area, which will add an additional 20,400 jobs in this time period. Employment in the West and South Study Areas is expected to decline slightly, by one and seven percent respectively. With this overall projected increase in employment, there is a clear opportunity to support growth through improving access to transit and jobs within Hayward, especially in the North Study Area. A summary of projected population and employment growth is shown in the previous section in **Table 2-2**.

[7] US Census Longitudinal Employer-Household Dynamics (LEHD) 2010 via EPA Smart Location Database
[8] U.S. Census Bureau. 2015. OnTheMap Application. Longitudinal-Employer Household Dynamics Program. http://onthemap.ces.census.gov/
[9] City of Hayward Chamber of Commerce '2015 InfoUSA business database'



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Transit

- Amtrak Station
- Bay Area Rapid Transit

Study Areas

- West Study Area
- North Study Area
- South Study Area

Employment Density (ppl/acre)

- 0 - 2.5
- 2.5 - 5
- 5 - 10
- 10 - 15
- > 15

- Parks

Source: EPA Smart Location Database, 2015

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Figure 2-2
Employment Density

Nationwide research suggests that a density of 20 jobs per acre is required to support local bus service, and 75 jobs per acre to support frequent local bus service.[10] Additionally, ITE suggests that around 13-22 jobs per acre is required to support local bus service[11]. For the two industrial study areas, densities fall short of the benchmarks required to support local bus service. However, a service focused on first-mile/last-mile could be effective serving these two areas if it provides a focused and efficient service. The shuttle serving the West Study Area could also increase ridership through serving the Saint Rose hospital area, Chabot College, Southland Mall, or the government cluster around the Hall of Justice, although care should be taken to ensure that these detours do not result in too large of a time penalty that would deter riders traveling to/from the industrial area.

For the North Study Areas, the employment areas along Mission Boulevard and in Downtown would approximately reach the minimum threshold required to support local bus service (up to 15 jobs per acre). A first-mile/last-mile service could be effective, although effectiveness would be reduced if it duplicates with existing transit service along this corridor.

2.1.3 Land Use Plan Review

Recent plans exist that identify certain areas of the city for targeted growth. Shuttle service should be designed as part of process which is cognizant of possible future growth area, such that its design takes into account prominent growth opportunities. In this section we review five local land use and development plans whose implementation could serve to affect service operations and planning. Within each plan, specific areas earmarked for planned intensification and land use changes are identified. We also note relevant considerations for shuttle service planning, where necessary.

- **Hayward Cannery Area Design Concept (2004):**

  (North Study Area)

  This plan outlines improvements in Hayward's Cannery Neighborhood, which is located within this study's "North Study Area." The Cannery Neighborhood as defined in the plan is generally bounded by Hayward BART Station to the east, Hayward Amtrak Station to the west, A Street to the north, and Winton Avenue to the south. Planned improvements, which are partially complete, included a gridded street network, public open space, sports facilities, a community center, additional housing units, and commercial and retail developments. A map of developable areas is shown in **Figure 2-3**.

  New residential construction has been concentrated in two main areas to the east and west of the Amtrak rail right-of-way. On the east side, development is concentrated in the L-shaped area

[10] New Hampshire Department of Transportation and Massachusetts Executive Office of Transportation. 2009. *I-93 Transit Investment Study - A National Review of Transit-Supportive Land Use Practices and an Analysis of New Hampshire and Massachusetts Land Use Regulations*.
[11] Institute of Transportation Engineers (ITE). 1989. *A Toolbox for Alleviating Traffic Congestion*

bounded by Martin Luther King Drive, Burbank Street, Parkhurst Street, Meek Avenue, Madsen Street and WintonWinton Avenue. Development on the west side of the rail right-of-way is located in the area bounded by Amador Street, A Street, the Amtrak rail right-of-way and the north side of Centennial Park.

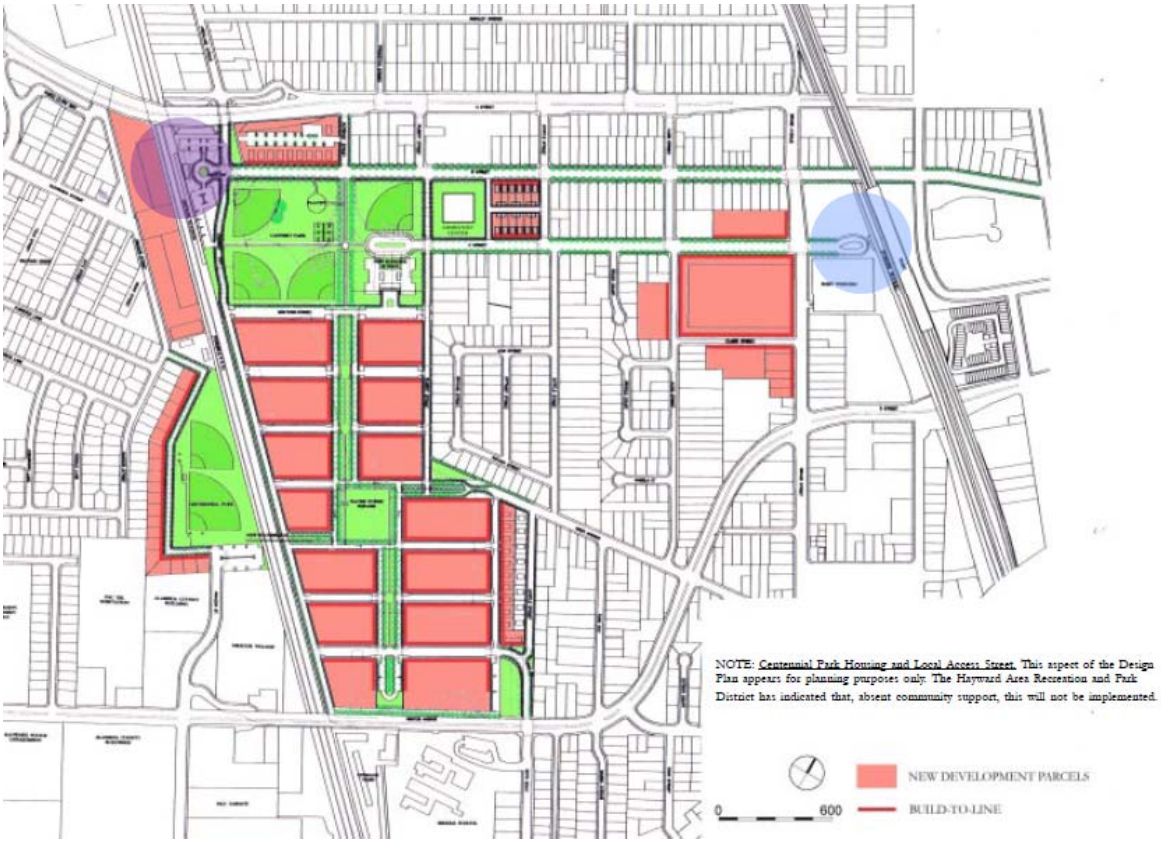
Based on aerial images of the site as of 2016, approximately three-quarters of the Plan area residential units have been constructed. Most of these units are either attached single family homes or in multi-family buildings, resulting in a denser neighborhood compared to adjacent residential areas (which are mostly detached, single-family homes). Based on its higher residential density and distance from Hayward BART station (>0.5 mile), shuttle services could better connect new Cannery Area residents (both to the east and west of the Amtrak rail right-of-way) with the Hayward BART Station. Residents towards the southern end of the neighborhood, near the intersection of Martin Luther King Drive and Winston Avenue, may also benefit from shuttle services connecting to Amtrak (a distance of around 0.5 mile away). The walking distance to the BART station from this intersection is 0.75 miles (around a 15-minute walk), which is far enough for some residents to choose a potential shuttle over walking, particularly if they have difficulty walking.

Commercial development has been planned adjacent to the Hayward BART Station on Grand Street; however none has yet developed. Today, most businesses located along Grand Street are automobile-serving business, such as auto repair shops. However, two senior housing developments have been built along Grand Street near Hayward BART Station: the 60-unit Hayward Senior Housing at Grand and C streets (2008), and the 22-unit Weinreb Place at Grand and B streets (2014). Because these developments are a block away from the BART station, shuttle service would not be required.

Opportunity Areas:

- Most Cannery development is within 0.75 miles of the Hayward BART Station, a catchment area that favors walking. Shuttle service that travels through the neighborhood, especially the southern portion which is further away, could provide a convenient option for residents in this high-density area.

Figure 2-3: Cannery Area Plan Development Parcels



Note: Amtrak station and Hayward BART station are shown as purple and blue circles, respectively. Red areas, while titled "new development parcels" in the figure, are intended to represent all redevelopment parcels covered under the Cannery Area Plan. Many of these parcels have been developed as of 2017.

Source: Hayward Cannery Area Design Concept, prepared by Solomon ETC Architecture & Urban Design, 2004

- **South Hayward BART/Mission Boulevard Concept Design Plan (2006):**

  (South Study Area)

  This plan presents a transit oriented development approach for both the areas adjacent to the South Hayward BART Station and along Mission Boulevard – between Harder Road and Industrial Parkway. Very high density (75-100 d.u./ac) "station area" residential units are planned adjacent to the BART station, with some shared resident/BART parking allowed. South of the BART station – and to the north side of the shuttle study's South Study Area – high density (17-55 d.u./ac) residential development, as well as commercial and mixed uses, are planned along Mission Boulevard between Tennyson Road and Industrial Parkway. Once completed, the South Hayward

BART/Mission Boulevard plan would add between 1,845 and 3,225 new residential units to the larger Mission Boulevard area (between Harder Road and Industrial Parkway), with the largest number added to the BART station area.

Beyond the BART station area, planned land use changes are concentrated on Mission Boulevard between Jefferson Street and Tennyson Road and in the "Dixon Street" area. Dixon Street runs south from the BART station, parallel with Mission Boulevard, providing a more direct connection to the Fairway Park neighborhood. The Dixon Street area is bounded by Mission Boulevard, Valle Vista Avenue, Industrial Parkway and the BART rail right-of-way. Over half of the Dixon Street area is undeveloped, State-owned land, which has "prime development potential," according to the Plan. In addition, commerical land uses (such as a conference center/hotel) are planned in the "triangle area" to the immediate southwest and southeast of the Mission Boulevard and Industrial Parkway intersection. This area is within the South Study Area.

To date, little of the proposed residential development has been completed. A high density development adjacent to the South Hayward BART Station, named Eden Housing, is under construction and expected to be completed in June 2016.[12] Eden Housing plans to deliver 151 affordable family and senior units alongside AMCAL Housing's 206 market rate rental units, to create a mixed income community with new public open space and neighborhood amenities. Since these developments are within walking distance of the BART station (~¼ mile), a shuttle connection is likely unnecessary.

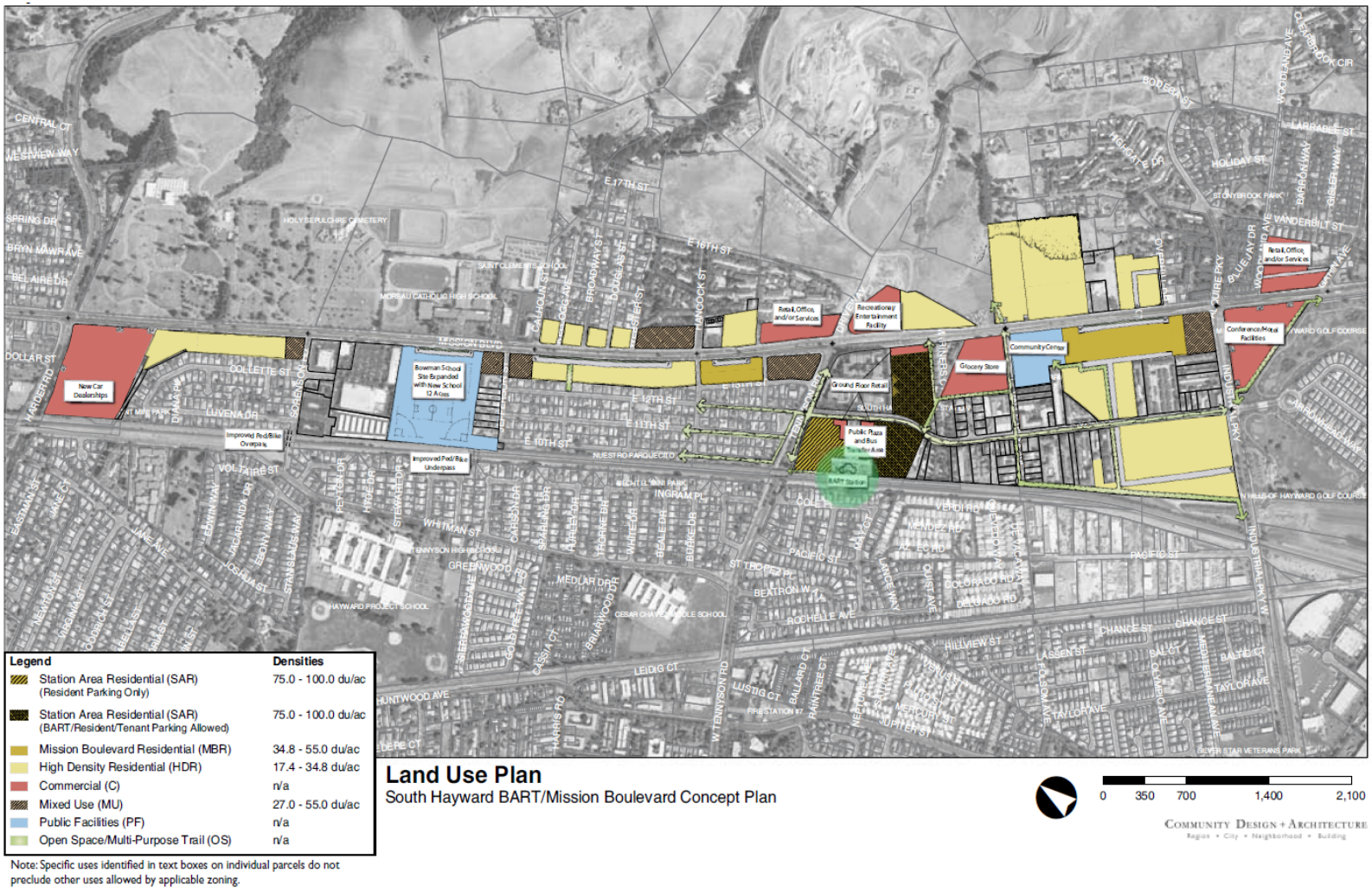
If dense residential development increases in this area in the future, particularly along Mission Boulevard and in the "Dixon Street" area, shuttle service connecting to BART may be justified.

Opportunity Areas:

- Dixon Street could be considered as a shuttle connection between the BART station and the Fairway Park Neighborhood, instead of Mission Boulevard. Shuttle service on this street could incentivize development along the corridor.

[12] Eden Housing (2014). South Hayward BART Family & Senior Housing. Accessed at http://www.edenhousing.org/property/south-hayward-bart-family-senior-communities on 7/6/2015

Figure 2-4: South Hayward BART/Mission Boulevard Concept Design Plan - Land Use Plan



Note: South Hayward BART station is shown as a green circle

- **Alternative Mode and Parking Planning Study – CSUEB (2012):**

  (North Study Area)

  Following California State University, East Bay's (CSUEB) 2009 Master Plan, this study reviews existing student, faculty and staff travel patterns and provides recommendations for transportation demand management (TDM) and parking management measures. These recommendations aim to reduce vehicle trip generation and encourage the use of alternative modes of transportation. Proposed strategies include improved transit service between the Hayward BART station and campus, investigating the appropriateness of shuttle service between campus and the downtown district (specifically for students), implementing discounted transit passes, preferential parking for carpools and vanpools, and increased outreach around the TDM plan. Since the study, AC Transit (Route 60) and shuttle services to/from Hayward BART Station continue to operate with the same headways and there are no discount transit passes in place. A new shuttle service between CSUEB and Castro Valley BART Station has been created while services to/from South Hayward BART Station (which were implemented for a quarter) were discontinued due to low ridership.[13, 14]

  Opportunity Areas:

  - Shuttle service serving CSUEB should complement and not duplicate or compete against current CSUEB offerings. The CSUEB shuttle system does not serve the South Hayward BART Station and AC Transit service to the station is infrequent. Therefore, connections to the South Hayward BART Station may be underserved.

- **Economic Development Strategic Plan 2014-2018 (2014):**

  (West and South Study Areas)

  The City of Hayward released their Economic Development Strategic Plan for FY 2014-2018 in 2014 with the following vision:

  > *"The City of Hayward is recognized as the most desirable and business-friendly place in the East Bay in which to locate and conduct business."*

  This plan presents the city's approach to economic development, which is organized across three categories: 1. Branding and Marketing, 2. the Industrial Sector, and 3. the Service and Retail Industry. Economic growth will be evaluated according to performance measures identified in the strategic plan.

  For the Industrial Sector, the plan identifies opportunity sites, as shown in **Figure 2-5**. Sites that overlap with the shuttle study's Study Area include: Airport national Guard Site, Depot Road Auto Yards, and Arkay Site.

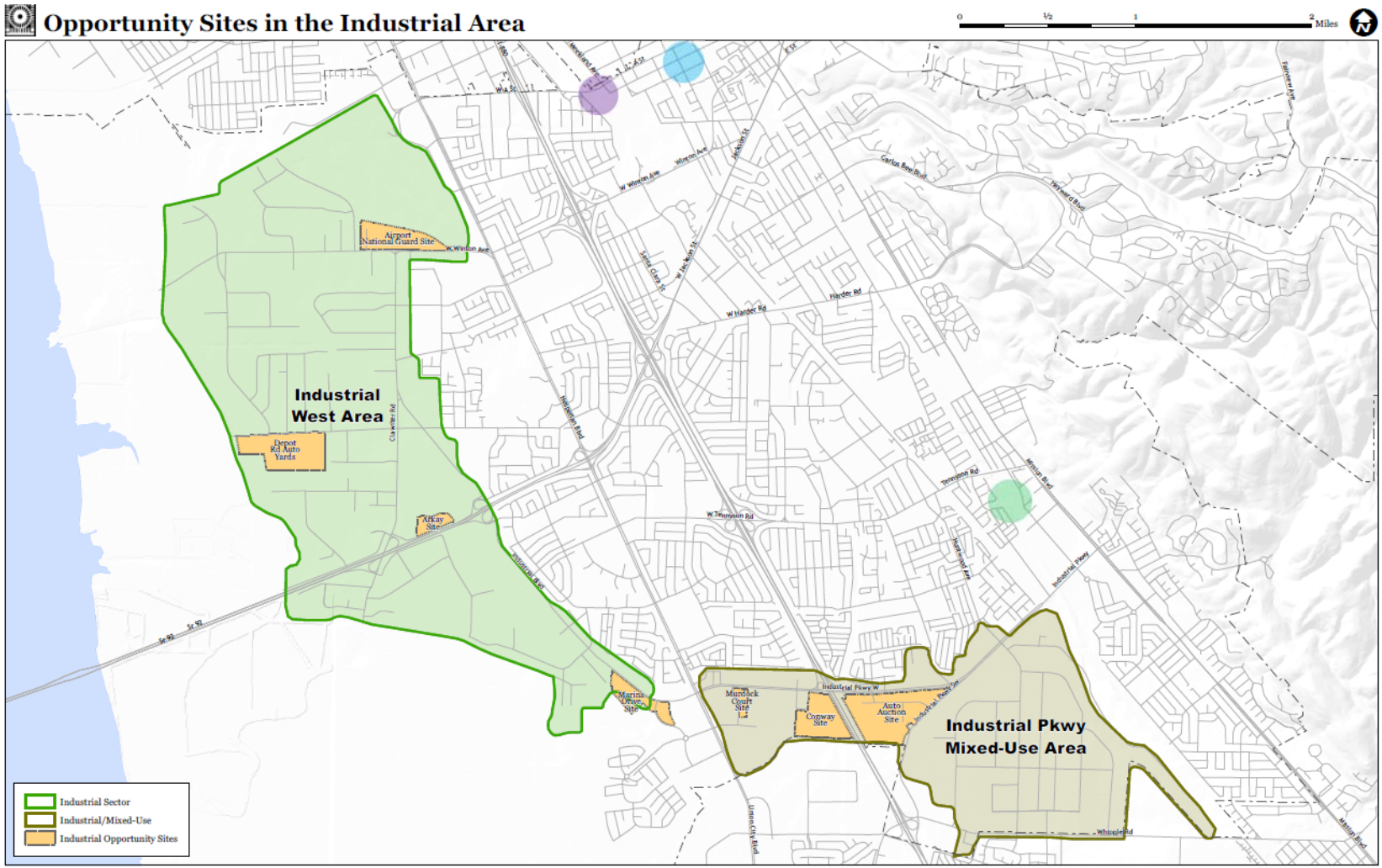
[13] CSUEB (2015). New!! Shuttle Service to Castro Valley BART Starting April 22, 2013. Accessed at http://www20.csueastbay.edu/af/departments/parking/alt-trans/cv-service.html on 7/6/2015
[14] CSUEB (2015). No More Service to South Hayward BART. Accessed at http://www20.csueastbay.edu/sa/parking/alt-trans/No%20More%20Service%20to%20South%20Hayward%20Bart%20Station.html on 7/6/2015

The strategic plan also identifies key retail areas and catalyst sites, as demonstrated in **Figure 2-6**. Key retail areas that overlap with the shuttle study's study areas include the Downtown Area, A Street Corridor, Central Mission Boulevard Corridor, South Hayward BART Station Area, South Mission Boulevard Corridor and 880 Retail Area. The plan identifies the following sites within the shuttle study's study areas as catalyst sites: Bank Building, Green Shutter Building, Carlos Bee Site, Former Auto Row, Airport Retail Parcels, SHBART 238 Property Site, Roller Rink Site and Holiday Bowl Site.

Opportunity Areas:

- Growth is planned in all three areas, which justifies their selection for study. In particular, service to the West Study Area should consider the Airport National Guard Site, Depot Road Auto Yards, and Arkay Site, which are slated for future development. Service to the South Study Area should consider the South Mission Boulevard Corridor. Outside of Downtown, service in the North Study Area should specifically consider the Carlos Bee Site and Former Auto Row sites, which lie just within the southern boundary of the study area.

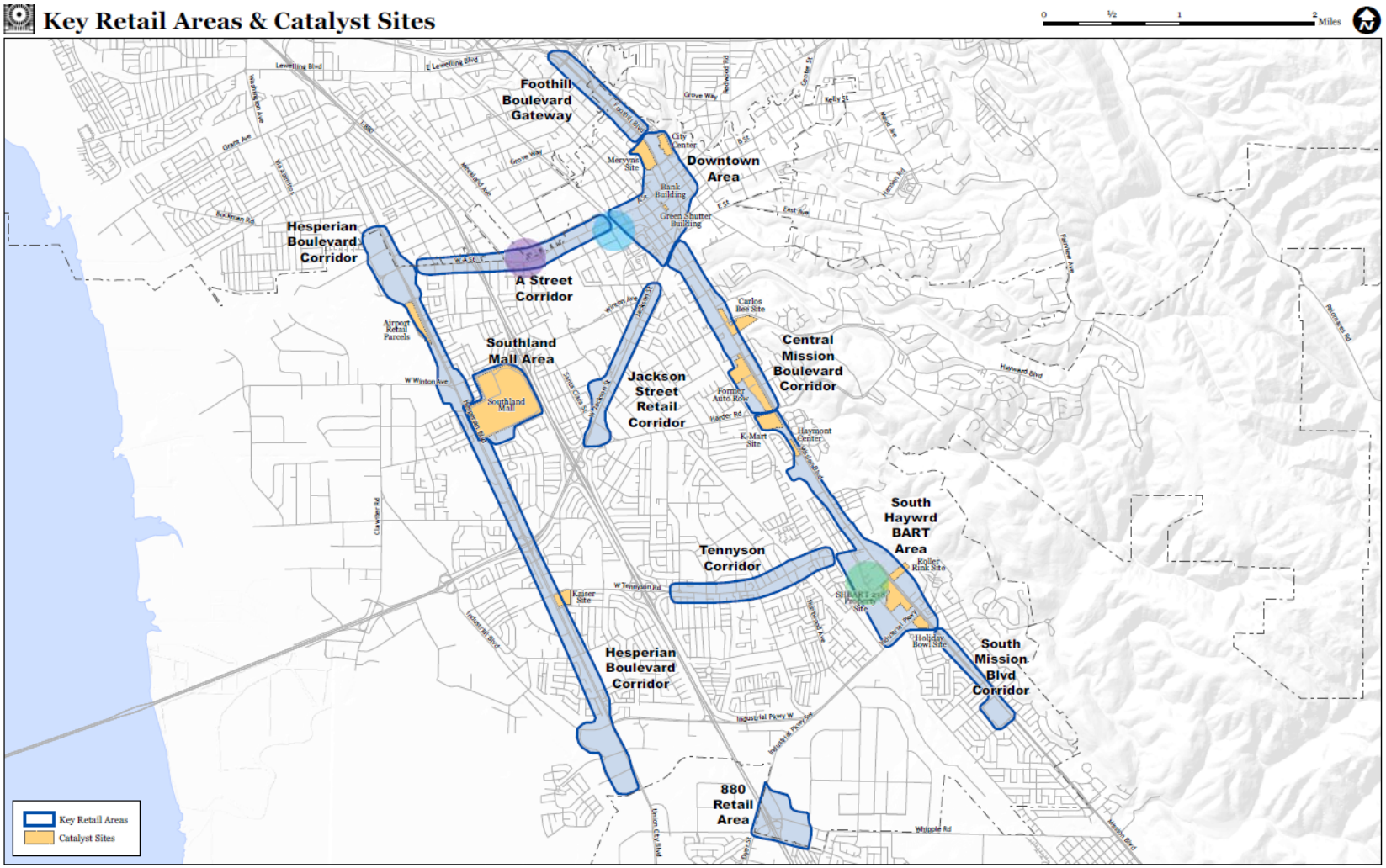
Figure 2-5: Opportunity Sites in the Industrial Area



Note: Amtrak station, Hayward BART station, and South Hayward BART station are shown as a purple, blue, and green circle, respectively

Source: City of Hayward (2014). Economic Development Strategic Plan FY 2014 – FY 2018. p. 23

Figure 2-6: Key Retail Areas & Catalyst Sites



Note: Amtrak station, Hayward BART station, and South Hayward BART station are shown as a purple, blue, and green circle, respectively

Source: City of Hayward (2014). Economic Development Strategic Plan FY 2014 – FY 2018. p. 24

- **Hayward Downtown Specific Plan Project** (ongoing) – The Specific Plan will be an extension of the Hayward General Plan, with a focus on how the General Plan goals and policies will be implemented in the Downtown Hayward area. The Specific Plan will use a public outreach process to establish a vision for the Downtown area and draft policies that will achieve that vision. The plan will likely identify policies to further support General Plan goals with respect to multimodal transportation and access to regional transportation connections. These policies would further support the implementation of shuttle services to support these goals. At the time of this report the planning process is underway; therefore because it has not been finalized it has not been considered as part of this study.

2.2 TRANSIT CONDITIONS

This section provides an assessment of current transit service, and transit accessibility in the City of Hayward. First, the existing transit service to the study areas is described. This is followed by a report into current ridership trends. The section ends with a presentation of service gaps and opportunities within the three study areas.

2.2.4 Existing Transit Service

Public transportation is provided by four different providers, as described below:

Bay Area Rapid Transit (BART). BART provides rail access to many locations throughout the Bay Area, including downtown Oakland and downtown San Francisco. The Hayward and South Hayward stations provide direct service to Richmond, Warm Springs/South Fremont, and Daly City bound trains. Passengers can transfer to access Dublin/Pleasanton, Pittsburg/Bay Point, and Millbrae/SFO bound trains at Bay Fair Station, 19th Street Station (Oakland), and Daly City Station, respectively.

Amtrak (Capitol Corridor). Hayward Amtrak Station is served by Amtrak's Capitol Corridor, which operates between Sacramento and San Jose. The Capitol Corridor provides weekday peak period service and less frequent off peak and weekend service.

Alameda-Contra Costa Transit district (AC Transit). This is a transit service provider for both Alameda and Contra Costa counties. AC Transit offers three different types of bus service in Hayward: Local (trunk route bus service provided on major arterials), Transbay (Commuter bus service operating during weekday peak periods to locations in San Francisco and the South Bay), and Express (intercity commuter service operating during weekday peak periods).

In addition to fixed-route public transportation, AC Transit offers paratransit service named East Bay Paratransit that provides door-to-door mobility to disabled individuals and seniors. Detailed discussion of AC Transit service and ridership in the study areas can be found in **Appendix A**.

California State University East Bay (CSUEB). CSUEB provides shuttle service to and from the Hayward and Castro Valley BART stations. The Hayward shuttle operates every 15-30 minutes, seven days per week, when classes are in session. The shuttle is routed either along 2nd Street or Mission Boulevard from CSUEB to Hayward BART depending on traffic conditions, and it makes no intermediate stops. From the Hayward BART Station to CSUEB, the shuttle is routed along 2nd Street. This shuttle is available to all current students, staff and faculty, and members of the public.

