



SOUTH HAYWARD BART STATION ACCESS AUTHORITY

# SOUTH HAYWARD BART PARKING & ACCESS STUDY

FINAL REPORT

JANUARY 2013





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**SOUTH HAYWARD BART PARKING & ACCESS STUDY**  
South Hayward BART Station Access Authority

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# 1 INTRODUCTION

A May 2011 South Hayward BART Access Study highlighted multimodal access issues and recommended the formation of a Joint Powers Authority between San Francisco Bay Area Rapid Transit District (BART) and the City of Hayward to implement that report's access strategies. The South Hayward BART Station Access Authority ("Authority") was subsequently established in September 2011 to manage parking and access around the South Hayward BART station. The Authority consists of two members: the City of Hayward and BART.

It is critical that the parking and access needs of both BART patrons and those of the South Hayward community are met as the area continues to develop and change. The purpose of this Parking & Access Study is to identify the Authority's initial and future activities in regards to parking and access.

## PROJECT SUMMARY

This study is primarily concerned with the management of parking in the project area. In the near term, various improvement projects and development will reconfigure the available parking at the South Hayward BART Station. Managing the parking ramifications of these projects and ensuring that new development does not adversely affect BART patrons or neighborhood residents is the focus of this report.

## REPORT STRUCTURE

This report begins with a brief description of the surrounding context, existing parking conditions, and the results of parking occupancy and turnover analyses conducted in January 2010 and November 2011. The parking survey discussed in Chapter 2 documents existing parking supply and the current parking demand at the station, including the extent to which BART patrons park in the surrounding neighborhoods. Understanding the magnitude of parking demand is important to inform the appropriate response to planned removal of some of the existing parking supply. In Chapter 3, the report outlines two alternatives to accommodate existing parking demand given decreased parking supply due to both future development of the BART East Lot along Dixon Street and a future Dixon Street reconfiguration. These alternatives also identify potential effects on the neighborhood around the station and strategies to mitigate negative impacts. Next, Chapter 4 investigates the potential initiation of parking fees, parking regulations, and enforcement activities. Financial impacts are discussed in Chapter 5, followed by an implementation strategy for the Authority in Chapter 6.



## 2 PARKING ANALYSIS

### DEFINITION OF THE STUDY AREA

For the purposes of this report, the study area delineates only a portion of the South Hayward BART catchment area. The study area approximates the current limits of the Authority boundary, or roughly a ¼-mile of the station (Figure 2-1).<sup>1</sup> Network analysis in GIS was used to determine the ¼-mile walk from the station entrance. At average walking speed, walking a ¼-mile takes roughly five minutes, which is the most desirable maximum walking distance for commuters who drive to and park at the station.

The Authority purview contains predominately local residential streets. However, there are a few major residential collector streets within the boundary, including Dixon Street, immediately east of and adjacent to the station, and Tennyson Road immediately north of the station. Mission Boulevard bounds the eastern edge of the Authority boundary and is a four-lane commercial arterial with a variety of local services, including restaurants, hotels, and auto body shops.

### PARKING ISSUES

The Hayward Police Department has received no recent complaints about BART commuter parking from residents and businesses in the vicinity of the BART station.

### PARKING SUPPLY

The 2011 BART South Hayward Access Study gauged the number of BART-owned, off-street parking spaces and on-street public parking spaces in January 2010. To corroborate these findings, an inventory of parking spaces both within a ¼-mile walking distance from the station and in the BART lots was conducted in November of 2011. The parking supply of on-street spaces along Tennyson and Mission Blvd were provided by the City of Hayward.

#### Off-Street Supply

The November 2011 off-street parking inventory surveyed automobile, motorcycle, and bicycle parking in two BART parking lots: the BART Main Parking Lot adjacent to the BART entrance (divided into three lots for purposes of analysis: the north, center and south lots) and the BART East Parking Lot across Dixon Street from the station entrance, as illustrated in Figure 2-1.

<sup>1</sup> The study area includes a portion of Tennyson Road and Valle Vista Avenue beyond a ¼ mile of the station. Refer to the Authority Boundary Map in Appendix B.



The BART Main Parking Lot includes the off-street parking west of Dixon Street, and supplies all 27 of the station's disabled parking spaces<sup>2</sup>, all 39 reserved parking spaces, two BART employee parking spaces, and 10 motorcycle parking spaces. There are 78 regulated (reserved, disabled, BART official, and motorcycle) spaces and 1,012 unregulated off-street spaces in the Main Parking Lot.<sup>3</sup> The 39 reserved monthly spaces available in the Center lot are priced at \$42 per month. Unoccupied reserved parking spaces become available to any BART rider after 10 AM. The remaining 96% of the spaces are available without charge on a first-come, first-served basis.

The BART East Parking Lot is located across Dixon Street, east of the BART Main Parking Lot and contains 174<sup>4</sup> unregulated, free of charge spaces. There are a total of 1,264 off-street parking spaces at the station. Figure 2-2 details the capacity of each lot and the proportion of off-street parking in the Main Parking Lot and the East Parking Lot. Figure 2-1 graphically identifies the location of each of the four BART lots and their total capacity.

Figure 2-2 Off-Street Parking Supply

Zone	Un-regulated	Reserved	Disabled	BART Official	Motor-cycle	Total Capacity	Share of Parking at BART Station
	Parking Capacity						
North Lot	382	0	12	2	10	406	32%
Center Lot	65	39	0	0	0	104	8%
South Lot	565	0	15	0	0	580	46%
Subtotal Main Lot	1,012	39	27	2	10	1,090	86%
East Lot	174	0	0	0	0	174	14%
BART Lots Subtotal	1,186	39	27	2	10	1,264	100%

Data collected by Nelson\Nygaard in November 2011.

### On-Street Supply

Because BART patrons may park on streets surrounding the station, the parking surveys in 2010 and 2011 included streets within the Authority boundary. The inventory examined parking regulations on all block faces<sup>5</sup> in the study area. Special note was made of no parking zones, disabled parking areas, street sweeping, and other restrictions.

Because there are mostly no delineated parking spaces for on-street parking in the area surrounding the station, the number of available parking spaces was estimated by measuring the length of curb between the parcel lines at each corner of each block where parking is allowed. Each of these curb lengths was divided by 20 feet, a typical length for a parking space. The resulting number of parking spaces was multiplied by 2/3 to account for the proportion of the block length typically unavailable to parking due to curb cuts, fire hydrants, etc. This figure was checked against representative blocks and adjusted where necessary. The actual number of

<sup>2</sup> In conformance with ADA, it is recommended that all designated disabled parking needed in the study area remain close to the station.

<sup>3</sup> An analysis is currently being done to determine the feasibility of increasing the number of parking spaces in the main BART parking lot through restriping the parking stalls from a width of 8'-6" to 8'.

<sup>4</sup> BART official records list this lot as having a capacity of 173 spaces. This inventory found 174 spaces.

<sup>5</sup> A block face is the entire length of one side of the street between two consecutive intersections (without regard to driveways or other interruptions within the block).

parking spaces on a street face may vary, depending on how “tightly” cars are parked. As a result, the inventory may estimate fewer spaces than are actually used, if drivers are parked very close together.