Alameda County Shuttle. Since 2013 the County has been providing a shuttle service restricted to County employees only between the Hayward BART station and County offices at the Hayward Hall of Justice and the Eden Multiservice Center, both of which are located on Amador Street. The shuttle operates every 20 minutes on weekdays between 6:30 AM to 6:30 PM.

2.2.4.1 Service by Study Area

The three figures below show the existing public transit service provided in the City of Hayward. In these figures, the thickness of the route line is a reference to its service frequency during commute periods. This approach highlights the most frequent, and therefore valuable, routes. Population and employment is also shown in the background on these figures.

In the North Study Area, the two major corridors are Winton Avenue-D Street, which is served by AC Transit routes 22, 86, and Transbay M at 40, 60, and 30 minute headways respectively, and Mission Boulevard, served by routes 22 and 99 at 40 and 20 minute headways respectively.

The South Study Area is served mainly by AC Transit route 99 along Mission Boulevard, which operates at 20 minute headways. The industrial areas within this study area are also served by AC Transit route 85 which provides a commute period service frequency of 60 minutes.

The West Study Area is mainly served by AC Transit routes 86 and 83, which provide a commute period service frequency of 60 minutes. To the east of the area is Hesperian Boulevard, a major corridor that features service from AC Transit routes 22 and 97 (as well as AC Transit Transbay routes M and S).

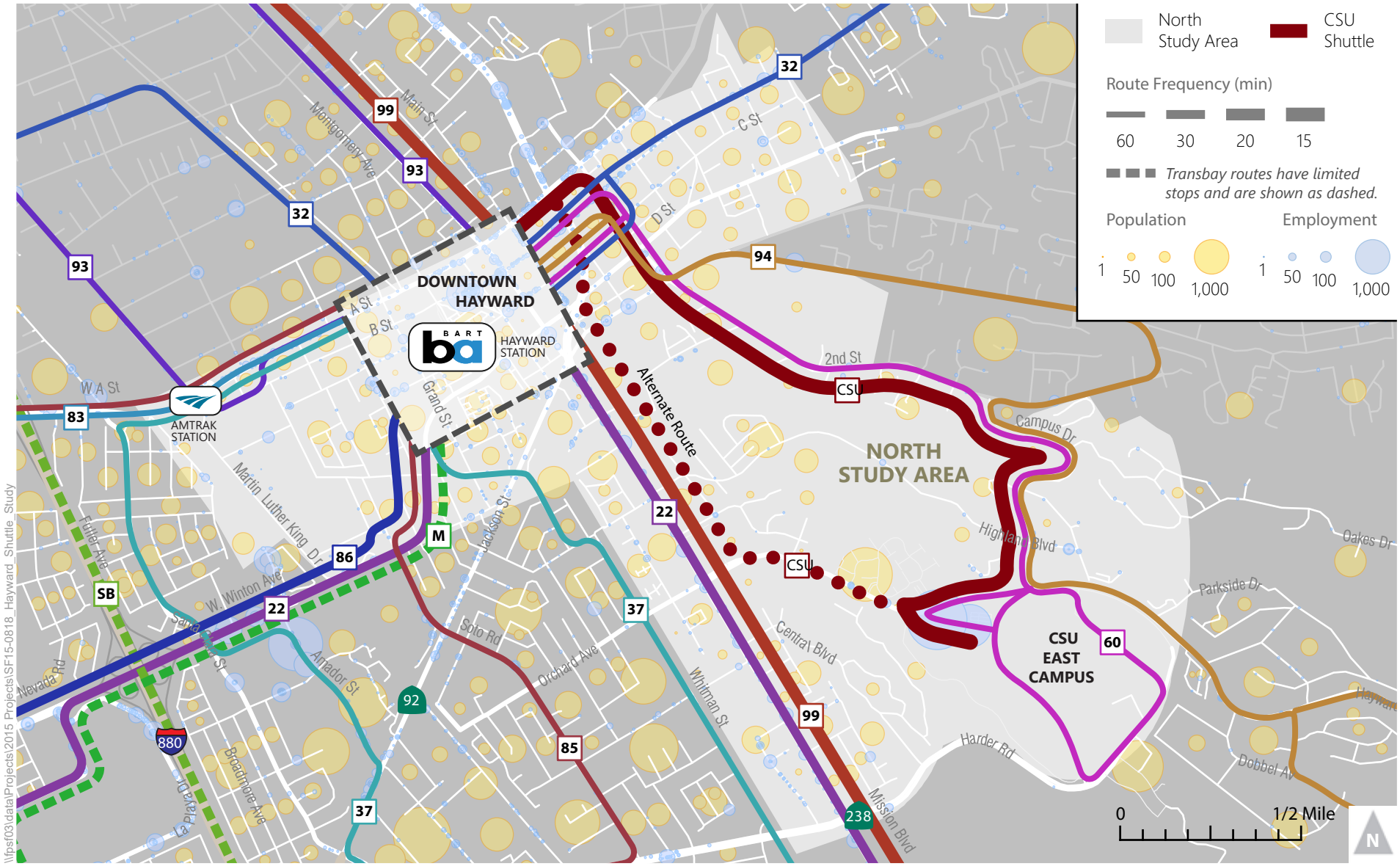


Figure 2-7

North Study Area & Transit Frequency

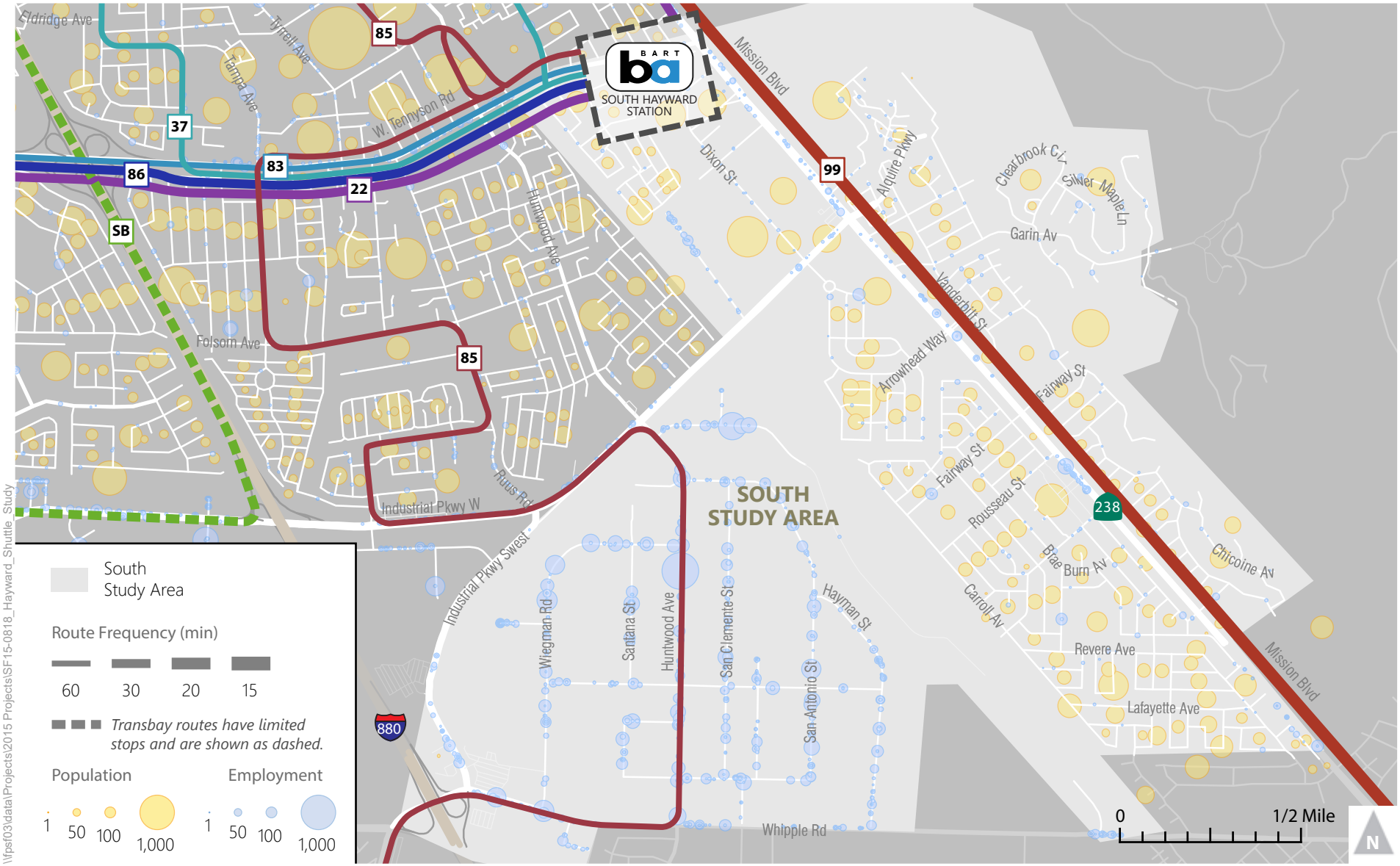
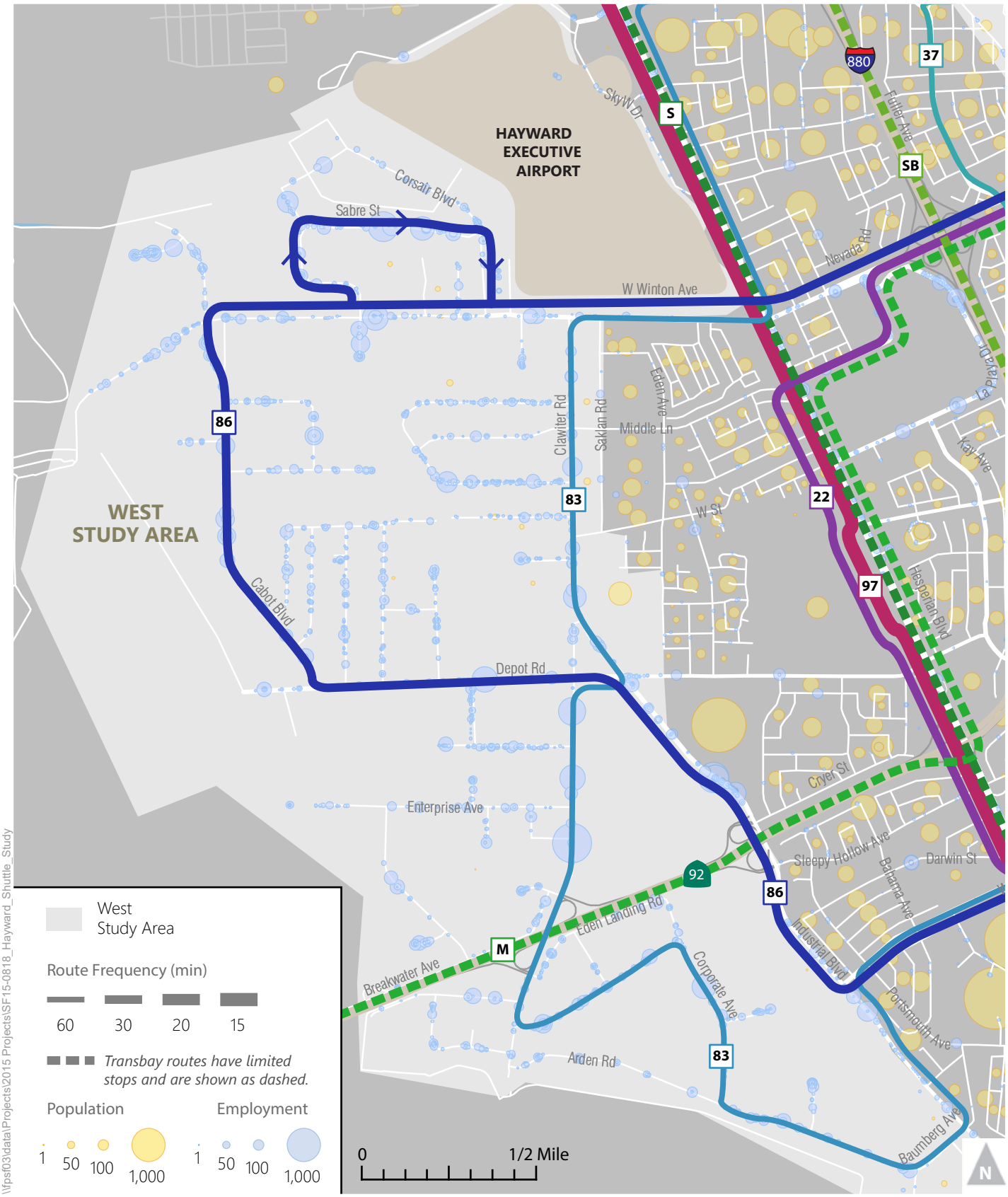


Figure 2-8

South Study Area & Transit Frequency



\\fpsf03\data\Projects\2015 Projects\SF15-0818_Hayward_Shuttle_Study

Figure 2-9

West Study Area & Transit Frequency

2.2.4.2 Route Characteristics

A table showing route characteristics for BART, Amtrak, AC Transit, and CSUEB shuttles is shown below in **Table 2-4.** For each route, a description of basic characteristics is provided along with weekday service span and headways.

TABLE 2-4: ROUTE CHARACTERISTICS

Route Number	Headways	Hours of Operation	Key Destinations and Connections
BART			
Richmond (NB)	15-20 Minutes	Weekday: 4:14 AM – 12:13 PM Saturday: 6:08 AM – 12:13 AM Sunday: 8:08 AM – 12:13 AM	Downtown Oakland, Berkeley
Daly City	15 minutes	Weekday: 5:20 AM – 6:05 PM Saturday: 9:03 AM – 6:03 PM No Sunday Service	Downtown San Francisco Stations
Fremont (SB)	6-20 Minutes	Weekday: 5:07 AM – 1:14 AM Saturday: 6:44 AM – 1:14 AM Sunday: 8:44 AM – 1:14 AM	Union City, Fremont
Amtrak			
NB	1 hour- 3 hours	Weekdays: 7:26 AM – 8:01 PM Weekends:	Oakland, Richmond, Davis, Sacramento
WB	1 hour - 3 hours	Weekday: 6:43 AM – 7:59 PM Weekend: 8:03 AM – 7:53 PM	Santa Clara, San Jose
AC Transit			
22	30 – 40 minutes	5:45 AM – 11:30 PM	Hayward BART, Southland Mall, Chabot College, Saint Rose Medical Center, South Hayward BART
32	60 minutes	5:00 AM – 9:00 PM	Hayward BART, Castro Valley BART, Bay Fair BART, San Lorenzo High School

TABLE 2-4: ROUTE CHARACTERISTICS			
Route Number	**Headways**	**Hours of Operation**	**Key Destinations and Connections**
37	60 minutes	6:00 AM – 9:00 PM	Hayward BART, South Hayward BART, Hayward Amtrak Station,
60	60 minutes	5:00 AM – 10:30 PM	Hayward BART, California State University East Bay
83	60 Minutes	5:15 AM – 8:15 PM	Hayward BART, Hayward Amtrak Station, Southland Mall, Saint Rose Medical Center, South Hayward BART
85	60 minutes	7:00 AM – 9:00 PM	Hayward BART, South Hayward BART, Union Landing Transit Center
86	30 minutes	4:00 AM – 12:00 AM	Hayward BART, Southland Mall, Saint Rose Medical Center, South Hayward BART
93	60 minutes	6:00 AM – 9:00 PM	Hayward BART, Bay Fair BART, San Lorenzo Village, Amtrak Station
94	60 minutes	5:00 AM – 8:00 PM	Hayward BART, California State University East Bay
99	20 minutes	5:00 AM – 1:00 AM	Hayward BART, South Hayward BART
M	30 minutes	8:00 AM – 6:00 PM	Hayward BART, Chabot College, Hillsdale Mall, Foster City, Hillsdale Caltrain
S	30 minutes[1]	5:00 AM – 9:00 AM; 4:15 PM – 8:15 PM	San Francisco Transbay Terminal
SB	30 minutes[1]	5:00 AM – 9:00 AM; 4:00 PM – 8:00 PM	San Francisco Transbay Terminal
Shuttles			
CSUEB Shuttle (Hayward BART to CSUEB route)	15 – 30 minutes	6:00 AM – 10:30 PM (M-W) 6:00 AM – 2:30 AM (R) 6:00 AM – 1:15 AM (F) 8:00 AM – 1:15 AM (Sa) 8:00 AM – 10:30 PM (Su)	Hayward BART, CSUEB

Notes:
1. This route only provides service in the peak direction during the peak period

Sources: *BART, Amtrak, AC Transit, California State University East Bay Student Affairs*

2.2.4.3 Fare Structure

Fare structure and transferability of the different systems that serve Hayward are shown in **Table 2-5**.

TABLE 2-5: FARE STRUCTURE AND TRANSFERABILITY											
		BART		**AC Transit**						**Amtrak**	**CSU Shuttle**
Fare Type		**Clipper/Cash**		**Clipper**			**Cash**			**-**	**Cash**
		Adult	Youth, Senior	Adult	Youth	Senior	Adult	Youth	Senior	Adult[5]	All
One-way fare		$3.20[1]	$1.20[1]	$2.00	$1.00	$1.00	$2.10	$1.05	$1.05	$9.00 to $38.00[3]	Free
Transbay One-way fare		$4.85[2]	$1.80[2]	$4.20	$2.10	$2.10	$4.20	$2.10	$2.10	-	-
Passes	Day	N/A	N/A	$5.00	$2.50	$2.50	$5.00	$2.50	$2.50	-	-
	Month			$75.00	$20.00	-				$144.00 to $568.00[4]	-
Trans-bay passes	Month	N/A		$151.20	-	-	-	-	-	-	-
Transferability (to other systems)		Transfer to AC Transit with 50 cent discount BART does not have transfer agreements with other agencies								No transfer agreements in place	-

Notes:

1. Fare from Hayward Station to 12th Street Oakland City Center Station
2. Fare from Hayward Station to Embarcadero Station
3. One-way fares range from $9.00-Oakland Coliseum to $38.00-Rocklin
4. Monthly passes range from $144.00-Oakland Coliseum to $568.00-Rocklin
5. Seniors are eligible for a 15 percent discount. Children 12 or under are eligible for a 50 percent discount when traveling with an adult

Source: bart.gov, actransit.org, Amtrak.com, csueastbay.edu

2.2.5 Existing Transit Ridership

Public transit ridership is dependent upon a number of factors including but not limited to population and employment densities, personal income, the price of gasoline, travel time savings compared to automobile travel, service frequency (mobility), and proximity to beginning and end destination (accessibility). In this section, we present ridership on locally-accessible transit service.

2.2.5.4 BART Weekday Ridership

Hayward Station

Hayward Station experiences 5,359 entries each weekday, per May 2015 data. During the AM Peak Period an average of 2,073 entries and 783 exits were recorded at the Hayward station based on a survey taken in November 2012. In the PM Peak Period, 1,360 entries and 2,742 exits were recorded. Based on these patterns, the station appears to serve more commute trips for residents who live locally and work elsewhere, compared to those who travel from elsewhere to their job in Hayward, by a ratio of around 2:1 (assuming all trips are commute trips). The most frequent destinations from the Hayward BART Station, in descending order, are Embarcadero, Montgomery, Fremont, 12th Street-City Center, and Powell[15].

The 2008 BART Mode of Access Study found that approximately 49 percent of weekday riders coming from home drive alone to the station, 22 percent walk, 12 percent are dropped off, 8 percent take a bus or other transit, 7 percent carpool and 1 percent walk.

South Hayward Station

South Hayward Station experiences 3,342 entries each weekday, per May 2015 data. Based on data collected in November 2012, there were an average of 1,763 entries and 326 exits recorded at the South Hayward BART Station in the AM Peak Period. In the PM Peak Period, 610 entries and 2,142 exits were recorded. Based on these patterns, the station appears to skew even more heavily than Hayward BART Station towards a tidal commute pattern predominantly serving more commute trips for residents who live locally and work elsewhere, compared to those who travel from elsewhere to their job locally, by a ratio of around 4:1 (assuming all trips are commute trips). The most frequent destinations accessed from the South Hayward BART Station are Embarcadero, Montgomery, Powell, Civic Center and Fremont.

The most utilized mode of access from home to the South Hayward Station is driving alone (58%) followed by being dropped off (15%), walking (12%), carpool (8%), bus/transit (5%) and bicycle (2%).

2.2.5.5 Amtrak Weekday Ridership

Amtrak provides infrequent, peak period service from the Hayward Amtrak Station.

On weekdays in the westbound direction (towards San Jose) there are seven trains per day: at 6:43 AM, 7:43 AM, 9:13 AM, 12:23 PM, 2:23 PM, 5:52 PM, and 7:59 PM. On weekdays in the eastbound direction (towards

[15] Based on data collected of an average Wednesday in March 2014

Sacramento) there are also seven trains per day: at 7:26 AM, 9:54 AM, 1:06 PM, 3:59 PM, 5:06 PM, 6:36 PM, and 8:01 PM.

Ridership at this station is modest. The station experiences around 35,000 boardings plus alightings annually[16]. This equates to approximately 95 boardings plus alightings per day (assuming an even distribution for every day of the year), around three percent of the ridership of the nearby BART station.

2.2.5.6 AC Transit Weekday Ridership

Within the City of Hayward, AC Transit recorded approximately 13,000 boardings on the average weekday in 2014. Among those boardings, 15 percent were in the AM peak period (7 AM – 9 AM), 37 percent were in the midday period, and 12 percent were in the PM peak period (5 PM – 7 PM). Boardings were largely concentrated at key destinations and transfer points.

At the Hayward BART Station, 844 and 601 combined boardings and alightings on AC Transit were recorded in the AM and PM peak hours, respectively, for an average weekday. At the South Hayward BART Station, 218 and 184 combined boardings and alightings on AC Transit were recorded in the AM and PM peak hours, respectively, for an average weekday. The highest ridership stops in Hayward include both BART stations as well as the stops adjacent to Chabot College and Southland Mall. A map of AC Transit ridership by stop can be found in **Appendix A**.

North Study Area

Within the North Study Area, ridership is concentrated mainly near Downtown and along Mission Boulevard. The major stops are the BART Station, CSUEB, and at Mission Boulevard/Harder Road. Ridership on routes 32, 94, 95, and 60 through the hills is generally light.

West Study Area

Within the West Study Area, the ridership skews heavily towards alightings in the morning and boardings in the afternoon, which is to be expected for an area where employment dominates over housing. Ridership is highest in the cluster of stops near the intersection of Sabre Street/W Winton Avenue, on Route 86. There is a secondary cluster of ridership near the intersection of Depot Road and Clawiter Road, where routes 83 and 86 cross. Otherwise, ridership is generally light in this area.

[16] Annual ridership data for Fiscal Year 2013 provided here: http://www.amtrak.com/pdf/factsheets/CALIFORNIA13.pdf

South Study Area

Within the South Study Area, ridership along route 99 is fairly evenly spread along Mission Boulevard. As is expected for an area where residences dominate, the ratio of boardings to alightings is around 3:1 in the morning, and reversed in the afternoon. Ridership for Route 85 in the industrial areas is very low.

2.2.5.7 CSUEB Shuttle Weekday Ridership

CSUEB Shuttles appear to be well-utilized, especially those providing access to campus from Hayward BART Station. There are approximately 2,000 daily boardings system-wide. The shuttle is very direct, having only two stops: one at Hayward BART station and one on CSUEB campus at the parking lot on the north side of Carlos Bee Boulevard. Service Gaps and Opportunities

In this section we present gaps in first-mile/last-mile service to/and from rail transit, which present opportunity areas for shuttle services to fill in these gaps. We have identified opportunity areas in previous parts of this study, and these are supplemented with an analysis of transit likelihood using the Smart Location Database.

2.2.5.1 Transit Likelihood

The Environmental Protection Agency's (EPA) Smart Location Database is developed using US Census data to address the need for the integration of land use and transportation data. This dataset includes demographic, employment and built environment variables at the census block group level. These variables are commonly known as the 'D' variables, i.e. population and employment density, land use diversity, built environment design, distance to transit and accessibility of destinations. These variables are used to measure the existing demand for transit in an area, or transit likelihood.

Transit likelihood evaluates the potential transit ridership based on demographic and built environment variables known to contribute to transit use. These variables are selected either based on a specific populations' known need for transit (i.e. zero-auto households, low income households) or the variables' indication that the population or built environment would support transit use (i.e. high population density). The variables included in the study of transit likelihood for the City of Hayward are population density, zero-auto households, low income population and intersection density. These variables are presented in turn next, followed by a map of transit likelihood.

Population Density

As presented in Section 2.1.1, areas with population densities greater than 4-5 households per acre are supportive of local bus service. In Hayward, parts of the North Study Area and all residential areas in the South Study Area are above this threshold. It is also anticipated that the population of Hayward will increase

by as much as 25 percent by 2040[17] therefore, many neighborhoods may grow to support high frequency transit service. A map of population densities is shown earlier in this report in **Figure 2-1**.

Zero-Auto Households

Houses without automobiles typically rely heavily on transit for day-to-day activities. In some cases, these households correspond with low-income populations and proximity to existing high frequency transit. Approximately six percent of households in Hayward do not own a car. Zero-auto households are concentrated northeast of the Hayward BART Station, with a small pocket to the immediate southeast of the South Hayward BART Station. A map of zero-auto households is shown in **Figure 2-10**.

Low-income Population

Persons with low-income are more predisposed to use transit service due to its low cost in comparison with auto ownership. Though this variable can be correlated with zero-auto households, in Hayward, low wage workers[18] are concentrated in neighborhoods west of Mission Boulevard towards the north of the South Study Area, and in the neighborhoods near Tennyson Road (i.e. the Jackson Triangle). A map of low-income population is shown in **Figure 2-10**.