The current on-street parking supply within the Authority boundary is about 533 spaces. Figure 2-1 displays the supply of on-street and off-street parking within the Authority boundary. Darker blue lines indicate block segments with the highest number of on-street parking spaces, while lighter blue block faces contain relatively fewer on-street spaces. **Consequently, before considering planned parking supply changes (discussed in Chapter 3), there are currently a total of 1,797 spaces within the current Authority boundaries.**

## Parking Restrictions

Within the ¼-mile study area, parking regulations restrict some parking availability, which temporarily decreases the effective supply. Parking is restricted along Dixon Street adjacent to the station entry two mornings every other week from 7:00 AM until 11:30 AM. Along the west side of Dixon Street (for four blocks within the Authority), street sweeping prohibits parking on the 1<sup>st</sup> and 3<sup>rd</sup> Tuesday mornings. On 1<sup>st</sup> and 3<sup>rd</sup> Wednesday mornings, street sweeping prohibits parking along the east side of Dixon Street. The City of Hayward enforces the parking restriction along Dixon Street during street sweeping, issuing between five and ten tickets on these mornings.

In addition, parking is not permitted on the following street segments within the Authority:

- Adjacent to Vista Park on both sides of Valle Vista Avenue
- Along Mission Boulevard
- Along Tennyson Road

Temporary parking restrictions due to street sweeping drop the effective supply of 1,797 spaces by approximately 65 spaces two mornings every other week, subject to change.

## PARKING DEMAND

Parking demand was observed on the first three days of November 2011 between 6:00 AM and noon, investigating both on-street and off-street parking occupancy. A similar occupancy survey was conducted in January of 2010 for the South Hayward BART Station Access Study. The objective of this updated survey is to verify the findings and monitor recent trends in parking demand. For this report, the survey area was confined to the Authority boundary (illustrated in Figure 2-1).

## Parking Occupancy

### Off-Street Parking

As discussed in the parking supply section, BART provides 1,264 parking spaces in its lots at the South Hayward BART station. One of these lots, the Main Lot adjacent to the station, for the purposes of this study can be divided into three: North, Center, and South. The East lot, on the east side of Dixon Street, is slightly farther from the station entrance.

These four BART lots were surveyed in January 2010. For that survey, the lots were checked twice per day, at 9:00 AM and again at 11:30 AM, to understand not only how many people parked in the lots but also when people tend to arrive at BART. For the current survey, off-street parking

spaces in the four BART lots were surveyed just once each day, at noon on Tuesday, Wednesday, and Thursday, November 1, 2, and 3, 2011. The off-street lots are almost exclusively, if not exclusively, used by BART commuters, who generally arrive in the morning and park for the day. Consequently, measuring occupancy at noon provides a fairly accurate snapshot of peak parking demand at the station.

As shown in Figure 2-3, in November 2011, there were only ten empty spaces in total, eight of them in the East lot, at a slightly longer walking distance from the station than the other lots. All of the empty spaces were in unregulated areas—there were no empty reserved, disabled, or BART official spaces. See Figure 2-4 for a map of the average off-street occupancy.

Figure 2-3 Off-Street Parking Occupancy

Zone	Total Capacity	Total Occupied Spaces	Total Empty Spaces	Occupancy %
North Lot	406	405	1	99.8%
Center Lot	104	104	0	100.0%
South Lot	580	579	1	99.8%
East Lot	174	166	8	95.4%
<b>BART Lots</b>	<b>1264</b>	<b>1254</b>	<b>10</b>	<b>99.2%</b>

Data collected by Nelson\Nygaard in November 2011.

Both the 2010 and 2011 surveys found that midday, midweek, BART lot occupancy is very high; in fact, it was higher in November 2011 than it had been in January 2010. The earlier survey in January 2010 found that the three main lots almost fill to capacity by midday, and that as lots reach capacity BART patrons tend to park on Dixon Street rather than in the BART East lot, which is across Dixon Street. This may be because the street parking on Dixon is unrestricted (except during street sweeping), and because parking there is slightly more convenient to the station than the BART East Lot.

The November 2011 survey observed the same occurrence: Dixon Street adjacent to the station filled with cars in conjunction with the BART East Lot. However, whereas in 2010, both the BART East Lot and on-street parking along Dixon Street in front of the station filled to approximately 40% of capacity, by late 2011, these areas filled to over 95% of capacity. In November of 2011 the BART Main Parking Lot was 100% full at noon on three days, and Dixon Street in front of the station housed more cars than spaces, implying that some cars were illegally or very tightly parked there. See Figure 2-5 for a comparison of the occupancy rates found in the two surveys.