Intersection Density

Intersection density is a variable that measures intersections per square mile. This variable is intended to show the level of connectivity and comfort for street users. Higher intersection densities typically reflect smaller blocks and more connected street networks, leading to less traffic congestion and a more comfortable pedestrian environment. This variable is important to both transit accessibility and transit vehicle speed. In the North Study Area, intersection density is high nearer Downtown and the BART station, and becomes very low to the east in the hillside neighborhoods. In the South Study Area, intersection density is highest to the west of Mission Boulevard in the Fairway Park neighborhood. On close inspection, the street network in this neighborhood has somewhat limited connectivity, which would serve as a barrier to direct shuttle service. The West Study Area has a very low intersection density, which serves as an indicator that this area has a poor pedestrian environment and a deficit of direct high-quality pedestrian connections. This area does have multiple gaps and deficiencies in its pedestrian network, which will serve to decrease the catchment areas for shuttle stops in this area as pedestrians are discouraged to walk long distances. A map of intersection density is shown in **Figure 2-10.**

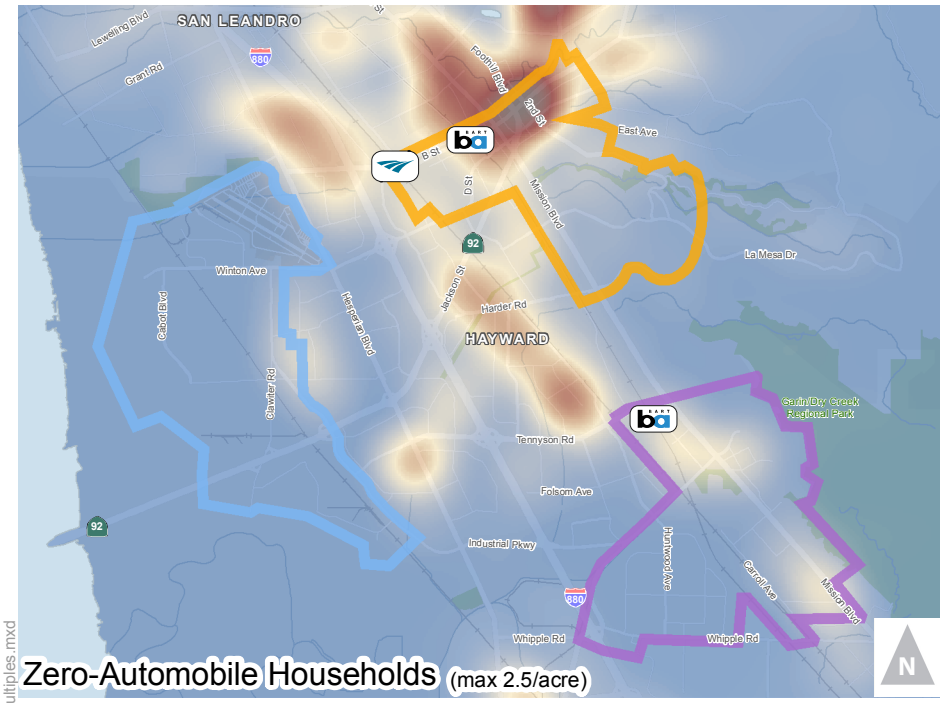
[17] Alameda County Transportation Commission Travel Demand Model
[18] Defined by the EPA smart location database as those workings earning $1,250/month or less

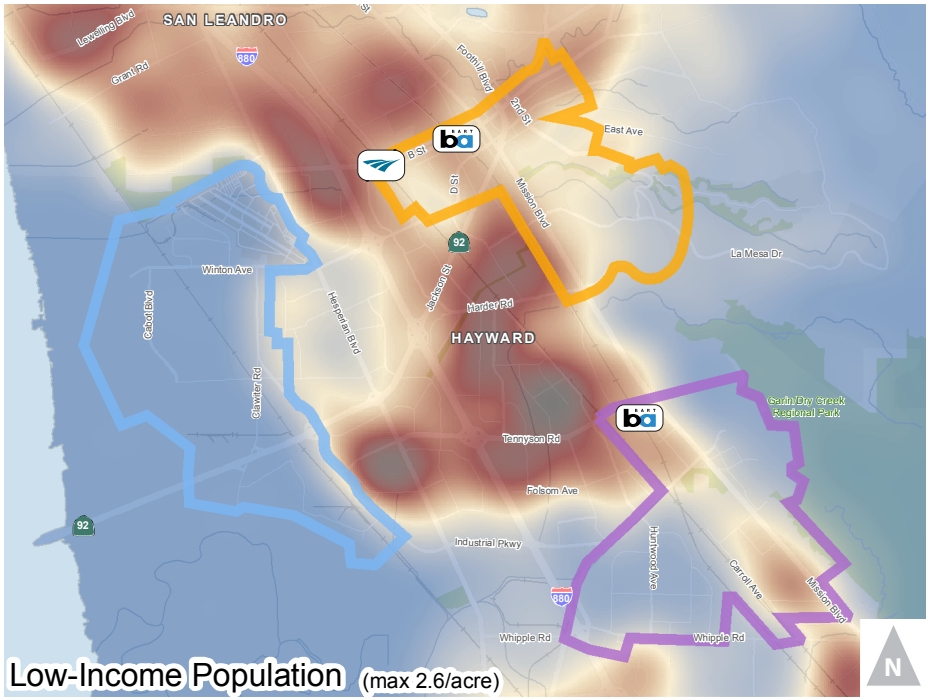
Composite Transit Likelihood

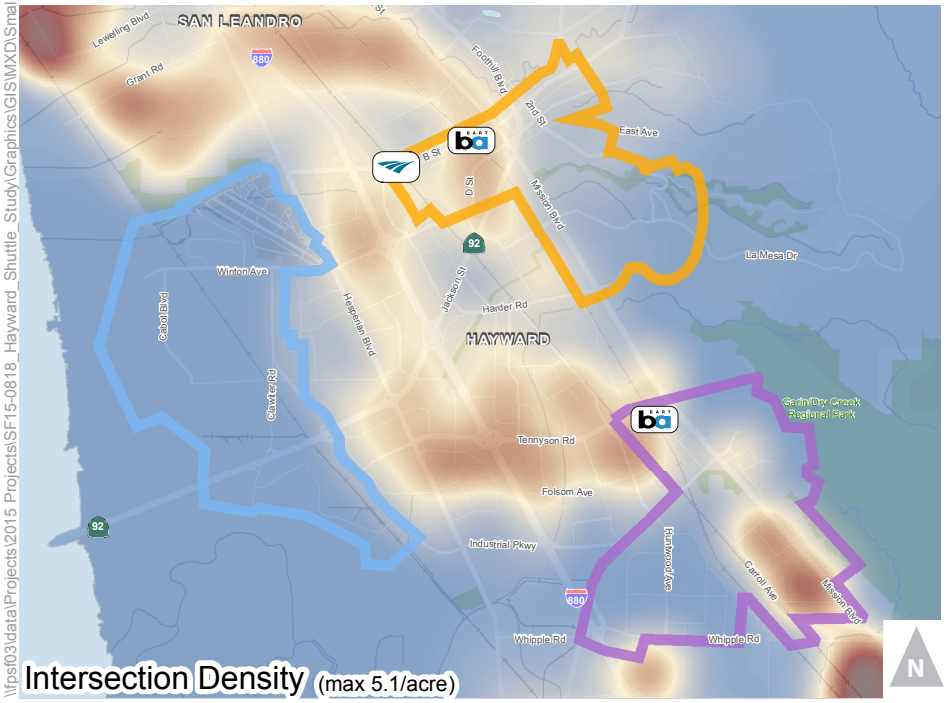
Because the transit likelihood is based almost entirely on variables relevant to residential areas, it is only applicable to residential areas, i.e. the North and South study areas but not the West Study Area. As such, the transit likelihood approach used in this chapter does not give a clear picture of transit likelihood in primarily employment-oriented areas.

A map of the overall transit likelihood is shown in **Figure 2-11**. For context, the transit likelihood of Hayward is in the low to medium-low range compared to other more densely developed urban areas like San Francisco, Downtown San Jose or Downtown Oakland. The information shown in **Figure 2-11** should be understood to display the relative transit likeliness of one part of Hayward to another, rather than compared to a national benchmark or other cities in the Bay Area. This is the reason that the transit likelihood scale on the legend is labeled "Hayward Maximum" to "Hayward Minimum."

Driven by a tight street grid, high population density, the areas around Downtown show high propensity for transit ridership, as well as areas just to the east, south, and west of Downtown (such as the Cannery Area). In the South Industrial Areas, driven by high street connectivity, population density, and to some extent low income population, there are two distinct areas with high transit likelihood: the area to the immediate south of the South Hayward BART Station, and areas west of Mission Boulevard and south of Fairway Street in the Fairway Park neighborhood.







Legend

Transit

- Amtrak Capitol Corridor
- Bay Area Rapid Transit

Study Areas

- West Study Area
- North Study Area
- South Study Area

Hayward Maximum

Hayward Minimum

0 2 Miles

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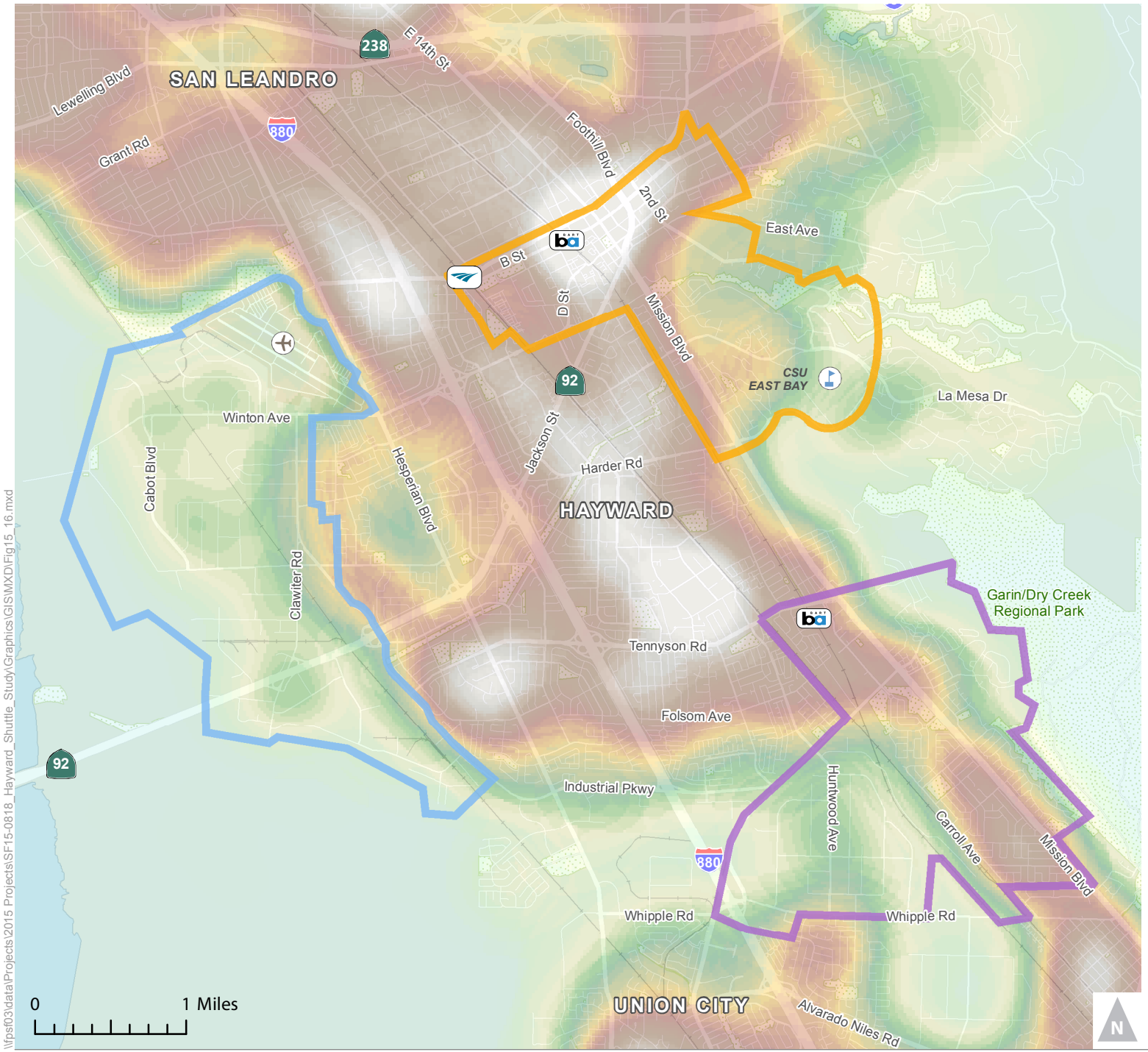
Figure 2-10

Transit Likelihood Input Variables



Legend

Transit

- Amtrak Station
- Bay Area Rapid Transit

Study Areas

- West Study Area
- North Study Area
- South Study Area
- Parks

- Hayward Maximum
- Hayward Minimum

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Figure 2-11
Transit Likelihood

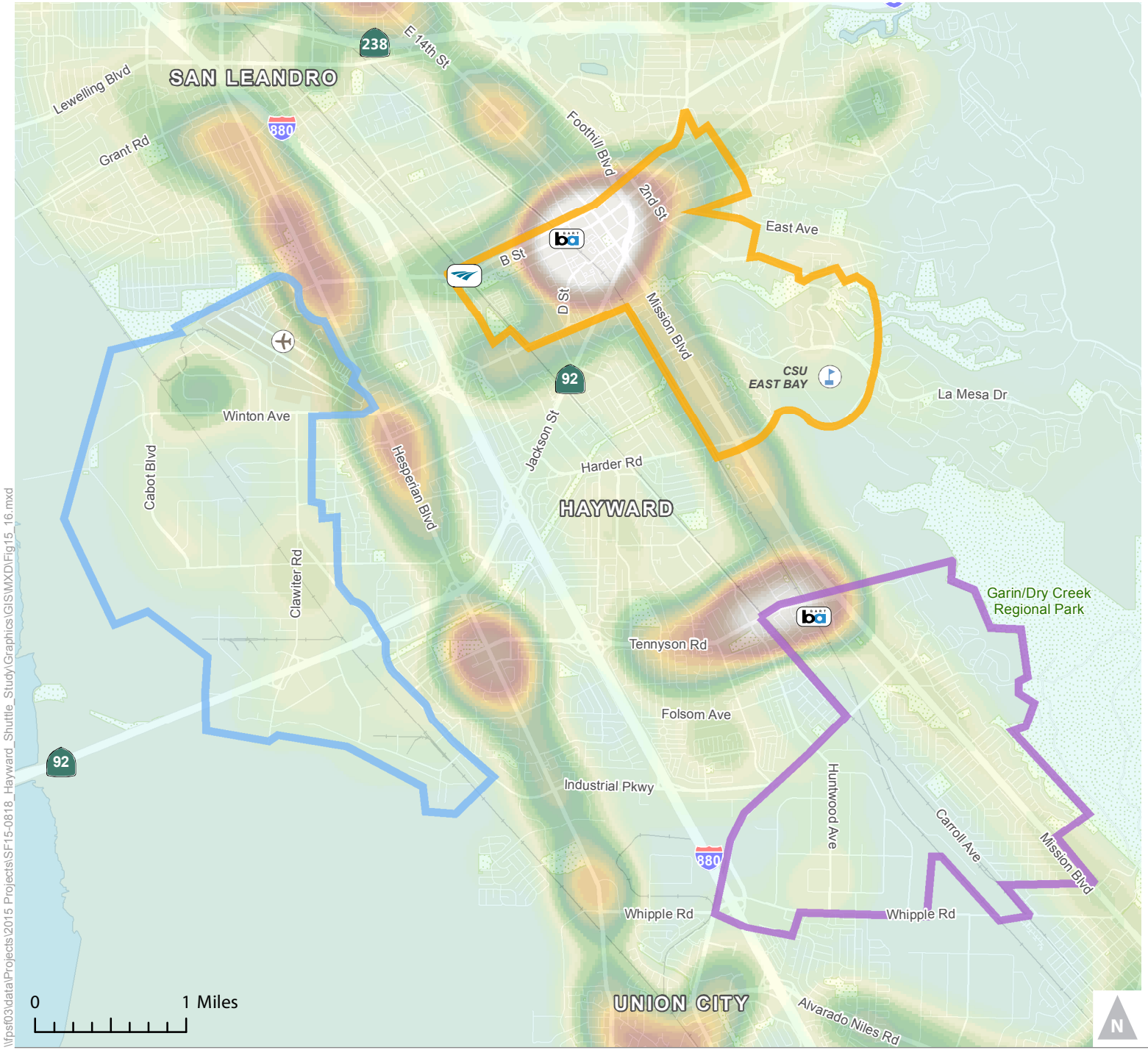
2.2.5.2 Transit Utility

Transit utility shows where there are gaps in existing transit service and when compared with transit likelihood, can show the areas where transit service is not meeting potential demand. In this study, transit utility measures the provision of bus transit, based on existing AC Transit route and network specific variables. While the BART stations in Hayward provide a high-frequency, regional rail connection to other destinations in the Bay Area, the focus of this transit utility approach was on the utility of local bus service that provides connections to this high-quality service; therefore the utility related to BART is not included in the figures. The approach relies on using General Transit Feed Specification data as input, and because this information was not available for the CSUEB shuttle, that service was omitted from this analysis. The transit utility analysis in Hayward assesses transit use at the stop level based on transit frequency and operating hours for AC Transit routes.

The composite transit utility map is shown in **Figure 2-12**. For context, the transit utility of Hayward is in the low to medium range compared to more densely developed urban areas like San Francisco, Downtown San Jose or Downtown Oakland that have rail transit service like Hayward. The information shown in **Figure 2-12** should be understood to display the relative transit utility of one part of Hayward to another, rather than compared to a national benchmark or other cities in the Bay Area. This is the reason that the transit utility scale on the legend is labeled "Hayward Maximum" to "Hayward Minimum."

Transit utility is a reflection of AC Transit service and accordingly is highest near both the Hayward and South Hayward BART stations which most lines serve. In addition, the two key corridors in Hayward are Hesperian Boulevard and Mission Boulevard north of the South Hayward BART Station. Areas in the three study areas with poor transit utility are the industrial parts of the South Study Area, almost the entirety of the West Study Area, and hillside neighborhoods in the North Study Area.

While not in the selected study areas, the area of Hayward bounded by Harder Road, Jackson Street, and Mission Boulevard has a large number of zero-auto, low-income households. As shown in **Figure 2-11** and **Figure 2-12**, the area has high levels of transit likelihood but low levels of transit utility (i.e. low levels of high-quality transit service). Therefore, should future shuttle service options be explored by the City beyond what is being proposed in this study, it is recommended that this area should be studied in further detail as a candidate.



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Legend

Transit

- Amtrak Station
- Bay Area Rapid Transit

Study Areas

- West Study Area
- North Study Area
- South Study Area
- Parks

Hayward Maximum

Hayward Minimum

Note: CSUEB shuttle and BART not included

Figure 2-12

Transit Utility

2.2.6 Findings

To summarize the findings of this chapter, the likelihood that residents within the study areas would use transit is in the low-to-medium low range based on the level of density, street network design and demographics. The utility, or in other words "the convenience of using the existing transit system", is in the low-to-medium range within the study areas based on the current frequency and coverage of bus routes.

Residential areas where there is a relatively high level of transit likelihood, but a relatively low level of transit utility are as follows:

- North Study Area
  - Cannery Neighborhood
  - Upper B Street Neighborhood
- South Study Area
  - Fairway Park Neighborhood

For employment, the available data does provide a clear picture. Overall, levels of employment density are on the low side to support frequent transit service; however, industrial districts may be good transit markets overall, especially if there are many of back office functions, lower wage jobs and educational institutions located within the district as appears to be the case in the West Study Area. Data gathered from employee and employer surveys and focus groups as described in the next chapter will be needed to develop a more complete understanding of transit likelihood in the industrial areas.

As a summary of findings from this chapter, the primary gaps and opportunities in the three study areas are as follows:

West Study Area

- While there is some transit service coverage in the area (AC Transit routes 83 and 86), the headways on these routes of 30 to 60 minutes do not represent a convenient travel alternative to those who have the option to drive to destinations in this area.
- While employment densities in the industrial area are lower than the benchmark required to support local bus service, a service focused on first-mile/last-mile could be effective if it provides a focused and efficient service.
- Service to the West Study Area should consider the Airport National Guard Site, Depot Road Auto Yards, and Arkay Site, which are slated for future development.
- The West Study Area service could consider stops at the Saint Rose hospital area, Chabot College, or Southland Mall, although care should be taken to ensure that these detours do not result in too large of a time penalty that would deter riders traveling to/from the industrial area.

North Study Area

- Most Cannery development is within 0.75 miles of the Hayward BART Station. At distances under ½ mile, many BART patrons may choose to walk. Shuttle service that runs through the neighborhood, especially the southern portion, could provide a convenient option for residents in this high-density area.
- Outside of Downtown, service in the North Study Area should specifically consider the Carlos Bee Site and Former Auto Row sites, which lie just within the southern boundary of the Study Area (as future development sites).
- A first-mile/last-mile service along Mission Boulevard and in Downtown could be effective in attracting employment ridership, although service could be ineffective if it duplicates with existing transit service along this corridor.
- Shuttle service serving CSUEB should complement and not duplicate or compete against current CSUEB offerings. Currently, connections to downtown and South Hayward BART Station appear to be underserved.

South Study Area

- While there is some transit service coverage in the area (AC Transit route 85), the headway of 60 minutes and circuitous route through nearby neighborhoods does not represent a direct or convenient travel alternative to those who have the option to drive to destinations in this area.
- Dixon Street could be considered as a shuttle connection route between the BART Station and the Fairway Park Neighborhood, instead of parallel Mission Boulevard. Shuttle service on this street could incentivize development along the corridor.
- Service to the South Study Area should consider the South Mission Boulevard Corridor.
- The residential area to the west of Mission Boulevard, south of Arrowhead Way, has a mismatch of high transit likelihood and low transit utility, which makes it a good candidate for service. The South Mission Boulevard Corridor is also a key retail/catalyst site per the City's Economic Development Strategic Plan.
- Population density west of Mission Boulevard and south of Revere Street is comparatively high and could be a focus area for residential first-mile/last-mile service.
- In particular, shuttle service in the Mission-Foothill area south of the BART station could incentivize development along the corridor.
- While employment densities in the industrial area may not technically meet the benchmark required to support local bus service, a service focused on first-mile/last-mile could be effective if it provides a focused and efficient service

3 PUBLIC AND STAKEHOLDER OUTREACH

The goal for outreach and engagement was to ensure that all stakeholders potentially impacted by shuttle service in Hayward had a voice in the study, and that the study was reflective of input from important local stakeholders. Outreach was designed to actively engage key employers, employees and residents encourage their participation in the survey process (described in more detail in Section 3.3) and educate them about the transportation/community option City of Hayward is undertaking for bettering the community. The following were the objectives of the community outreach process:

- Inform key stakeholders throughout Hayward that the study was being conducted;
- Reach out to 500-700 employees and at least 16 employers regarding their use and interest in community shuttle connections;
- Reach out to at least 300 residents in targeted neighborhoods identified by the City regarding their use and interest in community shuttle connections; and
- Be responsive and inclusive of Limited English Proficiency (LEP) stakeholders..

3.1 COMMUNITY OUTREACH

Pursuant both to Caltrans requirements and the principles of effective public outreach, the outreach team conducted a total four public meetings. Two of these meetings were community open house style events focused on residents in The Cannery, Upper B Street, Mission/Foothill and Fairway Park neighborhoods, as described in **Section 3.1.1**. One of the meetings was targeted to both residents and employees of the South Study Area, and one meeting was specifically targeted to include employees in the West Study Area, as described in **Section 3.1.2**.

3.1.1 Residential Open Houses

Four key residential neighborhoods were selected by the City of Hayward for targeted outreach. These include The Cannery neighborhood, Upper B Street and Mission/Foothill neighborhoods, located in the North Study Area, and the Fairway Park neighborhood, located in the South Study Area. The neighborhood boundaries as defined for this study can be seen in **Figure 1-1**. Primary reasons for selecting the residential neighborhoods in the North Study Area were to evaluate the demand for first-mile connections from residences to the Downtown Hayward BART Station, which could reduce the need for residents to drive to and park at the station. Motivation behind selecting the Fairway Park Neighborhood was to evaluate the potential demand for a lower cost transit option between the neighborhood and Downtown Hayward.

Hayward residents, particularly from the four neighborhoods targeted for outreach, were invited to learn and provide feedback regarding proposed shuttle service connecting these neighborhoods, Downtown Hayward and BART. The open house format allowed residents to stop by at their convenience anytime during either of the two two-hour events and interact directly with members of the study project team. Participants also had the opportunity to plot their suggested shuttle stops on a map of Hayward.

3.1.1.1 Dates and Locations

The first evening public open house event was held in the Fairway Park neighborhood at the Mission Hills of Hayward Golf Course, Mission Café, on Wednesday, July 29th, 2015, from 6:30 PM – 8:30 PM. The second open house was held at Hayward City Hall on Monday, August 10th, 2015, from 6:30 PM – 8:30 PM.

3.1.1.2 Promotion

Both events were promoted by email directly from the City of Hayward to more than 900 residents in areas being studied who were subscribed to receive updates from the City. The events were also promoted via the City's Twitter and Facebook channels. Additionally, the outreach team coordinated with The Fairway Park Neighborhoods Association President, who extended notice of the events to her list of nearly 1,000 resident contacts in Fairway Park. Documentation of meeting announcements can be found in **Appendix B**.

3.1.1.3 Qualitative Feedback

Twelve residents from the community participated in the Fairway Park Open House and eleven residents participated in the City Hall Open House. In addition to collecting survey responses, attendees offered the following feedback to the project team.

- Several senior residents of the Fairway Park neighborhood mentioned that they currently can drive, and frequently visit locations in downtown Hayward including the library, city hall, shops and restaurants. If they got to the point that they could no longer drive, they would not likely take a bus or BART to access downtown. They would either not go to downtown or get a ride from a family member, causing them to go less frequently. However, if there was a shuttle option they would take it and feel that it would provide them with more independence.
- A resident of the Fairway Park neighborhood mentioned that she would see a need for a shuttle to connect downtown and the downtown Hayward BART Station to the senior center, the Douglas Morrisson Theater, and the Japanese Gardens (which are on a hill and difficult to access by walking).
- Senior residents of the Fairway Park neighborhood mentioned that they would like a shuttle connection from their homes to the Fairway Park Shopping Center and the South Hayward BART Station.

- One 91-year-old resident of Fairway Park expressed she is seriously considering giving-up her driver's license. She already does not drive at night. She's been hesitant to do so because of the lack of alternate transit options available to her.
- Other community members were enthusiastic about a shuttle connecting from the Fairway Park neighborhood to downtown Hayward. Many mentioned that while they would not take the bus or BART, they would take a shuttle to downtown Hayward.
- A resident mentioned a potential need for a shuttle to serve the Kaiser hospital in Hayward, but Hayward residents are now traveling to the new Kaiser hospital in San Leandro, because since its opening, services have been shifted from the Hayward location to the San Leandro location
- Several residents of the Upper B Street neighborhood mentioned that they often travel to Castro Valley for shopping, services, or to access BART at the Castro Valley Station, since it is easier to get to than downtown Hayward. Reasons for this are that it is faster to get to Castro Valley due to the way traffic lights are timed, the new "loop" in downtown Hayward is confusing, and it is harder to find parking in downtown Hayward.
- A resident who both lives and works in the Upper B Street area mentioned that, as a resident, she would like a shuttle that would take her from the area to the downtown Hayward BART station so that she wouldn't have to drive and park. In addition, she mentioned that there are several services in the Upper B Street area (including therapist and lawyer services) and that clients of these services would be interested in taking a shuttle from the BART station, up the hill to these services.
- Residents mentioned that there are no bicycle facilities between the Upper B Street area and downtown and they feel like it is unsafe to bike, and difficult to bike due to the incline. They would like a shuttle alternative to driving between the area and downtown Hayward.
- Several residents mentioned that they felt a shuttle would be valuable and they would be willing to pay a fare.
- A resident mentioned that they would like a shuttle to CSU East Bay and were not aware that there was an existing shuttle service.
- Several residents from the Eden Shores neighborhood noted that although their residential development is not in the study area, they believe residents in the neighborhood would benefit from a direct shuttle connection to the South Hayward BART Station. They mentioned that it is currently difficult to find parking at the South Hayward BART Station.
- A resident of a mobile home community just outside of the Fairway Park study area expressed her concern over her community's exclusion from the shuttle study. She expressed her belief that there is a strong need and demand for a shuttle connecting her community, and four other mobile home communities in the area largely populated with seniors, with BART and Downtown Hayward.

3.1.2 Employee Lunch Events

Two key employment areas were targeted for outreach. These include the West Industrial Employment Zone, located in the West Study Area, and the South Industrial Employment Zone, located in the South Study Area, both shown in **Figure 1-1**. A primary reason for selecting these zones was to evaluate the demand for last-mile connections from the Downtown Hayward BART Station to employment locations in these zones, which could reduce the need for employees to drive to work.

Employees were invited to take a break from their usual lunch routine and enjoy food while learning and offering feedback regarding proposed shuttle service at two lunchtime events. The event format allowed participants to stop by at their convenience anytime during either of the two two-hour events and interact directly with members of the project study team. Participants also had the opportunity to plot their suggested shuttle stops on a map of Hayward. Since one of the events was held in the South Study Area, located near the Fairway Park neighborhood, residents were also invited to this event, providing an additional opportunity for residents to give feedback.

3.1.2.1 Dates and Locations

The first lunchtime event was held in the West Study Area at Life Chiropractic College West, on Friday, July 31st, 2015, from 11 AM – 1 PM. The second lunchtime event was held in the South Study Area at the Mission Hills of Hayward Golf Course, Mission Café, on Tuesday, August 11th, 2015, from 11 AM – 1 PM.

3.1.2.2 Promotion

Both events were promoted to industrial area employees through direct emails sent to area employers, asking each employer contacted to relay the info to their employees. Additionally, City of Haywardstaff sent notices promoting the events to their list of Economic Development contacts. The Hayward Chamber of Commerce also sent notices to its list of 1,200 contacts by email about the events.

The West Study Area lunch event was also promoted via fliers which were hand delivered to the 50 top employers. To promote the South Study Area lunch event to residents, the outreach team coordinated with The Fairway Park Neighborhoods Association President, who extended notice of the event to her list of more than 1,000 resident contacts in Fairway Park electronically and by mail. The City also promoted the event via its Twitter and Facebook channels. Documentation of meeting announcements can be found in **Appendix B**.

3.1.2.3 Qualitative Feedback

More than 100 people attended the West Study Area lunchtime event, including area students, employees and key area employer representatives. Ninety-two employee surveys and two resident surveys were

collected on-site. Given the spike in the total number of Industrial Employee Surveys submitted online that same afternoon, it's reasonable to assume many of those online responses resulted from event attendees sharing the survey link with their colleagues. Because of the event's location, the majority of participants were affiliated with Life Chiropractic College West (administrators, faculty, staff and students). Eleven members of the public participated in the South Study Area lunchtime event, including residents, a representative from AC Transit, several representatives from Amalgamated Transit Union Local 192 and one local employee. In addition to collecting survey responses, attendees offered the following feedback to the project team:

- Life Chiropractic College West strongly supports a shuttle for both its team members (students, faculty and staff) and patients.
- There is strong interest in a shuttle from BART, particularly among students, and particularly in the morning hours (for students first class is at 7:30am).
- For many, morning traffic is an issue but they live near a BART station, so BART plus a frequent, direct shuttle would be a competitive option; currently BART plus AC Transit is too slow/unreliable.
- There are concerns about security waiting at stops in the area, particularly at night.
- Many would prefer a faster option from the BART station, even if it means fewer stops (many don't take AC Transit because it is too slow).
- There is not a good/safe biking path from the Downtown Hayward BART Station, few bike lanes, many large arterials to cross. You could go out of your way to a SR-92 pedestrian/bike overpass, but it would add time to your ride.
- Some prefer to ride BART to the Bayfair Station and then bike to the area.
- Many would like shuttles that can accommodate bikes.
- Several representatives from the AC Transit union mentioned that AC Transit will be increasing transit service in Hayward, as described in the Comprehensive Service Plan.
- The AC Transit union representatives mentioned that they would support partnering with the shuttle project, if it meant AC Transit would operate the shuttle service.
- An employee in the South Industrial Area mentioned that the Mount Eden Office Park (3955 Point Eden Way) previously provided a shuttle for employees between the office park and BART, but it was discontinued due to low ridership. He suggested contacting the property manager for more information about their experience and perhaps their interest in supporting a shared shuttle to/from that area.