Figure 2-4 Noon BART Parking Lot Occupancy, November 2011

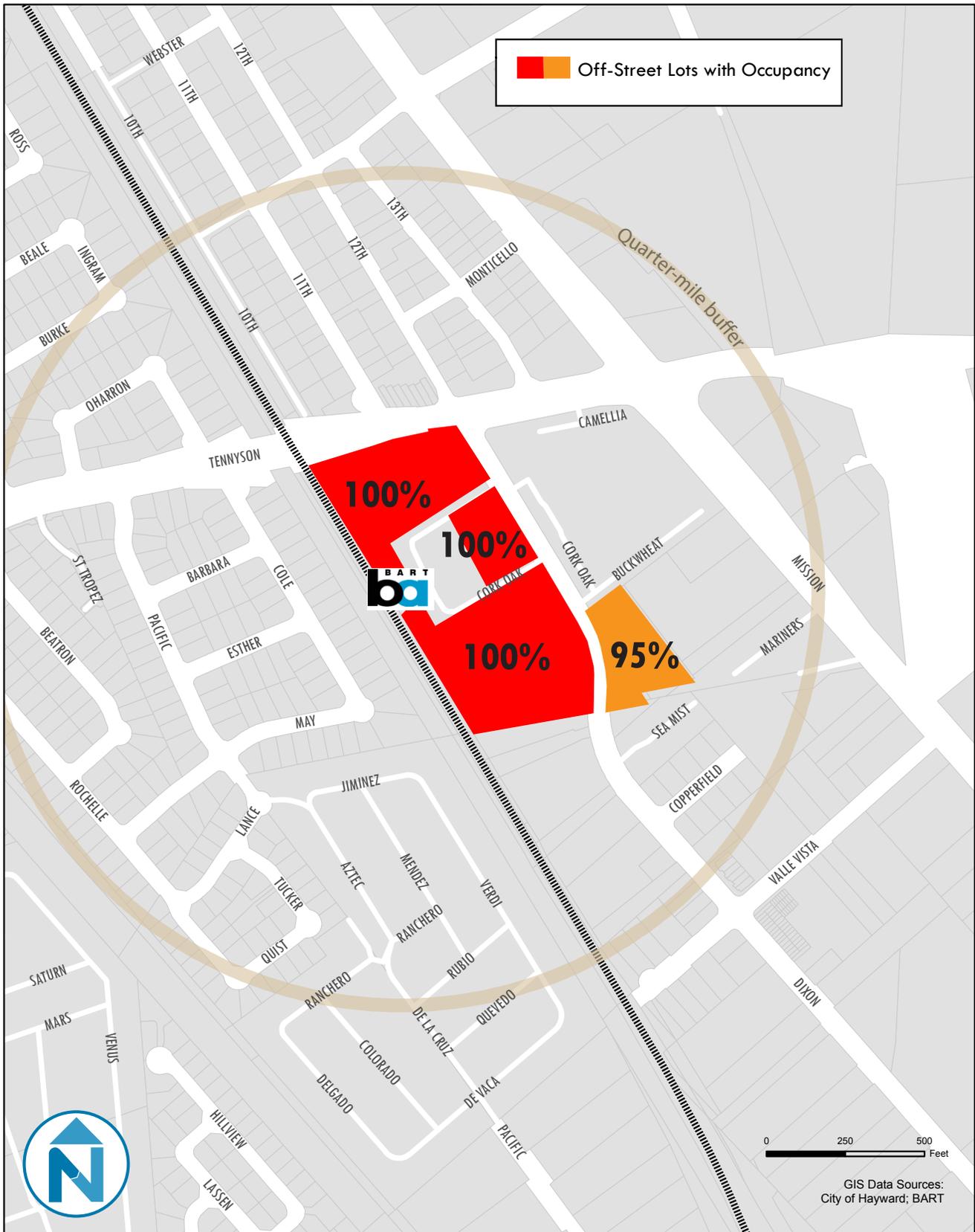


Figure 2-5 Off-Street Parking Occupancy Rates, 2010 and 2011

Zone	Parking Capacity	January 2010		November 2011	
		11AM Occupancy	11AM % Occupancy	Noon Occupancy	Noon % Occupancy
BART Main Parking Lot	1090	1070	98%	1088	100%
BART East Parking Lot	174	68	39%	166	95%
BART Lots Subtotal	1264	1138	90%	1254	99%
Dixon Street Parking (Tennyson-Sea Mist)	66	28	42%	69	104%
Total including Dixon St	1330	1166	86%	1322	99%

Data collected by NelsonNygaard in January 2010 and November 2011.

The following section addresses potential causes of this increase in occupancy at the South Hayward BART station.

### Regional Initiatives & Parking Demand

The surge in off-street parking in the BART East Parking Lot from 39% occupancy to 95% occupancy in less than two years could be a result of a number of factors. One indicator of the improving regional economy is increased ridership and parking demand throughout the BART system. After dipping in 2008 and 2009, BART ridership has rebounded, and BART staff indicates that parking lots throughout the system seem to be fuller in the last year. However, this observation has not been quantified,<sup>6</sup> but it helps to contextualize the increase in parking demand at the South Hayward BART Station. A few regional initiatives, including increasing the cost of driving to San Francisco and parking at other stations, may also be contributing to increased parking occupancy at this station.

A \$2.50 toll for crossing the Bay Bridge was implemented on July 1, 2010 for carpoolers who had previously crossed for free. The fee for vehicles with fewer than three occupants crossing the bridge increased from \$4 to \$6 during the weekday peak period. As a result of these toll increases, many drivers may have switched modes, choosing to take BART across the San Francisco Bay. The increased utilization of the off-street parking lots at the South Hayward BART Station may be partially caused by this toll increase. In fact, BART ridership at all three stations (Hayward, South Hayward and Union City stations) did increase after the initiation of higher tolls in mid-2010, as illustrated in Figure 2-6 and Figure 2-7.

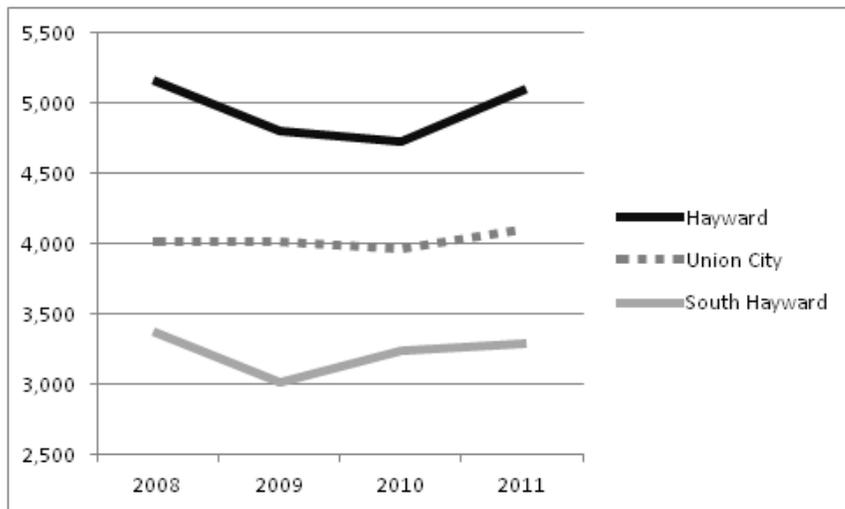
Additionally, increased parking demand at South Hayward may be a result of parking fee implementation at neighboring BART stations. The closest station to the south, Union City, began charging for parking in recent years. BART has charged a \$1 daily fee to park at the Union City station since April of 2009, and the City of Union City began charging for parking at adjacent City-owned parking lots and streets near the station in March 2010. The daily parking fee in the City-owned lots is \$3, or \$2/day if a quarterly parking pass is purchased<sup>7</sup>. On-street parking near the station costs \$0.50/hour with no time limit from 8AM to 8PM. As a result of the parking fees, parking utilization has fallen in the two City-owned parking lots. Utilization remains high at the BART-owned Union City parking lot, where the daily fee is still \$1. Ridership at Union City has

<sup>6</sup> This study does not analyze behavior at other BART stations.

<sup>7</sup> In Union City, quarterly parking permits cost \$120, which amounts to roughly \$2/day assuming patrons park Monday-Friday over three months.

remained steady through both parking fee introductions, which could be a result of more patrons accessing the station by other modes than park and ride, partially by the addition of new transit-oriented development at the station. The slight increase in ridership at South Hayward between 2010 and 2011 (Figure 2-6) could be a result of park and ride patrons shifting from Union City to South Hayward. However, the ridership increase at Hayward, which is further away from Union City than South Hayward, is even larger than at South Hayward, so it is uncertain whether the increase in ridership at South Hayward can be attributed to the \$3 fee introduction in the City-owned lots in Union City.

Figure 2-6 Ridership at Hayward, Union City, and South Hayward BART Stations



Data provided by BART for November 2008, 2009, 2010 and 2011.

Figure 2-7 Average Weekday Ridership

Station	Average Weekly Entries (Excluding Holidays)					Station Total
	11/3/2008-11/14/2008	11/2/2009-11/13/2009	11/1/2010-11/12/2010	10/31/2011-11/11/2011	% Change (2008-2011)	
Hayward	5,153	4,799	4,728	5,092	-1.18%	19,772
Union City	4,014	4,019	3,967	4,102	2.19%	16,102
South Hayward	3,363	3,008	3,239	3,294	-2.05%	12,904

Data provided by BART for November 2008, 2009, 2010 and 2011.

### On-Street Parking

To gauge on-street parking demand, surveyors recorded the number of cars parked within each street segment within the Authority boundary.<sup>8</sup> Many of the on-street parking spaces available near the station are in residential areas, so it was important to find a way to separate resident parking from BART commuter parking. To achieve this, the areas were surveyed twice (in both January 2010 and November 2011), once at 6:00 AM and again at 11:00 AM. An effort was made

<sup>8</sup> The Nelson\Nygaard on-street parking average occupancy analysis incorporates posted parking restrictions. For instance, when calculating the proportion of parking spaces occupied, those spaces unavailable due to parking restrictions are not included in the total supply during the period of the restriction.

to determine whether specific cars stayed in place—any car parked on the street at 6:00 AM that was still there at 11:00 AM could reasonably be considered to belong to a resident, and therefore was excluded from the count of BART riders.

In January 2010, roughly 30% of on-street spaces were full at both 6:00 AM and 11:30 AM; however, the distribution of these spaces changed as the morning wore on. By 11:30 AM, on-street spaces near the station filled, while those further from the station emptied. Overall occupancy decreased by 4% between 6:00 AM and 11:30 AM.

November 2011 on-street parking occupancy trends are similar to those observed in January 2010. At 6:00 AM in November 2011, parking on all the streets within the Authority was light, with an average of only 31% of available spaces occupied (refer to Figure 2-8). Occupancy of specific segments is shown in Figure 2-9, which provides a more fine-grained perspective. Street segments at the periphery of the Authority boundary were relatively more occupied, but even there the occupancy did not surpass 85%.

Figure 2-8 On-Street Parking Occupancy

Survey	On-Street Parking Capacity	6AM			11:30AM			Change in Occupancy between 6AM and 11:30AM
		Number of Spaces Occupied	Number of Spaces Unoccupied	6AM % Occupancy	Number of Spaces Occupied	Number of Spaces Unoccupied	11:30AM % Occupancy	
January 2010	533	178	355	33%	156	377	29%	-4%
November 2011	533	164	369	31%	205	328	38%	8%

Data collected by Nelson\Nygaard in January 2010 and November 2011.

At 11:30 AM, on-street spaces within the Authority boundary were slightly more occupied, with 205 (38%) of the 533 spaces occupied. As expected, the occupancy distribution of these spaces at 11:30AM is the reverse of the 6:00 AM occupancy: the highest relative on-street occupancy is centered on the BART station, not at the periphery of the Authority boundary. It is likely that many residents, who at 6:00 AM parked on the street, have left by 11:30 AM to work or run errands. Between 6:00 AM and 11:30 AM, primarily BART patrons arrived and parked near the station. As can be seen in Figure 2-9, along Dixon Street in front of BART, parking is filled to capacity or beyond (with illegal or very tight parking). Thus, we can conclude that BART spillover parking is first confined to Dixon Street.<sup>9</sup>

### Parking Turnover

Average occupancy figures can mask parking turnover, or the rate of parking usage. Parking turnover identifies the number of discrete vehicles that occupy a single space over a given time. While average occupancy surrounding the South Hayward BART station declined between 6:00 AM and 11:30 AM on all streets except Dixon Street and the west side of 12<sup>th</sup> Street, many vehicles entered the station area to park after 6:00 AM—replacing vehicles that left the area in the AM peak period.

Parking turnover data were recorded for on-street parking only. In part, this was conducted to enable differentiation of the cars of residents parking in front of their homes from those of

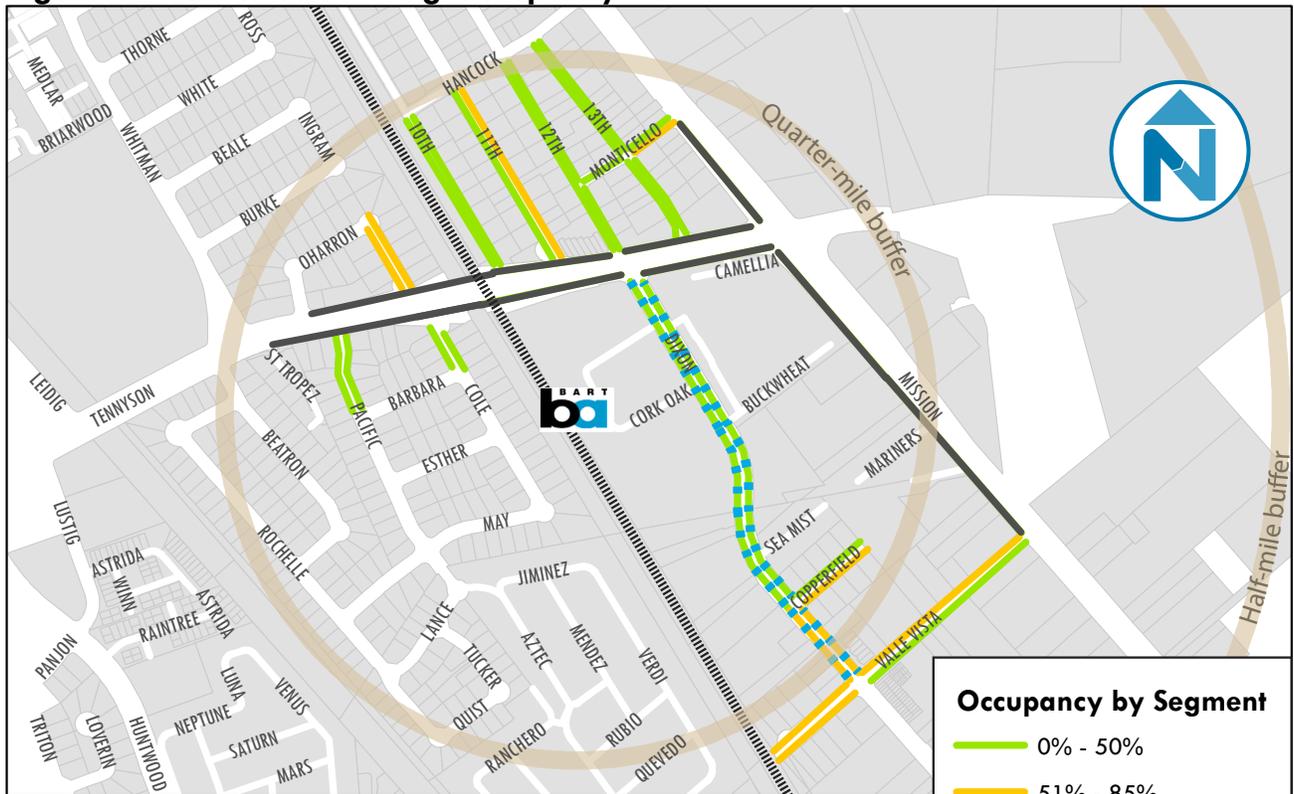
<sup>9</sup> As Dixon Street and the BART off-street parking lots fill to capacity, parking demand extends across Tennyson Avenue along the west side of 12<sup>th</sup> Street and 13<sup>th</sup> Street.

commuters parking outside of the BART lots. To identify unique vehicles, the last three digits of each license plate were recorded. From this, the number of new vehicles, presumably accessing BART, could be calculated. The November 2011 parking occupancy survey revealed that of the 205 cars parked on-street within the Authority boundary, 80 cars had been parked in the same location at 6AM. This study assumes that the 125 new vehicles belonged to BART patrons and the other 80 vehicles belonged to residents. This turnover figure is close to what was observed in January 2010. In that on-street occupancy survey, an average of 128 new, non-resident vehicles parked on-street within the Authority.