3.2 EMPLOYER INTERVIEWS

Initially the project team intended to conduct two small, in-person, group discussions with employers in the West and South Study Areas in order to provide an opportunity to gather their perspective on the value of

shuttle connections on business viability, growth, and recruitment. An intention of the group meetings would have been to allow employers to interact and have somewhat unstructured conversations about issues and potential solutions. However, due to low response from employers and their limited time availability, the project team decided to instead conduct one-on-one telephone interviews with interested employers. A standard set of questions was asked to all employers. The responses are summarized in **Appendix C**.Overall, most of the employers interviewed stated that current transit provision to the industrial employment areas is insufficient, citing issues of low reliability and frequency. Most suggested that providing a more direct shuttle service would be a benefit to employees and could even help with employee recruitment and retention in some cases. Generally, employers stated that parking in the area is readily available, suggesting that limited parking supply is not an issue in the area and would likely not be a driver of shuttle use. Work shifts varied among the employers surveyed. Some shifts start in the middle of the night, when BART is not in service. Many shifts start around 6 AM-7 AM. Several shifts end between 4 PM-6:30 PM. These are likely peak periods for employee travel in the area, however further study may be needed to determine the degree of these peaks.

3.3 SURVEY

Two surveys were prepared to gather data on travel patterns, travel mode use, awareness, and attitudes towards transit by residents and employees in the study area. The surveys were developed in both online and hard copy formats and translated into Spanish and Chinese. Copies of the surveys can be found in **Appendix C.**

The surveys were promoted through the community outreach described in Section 3.1. Links to the surveys were included in the emails sent to residents and employers and in the City's Facebook and Twitter posts. Residents and employers were encouraged to share the survey links with others. Participants at the community outreach events were given the opportunity to fill out a paper copy of either of the surveys.

Completed surveys were collected from 192 residents and 314 employees. Results of the surveys are described below.

3.3.1 Resident Survey Results

The residential survey targeted residents of four specific residential neighborhoods, displayed in **Figure 1-1**. These neighborhoods included The Cannery, Upper B Street, and the Mission/Foothill Area located in the North Study Area, and the Fairway Park neighborhood in the South Study Area. All residents of Hayward were welcome to take the survey, so some survey respondents did not live in the study areas. Among the

192 residents surveyed, 86 percent lived in one of the targeted residential neighborhoods, as shown in **Figure 3-1**.

Figure 3-1: Neighborhood of Residence among Residential Survey Respondents

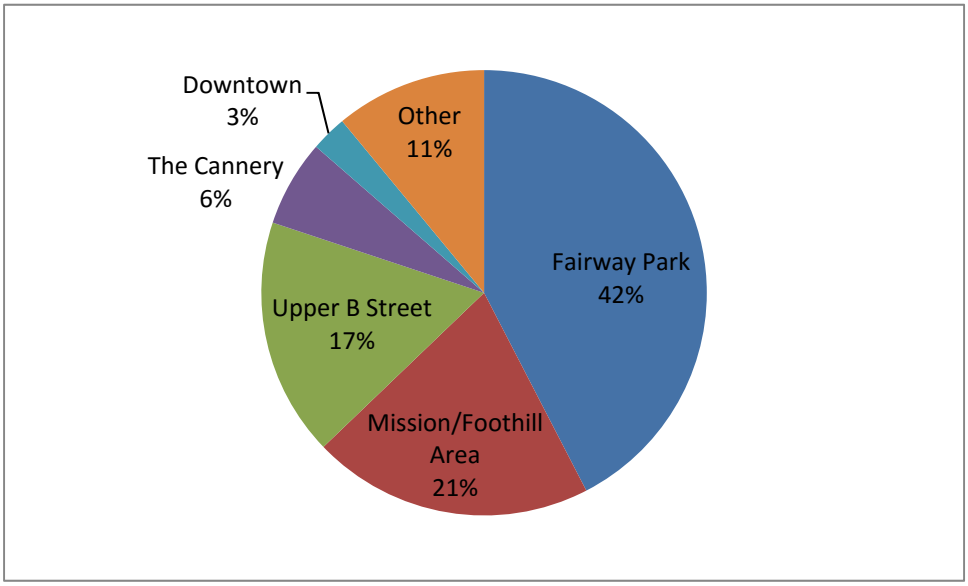


Table 3-1 summarizes the percent of households in each of the residential neighborhoods surveyed. The percent of households surveyed per neighborhood varied from one percent to four percent, with an average of two percent of households. This response rate is not large enough to say that the survey responses are a statistically significant sample of residents, and it is possible that the survey was self-selecting in that those more likely to take the shuttle chose to respond to the survey. However, the survey results are useful in that they provide information on the travel choices and preferences of a select segment of the population.

TABLE 3-1: RESIDENTIAL SURVEY RESPONSE RATE

Neighborhood	Number of Households	Number of Survey Respondents	Percent of Households Surveyed
The Cannery	310	12	1.2%
Upper B Street	1,510	33	2.2%
Mission/Foothill	3,170	39	3.9%
Fairway Park	2,760	81	2.9%
TOTAL	**7,750**	**165**	**2.1%**

3.3.1.1 Travel to Downtown Hayward

Survey respondents were asked about their travel to Downtown Hayward in order to evaluate potential for a shuttle to stimulate travel to this area. North Study Area residents and South Study Area residents were evaluated separately. As seen in **Figure 3-2**, North Study Area residents currently travel to Downtown Hayward much more frequently than South Study Area residential, which is not surprising given their relative proximity to downtown.

Figure 3-2: Frequency of Travel to Downtown Hayward among North and South Study Area Survey Respondents

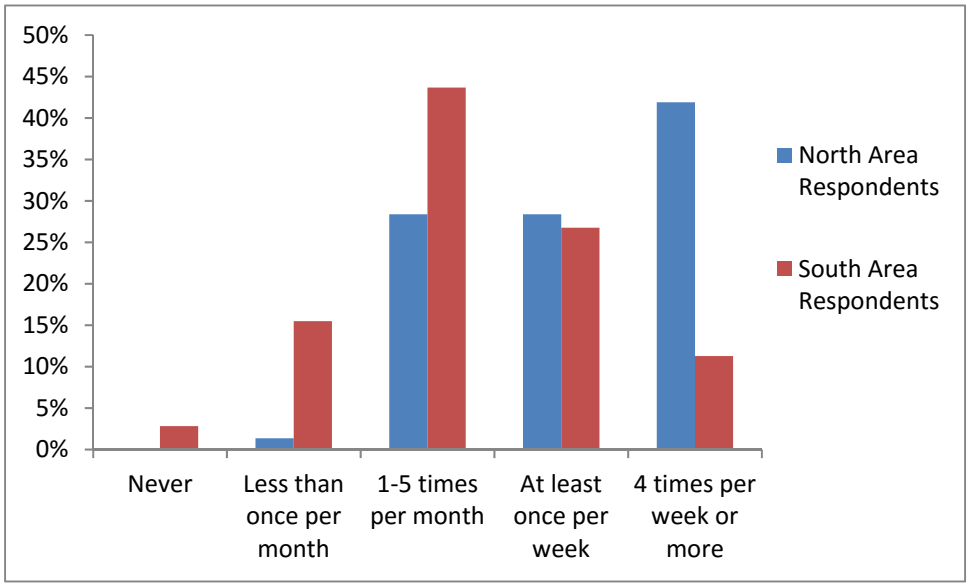
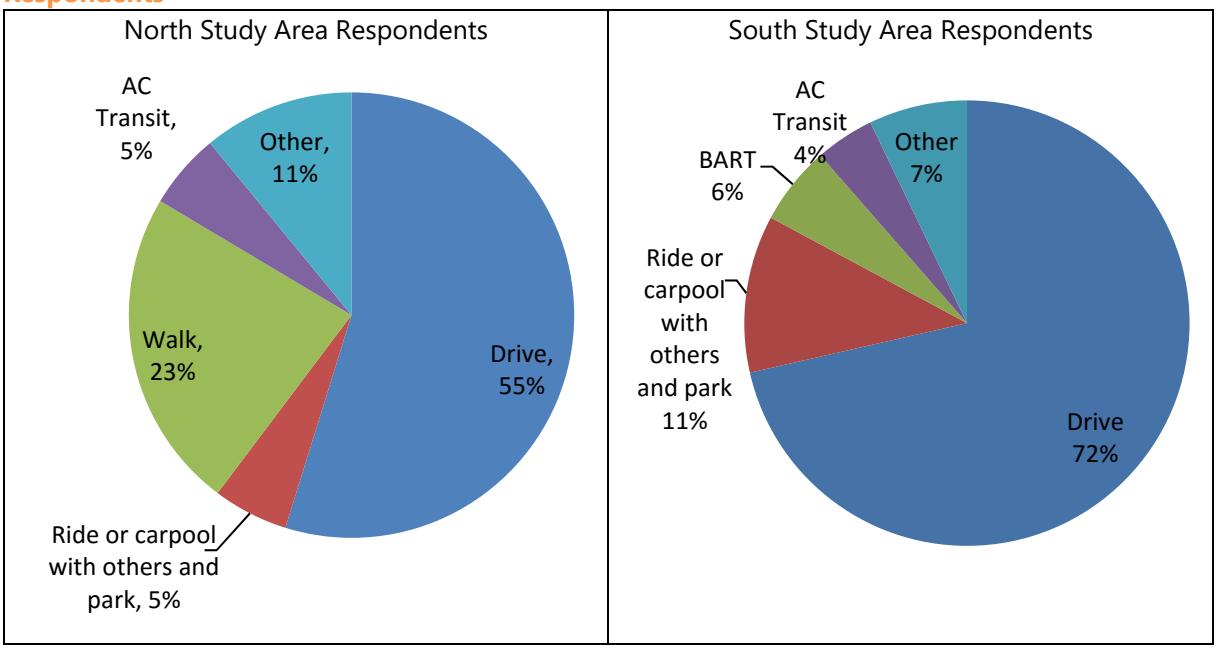


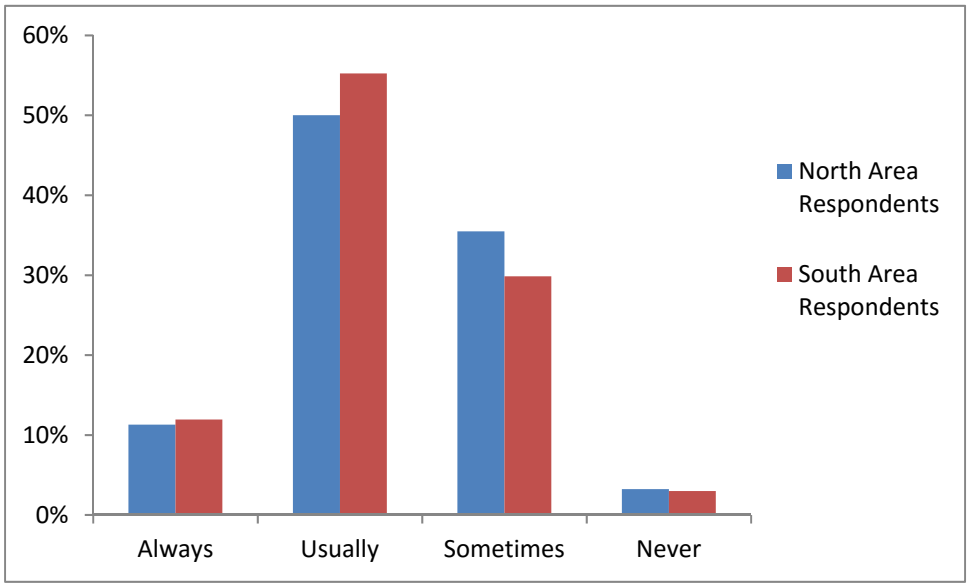
Figure 3-3 shows the typical mode of travel to Downtown Hayward among North and South Study Area respondents. More than 80 percent of South Study Area respondents travel to Downtown Hayward by car versus 60 percent of North Study Area residents. Nearly a quarter of North Study Area residents walk to Downtown Hayward. The majority of trips shifted to a shuttle connecting between the South Study Area and Downtown Hayward would be shifting from car to shuttle, while a shuttle connecting parts of the North Study Area to Downtown Hayward would shift trips from a wider variety of modes including both driving and walking.

Figure 3-3: Mode of Travel to Downtown Hayward among North and South Study Area Survey Respondents



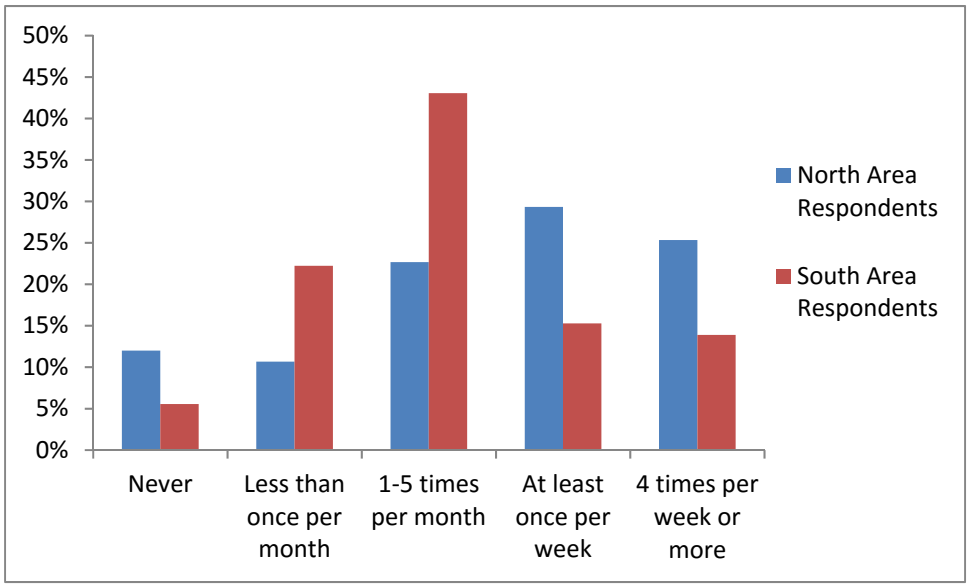
Survey respondents were also asked about parking availability in Downtown Hayward. As seen in **Figure 3-4**, South Study Area respondents were more likely to say that it was easy to find parking in Downtown Hayward than North Study Area respondents. Lack of parking can make travelers more likely to use transit options like a shuttle.

Figure 3-4: Ease of Finding Parking in Downtown Hayward among North and South Study Area Survey Respondents



Respondents were also asked how frequently they would take a free or low-cost shuttle from their neighborhood to Downtown Hayward. As seen in **Figure 3-5**, North Study Area respondents would take the shuttle much more frequently than South Study Area respondents. The majority of South Study Area respondents would take a shuttle to Downtown Hayward less than once per week, demonstrating that it would mainly be used only for occasional trips, and not for regular daily travel, such as commute trips.

Figure 3-5: Frequency of Potential Shuttle Use to Downtown Hayward among North and South Study Area Survey Respondents

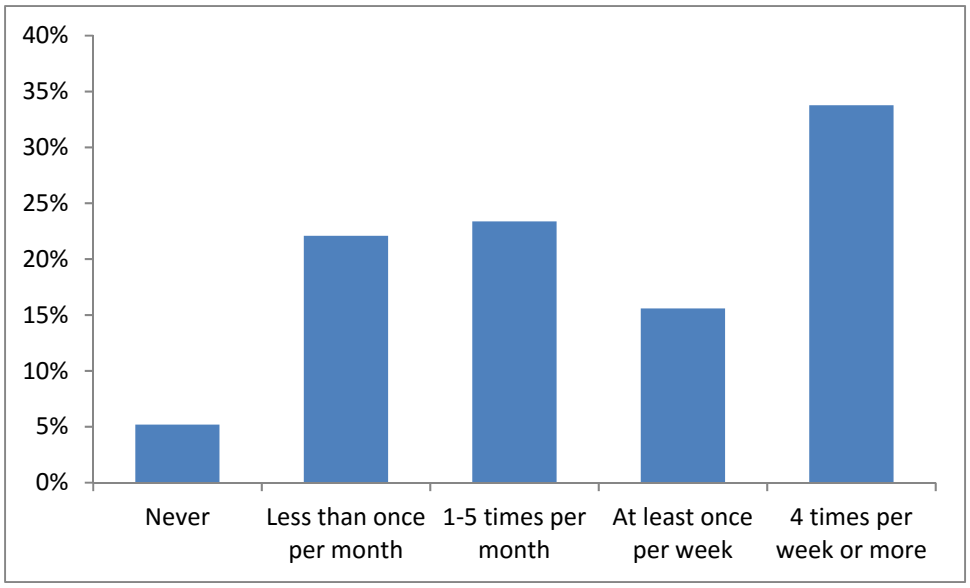


3.3.1.2 Travel to Downtown Hayward BART Station

Respondents were also asked about their travel to the Downtown Hayward BART Station. These questions were mainly asked to gauge the interest and effectiveness of a first or last mile shuttle connecting the North Study Area residential neighborhoods to the Downtown Hayward BART Station. Therefore, only the North Study Area respondents are evaluated in this section.

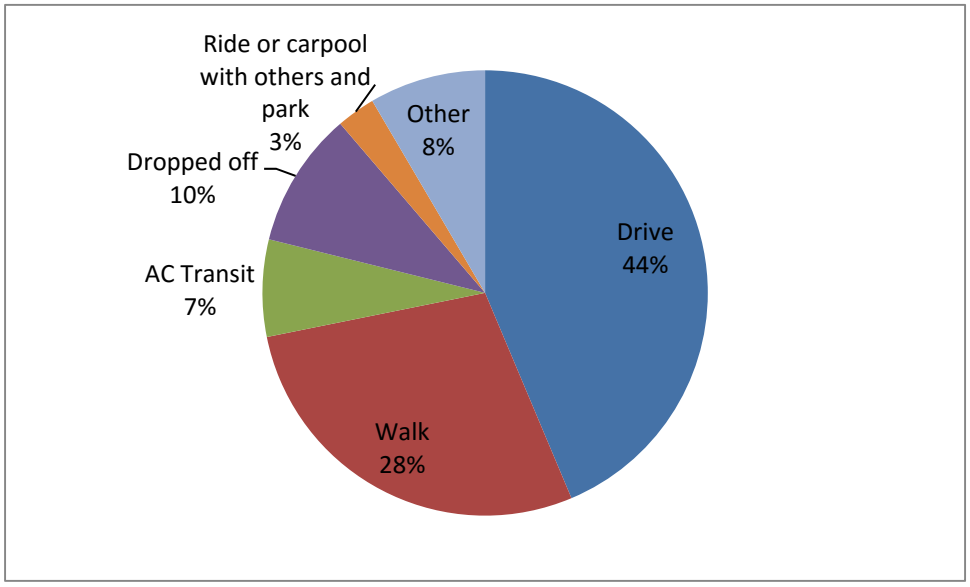
Respondents were asked how frequently they travel to the Downtown Hayward BART Station. The majority of North Study Area respondents travel to the BART station once per week or more, as seen in **Figure 3-6**.

Figure 3-6: Frequency of Travel to Downtown Hayward BART Station among North Study Area Survey Respondents



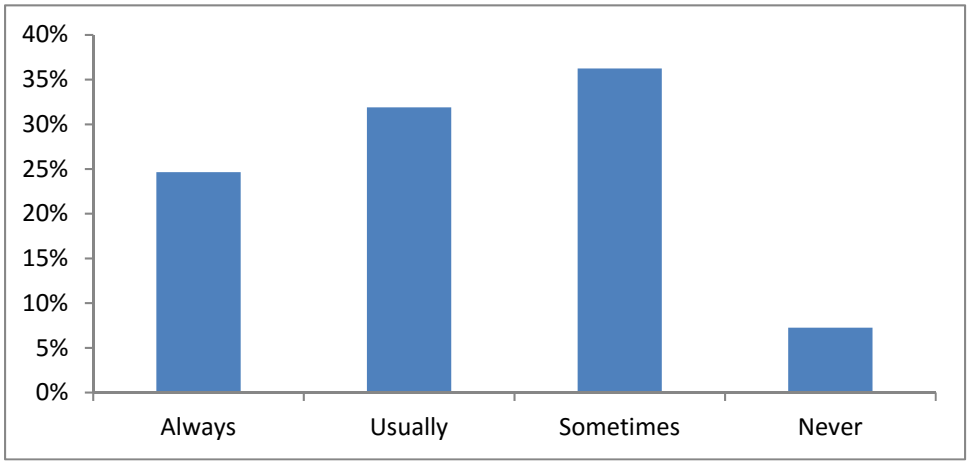
Respondents were also asked how they typically get to the Downtown Hayward BART Station. As seen in **Figure 3-7**, nearly half of respondents either drive alone or carpool and park; more than a quarter walk; 10 percent are dropped off and 7 percent take AC Transit.

Figure 3-7: Mode of Travel to Downtown Hayward BART Station among North Study Area Survey Respondents



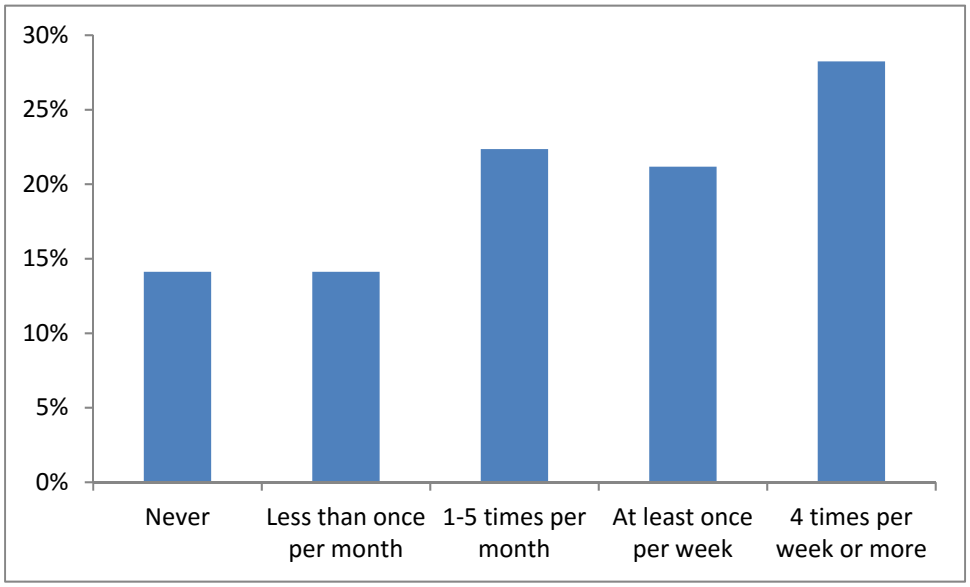
When asked about the ease of finding parking at the Downtown Hayward BART Station, the majority of North Study Area drivers responded that it was always or usually easy to find parking, as shown in **Figure 3-8**.

Figure 3-8: Ease of Finding Parking at the Downtown Hayward BART Station among North Study Area Survey Respondents



More than a quarter of North Study Area survey respondents stated that if a shuttle were available, they would take it to the Downtown Hayward BART station four times a week or more, as shown in **Figure 3-9**.

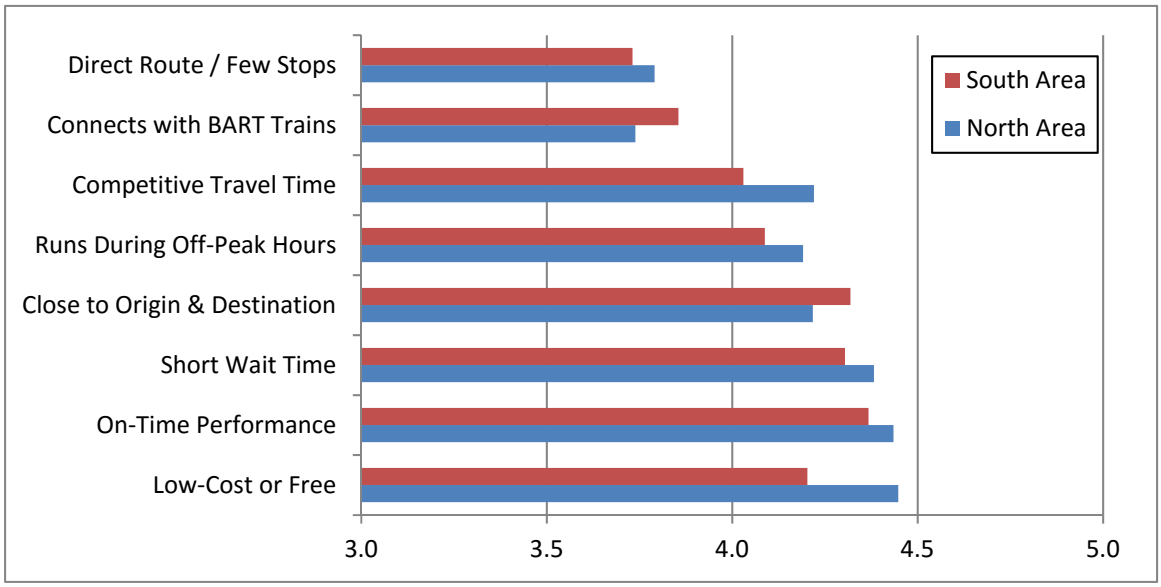
Figure 3-9: Frequency of Potential Shuttle Use to the Downtown Hayward BART Station among North Study Area Survey Respondents



3.3.1.3 Shuttle Features

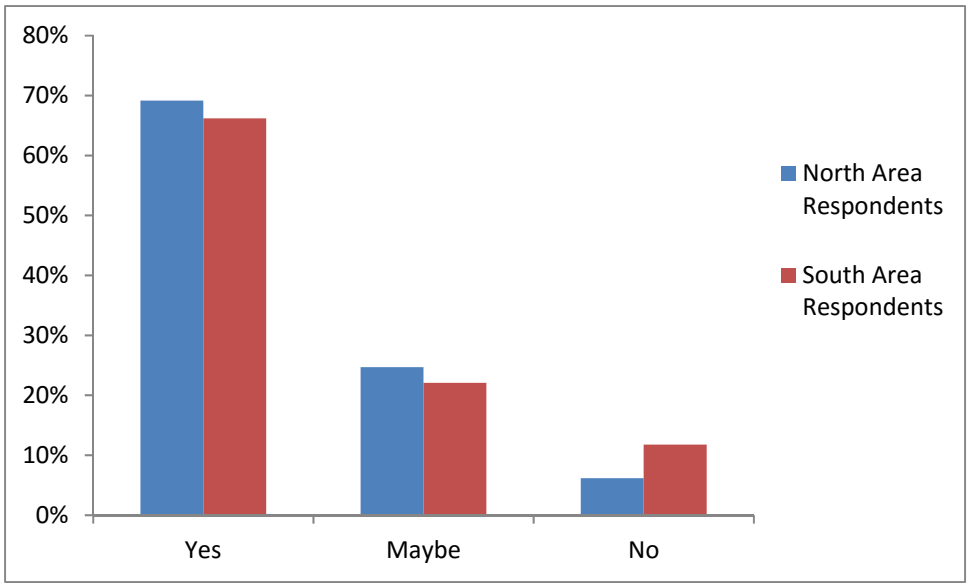
Respondents were asked to rank the importance of several shuttle features on a scale from 1 to 5 with 1 being not important and 5 being very important. This information can be used to prioritize various features for proposed routes. The average rating among North and South Study Area respondents are shown in **Figure 3-10**. The top three features among North Study Area respondents were: low cost, on-time performance, and short wait time. The top three features among South Study Area respondents were: on-time performance, stop location close to origin and destination, and short wait time. North Study Area respondents were more concerned about shuttle cost than South Study Area respondents, and less concerned about having a short travel distance to a stop.