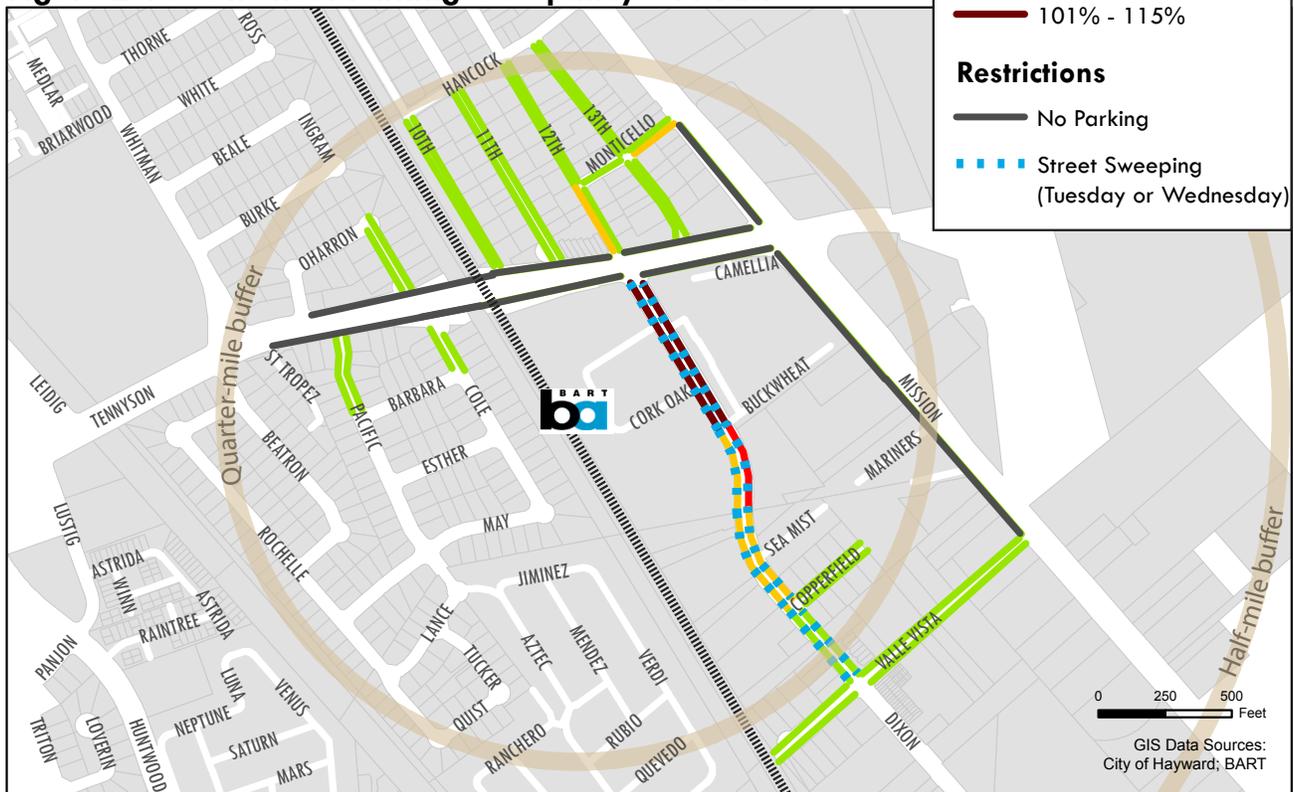
As would be expected, these vehicles tended to park close to the BART station. Turnover was much higher along Dixon Street in front of BART than on most other streets within the Authority. In fact, 69 (55%) of the 125 new (non-resident) vehicles parking on the street network within the Authority boundary between 6:00 AM and 11:30 AM parked along the two blocks of Dixon Street in front of the station. However, a few other streets also experienced high turnover, most of them within a reasonable straight-line walk from the BART station.

Figure 2-9 demonstrates that people who drove to BART and parked preferred to park adjacent to the station along Dixon Street or south east of the station along Dixon Street and Copperfield Avenue. Some people chose to park north of Tennyson Road, along 12<sup>th</sup> and 13<sup>th</sup> Streets. It is possible that this is a result of the BART parking lots filling to capacity, causing people to look further afield for parking, and replacing the cars of residents who had left for the day. Also, people may have chosen to park in a location that facilitates exiting the station area and driving home or in areas where they prefer to walk. However, this spillover into the residential area is mostly confined to within two blocks of the station, in part due to parking restrictions along Tennyson Road. In spite of some spillover, the majority of on-street parking spaces are empty during the day.

**Figure 2-9 On Street Parking Occupancy - 6 AM**



**Figure 2-10 On Street Parking Occupancy - 11 AM**





### 3 ALTERNATIVES ANALYSIS

This section examines ways to balance the needs of South Hayward BART patrons and area residents, and visitors to the surrounding neighborhoods. The solutions focus on managing parking in the near term and providing enough parking for both current BART patrons and residents who park on the street network. Looking further ahead, the goal is to foster increasing BART ridership. Understanding that at suburban BART stations, like at the South Hayward BART Station, ridership is, and may in the near-term continue to be, heavily reliant on parking availability. Therefore, a secondary goal of this project is to maintain an occupancy rate of 98% in the BART Main Lot, which would leave approximately 22 spaces in the BART Main Lot empty. The long-term parking demand is further discussed in Appendix A.

Before delving into alternatives for meeting the current parking demand, the following section articulates parking supply and demand assumptions that underlie the alternatives analysis.

#### PLANNED PARKING SUPPLY & DEMAND

Changes in the supply of both on- and off-street parking are forthcoming. In the long-term, the entire off-street BART parking supply may potentially be replaced with a mix of affordable housing, market rate rental and for-sale housing, some retail, and a BART parking structure. More imminent and the focus of this analysis, the BART East Parking Lot will lose all **174** spaces when the site is developed. In place of parking, the site is planned to house approximately 206 market rate units and 151 affordable units between Mission Boulevard and Dixon Street. With this development, the future off-street BART parking supply will drop from 1,264 to 1,090 spaces.

In addition to the removal of off-street parking spaces in the BART East Parking Lot, the number of on-street parking spaces along Dixon Street will be reduced. In front of the BART station, the Dixon Street Improvement Project will decrease the parking supply on Dixon Street by **33** spaces to accommodate a planned streetscape project.

Relaxing on-street parking restrictions on Tennyson Road and Mission Boulevard could more than compensate for the loss of parking in the BART East Lot and along Dixon Street. Tennyson Road between Mission Boulevard and Whitman Street could make available 108 parking spaces within the Authority boundary. Using more of Tennyson Road south of Whitman Street to Huntwood Avenue could add an additional 34 spaces outside the bounds of the Authority, but within a ½-mile (a 10-minute walk) of the station. For the planned parking supply within the Authority, this Study assumes that the Authority will be expanded to include all new parking spaces along Tennyson Road within a ½-mile of the station, for a net increase of **142** spaces.

Additionally, parking along the west side of Mission Boulevard from Valle Vista Street to Tennyson Road, calculated to be approximately **40** spaces, can be added to the available supply of parking, especially as the new project contains a pedestrian pathway available to the public from Mission Boulevard to Dixon Street facilitating easy access to the station.

Further, considering expanding the useable supply to within ½ mile of the station (a 10-minute walking distance) there are 60 parking spaces on Dixon Street from Valle Vista to a ½ mile distance of the station.

As a result of these events, on-street parking will increase from 533 spaces to 682 spaces. Off-street parking will decrease from 1,264 spaces to 1,090 spaces. The total supply of parking within the expanded Authority boundary would increase by 35 spaces (-174-33+142+40+60) to **1,832** spaces. Refer to Figure 3-1 for a description of planned on- and off-street parking supply.

Figure 3-1 Planned On- and Off-Street Parking Supply within the Study Area

Type	Parking Supply
Existing On-Street Parking Supply	533
Dixon Street Improvement Project	-33
Tennyson Road (Mission to Huntwood)	142
Mission Boulevard (Tennyson to Valle Vista)	40
Dixon Street (southerly of Valle Vista)	60
<b>Subtotal Planned On-Street Parking Supply</b>	<b>742</b>
Existing Off-Street Parking Supply	1264
Removal of East Lot	-174
<b>Subtotal of Planned Off-Street Parking Supply</b>	<b>1,090</b>
<b>Total On- and Off-Street Parking</b>	<b>1,832</b>

As stated in Chapter 2, current BART parking demand regularly fills 1,254 of the 1,264 off-street parking spaces. Additionally, the November 2011 parking survey within the Authority concluded that over three days, on average, 125 BART riders parked on neighborhood streets. Taken together, within the Authority on- and off-street demand for parking spaces due to BART is 1,379. Parking demand has risen over the last year and a half from 1,266 spaces in January 2010 to 1,379 spaces in November 2011—an increase of 9%. However, for initial planning purposes, this report assumes that current parking demand has largely adjusted to regional initiatives. Parking management strategies discussed in Chapter 4 can help maintain current levels of parking demand, while boosting BART ridership and access via other modes. Figure 3-2 demonstrates the difference between the planned parking supply (of 1,832 spaces) after the removal of the BART East Lot and implementation of on-street parking, along with the expected near-term parking demand of 1,379 spaces. As shown in Figure 3-2, if the on- and off-street parking were treated as one parking pool, there would be more than enough on- and off-street parking to meet current BART parking demand. **Under these circumstances, there would be a total surplus of 453 on-street parking spaces within the Study Area.**

Figure 3-2 Planned BART Parking Supply & Demand within the Study Area

Type	Parking Supply	Parking Demand	Supply - Demand Gap
On-Street Parking	742	125	617
Off-Street Parking	1,090	1,254	-164
Total	1,832	1,379	453

However, BART is not the only entity vying for access to the parking supply near the South Hayward station. Residents of and visitors to the area also use the on-street parking. The November 2011 parking survey found that the largest cumulative demand for on-street parking from both residents and BART patrons can be observed at midday. At 11:30 AM, on average, there were 80 neighborhood residents parked on the street (and 125 vehicles belonging to non-residents).

The following two alternatives provide a blueprint for meeting existing residential and BART demand for parking, given planned changes to the future parking supply.

### TYPE & LOCATION OF FUTURE PARKING SUPPLY

As the near term goal is to ensure that the development of the BART East Lot does not adversely affect BART ridership or resident parking needs, the following alternatives utilize parts of existing on-street parking to accommodate the overflow from current BART patrons. The balance of the on-street spaces would be reserved for residents of the South Hayward BART station area. Assuming existing BART parking demand remains unchanged and that the 1,090-space BART lot fills first, additional patrons who drive and park at BART would spill over onto the street. As shown in Figure 3-3, BART-related on-street parking demand amounts to 289 spaces (assuming current demand remains unchanged). The following two alternatives aim to accommodate up to 289 BART parking spaces on streets within the Authority, and assume all other spaces (approximately 393 spaces) will be reserved for residents. Current residential on-street parking demand during the peak period is 80 spaces.

Figure 3-3 On-Street Parking Reserved for BART Patrons and South Hayward Residents

Type	Supply	Average Peak Residential Demand		Average Peak BART Demand		Supply Available for BART Patrons		Supply Reserved for Residents		Total
		No. of Spaces	% of Supply	No. of Spaces	% of Supply	No. of Spaces	% of Supply	No. of Spaces	% of Supply	
Planned On-Street Parking	742	80	12%	289	42%	289	42%	453	61%	100%
Planned Off-Street Parking	1,090	0	0%	1,090	100%	1,090	100%	0	0%	100%
Parking Total	1,832	80	4%	1,379	77%	1,379	78%	453	25%	100%

While each of the two alternatives accommodates current on-street BART parking demand, they differ in convenience for BART riders and impact on the neighborhood. Due to neighborhood concerns about street width, among other matters, the parking spaces north of Tennyson Road will not be considered for BART parking in either alternative. The alternatives are presented by order of least impact on residents of the station area. Both alternatives operationalize some on-street spaces for BART and make available the bulk of on-street spaces within the study area for residents. The recommended alternative depends on which strategy best meets the goals of the neighborhood and BART. Mission Blvd. from Tennyson to Hancock is primarily a retail area. No parking should be allowed in the early morning (i.e. prior to 9:00 AM). These spaces are not included in the parking supply as they are typically not used by residents and, if not available to early BART commuters, are likely not to be used at all by BART patrons.

## Alternative 1

One way to accommodate the expected 289-space overflow parking demand on streets is to first confine BART parking to those areas currently with fewer housing units or little on-street parking demand. Parking spaces along Tennyson Rd. and Mission Boulevard, proposed to be newly striped, are excellent candidates. Tennyson Road is a four-lane collector that currently prohibits on-street parking, and in recent years parking has been prohibited due to a lack of demand and safety concerns. The north side of Tennyson Road between Leidig Court and Whitman Street currently serves as drop-off and pick-up for Cesar Chavez Middle School. One hundred forty-two (142) spaces on Tennyson Road could be introduced from Mission Boulevard to Huntwood Avenue, (excluding in front of Cesar Chavez Middle School), although 34 of these spaces would be located outside the current Authority boundary. All 142 spaces are within a 10-minute walk of the station. Thus, 49% (142/289) of the BART-related parking spillover onto neighborhood streets could be accommodated in parking spaces that are currently not available for residents. Operationalizing 142 spaces along Tennyson Road for BART patrons would not remove parking spaces from the existing residential supply, and would thus have minimal impact on residential parking. However, the Authority boundary would have to be formally modified.