Figure 3-10: Ranking of Shuttle Features among North and South Study Area Survey Respondents



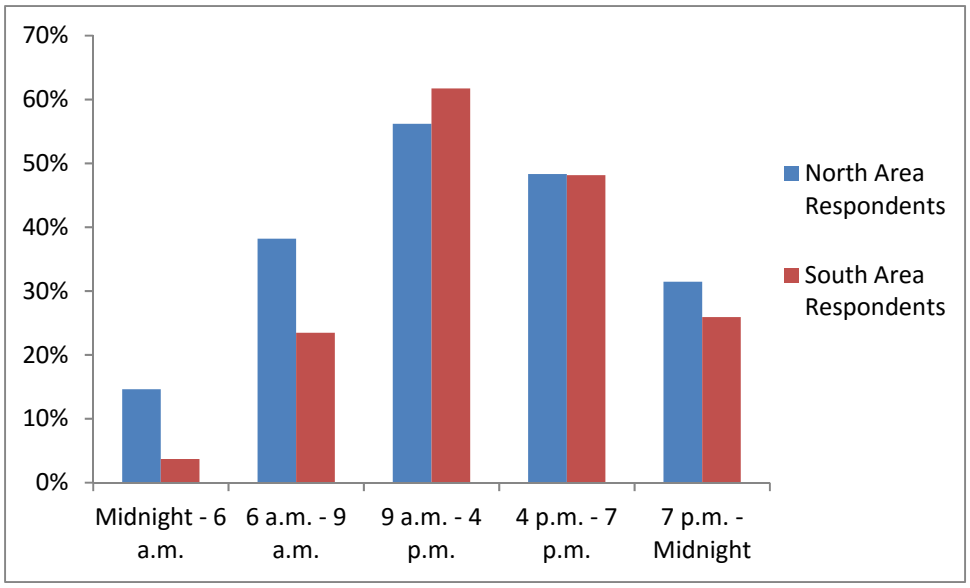
Respondents were also asked whether they would be willing to walk a few blocks to a shuttle stop if it would reduce the overall shuttle travel time. This question was meant to inform respondents of the trade-off between close stop spacing and travel time and to determine preferences between these two features. The findings can be used to help determine the most appropriate shuttle spacing for proposed routes. The results of this question are summarized in **Figure 3-11**. The majority of respondents stated that they would prefer shorter travel times if it meant having to walk farther to a stop.

Figure 3-11: Willingness to Walk a Few Blocks to a Shuttle Stop if it would Reduce Overall Shuttle Travel Time among North and South Study Area Survey Respondents



Respondents were also asked about what time period they would be most likely to use a shuttle. Responses are summarized in **Figure 3-12**. Most respondents would use the shuttle during the middle of the day, between 9 AM and 4 PM. North Study Area respondents were more likely to use the shuttle during the AM peak hour than South Study Area respondents. This information can be used to help inform shuttle route scheduling.

Figure 3-12: Time Period of Likely Shuttle Use among North and South Study Area Survey Respondents



*Multiple responses allowed, so total may add up to more than 100 percent

3.3.1.4 Demographics

Survey respondents were asked demographics questions including age and income level, summarized in **Figure 3-13** and **Figure 3-14**, in order to get an idea of the markets captured through the surveys. As mentioned, these responses may not represent the distributions of all residents of the study areas, but rather provide a summary of those surveyed. Nearly 30 percent of those surveyed were over 60 years old and 60 percent were over 50 years old.

Figure 3-13: Age of Survey Respondents

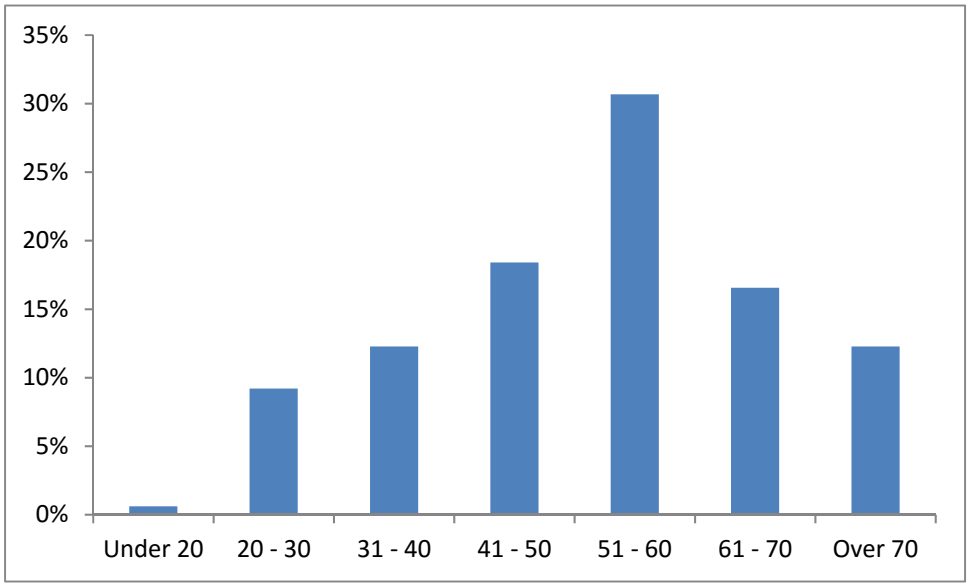
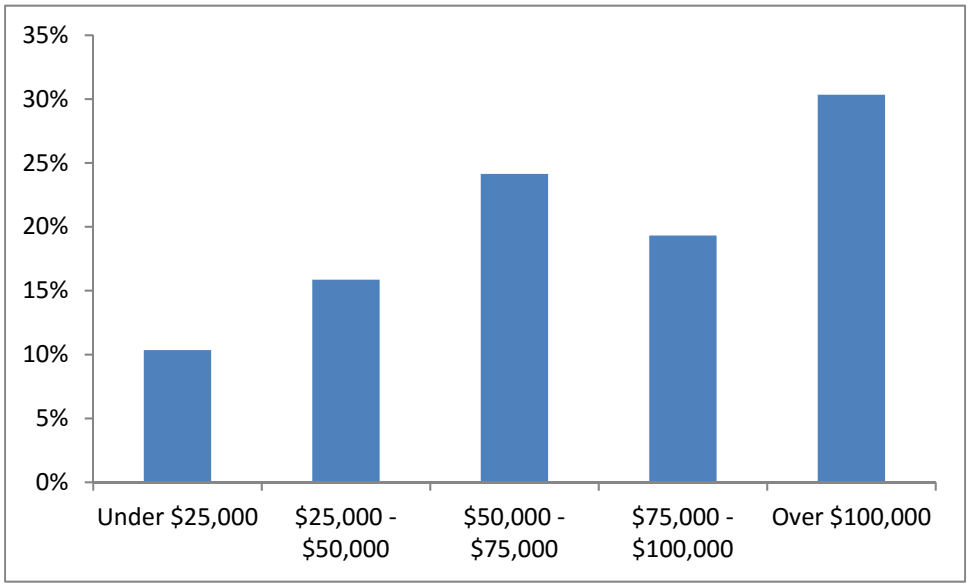


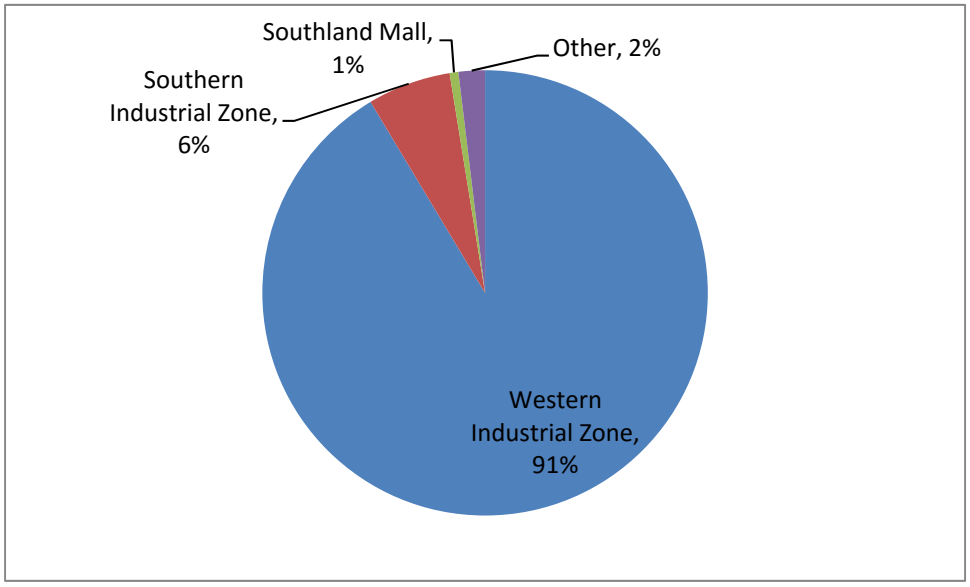
Figure 3-14: Income Level of Survey Respondents



3.3.2 Employee Survey Results

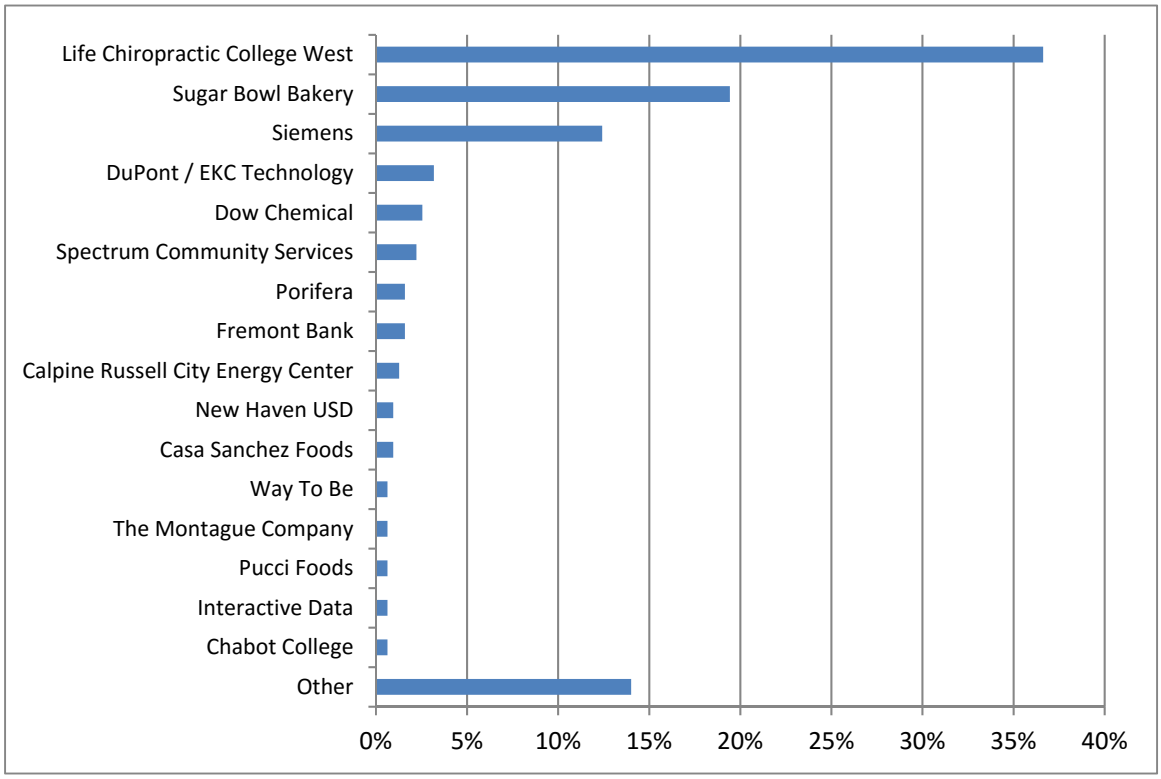
The survey targeted employees of two specific areas of the city: the West Industrial Area, and the South Industrial Area, displayed in **Figure 1-1**. AnyAny one who works in Hayward was welcome to take the survey, so some survey respondents did not work in one of the targeted areas. Among the 314 employees surveyed, the majority (91 percent) worked in the West Industrial Area, and 6 percent worked in the South Industrial Area, as shown in **Figure 3-15**.

Figure 3-15: Location of Employment among Employee Survey Respondents



Since one of the outreach events was held on the Life Chiropractic College West campus, a large proportion of those surveyed were students, faculty, and/or staff of the college, as seen in **Figure 3-16**. Other employers with a large proportion of respondents were Sugar Bowl Bakery and Siemens. While outreach was conducted to the entire study area, the responses do not represent a uniform sampling of all employers in the study areas. Therefore, the results do not represent the entire population of employees in a statistically significant manner, and it is possible that those who chose to respond were more inclined to take a shuttle than those who did not respond. However, as with the residential survey, the survey results are useful in that they provide information on the travel choices and preferences of a select segment of the employee population.

Figure 3-16: Place of Employment among Employee Survey Respondents



Among those surveyed, 77 percent responded that they would consider taking a shuttle while 23 percent stated that they would not. In the following analysis, many of the survey questions were analyzed separately for these two categories of respondents in order to evaluate how likely riders might differ from unlikely riders.

3.3.2.1 Shuttle Features

Respondents were asked to rank the importance of several shuttle features on a scale from 1 to 5 with 1 being not important and 5 being very important. The average rating for each feature among likely riders and unlikely riders are shown in **Figure 3-17** and **Figure 3-18**. The top four features among likely riders were: on-time performance, drop-off is close to work, schedule aligns with work start and end times, and short wait time. This information will be useful when designing potential shuttle routes in order to ensure that the features that are most important to employees are considered. The ratings for unlikely riders are much lower. The top four features among unlikely riders were: short wait time, on-time performance, travel time and drop-off is close to work.

Figure 3-17: Ranking of Shuttle Features among Likely Riders from Employee Survey

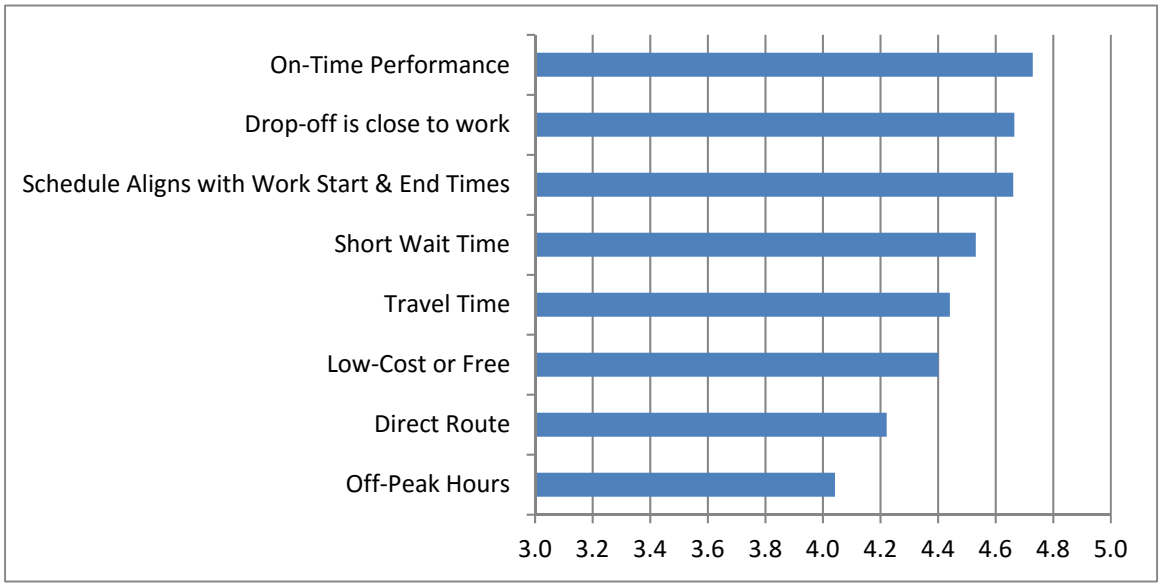
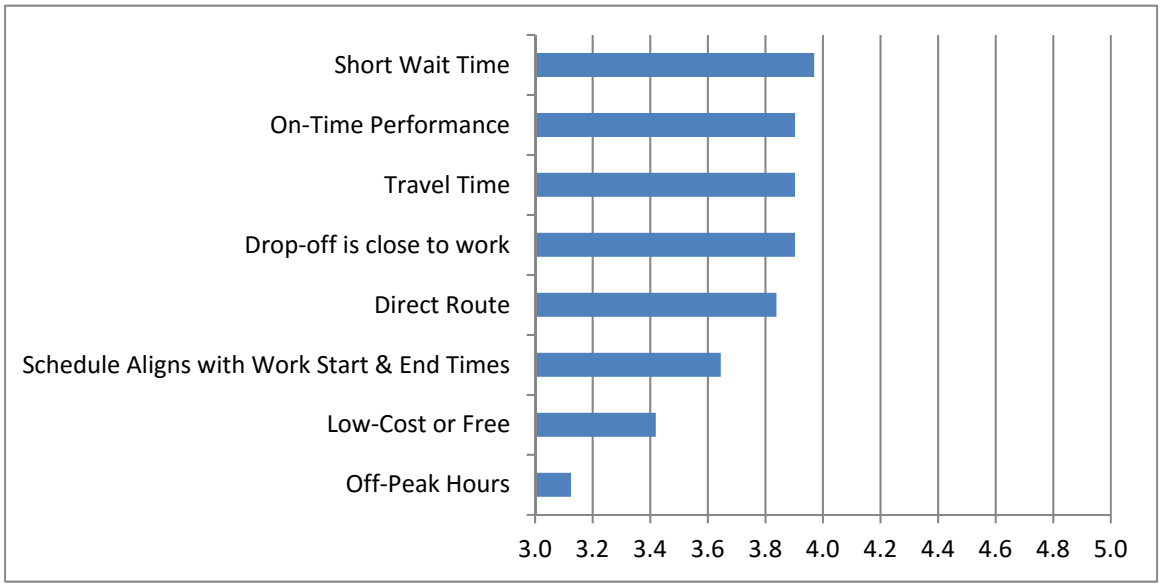
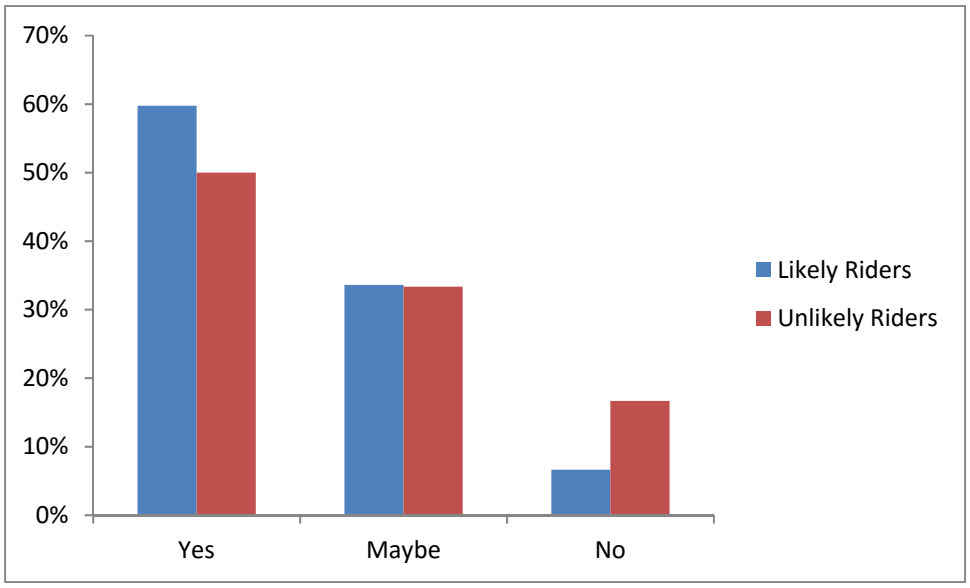


Figure 3-18: Ranking of Shuttle Features among Unlikely Riders from Employee Survey



Respondents were also asked whether they would be willing to walk a few blocks to a shuttle stop if it would reduce the overall shuttle travel time. This question was meant to inform respondents of the trade-off between close stop spacing and travel time and to determine preferences between these two features. The results of this question are summarized in **Figure 3-19**. The majority of respondents stated that they would prefer shorter travel times if it meant having to walk farther to a stop. Likely riders were more likely to be willing to walk a little farther than unlikely riders.

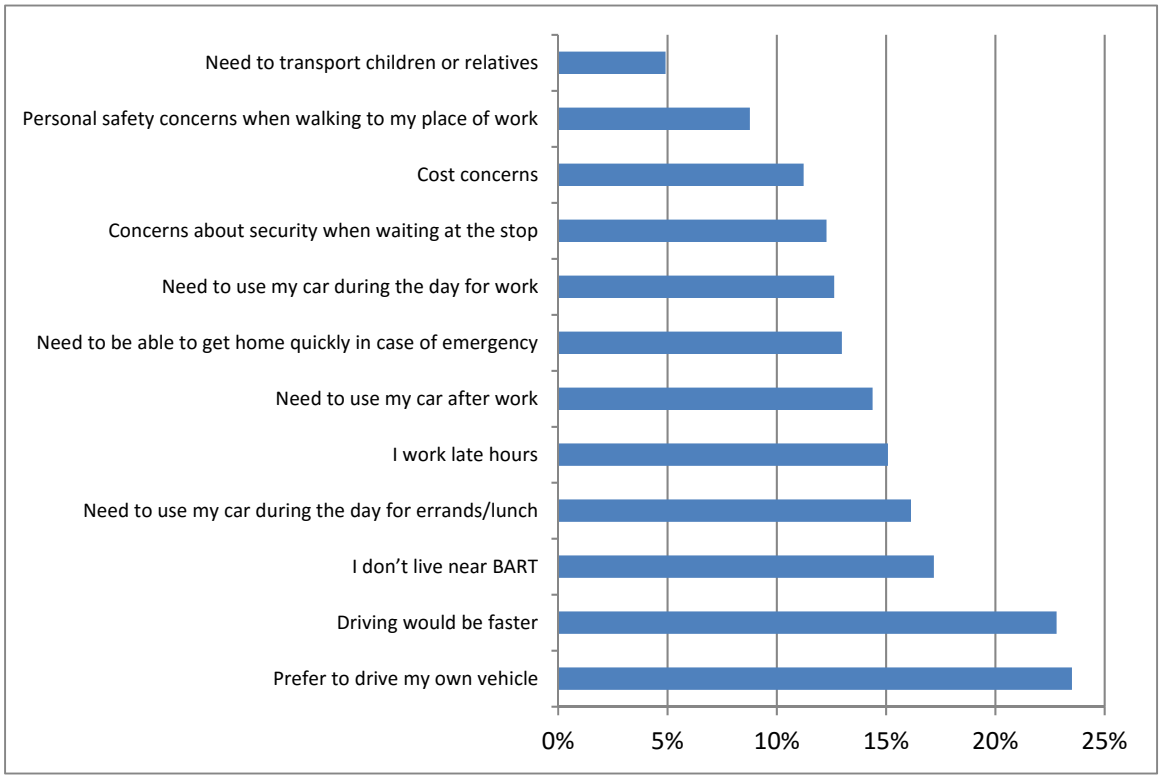
Figure 3-19: Willingness to Walk a Few Blocks to a Shuttle Stop if it would Reduce Overall Shuttle Travel Time among Likely and Unlikely Riders



3.3.2.2 Reasons for not Taking a Shuttle

Respondents were also asked, if they would not consider taking a shuttle, what were their reasons for not riding. **Figure 3-20** summarizes the results. Respondents could give more than one response. The most common reason stated was: "Prefer to drive my own vehicle." For these respondents, no level of shuttle features would likely be able to convince them to leave their car at home in exchange for taking a shuttle. The second most common response, however, "Driving would be faster," indicates that these respondents may be willing to take a shuttle or transit option if the travel time were competitive with auto. The third most common response, "I don't live near BART," indicates that for many employees, a shuttle connecting to BART would not be useful since they do not live near BART and therefore getting to a station may not be a simple alternative to driving.

Figure 3-20: Reasons for not Taking a Shuttle



3.3.2.3 Work Schedules

Respondents were also asked at what time they arrive at and depart from work. As seen in **Figure 3-21** and **Figure 3-22**, likely riders typically have a regular work schedule, starting work during the AM peak period (between 6 AM and 9 AM) and departing from work during the PM peak period (between 4 PM and 7 PM). Unlikely riders are more likely to have non-traditional work schedules, which may be one reason why they have stated that they would not be likely to take a shuttle if it were offered. These findings suggest that operating a shuttle during the AM and PM peak periods has the highest potential for serving likely riders.

Also, the majority of those surveyed (more than 90 percent) work a typical 5-day work week from Monday through Friday.

Figure 3-21: Typical Work Arrival Time among Likely and Unlikely Riders

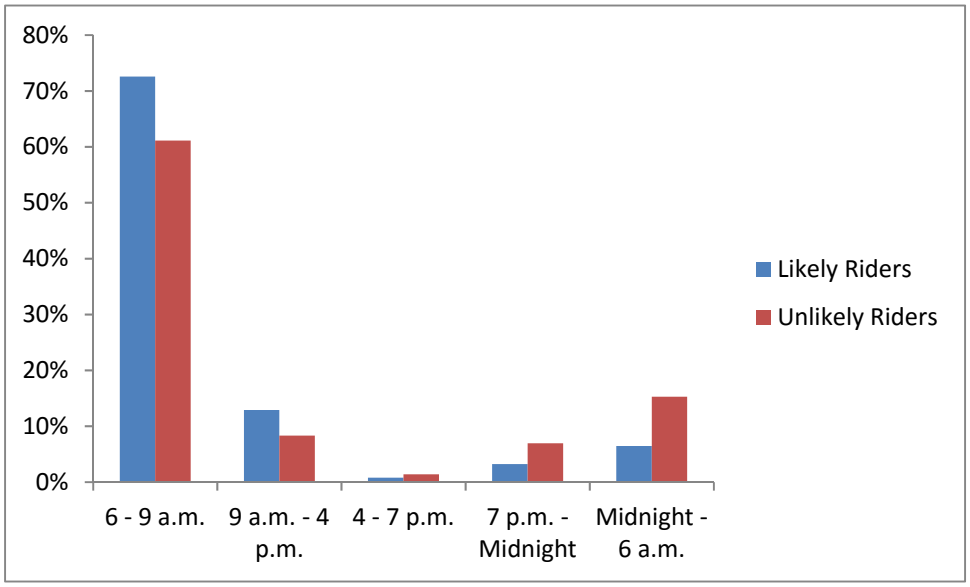
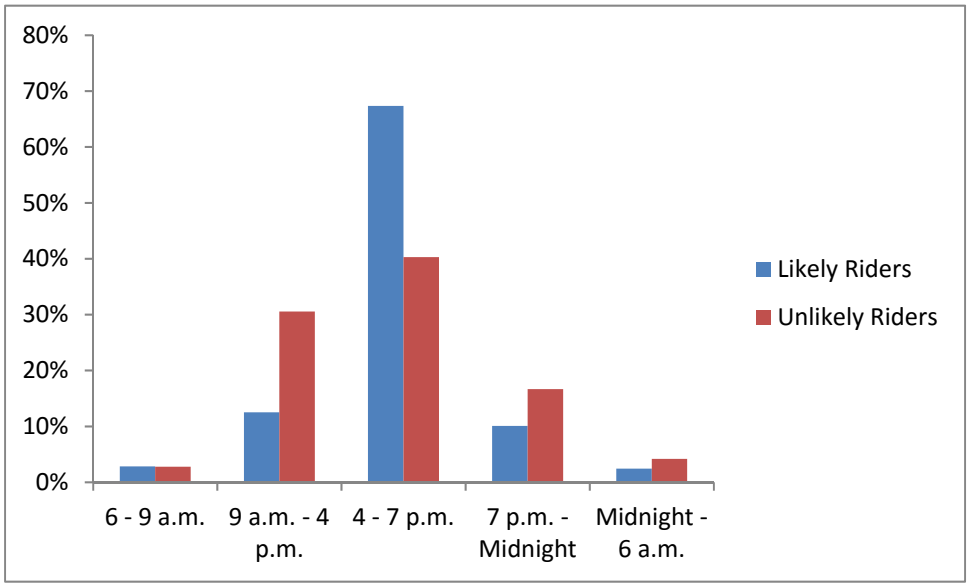


Figure 3-22: Typical Work Departure Time among Likely and Unlikely Riders

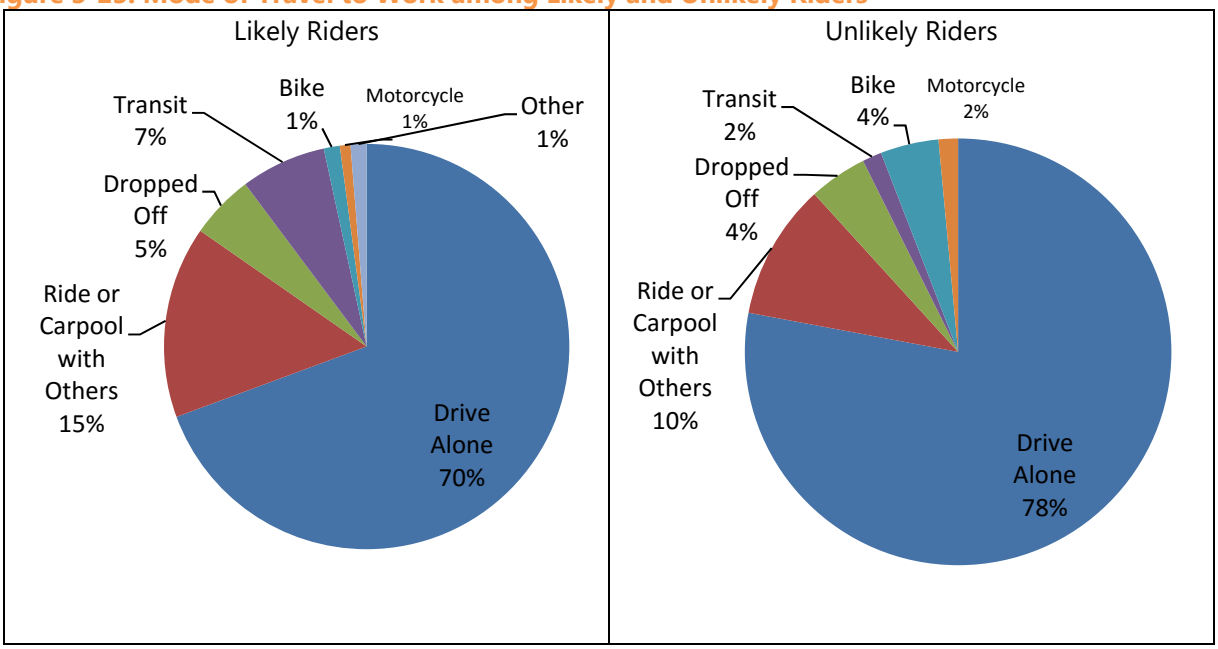


3.3.2.4 Commute Characteristics

Survey respondents were asked how they currently commute to work. The survey results are summarized in **Figure 3-23**. The majority of employees surveyed drive to work. Respondents who indicated that they would potentially take a shuttle were more likely to currently take transit or carpool than those who responded that they would not take a shuttle. This indicates that some current transit users and carpoolers would be interested in shifting to a shuttle option. The shuttle option also has the potential to shift many

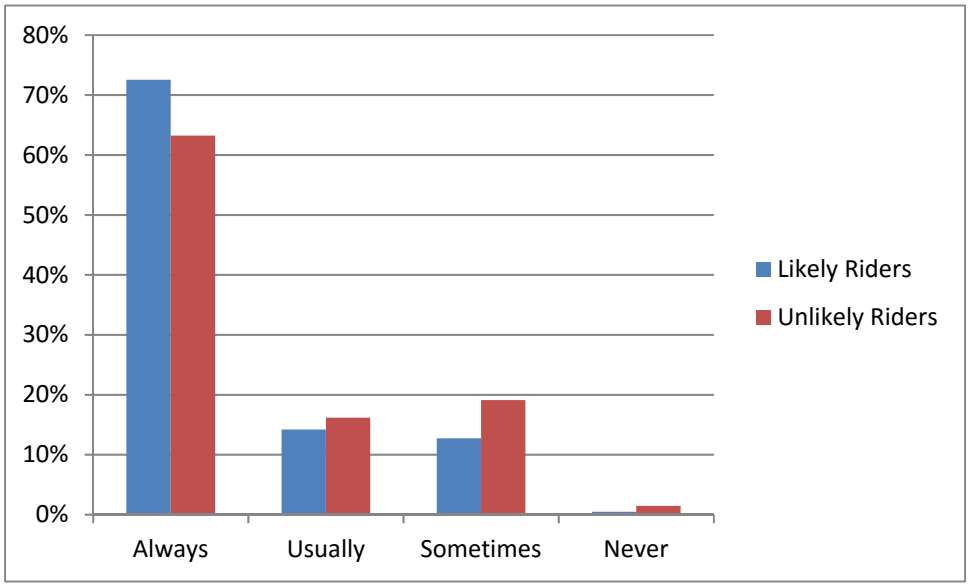
drive alone trips. The results indicate that those who currently bike to work would likely continue to bike rather than shifting to a shuttle option if one became available.