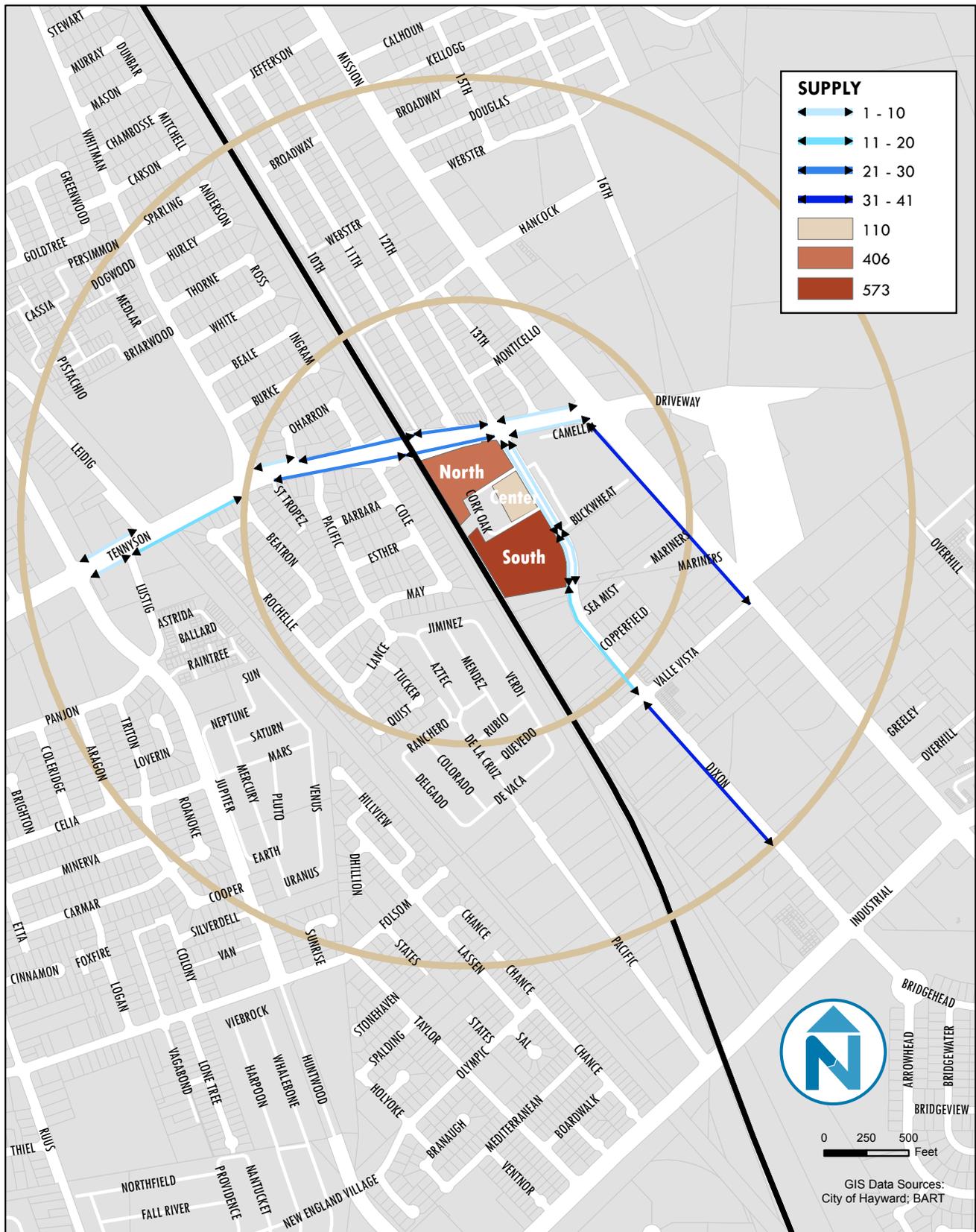
When the new improvements along Mission Boulevard are completed, approximately 40 spaces from Valle Vista Street to Tennyson Road will be available on the west side of Mission Boulevard. Unlike Tennyson Road, Mission Boulevard is a largely commercial district, which may benefit from higher parking turnover and two-hour parking restrictions. No parking should be allowed in the early morning (i.e. prior to 9 AM) on the primarily retail stretch of Mission Boulevard north of Tennyson Road. These spaces are not included in the parking supply as they are typically not used by residents and, if not available to early BART commuters, are likely not to be used at all by BART patrons. Alternative 1 assumes all 40 spaces are available for BART commuters along Mission Boulevard, meeting another 14% of BART spillover parking demand (40/289). The Authority boundary would need to be expanded to include all 40 spaces on Mission Boulevard.

BART parking spaces could be accommodated on Dixon Street. Immediately adjacent to the BART Main Lot, 33 spaces will remain available after construction of the streetscape project. Between the BART property line and Copperfield Avenue, 19 spaces could be provided for BART parkers on the west side of Dixon Street. By expanding the Authority boundary to ½ mile of the station along Dixon Street, another 38 spaces could be provided on the west side of Dixon Street. BART patrons currently park for free along Dixon Street, and these 90 spaces (33+19+38=90) could accommodate 31% (90/289) of BART's on-street parking demand. To operationalize these

spaces on Dixon Street south of the Authority boundary, the Authority boundary would need to be formally modified.

Taken together, Tennyson Road (from Huntwood Avenue to Mission Boulevard except in front of the middle school), the west side of Mission Boulevard (from Tennyson Road to Valle Vista Street), and the west side of Dixon Street (from Tennyson Road to ½-mile of the station) could accommodate 272 (142 + 40 +90 spaces, respectively), which more than compensates for the loss of 174 spaces in the BART East Lot. By treating on- and off-street parking as a single supply, Alternative 1 would meet 98.8% of total BART parking demand (272+1090 (supply) /289+1090 (demand)). All other streets within the Authority could be reserved for residential parking. Refer to Figure 3-4.

Figure 3-4 Alternative 1



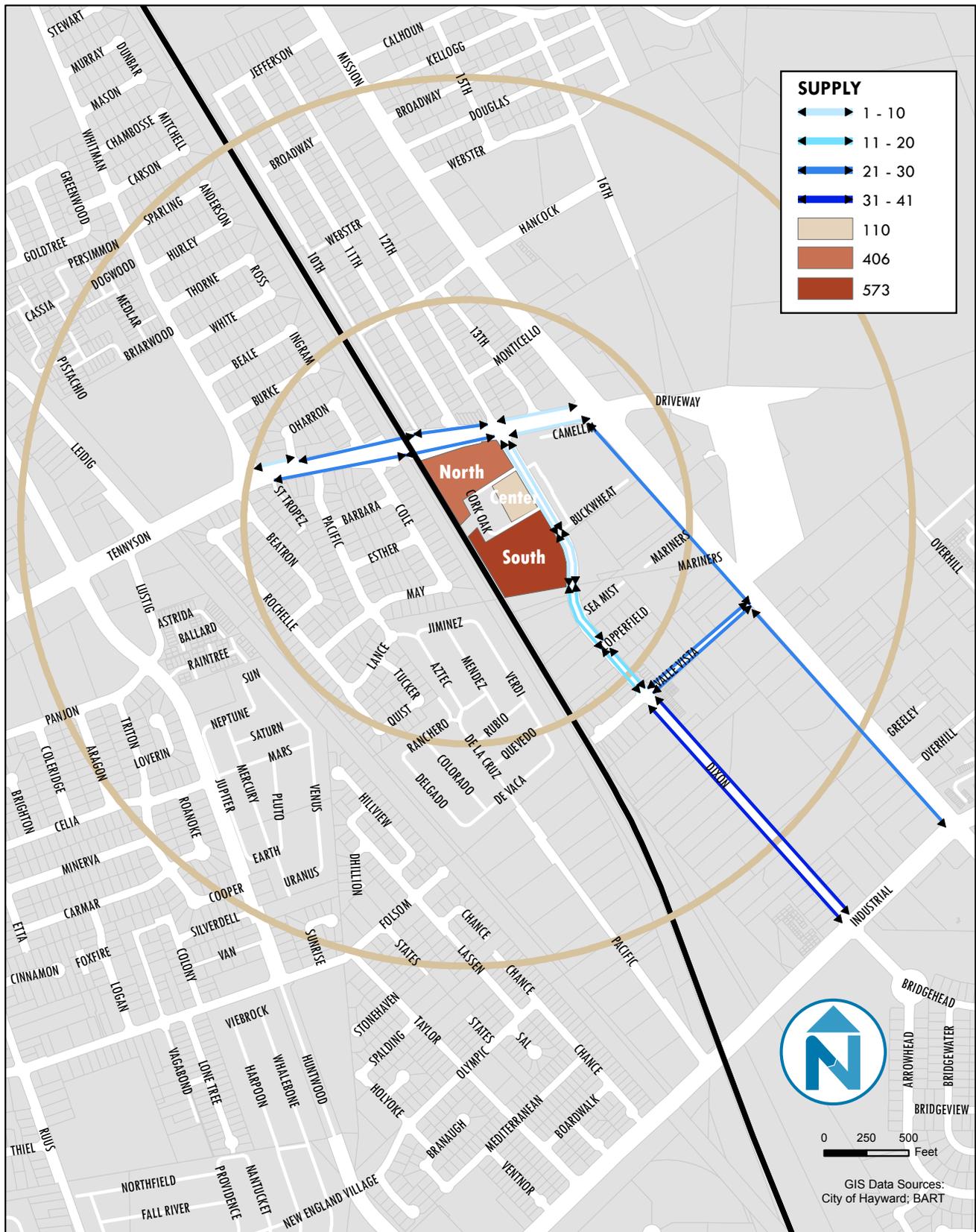
## **Alternative 2**

Alternatively, in lieu of operationalizing all of the newly created parking spaces along Tennyson Road, only those spaces within the current Authority boundary could be reserved for BART parking. This would preclude expanding the boundary of the Authority. Those spaces on Tennyson Road further than ¼-mile away from the station would not be reserved for BART riders. In Alternative 2, the 108 newly striped spaces on Tennyson Road (from Mission Boulevard to Whitman Avenue) within the Authority would be reserved explicitly for BART patrons. Residents of the station area are not accustomed to parking on Tennyson Road, so such an allocation to BART patrons would not be viewed by residents as a “loss” of existing parking. The benefit of this Alternative is that the Authority boundaries would not need to be modified.