Figure 3-23: Mode of Travel to Work among Likely and Unlikely Riders



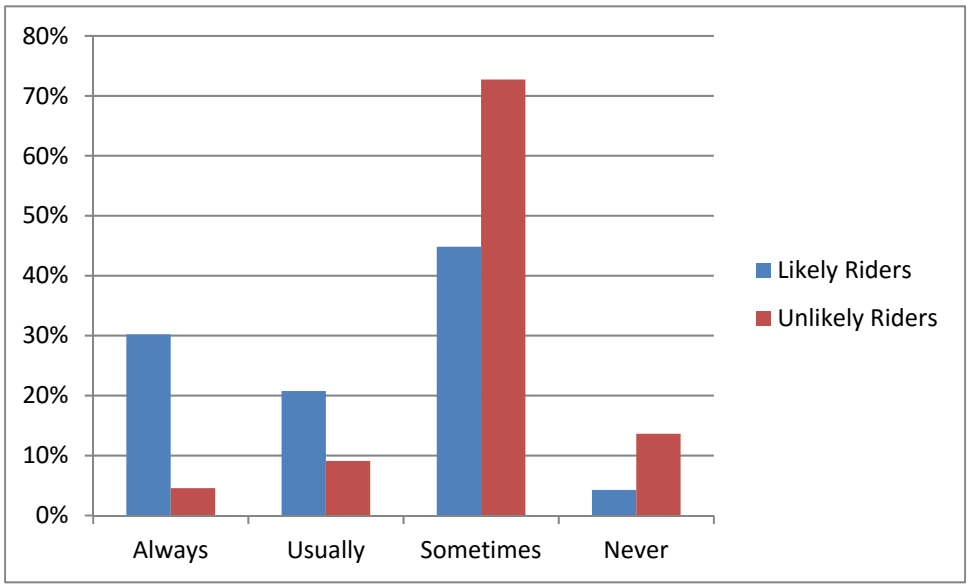
When asked about parking availability near work, the majority of drivers responded that it was always easy to find parking, as shown in **Figure 3-24**. Likely riders were actually more likely to respond that it was easy to find parking than unlikely riders. These results indicate that lack of parking is not currently an issue in the study areas and therefore does not deter people from driving to work. Difficulty in finding parking does not seem to be an influencing factor on whether or not an employee would consider taking a shuttle. In a situation where parking were more limited, the difficulty in finding a parking space may be a motivating factor which would influence drivers to shift to an alternative mode of transportation such as a shuttle. This does not seem to be the case in the West or South Study areas.

Figure 3-24: Ease of Finding Parking at Work Location among Likely and Unlikely Riders



When asked whether traffic congestion was typically an issue during the commute to work, likely shuttle riders were much more likely to respond that traffic congestion was an issue than unlikely shuttle riders, as shown in **Figure 3-25**. This finding indicates that traffic congestion on the way to work is an influencing factor on whether or not an employee would consider using a shuttle. Therefore, those employees traveling along congested corridors are much more likely to shift to taking a shuttle than those commuting along uncongested corridors.

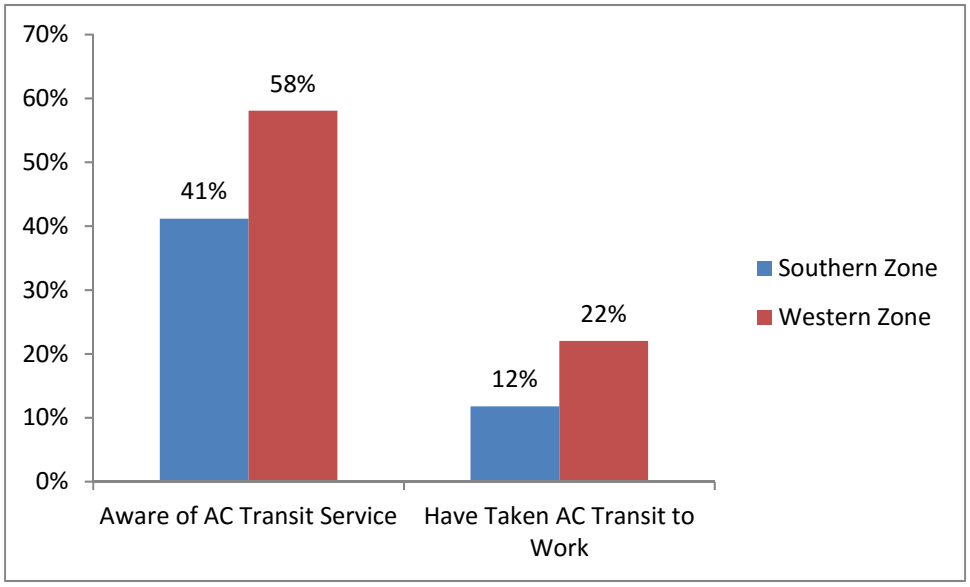
Figure 3-25: Occurrence of Traffic Congestion during Commute among Likely and Unlikely Riders



3.3.2.5 Transit Awareness

Survey respondents were asked both whether they were aware of current AC Transit service to the area and whether they had ever taken AC Transit to work. Responses were evaluated separately for employees of the South and West study areas, as shown in **Figure 3-26**. West Study Area employees were both more likely to state that they were aware of AC Transit service and were more likely to have taken AC Transit to work. These findings indicate that there is potential to increase awareness of transit service in both study areas. In addition, the share who have experience taking transit to work is higher than the share who typically take transit to work. This suggests that there is a segment of employees who are already amenable to taking transit as a potential option, and perhaps would choose this option on a more regular basis if a higher level of service were provided.

Figure 3-26: Familiarity with AC Transit Service among South and West Study Area Employees



Respondents were also asked what BART station is closest to their home and the distance to this station. The results are summarized in **Figure 3-27** and **Figure 3-28**. In **Figure 3-27** some stations are grouped based on the geographic location. A BART system map is shown in **Figure 3-29** for reference.

Figure 3-27: Closest BART Station to Home

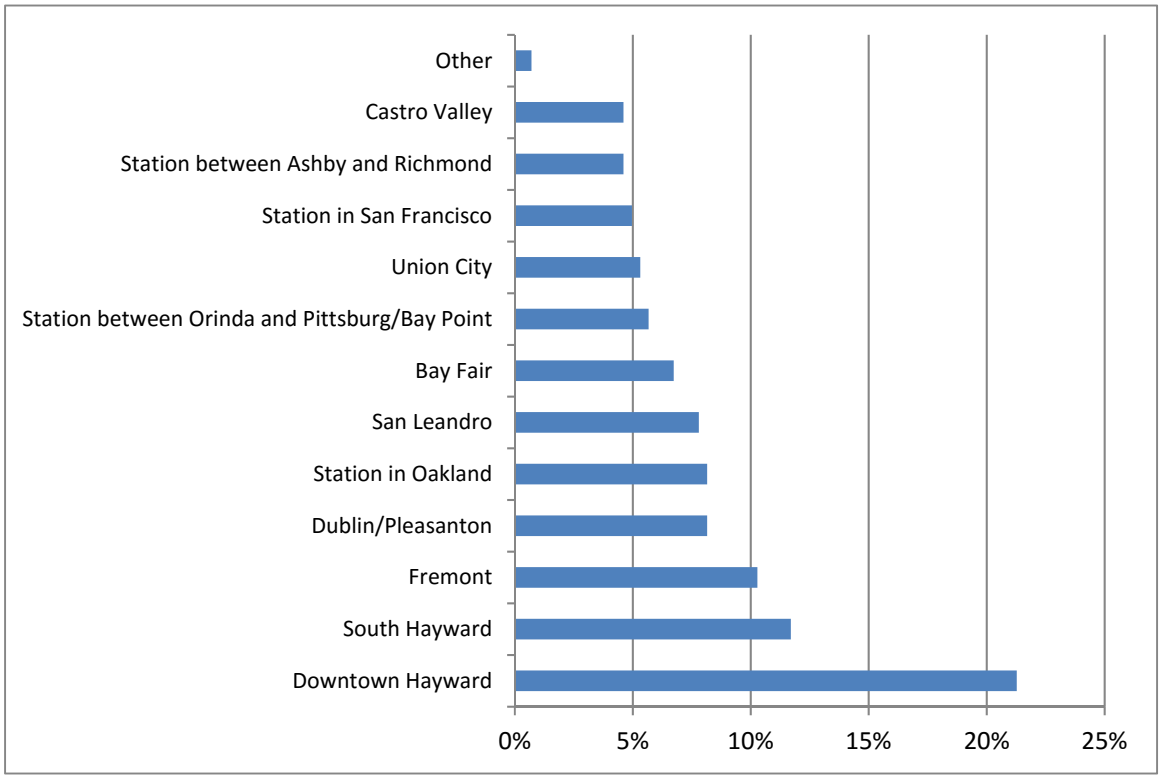


Figure 3-28: Distance to Closest BART Station

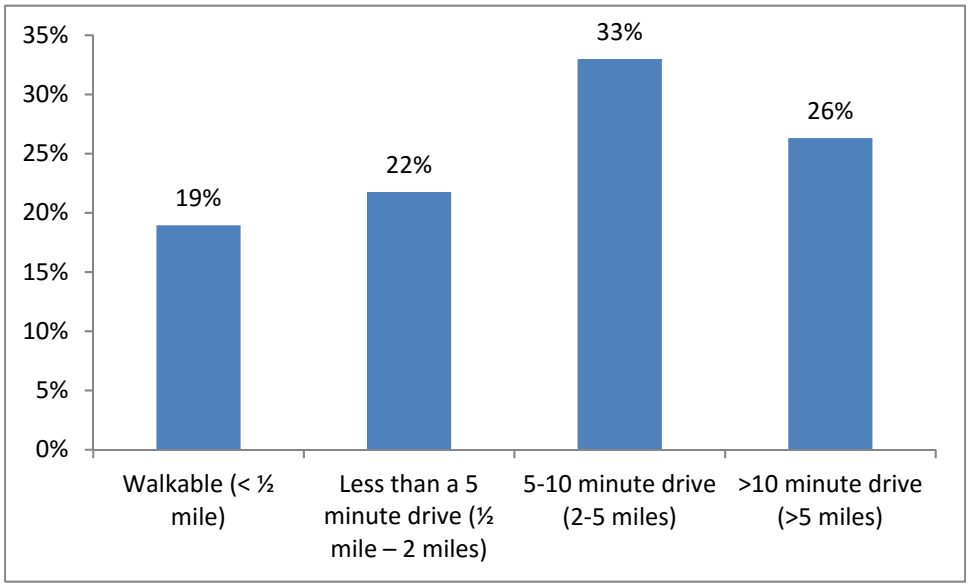


Figure 3-29: BART System Map

The majority of employees come from station areas near Hayward, including Downtown Hayward, South Hayward, San Leandro, Bay Fair and Union City. However, a fair number of employees come from areas farther away, including Fremont to the south, Dublin/Pleasanton to the east, Pittsburg/Bay Point to the northeast, Oakland and Richmond to the North, and San Francisco to the west. Many of these corridors experience high levels of traffic congestion, particularly during peak commute hours. During these hours the travel time on BART can often be competitive with auto, depending on the time needed to travel to and from BART station at either end of the trip. As **Figure 3-28** shows, nearly 20 percent of those surveyed live close enough to walk to a BART station, and more than half live a short drive from a station. This suggests that for many respondents, taking BART could be an alternative to driving if a good connection existed from the BART station to work.

3.3.2.6 Demographics

Survey respondents were also asked a few demographics questions including their age and income level, as summarized in **Figure 3-30** and **Figure 3-31**. These results may not be representative of all employees in the study areas, but provide a summary of those surveyed.

Figure 3-30: Age of Survey Respondents

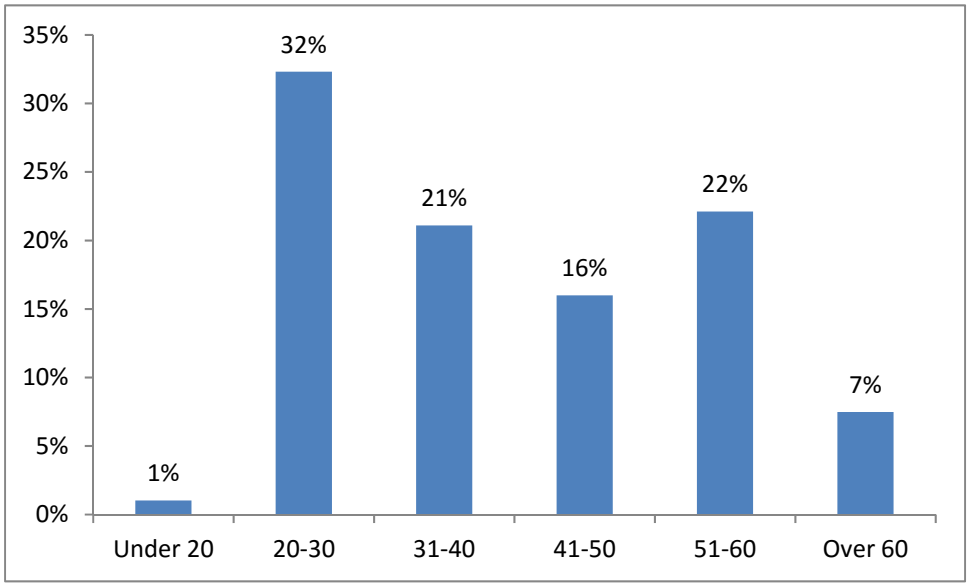
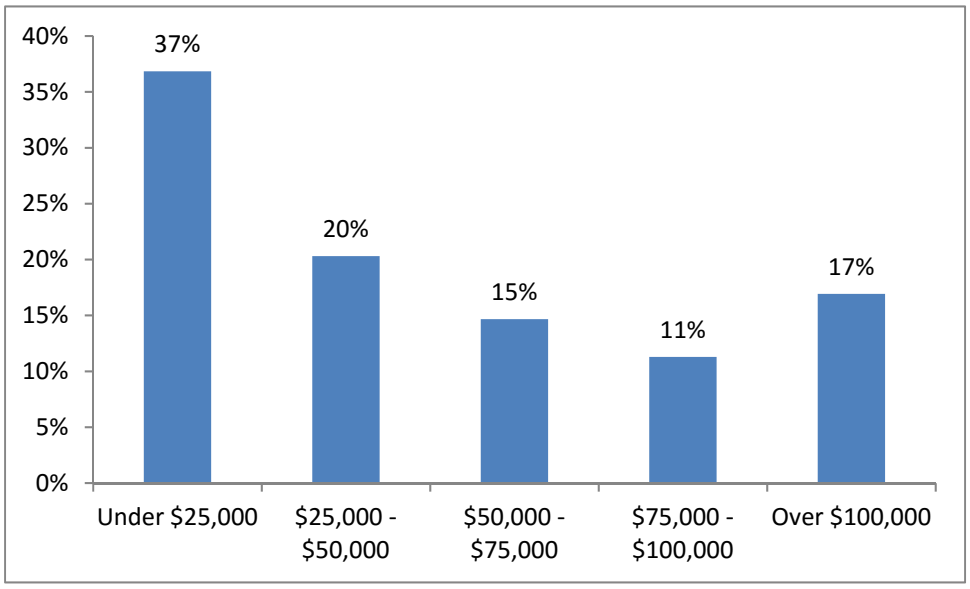


Figure 3-31: Income Level of Survey Respondents



3.4 SUMMARY OF FINDINGS

Outreach findings are summarized by study area and separated between residents and employees in **Table 3-2**.

Many of the residents that attended outreach events and enthusiastically supported the idea of a shuttle connecting to the Downtown Hayward BART Station and/or Downtown Hayward. Some residents currently conduct shopping in other cities besides Hayward, because those areas are easier to access from where they live. Some residents stated that a shuttle to Downtown Hayward may encourage them to shop in the area. Senior residents stated that once they can no longer drive, a shuttle option would help provide them with independence and that they would prefer a shuttle to taking public transit. However, although support at the outreach events was strong, the number of people in attendance was low.

Based on the resident survey results, even among those who supported a shuttle, respondents stated they would primarily take the shuttle during off-peak hours (9 AM-4 PM). Furthermore, South Study Area respondents stated that they would only take a shuttle to Downtown Hayward occasionally (1-5 times per month). Based on these responses, it appears that there would be no critical mass of riders during any particular time period, but rather riders would be spread throughout the day. Demand for a shuttle would be low, with most riders only riding occasionally, particularly for a route connecting to the South Study Area. While a shuttle could encourage some to shop in Downtown Hayward, based on the survey results, shuttle ridership would be expected to be low.

Potential demand among North Study Area residents to the Downtown Hayward BART Station is higher. These residents stated that they travel to Downtown Hayward and the Downtown Hayward BART Station more frequently than South Study Area residents and would take a shuttle option more frequently. Likely travel times were spread throughout the day.

By contrast, among employees surveyed, demand for shuttle use tended to be concentrated in the peak periods (6-9 AM and 4-7 PM) and would be used for regular commute travel, typically five days per week. In particular, many students of Life Chiropractic College West were interested in a shuttle connection for classes starting at 7:30 AM. These results suggest that there could be enough demand for a shuttle, particularly during the peak periods. This would especially be an attractive option for those who live near a BART station and for whom BART could be a time competitive alternative to driving due to traffic congestion. These results are encouraging and suggest that a shuttle option could be effective. Further analysis of shuttle demand and cost effectiveness will be evaluated in subsequent sections of the report.

TABLE 3-2: OUTREACH FINDINGS		
Study Area	**Residents**	**Employees**
North Study Area	• Residents frequently travel to Downtown Hayward and the Downtown Hayward BART Station • Difficulty finding parking is not a huge deterrence for drivers • Many residents stated that they would use a shuttle frequently • Most important features were low cost, on-time performance, and short wait time • Residents would be willing to walk farther to a stop to save travel time • Most respondents would use the shuttle during off-peak hours	
West Study Area		• Many students of Life Chiropractic would be interested in a shuttle connecting to BART, particularly for classes starting at 7:30am • Most important shuttle features were on-time performance, drop-off close to work, and schedule aligns with work start and end times • Employees would be willing to walk farther to a stop to save travel time • Top reasons for not taking a shuttle were preferring to drive, driving would be faster, and don't live near BART • Most potential riders would use the shuttle during peak hours (6-9 AM and 4-7 PM) • Most respondents currently drive to work and do not have trouble finding parking • Many likely riders frequently experience traffic congestion during commute • Many respondents live within a walkable distance to a BART station

Study Area	Residents	Employees
South Study Area	• Residents do not frequently travel to Downtown Hayward; many conduct shopping trips in other areas such as Union City • When traveling to Downtown Hayward, most residents drive or carpool • Difficulty finding parking is not a huge deterrence for drivers • Many residents stated that they would use a shuttle to Downtown Hayward occasionally • Most important features were on-time performance, short wait time, and close to origin and destination • Residents would be willing to walk farther to a stop to save travel time • Most respondents would use the shuttle during off-peak hours • Most residents who attended outreach events were seniors who would be interested in a shuttle as an alternative to driving	• Most important shuttle features were on-time performance, drop-off close to work, and schedule aligns with work start and end times • Employees would be willing to walk farther to a stop to save travel time • Top reasons for not taking a shuttle were preferring to drive, driving would be faster, and don't live near BART • Most potential riders would use the shuttle during peak hours (6-9 AM and 4-7 PM) • Most respondents currently drive to work and do not have trouble finding parking • Many likely riders frequently experience traffic congestion during commute • Many respondents live within a walkable distance to a BART station

4 SHUTTLE ROUTE ALTERNATIVES DEVELOPMENT

This chapter describes the process used to develop a set of route alternatives for detailed assessment. An initial set of routes was identified to serve the study areas selected and meet the connectivity goals of the City. This initial set of routes was benchmarked against an evaluation of peer systems in the Bay Area and further screened based on conceptual-level ridership estimates and potential emissions reductions and input from the Technical Advisory Committee, City staff, and the City Council. Using this process, a shortlist of four routes was forwarded for further assessment. Based on additional consultation with City staff, route efficiency and potential funding partners, a single route was proposed for final study and near-term implementation with a second route selected for possible future implementation.

4.1 INITIAL ALTERNATIVE DEVELOPMENT

Based on an understanding of the City's goals and the general study areas described previously, four corridors were identified that would most benefit from a connection to regional transit: Cannery Area to Hayward BART, West Industrial Area to Hayward BART, CSUEB to Hayward BART, and South Industrial Area to South Hayward BART. Service to other key destinations, such as Chabot College, St. Rose Hospital, Downtown Hayward, and Eden Shores would be folded into the corridors based on proximity to the proposed route.

Using surveys of residents and employees in the area and an analysis of current transit service gaps and opportunities (discussed previously), the following eight conceptual routes were identified:

- Tennyson Route
    - Connect southern portion of West Industrial Area to South Hayward BART
- Winton Route
    - Connect northern portion of West Industrial Area to Hayward BART
- Fairway Park to Downtown Route (three alternatives)
    - Connect southern Hayward residents to downtown Hayward and/or BART
        - Alternative 1 – provide connection to South Hayward BART
        - Alternative 2 – provide connection to downtown Hayward only
        - Alternative 3 – provide connection to downtown Hayward and Hayward BART
- South Industrial Loop Route
    - Connect South Industrial Area to South Hayward BART
- CSUEB/Hills Route
    - Connect CSUEB campus and nearby residential areas to downtown Hayward and BART
- Amtrak/Downtown Loop/Cannery Route

- Downtown circulator shuttle with connections to BART and Amtrak stations

For each of these routes, a data analysis was performed to estimate the ridership, vehicle trips reduced, emissions reduction, service population within ½ mile, and efficiency metrics (cost per rider, riders per hour, riders per mile). Route maps and metrics are contained within **Appendix D**.

4.2 EVALUATION OF PEER SYSTEMS

To inform the route development and screening process, an evaluation of six peer shuttle systems was undertaken. A full discussion of the peer review can be found in the memorandum[19] contained within **Appendix E**. The key findings from the peer review were as follows:

1. Most of the peer systems connect major transit centers with employment centers via timed connections to enable convenient travel.
2. Ridership is highest for high-frequency services, particularly when headways are 15 minutes or less
3. Most of the peer systems offer technological components to help increase convenience and ridership. These include transit card (e.g. Clipper card) integration, real-time arrival and shuttle tracking platforms, and inclusion in online mapping programs (e.g. Google Maps).
4. Most peer systems are public-private partnerships and have strong community and private sector support (e.g. Business Improvement Districts, Transportation Management Agencies, and major local employers).
5. A key challenge for these peer systems is achieving a sustainable funding source beyond the initial start-up grant. Long-term funding sources could include TMA funds, BID contributions, city or county funds, and other private sector contributions.

These findings were incorporated into the screening process by ensuring that the route selection process favored the characteristics identified above. The most important characteristic was the extent to which the concept connects regional transit centers (i.e. BART stations) with local employment centers (per item 1 above). The potential ridership of the selected alternative was considered (item 2 above) and is discussed in more detail in Section 4.3.1 below. Consideration of potential partnerships and funding sources is presented in Chapter 6.

Data on general operating characteristics was available for four of the peer systems. This information is presented below in **Table 4-1.**

[19] Fehr & Peers. *Peer Review for Hayward Shuttle.* Memorandum to City of Hayward. August 20, 2015

TABLE 4-1: PEER SYSTEM METRICS				
System Name	**Annual Boardings**	**Ridership/Service Hour**	**Ridership/ Service Mile**	**Cost/ Revenue Hour**
San Leandro Links	191,646	44.4	4.1	$72.92
Palo Alto Shuttle	166,050	28.4	1.0	$58.11
Irvine iShuttle	249,750	11.7	1.6	$121.89
Alameda Estuary Crossing	86,400	40.0	3.5	$96.30

4.3 ROUTE SCREENING

Based on efficiency metrics and feedback from the Technical Advisory Committee (TAC), the eight conceptual routes were narrowed down to the following six routes, which were presented to the Hayward City Council for consideration:

1) Tennyson Route,
2) Winton Route,
3) Fairway Park to Downtown Route – Alternative 1,
4) South Industrial Loop Route,
5) CSUEB/Hills Route, and
6) Amtrak/Downtown Loop/Cannery Route.

4.3.1 Ridership Estimates

Ridership estimates were prepared for the six shuttle routes presented to City Council. Estimates were prepared using the Alameda Countywide Travel Demand Model developed by the Alameda County Transportation Commission (ACTC). A full discussion of the methodology for developing the ridership and emissions forecasts for the four routes can be found in the memorandum[20] contained within **Appendix F**.

A summary of comparable route performance is provided in **Table 4-2** below, which demonstrates that the highest performing route is the Tennyson Route, which would have high daily riderhip, boardings per mile, and emissions reductions. This is followed by the Winton and South Industrial Loop routes, which have slightly lower levels of ridership and emissions reductions. This indicates that routes providing last mile connections to employment areas have the highest potential to generate ridership and reduce emissions.

[20] Fehr & Peers. *Ridership Forecasting Results* Memorandum to City of Hayward. October 30, 2015

TABLE 4-2: ROUTE PERFORMANCE COMPARISONS				
Route Name		**Average Daily Boardings**	**Boardings per Mile**	**Average Daily Reduction in CO_2 (kg)**
West Study Area				
Couplet	**Tennyson**	419	36	2,110
	Winton	323	30	1,620
South Study Area				
Fairway Park to Downtown		242	19	290
South Industrial Loop		227	38	1,140
North Study Area				
CSUEB Hills		214	21	230
A/D Loop/Cannery		184	41	50

4.3.2 Development of Shortlist of Four Routes

Based on feedback from the City Council in response to the route performance comparisons presented above, and taking into account additional input from the TAC, the following four routes were advanced for final consideration as best meeting the needs of the community:

1) Tennyson Route,
2) Winton Route,
3) Amtrak/Downtown Loop/Cannery Route, and
4) South Industrial Route.

A more detailed description of each of these four routes is provided below.

4.3.2.1 Tennyson Route

The primary function of this route is to provide first-mile/last-mile service connecting employees in the southern part of the West Industrial Area to the BART network. The South Hayward BART station is the closest station to this area. The route is designed to operate alongside the Winton Route as a couplet. The Winton Route by contrast would serve the northern half of the West Industrial Area. There would be a transfer point between routes at Industrial Boulevard/Depot Road. To avoid unduly long travel times, a single route to serve the entire West Industrial Area was not considered.

4.3.2.2 Winton Route

Similar to the Tennyson Route, the primary function of this route is to provide first-mile/last-mile service connecting employees in the northern part of the West Industrial Area to the BART network. Downtown Hayward BART Station is selected as it is the closest station to this part of the West Industrial Area. A secondary function is to connect to the Southland Mall. This route is designed to operate alongside the Tennyson Route, as a couplet. The Tennyson Route would serve the southern half of the West Industrial Area, and there would be a transfer point between routes at Industrial Boulevard/Depot Road.

4.3.2.3 Amtrak/Downtown Loop/Cannery Route

The primary function of this route is to act as a downtown circulator shuttle between the Amtrak and BART stations and the commercial and retail areas in the northern part of the downtown area. The route generally operates in a counter-clockwise loop starting at the Amtrak station before traveling through the Cannery residential development and past the Hayward BART station. The route then makes a loop around commercial and retail areas in the northern part of the downtown area before traveling back to the BART and Amtrak stations.

4.3.2.4 South Industrial Loop Route

The primary function of this route is to provide a first-mile/last-mile service connecting employees in the South Industrial Area to the BART network. The South Hayward BART Station is selected as it is the closest station to this area. The route provides non-stop service between the BART station and Industrial Parkway before making a clockwise loop in the area along San Antonio Street, San Luis Obispo Street, Whipple Road, and Wiegman Road.

4.3.3 Selection of Final Route

After further consultation amongst City staff, a final route was developed for near-term implementation. This route is a hybrid route developed from the Tennyson, Winton, and Amtrak/Downtown/Cannery routes, named the "Winton Loop Hybrid Route". Additionally, the South Industrial Route was also retained as a possible second phase, i.e. a longer-term implementation to complement the Winton Loop Hybrid Route. A description of the Winton Loop Hybrid Route is provided below.

4.3.3.1 Winton Loop Hybrid Route

The chosen route is a hybrid of the Winton, Tennyson, and Downtown Loop routes. This route (the Winton Loop Hybrid) has been designed to be as productive as possible while meeting the goals and objectives of the study, including maintaining funding potential. It has been developed to be implementable in the near-term.

The function of this route is to provide first-mile/last-mile service to Hayward BART and Downtown Hayward for the following groups:

- Employees of and students at Life Chiropractic College and Chabot College,
- Employees of and visitors to the Hayward Hall of Justice and surrounding government administration buildings,
- Employees of and visitors to Southland Mall, and
- Employees of West Industrial Area businesses.

The route makes a counter-clockwise loop around the Downtown Hayward area before proceeding west to the Hayward Hall of Justice and Southland Mall. The route then makes a loop in the northern part of the West Industrial Area along Winton Avenue and Clawiter Road to serve the area and the two colleges before returning to Downtown Hayward via the Southland Mall and the Hall of Justice. A map of this route is presented in **Figure 4-1**.

The chosen route would serve the same locations as the existing Alameda County employee shuttle route, such as the Hayward BART station and the Hayward Hall of Justice, but also serve additional destinations such as Southland Mall, Chabot College, and the West Industrial Area.

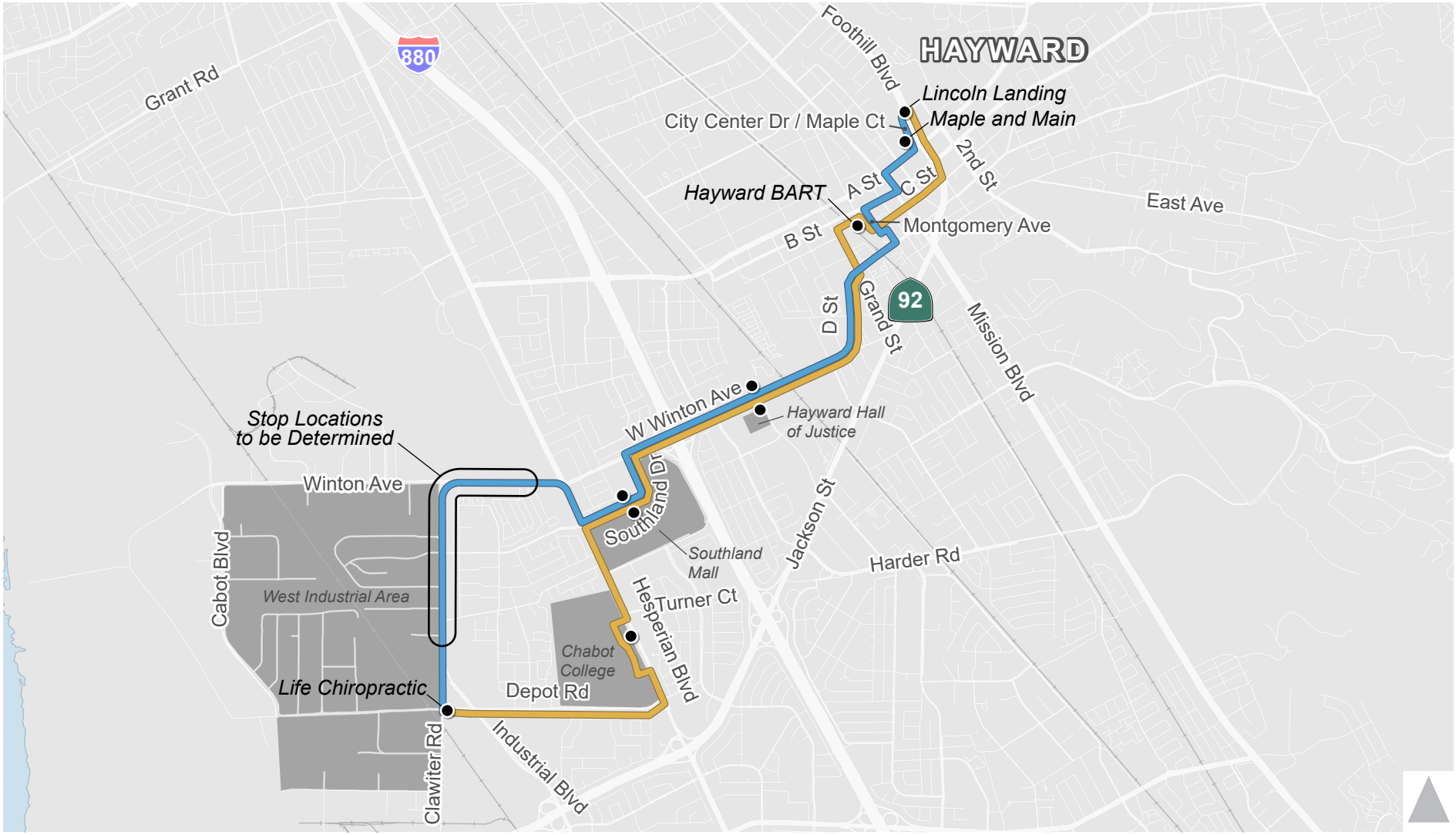


Figure 4-1

Winton Loop Hybrid Route Alignment and Stop Locations

5 SHUTTLE OPERATIONS AND ACCESS IMPROVEMENT PLAN

This chapter presents the operations and access improvement plan for the proposed shuttle route. The operations plan discusses the route alignment, stop locations, schedule, ridership, and other operating characteristics. An operations plan is also presented for the potential phase two route. The access improvement plan identifies potential access and connectivity projects that are recommended to enhance the shuttle stop area and make the service visible and attractive to potential passengers.

5.1 SERVICE OPERATIONS PLAN

A service operations plan is presented for this route which details the route alignment, stop locations, markets and destinations, ridership estimate, and operating characteristics. A description of the Phase Two route for potential future implementation, the South Industrial Loop route, is also provided.

5.1.1 Winton Loop Hybrid Route

This route is generally oriented east-west, with the paths of travel in each direction mostly similar, with the exception of a few crossover points that give the route a figure-eight-like appearance. The roundtrip length of the proposed Winton Loop Hybrid route is 9.9 miles (5.2 miles eastbound and 4.7 miles westbound). The proposed full routing and stops are shown in **Figure 4-1**. The route includes the following twelve stops, in order of service.

- Eastbound
    - Life Chiropractic College (Depot Road/Clawiter Road)
    - Chabot College (Hesperian Boulevard/Depot Road)[21]
    - Southland Mall (Southland Drive)
    - Hayward Hall of Justice (West Winton Avenue, in between Edloe Drive and Amador Street)
    - Hayward BART Station **[lay over location]**
    - Lincoln Landing (Foothill Boulevard/City Center Drive)
- Westbound
    - Lincoln Landing (Foothill Boulevard/City Center Drive)
    - Maple & Main (Maple Court/A Street)
    - Hayward BART Station **[lay over location]**

[21] Because this stop location is on private property, permission from Chabot College would be required to operate at this location.

- Hayward Hall of Justice (West Winton Avenue, in between Edloe Drive and Amador Street)
- Southland Mall (Southland Drive)
- West Industrial Area (stop locations to be determined)
- Life Chiropractic College (Depot Road/Clawiter Road)

5.1.1.1 Routing Description

Eastbound: The eastbound run would begin at Life Chiropractic College at the far-side stop at the intersection of Depot Road and Industrial Boulevard. From this location, the shuttle would travel westbound to the Chabot College campus via Depot Road and Hesperian Boulevard before entering the campus. The shuttle would then return to Hesperian Boulevard and continue traveling northbound to the Southland Mall area, where it would turn eastbound onto Southland Drive and stop adjacent to the mall. The shuttle would continue to the vicinity of the Hayward Hall of Justice (and other Alameda County government services) via Southland Drive and West Winton Avenue. To provide access closer to the center of the governmental campus, the shuttle could serve the Hall of Justice directly via Amador Street and use Crystal Gate Common to turn around and proceed on Amador Street to return to West Winton Avenue, where the shuttle would proceed eastbound. However, this option would lead to a less direct route, and for that purpose was not selected. The shuttle would travel to the Hayward BART Station via Grand Street, B Street and Montgomery Avenue before stopping in the bus station adjacent to the Hayward BART station. The bus may layover at this time. From the BART station, the shuttle would perform a counter-clockwise loop through downtown Hayward, via C Street, Foothill Boulevard, City Center Drive, Maple Court, A Street, Mission Boulevard, and B Street. In this area, the shuttle would stop at Lincoln Landing, the final stop in the eastbound direction.

Westbound: The shuttle would then immediately begin its westbound run and complete the loop through the downtown area by stopping at Maple & Main, and at the Hayward BART station (where it may lay over) before traveling further west. The shuttle would proceed westbound to the Hayward Hall of Justice via C Street, Atherton Street, D Street, and West Winton Avenue. The shuttle would continue westbound to Southland Mall via West Winton Avenue and Southland Drive. The route would then begin its counter-clockwise loop through the West Industrial Area via Hesperian Boulevard, West Winton Avenue, and Clawiter Road before stopping at Life Chiropractic College, the final stop in the westbound direction.

A map of the route is shown in **Figure 4-1**.

5.1.1.2 Layover Location

The shuttle bus would lay over and wait for the next run at the Hayward BART Station bus stop on the east side of the BART tracks off Montgomery Street. Restrooms are provided at this location for the driver. The dwell time would be scheduled to be synchronized with the arrival of BART trains to provide a convenient

connection for passengers. This stop is served in both westbound and eastbound directions, so the layover could be scheduled to occur in either direction, dependent on what would best align with meeting the train schedule.

5.1.1.3 Schedule

Shuttle service was developed to serve trips throughout the day (between 8 AM and 6 PM). An average headway of 15 minutes is desired to provide a level of service that offers flexibility to users by being frequent enough such that many users would not need to plan around the schedule. Five shuttle vehicles are required in order to meet the 15-minute headway: four shuttles in service due to the length of the route and one shuttle vehicle in reserve in case of a breakdown.

To provide a high-quality connection to regional transit, the shuttle schedule should be timed with respect to the BART station train schedule. At the station, the Richmond-Warm Springs/South Fremont train runs on a 15-minute headway all day, while the Daly City-Warm Springs/South Fremont train also runs on a 15-minute headway from 5 AM to 7 PM. The current schedules provided by BART indicate that these two trains operate about four to six minutes apart during the time in which the proposed shuttle would be in service. Since the proposed shuttle would have a 15-minute headway, this allows for the schedule to be timed to limit transfer wait times to seven minutes or less during peak commute periods. A summary of the shuttle headway schedule compared with the BART service schedule is shown in **Table 5-1** below.

TABLE 5-1: REGIONAL TRANSIT SCHEDULE (WEEKDAYS)

Service	Service Span	Headway (min)
Winton Loop Hybrid Route	8 AM – 6 PM	15
BART – Richmond/Fremont	4 AM – 1 AM	15
BART – Daly City/Fremont	5 AM – 7 PM	15

Shuttle travel time was estimated based on travel time runs recorded along the route which factor in estimated dwell times. Using this approach, the total round-trip running time was estimated to be 48 minutes. While the round-trip run time of 48 minutes assumes fair weather and typical traffic conditions, inclement weather, roadway construction, or other causes of congestion (such as a collision) would require additional run time. A buffer of ten minutes was assumed, meaning that the minimum round-trip headway without accounting for any layover time was 58 minutes. This is the effective round-trip time that should be used when developing the schedule.

5.1.1.4 Operating Characteristics

A summary of operating statistics for the route is shown below in **Table 5-2.**

TABLE 5-2: ROUTE OPERATING CHARACTERISTICS					
Route	**Service Span**	**Headway (min)**	**Service Days per Year**	**Shuttles in Service**	**One-way Distance (miles)**
Winton Loop Hybrid	8 AM – 6 PM; Weekdays only	15	261	4	5.2 (EB) 4.7 (WB)

A summary of daily and annual metrics is shown below in **Table 5-3**.

TABLE 5-3: DAILY AND ANNUAL PER-SHUTTLE METRICS AND ROUTE METRICS		
Daily Per-Shuttle Metrics	***Round-Trip Runtime w/ Recovery (min)***	56
	Vehicle Revenue Hours	10
	Vehicle Service Hours	11
	Vehicle Revenue Miles	106
	Vehicle Service Miles	111
Daily Route Metrics	***Daily Vehicle Revenue Hours***	40
	Daily Vehicle Service Hours	44
	Daily Vehicle Revenue Miles	424
	Daily Vehicle Service Miles	446
Annual Route Metrics	***Annual Vehicle Revenue Hours***	10,440
	Annual Vehicle Service Hours	11,500
	Annual Vehicle Revenue Miles	110,800
	Annual Vehicle Service Miles	116,400

5.1.1.5 Ridership

The projected daily boardings for the Winton Loop Hybrid route was estimated to be 630 boardings per day. This estimate was developed using a combination of the ridership estimates that had previously been prepared for the Amtrak/Downtown Loop and Winton Loop routes (see Section 4.3.1), as well as an estimate derived from a survey conducted by the Hayward Hall of Justice. Since the hybrid route traversed a similar alignment to the Amtrak/Downtown Loop, covered some of the same service area as the Winton Loop, and would provide a connection to the Hayward Hall of Justice, the following ridership combination was used:

- 100 percent of the Amtrak/Downtown Loop ridership (180 daily boardings)
- 50 percent of the Winton Loop ridership (160 daily boardings)
- 290 daily boardings from the Hayward Hall of Justice

This level of ridership translates to approximately 14.3 boardings per service hour and 1.4 boardings per service mile on an annual basis. These rates are on the lower end of the spectrum compared to peer systems, but are comparable to systems such as the Palo Alto Shuttle (1.0 boarding per service mile, 28.4 boardings per service hour) and the Irvine iShuttle (1.6 boardings per service mile, 11.7 boardings per service hour).

5.1.2 Potential Phase Two: South Industrial Loop Route

For this route, outbound is defined as away from the South Hayward Station. The roundtrip length of the proposed South Industrial Loop Route is 5.8 miles (2.9 miles inbound and outbound). The proposed conceptual routing and stops is shown in **Appendix D**. The route includes the following 16 stops (ordered per the outbound direction).

- South Hayward BART Station
- Huntwood Avenue/Sandoval Way
- 30559 San Antonio Street (mid-block)
- 30873 San Antonio Street (mid-block)
- San Antonio Street/Zephyr Avenue
- 31284 San Antonio Street (mid-block)
- San Luis Obispo Street/San Benito Street
- Huntwood Avenue/San Luis Obispo Street
- Whipple Road/Wiegman Road
- 31285 Wiegman Road
- Wiegman Road/Zephyr Avenue
- Wiegman Road/Delta Court
- 1563 Wiegman Road

- Huntwood Avenue/Wiegman Road
- Huntwood Avenue/San Antonio Road

5.1.2.1 Routing Description

The outbound run would begin at the South Hayward Station at the shuttle turnaround on the east side of the BART tracks off Dixon Street. From the station, the shuttle would travel express (for 1.3 miles) to Huntwood Avenue. The shuttle would then perform a clockwise loop through the South Industrial Area, via San Antonio Street, San Luis Obispo Street, Huntwood Avenue, Whipple Road, and Wiegman Road, stopping a total of 15 times (at an average stop spacing of 1,200 feet). Having returned to Industrial Parkway, the shuttle will express back to the BART Station.

A map of the route is presented in **Appendix D**.

5.1.2.2 Lay Over Location

For both outbound and inbound travel, the shuttle bus would dwell and wait for the next run at the shuttle stop adjacent to the station on the east side of the BART tracks off of Dixon Street, where restrooms are provided. Food and beverage services are a short walk away on Mission Boulevard.

5.1.2.3 Schedule

Shuttle service was developed to serve the AM and PM peak commute. These time periods were determined to be between 6 AM and 10 AM, and between 3 PM and 7 PM. An average headway of 15 minutes is desired for commute service to prevent long waits. In order to meet a 15-minute headway schedule, two buses would be required for operation and one shuttle vehicle in reserve in case of a breakdown.

With respect to regional connections to transit, as was discussed with the Winton Route, the effective headway for trains at the Hayward BART station (and South Hayward BART station, for this route) is approximately 7.5 minutes. Since the proposed shuttle would have a 15-minute headway, this allows for the schedule to be timed to limit transfer wait times to seven minutes or less during peak commute periods. A summary of the shuttle headway schedule compared with the BART service schedule is shown in **Table 5-4** below.

TABLE 5-4: REGIONAL TRANSIT SCHEDULE (WEEKDAYS)		
Service	**Service Span**	**Headway (min)**
South Industrial Loop	6:00 – 9:00 AM, 3:00 – 6:00 PM	15
BART – Richmond/Fremont	4 AM – 1 AM	15
BART – Daly City/Fremont	5 AM – 7:00 PM	15

While the round-trip run time of 23 minutes assumes fair weather and typical traffic conditions, inclement weather, roadway construction, or other causes of congestion (such as a collision) would require additional run time. A buffer of ten minutes was assumed, meaning that the minimum round-trip headway without accounting for any layover time was 33 minutes. This is the effective round-trip time used when developing the schedule.

5.2 SHUTTLE STOP ACCESS AND CONNECTIVITY PROJECTS

For the selected Winton Loop Hybrid route, each proposed stop location's accessibility and existing amenities (where applicable) were assessed to identify projects that could enhance access and connectivity to the surrounding neighborhood. The projects identified primarily consist of improvements to shuttle stop amenities and crosswalk treatments near the stops. A list of these projects scored on a set of qualitative metrics is provided at the end of the section.

Since stop locations along West Winton Avenue and Clawiter Road are still to be determined at the time of this study, specific access and connectivity projects were not identified for these corridors.

5.2.1 Lincoln Landing

Lincoln Landing is a proposed mixed-use development that would consist of two six-story residential buildings with commercial space on the ground floors and one single-story commercial building between the residential buildings. In total, the site would have 476 apartment units and 80,500 square feet of commercial space.

The proposed stop location to connect to Lincoln Landing is a far-side stop on City Center Drive to the immediate west of the intersection with Foothill Boulevard. Based on plans provided in the Notice of Preparation for the Lincoln Landing Development EIR[22], while there is no sidewalk present today, the development proposes to include a sidewalk to provide pedestrian access along City Center Drive in a

[22] *Notice of Preparation of the Environmental Impact Report for the Lincoln Landing Project*, City of Hayward, July 2016

manner that would be conceptually compatible with a shuttle stop (see **Appendix G**). It is recommended that the design in this area be reviewed by the City for compatibility with a future shuttle route stop that would include pedestrian accessibility via a sidewalk plus a bus flag pole at a minimum and amenities such as a shelter, bench, and trash bin. Streets near this stop have sidewalks on both sides of the street and have no need for new crosswalks.

5.2.2 Maple and Main

Maple and Main is an approved mixed-use development that would consist of a five-story residential building and a four-story medical office building, the latter of which is an existing medical office building that would be renovated. In total, the site would have 240 apartment units, 47,750 square feet of medical office space, and 5,571 square feet of ground-floor retail space in the residential building. The project is expected to begin construction in Winter 2017 and to complete full buildout in Winter 2018.

The proposed stop location to connect with Maple and Main would be either a midblock stop on Maple Court between McKeever Avenue and A Street or a near-side stop at the intersection of A Street and Maple Court. The midblock location would provide direct access to the Maple and Main development, while the near-side stop would provide a more visible shuttle stop location to the surrounding neighborhood since it would be located on the corner of A Street. If a midblock location is chosen, plans provided in the Initial Study for the Maple and Main Mixed-Use project[23] show that the existing sidewalk and street lighting would be preserved and enhanced with street trees, which would be compatible with a future stop location here (see **Appendix H**). The street currently has on-street parking on the west side of the street that would need to be removed in order for the shuttle vehicle to pull over to the curbside. If the near-side location is chosen closer to A Street, there is an existing sidewalk in this location along with street lighting which would be compatible with a shuttle stop. However, since the sidewalk is wider in this location, there is no on-street parking. This would require the shuttle to stop in the vehicle travel lane. For either location, it is recommended that the stop include amenities such as a bus flag pole (at minimum), shelter, bench, and trash bin. Streets near the stop have sidewalks on both sides of the street and have no need for new crosswalks.

5.2.3 Hayward BART Station

The proposed stop location at the Hayward BART station would be in the bus layover area adjacent to the main entrance of the station, which is served by multiple AC Transit routes and shuttle routes. This location would serve westbound and eastbound directions of travel for the proposed route and serve as the layover

[23] *Maple & Main Mixed-Use Project – Recirculated Initial Study and Mitigated Negative Declaration*, City of Hayward, November 2016

location for shuttle drivers. This location has abundant amenities such as bus shelters, lighting, and benches as well as ample pedestrian connections to the station and surrounding neighborhood. Therefore, no near-term improvements would be needed at this location. Streets near this stop have sidewalks on both sides of the street and have no need for new crosswalks.

5.2.4 Hayward Hall of Justice

The proposed shuttle stops to connect with the Hayward Hall of Justice and Alameda County Social Services Department are located on West Winton Avenue midblock between Edloe Drive and Amador Street, which are currently served by AC Transit. Theses stops are located less than 1,000 feet from the Hall of Justice. Both locations have a bus pole and pedestrian lighting from nearby streetlamps, but no other amenities. It is recommended that the stops be upgraded to include a bus shelter, bench, and trash can.

5.2.5 Southland Mall

The proposed shuttle stops at Southland Mall are on both sides of Southland Drive to the east of Southland Place at existing bus stops used by AC Transit routes 22 and 386. In the eastbound direction, the shuttle stop has a flag pole, shelter, bench, trash bin, and pedestrian lighting. In the westbound direction, the stop has a flag pole but no shelter, bench, or pedestrian lighting. It is recommended that the shuttle stop for the westbound direction be upgraded to include a shelter, bench, trash bin, and pedestrian lighting.

While the crosswalk adjacent to these proposed stops has stop signs for traffic in both directions, the crossing covers five lanes of traffic, which could be uncomfortable for pedestrians to navigate. It is recommended that the adjacent crosswalk be enhanced to improve pedestrian visibility. The appropriate enhancements to implement can be determined via an engineering study and could include features such as higher-visibility striping, a median refuge, or rectangular rapid-flashing beacons that are at driver eye-level instead of in pavement. These treatments and other example crossing treatments are described in more detail in **Appendix I**.

5.2.6 West Industrial Area

The proposed shuttle stops in the West Industrial Area are yet to be determined. However, this area is notable for incomplete sidewalks and missing or unmarked crosswalks. Therefore, we recommend that pedestrian accessibility be studied once the stop locations are finalized.

5.2.7 Life Chiropractic College West

The Life Chiropractic College stop is located on Depot Road on the far side of the intersection of Clawiter Road. The stop is served by AC Transit routes 83 and 86, but features only a bus flag pole and no shelter,

bench, or trash bin. There is lighting for pedestrians provided by the adjacent College parking lot. The nearest intersection (Depot Road/Clawiter Road) is signalized and has crosswalks and pedestrian signal heads for pedestrians on all four sides, but the striping on the eastern side of the intersection is extremely worn. It is recommended that this stop be upgraded to include a shelter, bench, and trash bin for passenger comfort. It is also recommended that the eastern crosswalk at the intersection of Clawiter Road and Depot Road be repainted for improved visibility.

5.2.8 Chabot College

The proposed stop location at Chabot College would be located at the existing campus bus station, which is located in the parking lot adjacent to the north end of the main campus area and accessed via the intersection of Hesperian Boulevard and Turner Court. AC Transit routes 22, 97, M, and S serve this location. This location has amenities such as a bus flag pole, shelter, benches, and pedestrian lighting. The location also has ample pedestrian connectivity with the campus. Therefore, no additional investments or upgrades are recommended at this location. Streets in the vicinity have sidewalks on both sides of the street and have no need for new crosswalks.

5.2.9 Opening Day Route Alignment

Since the eastern-most stops would be located adjacent to proposed developments in downtown Hayward, there are two potential options for the route alignment if these developments aren't complete by the time the route begins service. One option is to have the shuttle operate only on the portion of the route west of (and including) the Hayward BART station. A second option would be to establish temporary stops near the proposed stop locations at Lincoln Landing and Maple and Main. These temporary stops would need to be placed in a different location from their ultimate position due to construction or inadequacy of the current location for serving a shuttle stop.

5.2.10 Summary of Access and Connectivity Projects

Based on the above analysis of the accessibility and connectivity of each stop, **Table 5-5** shows a summary of the potential improvement projects that could be made along the route. The improvements have been assessed qualitatively on the following metrics to assist planning staff in the prioritization of project implementation:

- Project cost to City
    - Low: Less than $10,000
    - Medium: Between $10,000 to $50,000
    - High: Greater than $50,000

- Project implementation timeline
    - Near-Term: Project should be implemented alongside rollout of shuttle service
    - Long-Term: Project implementation is not urgent, but should be implemented within a few years
- Safety need
    - Low: The project would likely not address any potential safety issues
    - Medium: The project would help address minor issues (i.e. pedestrian lighting)
    - High: The project would help address major issues (i.e. pedestrian visibility in crosswalk)
- Convenience need
    - Low: The project would not improve rider convenience while waiting at the stop location
    - Medium: The project would somewhat improve rider convenience while waiting at the stop location
    - High: The project would greatly improve rider convenience while waiting at the stop location

TABLE 5-5: PEDESTRIAN IMPROVEMENT PROJECT SUMMARY						
Project Location	**Description**	**Type**	**Cost to City**	**Implementation Timeline**	**Safety Need**	**Convenience Need**
Lincoln Landing	Provide flag pole, shelter, bench, and trash bin at stop	Stop Amenities	Medium	Near-Term	Low	Medium
Maple and Main	Provide flag pole, shelter, bench, and trash bin at stop	Stop Amenities	Medium	Near-Term	Low	Medium
Hayward Hall of Justice	Provide shelter, bench, and trash bin at stop	Stop Amenities	Medium	Near-Term	Medium	Medium
Southland Mall (westbound stop)	Provide shelter, bench, trash bin and pedestrian lighting at stop	Stop Amenities	Medium	Near-Term	Medium	Medium
Southland Mall	Enhance crosswalk visibility and comfort (ladder striping, median refuge, RRFB, etc.)	Crosswalk Treatment	Medium to High	Long-Term	High	Low
Life Chiropractic College West	Provide shelter, bench, and trash bin at stop	Stop Amenities	Medium	Near-Term	Low	Medium
Life Chiropractic College West	Re-stripe crosswalk for improved visibility	Crosswalk Treatment	Low	Near-Term	High	Low

6 IMPLEMENTATION PLAN

This section provides information about institutional approaches, costs, and funding plan for the City to deliver a shuttle service. The report outlines various methods to provide shuttle service and characteristics of the various alternatives including staffing commitments, procurement requirements and costs. This is followed by an implementation schedule and identification of potential grant funding sources for shuttle services.

6.1 INSTITUTIONAL ANALYSIS

The two most common institutional models to deliver and manage shuttle services were evaluated for the project: an Owner-Operator model (i.e. "Traditional") and a Fully-Contracted model (i.e. "Turnkey"). These two models are described in more detail below. In addition, non-traditional models such as on-demand ridesourcing services (i.e. Transportation Network Companies like Uber and Lyft) and flexible shuttle services (i.e. microtransit companies like Chariot) were considered by the City. Following the descriptions, a recommended model is detailed in terms of staff requirements and schedule and cost estimates, a preferred funding approach and other potential funding sources are then presented.

6.1.1 Owner-Operator Model

Under an Owner-Operator shuttle delivery model, the City would be directly responsible for the day-to-day operation of the shuttle route, similar to many large-scale transit agencies, such as AC Transit. This would include performing tasks such as:

- Selecting, purchasing, operating, and maintaining shuttle vehicles;
- Selecting, purchasing, installing, and maintaining shuttle stop amenities;
- Hiring and managing operators, mechanics and support staff for shuttle operations and maintenance; and
- Providing facilities for servicing and storing shuttle vehicles.

In addition, the City would need to meet state safety oversight requirements for shuttle operations. This would require a significant allocation of City staff resources and new hires to oversee and manage, as well as staff to operate all aspects of the shuttle operations. The City would have total control over operations and City staff would have direct interaction with customers of the shuttle service.

6.1.1.1 Cost

For the Winton Hybrid Loop route, the costs for an Owner-Operator delivery model depend on whether the shuttle vehicles are purchased or leased. If the vehicles are purchased, capital costs include the purchase of shuttle vehicles and amenities to be installed at stops, while operating costs include vehicle operation and maintenance, fuel, marketing, and support staff. If the vehicles are leased, capital costs include only the stop amenities. Operating costs are similar to the purchase option, because the vehicle lease cost replaces the direct operation and maintenance cost.

The total annual cost estimate of the Owner-Operator delivery model ranges from $1.2 million (lease option) to $1.45 million (purchase option) per year, which translates into a cost of approximately $116 to $140 per vehicle revenue hour per year, respectively. To develop these estimates, capital costs are amortized over a seven year period to reflect the typical service life of a transit shuttle vehicle, while operating costs are calculated on an annual basis by vehicle service miles or vehicles service hours per year, depending on the specific cost item.

The lease option is less expensive than the purchase option, primarily because the vehicle lease cost (which includes the vehicle and its operation and maintenance) of approximately $705,000 per year is less than the cost of purchasing, operating, and maintaining the same type of vehicle; approximately $888,000 per year. Most other costs between the two options are similar including fuel, marketing and supplies.

6.1.2 Fully-Contracted Model

Under a Fully-Contracted shuttle delivery model, the City would be responsible for secure funding, procuring and managing a contract shuttle operator to provide:

- Drivers and mechanics,
- Vehicles,
- Fuel,
- Insurance, and
- Dispatch services.

The contracted shuttle operator would be responsible for operation and maintenance of the shuttle service and hiring and managing the necessary support staff. The City would set up an appropriate contract with the operator specifying performance and safety standards (e.g. headway, number/type of vehicles in service, maintenance, customer satisfaction, insurance requirements, safety, etc.). To ensure performance, the City would need to monitor the operator's compliance with the performance standards and communications protocols for incidents should they occur.

This would require a lower level of effort from City staff than the Owner-Operator model, as the primary task would be oversight of the contract and not day-to-day management of city staff and shuttle operations. While the City would not need to spend as much effort and resources on day-to-day operations, it would have less control over shuttle operations and less interaction with customers than under the Owner-Operator model.

With the use of the Fully-Contracted model, the City could benefit from economies of scale to reduce costs by contracting with a shuttle operator that provides multiple services in the East Bay. Under this scenario, the City may benefit from the existing resources of contract shuttle operators including a reservoir of drivers to draw on in the event of a driver absence, existing fueling locations and maintenance facilities, and spare vehicles.

There are two variants of the Fully-Contracted model – one in which the city staff directly manages the shuttle operator and another in which the city staff hires a shuttle program management contractor to manage the shuttle contractor on its behalf. These are described in more detail below.

6.1.2.1 Option A (Shuttle Contractor Directly Managed by City)

This option is defined as the City directly managing a shuttle contractor. This would require city staff to perform certain tasks, mainly associated with procurement of the shuttle contractor, ongoing management of contract requirements and representation of the service with the public. The staffing commitment for this option would be substantially less than if the City were to provide the service with the owner-operator model. Local agencies have been known to manage shuttle operation contracts of the proposed size through existing departments such as the Public Works, Transportation Services, or a Community Services division. A primary factor in identifying a city staff program manager would include transit operations background and experience. Tasks required to be performed include:

- Manage procurement activities including development of an RFP, review of proposals, interview process and contractor selection;
- Develop the shuttle operations agreement & negotiate terms with selected contractor;
- Develop and monitor performance reporting criteria;
- Manage the shuttle operations contractor to ensure services are performed in accordance with the terms set forth in the shuttle operations agreement;
- Coordination with other transit agencies (i.e. BART, AC Transit, CSUEB Shuttle); and
- Branding, Marketing and community outreach (including schedule material).

Based on the structure and experience of the City's staff overseeing the shuttle program, the City would directly provide and/or rely on vendors to provide shuttle support services not included in the shuttle

contractors responsibilities. The City could utilize existing City resources or procurements for items such as printing, sign services, web site services, or the maintenance division. The services expected to be required include the following:

- Graphic artist;
- Printing services (i.e. schedules, brochures, fliers, bus cards);
- Bus stop sign design;
- Bus stop sign manufacturer;
- Bus stop shelter procurement;
- Contractor (or City staff) to install and/or repair shuttle service signage and shelters;
- Web site services; and
- On call Transit Planner (to evaluate and recommend initial route and schedule revisions based on actual trial runs of the service performed by the shuttle service contractor and any future route revisions that may be considered based on actual operations data).

Many of these tasks will require additional staff and financial resources to procure contracts through City procurement process and are expected to be more heavily relied on at the time of service initiation. Ongoing needs for the vendor services would be on an as needed basis (see Section 6.4 for tasks identified for start-up costs).

6.1.2.2 Option B (Shuttle Contractor Managed by Program Management Consultant)

This option is defined as the City retaining a shuttle program management firm (program manager) to provide transit management expertise and oversee the shuttle operations contractor. The program manager's duties could include many or all of the activities listed in Option A, limiting the need for City staff to directly perform tasks related to procurement of the shuttle contractor, day to day management of contract requirements and representation of the service with the public. Using an analogy to the delivery of a capital project, the program manager approach is comparable to the City engaging a construction manager to oversee the contractor building a road or building. The construction manager provides a Resident Engineer to the project, who provides inspection and manages risk, schedule, budget, and construction quality on behalf of the City. Similarly, the shuttle program manager oversees the implementation and ongoing provision of service by the shuttle operations contractor, allowing the City to minimize staff resources devoted to the shuttle and transfer some of the risks associated with operations.

This option would further reduce City staffing requirements, and the need to have staff with a transit operations focus, to implement and manage shuttle service significantly compared to Option A, especially if the City assigns the program manager a broad scope of responsibilities. The City may choose to retain

responsibility for certain aspects of the shuttle service management directly (i.e. marketing), but the staff time savings would be less in this case. The City will also have less direct control over shuttle service and interaction with customers than in Option A.

Typically, the shuttle program manager would be hired first, to support the City's procurement of the operations contractor. In this case, the program manager's scope may include preparation of RFP material and support the City's review of proposals and contract negotiations with the shuttle operator. The scope of work for the program manager could also include all anticipated service needs (i.e. graphic artist, transit planning service, web site services) and reduce time and cost associated with multiple procurements.

6.1.2.3 Cost

For the Winton Hybrid Loop route, the costs for a Fully-Contracted delivery model is described with the two variations above, with City staff providing direct management of an operations contract or with the City using a contracted program manager to provide the direct management of an operations contract. In either the Option A or B scenario, the operations contract is the larger part of the service cost in this model. The costs for Option A and B scenario are therefore similar in cost, with the main difference being in the level of city staff resources required to manage the operations contractor (with Option A requiring more city staff resource). The total annual cost estimate of the Fully-Contracted delivery model is about $1.05 million for both Option A and B. This translates into a cost of approximately $99 per vehicle revenue hour. If you remove the program management component of the cost estimate, the service is estimated to operate at about $84 per vehicle revenue hour.

6.1.3 Non-Traditional Delivery Models

Within the past few years, non-traditional models have emerged for providing first/last-mile transportation connections by utilizing smart phone application platforms and crowdsourcing of routes. Two types of non-traditional service were evaluated: on-demand ridesourcing and flexible shuttle.

On-demand ridesourcing is a service offered through private Transportation Network Companies such as Uber and Lyft. Users request a ride via a smartphone application that pairs them with a driver and other passengers traveling in a similar direction. The service primarily utilizes passenger vehicles owned by drivers that can seat up to three passengers, though larger vehicles are also be available. The service is available to anyone with the smartphone application. This model would be managed similar to a fully-contracted model, in which the City would need to establish and monitor an agreement with the provider(s). City staff engaged with some local on-demand ridesourcing providers, but found they would not be as cost-effective as other models nor meet the goals and needs of the City, so this model was no longer considered.

Flexible shuttle services (also referred to as "microtransit") are also offered through private companies, examples of which are Chariot and Via. The shuttle service is set up as a fixed-route that is adjusted over time based on online feedback from users (i.e. routes/stops are crowdsourced online or via a smartphone application). Users register with the provider and use either a smartphone application or internet browser to make seat reservations. The shuttle service typically uses specially-branded vans that can carry up to 14 passengers. This model would also be managed similar to a fully-contracted model, in which the City would need to establish and monitor an agreement with the provider. Due to the start-up nature of these providers, this flexible shuttle model could be cheaper than the traditional methods discussed above.

6.1.4 Selection of Preferred Institutional Alternative

Based on the models that have been used to provide similar services (to the Winton Hybrid Loop shuttle service), variations of two service models were explored, an owner-operator model and a fully contracted model. The City has recommended the pursuit of the fully-contracted model to implement the Winton Hybrid Loop shuttle service. Goals considered in evaluating the options included the provision of the service with a cost efficient model, as well as minimizing the administrative requirements on the existing City departments and the need for additional staff. The fully-contracted model is the lower cost option, through the use of operations contracts for items such as vehicles, vehicle operators, fuel, insurance and dispatcher. This model also provides the benefit of a larger pool of resources with transit operation expertise than would likely be available in the event the City were to act in an owner operator capacity for the relatively small amount of service for the proposed route.

With a similar cost structure, the City has two alternatives to implement the route under the fully contracted delivery model. The City can identify (or hire) a new staff resource to manage the operator contract directly or procure the services of a transit program manager for the role. With the procurement of a transit program manager, the City would effectively minimize the role of "in house" City staff to a project and grant manager role. Whether the City directly manages or secures the services of a transit program manager, both options are similar in the overall cost. A primary factor in the decision to utilize City staff or a transit program manager would be the availability of City staff with transit operations background and experience. The utilization of the program manager variation of the fully contracted model could provide the City with additional transit operations experience and could include a team that will provide the wide array of needs for the operation of the route and minimize the need to procure multiple smaller contracts/vendors.

6.2 ROLES AND RESPONSIBILITIES

In **Table 6-1** below, the lead role of the City (or a program manager) and the shuttle operator are specified for both Fully-Contracted Model Option A and Fully-Contracted Model Option B.

TABLE 6-1: SHUTTLE PROGRAM ROLES AND RESPONSIBILITIES		
Responsibilities	**Option A**	**Option B**
Procurement of Program Manager Consultant*	N/A	City
Procurement of Shuttle Operations Contractor*	City	Program Manager
Service Implementation: • Service Branding • Development of Route Guides • Development of Website Content & Design • Development of Bus Stop Signage Content & Design • Development of Bus Stop Signage Installation scope of work (for City Public Works) • BART Coordination (identify designation of curb space & sign permitting) • Development of Shuttle Operation Protocols & Reporting Templates (ridership reports, on-time performance reports, etc.)	City	Program Manager
Bus Stop Signage Installation & Maintenance	City	City
Develop Marketing Plan and Implement (Route Guides, Website, Signage, Rider Notifications, etc.)	City	Program Manager
Vehicle Procurement	Shuttle Ops Contractor	Shuttle Ops Contractor
Vehicle Storage Facility	Shuttle Ops Contractor	Shuttle Ops Contractor
Vehicle Maintenance Resources	Shuttle Ops Contractor	Shuttle Ops Contractor
Establishment of Fueling Resources	Shuttle Ops Contractor	Shuttle Ops Contractor
Operator Recruitment & Retention	Shuttle Ops Contractor	Shuttle Ops Contractor
Insurance	Shuttle Ops Contractor	Shuttle Ops Contractor
Dispatch & Operations Management Services: • Assignment & Management Shuttle Operators • Respond to Rider Inquiries • Distribution of Rider Notifications • Complete Ridership & Performance Reports • Ensure services are performed in accordance to scope of work and shuttle operation protocols.	Shuttle Ops Contractor	Shuttle Ops Contractor
Monitor program manager contract performance	N/A	City
Monitor ridership & performance reporting	City	Program Manager
Preparation of Ridership & Performance Summaries (for City Council, Funding Partners, etc)	City	Program Manager
Identify & implement route and/or schedule modifications	City	Program Manager

6.3 STAFFING REQUIREMENTS

Table 6-2 below reflects the staffing requirements for the two Fully-Contracted delivery options based on similar shuttle operations in the San Francisco Bay Area. Option A includes resources provided completely by a City Staff Shuttle Manager position. In contrast, Option B includes the majority of Program Manager staff resources provided by a program management contractor.

TABLE 6-2: SHUTTLE PROGRAM ROLES AND RESPONSIBILITIES – FULLY-CONTRACTED MODEL

Role	Provided By	Number of Full Time Equivalent	
		Option A	Option B
Shuttle Manager	City	0.30	0.1
Program Manager	Program Manager	N/A	0.25
Operations Manager/Dispatcher	Shuttle Operations Contractor	1	1
Shuttle Operators	Shuttle Operations Contractor	5	5
Vehicle Maintenance Team	Shuttle Operations Contractor	0.25	0.25

6.4 SCHEDULE

The schedules below are estimates of timeframes required for procurement of services for a typical public agency procurement process, with the assumption of a 4-week advertisement period.

The schedules detailed below assume that City staff that will provide the Program/Project Manager. Additional time would be required if new City staff personnel are required. The overall timeframe for Option A would be approximately 6 months, while the timeframe for Option B would be slightly longer, approximately 10 months, due to the added time needed to bring on board a program manager, but would include the Program Manager position as well as other services (i.e. transit planner, graphic designer, sign manufacturer) that would not need to be identified at a later date. Reduction in procurement time frames is possible, but would depend on the extent of expedited review of material by the City. Certain service implementation items can also be performed concurrently with the Shuttle Operations Procurement Process.

Program Manager Procurement (Required only for Fully-Contracted Model Option B)
Approximately 16 weeks

- Prepare and Release RFP (with City Council approval)
- Release RFP
- Receive and evaluate proposals and prepare recommendation

- City Council Approval

Shuttle Operator Procurement
Approximately 16 weeks

- Prepare and Release RFP (with City Council approval)
- Release RFP (4-week advertisement)
- Receive and evaluate proposals and prepare recommendation
- City Council Approval

Service Implementation
Approximately 8-12 weeks

- Service Implementation:
  - Service Branding
  - Development of Route Guides
  - Development of Website Content & Design
  - Development of Bus Stop Signage Content & Design
  - BART Coordination (identify designation of curb space & sign permitting)
  - Development of Shuttle Operation Protocols & Reporting Templates (ridership reports, on-time performance reports, etc.)
- Bus Stop Signage Installation & Maintenance
- Develop Marketing Plan and Implement (Route Guides, Website, Signage, Rider Notifications, etc.)
- Shuttle Operations Contractor Responsibilities
  - Vehicle Procurement
  - Vehicle Storage Facility
  - Vehicle Maintenance Resources
  - Establishment of Fueling Resources
  - Operator Recruitment & Retention
  - Insurance

6.5 COST

6.5.1 Startup and First Year Costs

The cost of the proposed service is broken out by Start-up (**Table 6-3**) and Annual Operating Costs (**Table 6-4**). The implementation of the start-up tasks would be completed by City staff or a Program Manager, based on the delivery option selected.

TABLE 6-3: ESTIMATED START-UP COSTS			
Task	**Estimate of Hours**	**Cost**	
		Option A	**Option B**
Procurement of Program Manager	30	N/A	$ 6,000
Procurement of Shuttle Operator	60	$ 12,000	$ 12,000
Service Implementation	120	$ 24,000	$ 24,000
Vendor Expenses (route guides, sign manufacturing & installation, website development, etc.)		$ 30,000	$ 30,000
Subtotal Start-up Costs		***$ 66,000***	***$ 72,000***

TABLE 6-4: ESTIMATED ANNUAL OPERATING COSTS				
Task	**Option A**		**Option B**	
	Estimate of Hours	**Cost**	**Estimate of Hours**	**Cost**
Shuttle Oversight (City Staff)	650	$ 130,000	175	$ 35,000
Program Oversight (Contracted)	N/A	N/A	525	$ 105,000
Transit Planning Services	50	$ 10,000	50	$ 10,000
Shuttle Operator (Revenue Hours)	10,440	$ 600,000	10,440	$ 600,000
Vehicle Expense (Revenue Hours)	10,440	$ 220,000	10,440	$ 220,000
Fuel Expense (Revenue Hours)	10,440	$ 60,000	10,440	$ 60,000
Vendor Expenses (route guide production, website maintenance, etc.)	N/A	$ 10,000	N/A	$ 10,000
Subtotal Annual Operating Cost		***$ 1,030,000***		***$ 1,040,000***

Note: Cost numbers are rounded to the nearest $1,000

Assumptions:

- Operating hours are 8AM – 6PM Monday through Friday (about 261 days per year)
- One route with a frequency of 15 minutes
- Five 30-passenger capacity "cut away" shuttle vehicles (includes four vehicles to operate the service plus one spare vehicle for maintenance rotation)

The cost of implementing either Option A or B is similar, with the primary difference between the two models being the management of the contracted operator directly by the City or through a contracted program manager. The total annual cost estimate of the Fully-Contracted delivery model is about $1.04 million for both option A and B in this model. This translates into a cost of approximately $100 per vehicle revenue hour. If you remove the management component of the cost estimate, the service is estimated to operate at about $84 per vehicle revenue hour. These costs are based on conservative estimates of the

effort and resources required to provide the service. A lower-cost approach to implementing the route would be to change the initial hours of operation to peak period only service (7-9 AM, 4-6PM).

There is also the potential for lower-cost turnkey or flexible, non-traditional shuttle operators to provide the service at a lower cost. The City received a quote from a microtransit provider that was approximately $330,000 per year (around $55 to $65 per revenue hour) for a Winton Avenue service, which demonstrates this potential. This quote has not been verified.

6.5.2 Comparison with Peer Systems

Route productivity and efficiency compared with peer systems is presented below in **Table 6-5**. Productivity for the Winton Loop Hybrid Route is within the range of, although below average, of similar systems. The cost per revenue hour for the proposed route Fully-Contracted model would be similar to most of the peer systems, all of which are also Fully-Contracted systems.

TABLE 6-5: PEER SYSTEM METRICS

System Name	Annual Boardings	Ridership/Service Hour	Ridership/ Service Mile	Cost/ Revenue Hour
San Leandro Links	191,646	44.4	4.1	$72.92
Palo Alto Shuttle	166,050	28.4	1.0	$58.11
Irvine iShuttle	249,750	11.7	1.6	$121.89
Alameda Estuary Crossing	86,400	40.0	3.5	$96.30
Winton Loop Hybrid Route	164,430	14.3	1.3	$100.57

6.5.3 Five-Year Cost Projection

The estimates shown in **Table 6-6** and **Table 6-7** below details the costs for shuttle service for the next 5 years under Option A and Option B. This financial plan is based on the Winton Loop Hybrid Route, operating on 15 minute headways between 8 AM and 6 PM on weekdays, using 30 passenger "cut away" shuttle buses. The service would be operated using the Fully-Contracted option.

TABLE 6-6: ESTIMATED ANNUAL OPERATING COSTS – OPTION A						
Item	**2017**	**2018**	**2019**	**2020**	**2021**	**5-Year Total**
Labor	$ 600,000	$ 630,000	$ 661,500	$ 694,575	$ 729,304	$ 3,315,379
Vehicle	$ 220,000	$ 231,000	$ 242,550	$ 254,678	$ 267,411	$ 1,215,639
Fuel	$ 60,000	$ 63,000	$ 66,150	$ 69,458	$ 72,930	$ 331,538
Subtotal Shuttle Operations	**$ 880,000**	**$ 924,000**	**$ 970,200**	**$ 1,018,710**	**$ 1,069,646**	**$ 4,862,556**
Shuttle Management	$ 150,000	$ 157,500	$ 65,375	$ 173,644	$ 182,326	$ 828,845
SUBTOTAL Operations & Management	**$ 1,030,000**	**$ 1,081,500**	**$ 1,135,575**	**$ 1,192,354**	**$ 1,251,971**	**$ 5,691,400**
Start-up Expenses	$ 66,000	-	-	-	-	$ 66,000
TOTAL	**$ 1,096,000**	**$ 1,081,500**	**$ 1,135,575**	**$ 1,192,354**	**$ 1,251,971**	**$ 5,757,400**

Assumptions:

- Five percent escalation rate

TABLE 6-7: ESTIMATED ANNUAL OPERATING COSTS – OPTION B						
Item	**2017**	**2018**	**2019**	**2020**	**2021**	**5-Year Total**
Labor	$ 600,000	$ 630,000	$ 661,500	$ 694,575	$ 729,304	$ 3,315,379
Vehicle	$ 220,000	$ 231,000	$ 242,550	$ 254,678	$ 267,411	$ 1,215,639
Fuel	$ 60,000	$ 63,000	$ 66,150	$ 69,458	$ 72,930	$ 331,538
Subtotal Shuttle Operations	**$ 880,000**	**$ 924,000**	**$ 970,200**	**$ 1,018,710**	**$ 1,069,646**	**$ 4,862,556**
Program Management	$ 160,000	$ 168,000	$ 176,400	$ 185,220	$ 194,481	$ 884,101
SUBTOTAL Operations & Management	**$ 1,040,000**	**$ 1,092,000**	**$ 1,146,600**	**$ 1,203,930**	**$ 1,264,127**	**$ 5,746,657**
Start-up Expenses	$ 72,000	-	-	-	-	$ 72,000
TOTAL	**$ 1,112,000**	**$ 1,092,000**	**$ 1,146,600**	**$ 1,203,930**	**$ 1,264,127**	**$ 5,818,657**

Assumptions:

- Five percent escalation rate

6.6 FUNDING SOURCES

The City is proposing to pursue grant opportunities to fund the proposed shuttle service. As part of the City's ongoing application to the Alameda CTC Capital Improvement Program (CIP) process, the request for shuttle funding will be considered for multiple funding sources. Grant funding programs eligible to fund shuttle services are detailed in **Table 6-8** below, including the fund sources that will be evaluated through the Alameda CTC CIP process. Shuttle funding sources often have specific requirements such as matching

funding or cost effectiveness criteria that may limit the amount of funds awarded to a project. For instance, projects competing for funding through the BAAQMD programs are often limited in the amount of grant funds awarded by a cost effectiveness based evaluation (i.e. the more riders and therefore vehicle trips the shuttle service will effectively reduce relative to the cost of providing the shuttle service). The City can expect to need to secure grants from more than one source, which will also assist in meeting grant matching requirements. Identifying funding from a local source(s) will also assist in securing other grant funds. In general, the ability to demonstrate the proposed shuttle service's reduction of vehicle congestion and vehicle trips, support of priority development areas and disadvantaged communities, and regional benefits the service provides will support shuttle service grant requests.

In the event additional and/or local funding is required, the City could also consider pursuing the creation of a new local funding source. One option is the creation of a property based improvement district (PBID). Pursuit of a PBID would require a further study to define the district, benefits, proposed special assessment fees and a ballot process of affected property owners to consider approval.

TABLE 6-8: POTENTIAL FUNDING SOURCES				
Grant Funding Program	**Source of Revenue**	**Programming Agency**	**Revenue Potential**	**Eligibility Guidelines**
Alameda CTC (Through CIP Process)				
Community Development Investment	Measure BB Sales Tax	ACTC	$1.5M per year countywide	Transit that facilitates transit-oriented growth • Eligibility includes transit operations • Revenue represents amount eligible for non-infrastructure component of this program • Maximum grant of $500k for shuttle operations • 50% match required
Transportation Fund for Clean Air (TFCA) Program Manager Funds *City/County Shares 70%*	Vehicle Registration Fee	ACTC	$131k per year for Hayward ($1.4M per year countywide)	Shuttle/Feeder Bus Service • City of Hayward share of these funds currently oversubscribed • Project required to meet cost effectiveness standards for emissions reduced • Consideration in evaluation process for pilot project services as well as for services in Air District Community Air Risk Evaluation (CARE) areas • Coordination with local transit agency required • TFCA collected by the Bay Area Air Quality Management District (BAAQMD) and programmed by ACTC
TFCA Program Manager Funds *Transit Discretionary 30%*	Vehicle Registration Fee	ACTC	$586k per year countywide	Shuttle/Feeder Bus Service • Programmed to transit-related projects on a discretionary basis • This component of the TFCA program is current oversubscribed • Project required to meet (and evaluated) on cost effectiveness standards for emissions reduced • Consideration in evaluation process for pilot project services as well as services in Air District CARE areas • Coordination with local transit agency required • TFCA collected by the BAAQMD and programmed by ACTC

TABLE 6-8: POTENTIAL FUNDING SOURCES				
Lifeline Transportation Program	State Transit Assistance Funds Section 5307 JARC	ACTC	$3M per year countywide	New or enhanced fixed route transit services, restoration of Lifeline-related transit services and shuttle • Cycle 5 of the program is anticipated to include FY17 funding • City may be required to partner with eligible transit agency for these fund sources • ACTC identifies the programming priority of the MTC program
Transit Grant Program *Innovative and emerging transit projects*	Measure BB Sales Tax	ACTC	$3M per year countywide	Innovative and emerging transit projects • Priority for projects that contribute significantly to furthering countywide access to and expansion of transit services • Eligibility includes transit service expansion and preservation to provide congestion relief
Transit Grant Program *Transit for Congestion Relief Program*	Vehicle Registration Fee	ACTC	$2.85 M per year countywide	Maintain and improve the County's transportation network and promote the reduction of vehicle-related emissions through congestion relief, alternative transportation, or innovative transportation strategies • Priority for projects that contribute significantly to furthering countywide access to and expansion of transit services • Eligibility includes transit service expansion and preservation to provide congestion relief
Bay Area Air Quality Management District (BAAQMD)				
Regional TFCA Existing Shuttle/Feeder Bus Service and Rideshare Service	Vehicle Registration Fee	BAAQMD	Up to $ 4 M (in 9 County Air District in FY 2017)	Pilot Trip Reduction —in CARE areas or Priority Development Areas (PDAs) • FY2018 guidelines expected to be available in Summer 2017 • Project required to meet cost effectiveness standards for emissions reduced • Projects prioritized on cost effectiveness • Consideration in evaluation for Pilot Project services as well as for services in Air District CARE areas • Coordination with local transit agency required • Cannot be combined with TFCA Program Manager funding

6.7 NEXT STEPS

As the City moves forward to implement the shuttle service on the Winton Loop Hybrid Route, next steps to consider include first securing funding, and then once the funding plan is solidified and approved to implement the service. The steps are outlined below:

Secure Funding

- Identify City staff to:
  - Secure commitments for local fund sources
  - Build community support for the project
  - Monitor ACTC CIP Process
  - Monitor BAAQMD for release of the Regional TFCA Shuttle program and evaluate the application opportunity (late Spring/early Summer)

Once Funding Plan Identified and Approved

- Execute funding / grant agreements
- Draft RFP scope (for program manager or operations contract)
  - Ensure procurement process meets grant requirements
- Initiate outreach discussion on how to inform the community of the new service
- RFP process (based on option selected, may include more than one RFP)
  - Release, evaluate and award contract
- Service implementation
  - Service branding/route guides/website
  - Coordination with other transit operators
  - Development of shuttle operation protocols & reporting templates
- Bus stop signage tasks
- Develop marketing plan and implement
- Agree on shuttle operations contractor schedule for responsibilities, including
  - Vehicle procurement
  - Vehicle storage facility
  - Vehicle maintenance resources
  - Establishment of fueling resources
  - Operator recruitment & retention
  - Insurance