In addition to the 108 spaces on Tennyson Road, Alternative 2 proposes utilizing 40 newly-striped spaces on Mission Boulevard between Tennyson Road and Valle Vista Street for BART-related parking. BART parking could also be provided on both sides of Dixon Street adjacent to the BART Main Lot (33 spaces), on Dixon Street between the BART Main Lot and Copperfield (39 spaces), and on Dixon Street from Copperfield to Industrial (70 spaces). Maximizing the number of spaces available for BART parking on Dixon Street could provide 142 spaces (33+39+70=142). Another 44 spaces could be operationalized on Valle Vista between Dixon Street and Mission Boulevard. Mission Boulevard, between Valle Vista and Industrial, could provide another 30 spaces.

It is estimated that these street segments could add approximately 364 additional spaces to the BART parking supply, if needed. The Authority would need to expand the Authority boundary to include these streets. Alternative 2 differs from Alternative 1 in geographic reach. Because Alternative 1 utilizes more spaces along Tennyson Road to serve BART demand, Alternative 1 affects less of the South Hayward neighborhood than Alternative 2. Refer to Figure 3-5.

Figure 3-5 Alternative 2



## Preferred Alternative

Because of its predictable and relatively minimal impact on residents of the South Hayward BART Station area, Alternative 1 is recommended. The 142 spaces along Tennyson Road, which will be striped in conjunction with the development of the BART East Lot, should be reserved for BART patrons. It is recommended that the Authority formally expand its boundary to encompass the proposed 142 newly striped spaces on Tennyson Road. Additionally, the 40 spaces along Mission Boulevard may be used all day by BART parkers as would 90 spaces on Dixon Street. It is recommended that the Authority expand its boundary on Mission Boulevard to encompass the proposed 40 spaces between Tennyson Road and Valle Vista Street and along Dixon Street to ½-mile from the station, approximately 200 yards south of Valle Vista Street. These three streets would accommodate 98.8% of the existing total (on and off-street) BART-related parking demand with no additional impact to the neighborhood streets.

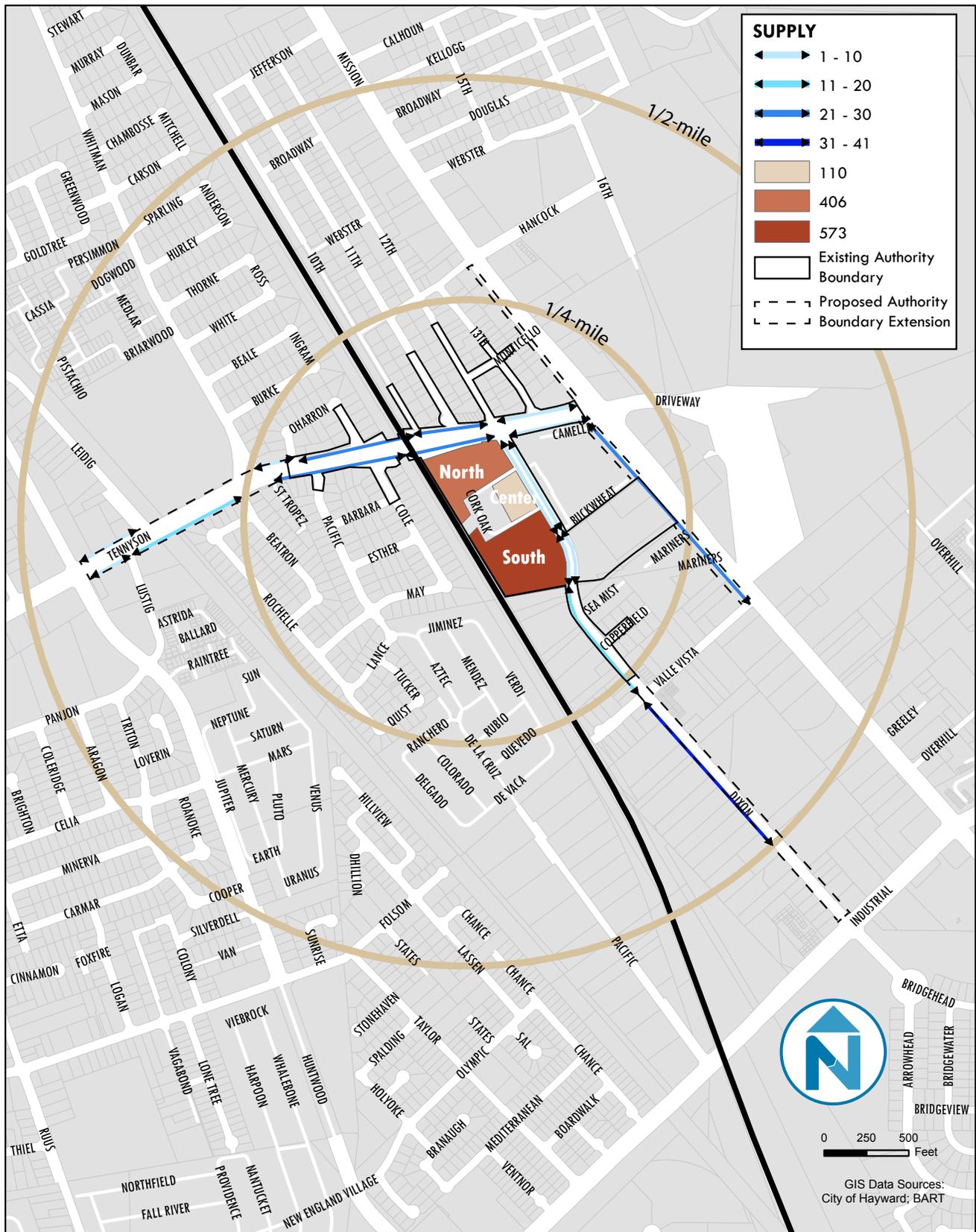
The Authority could amend this provision by potentially increasing the supply of on-street parking available to BART patrons, if demand warrants. It is recommended that the Authority formally extend its boundary along Dixon Street to Industrial Parkway, but make its use for BART parking contingent upon demand and a future Authority decision to add street parking in this location. Refer to Figure 3-6 and Figure 3-7.

Figure 3-6 Preferred Alternative Parking Supply

Type	Parking Supply
Existing Off-Street Parking Supply Reserved for BART	1,264
BART East Lot	-174
Subtotal Proposed Off-Street Parking Supply Reserved for BART (North, Central, South Lots)	1,090
Existing On-Street Parking Supply Reserved for BART	0
Tennyson Road (Mission to Huntwood, not including spaces in front of Cesar Chavez school) *	142
Mission Boulevard, west side (Tennyson to Valle Vista)	40
Dixon Street (adjacent to BART Main Lot)	33
Dixon Street, west side (BART Main Lot to Copperfield)	19
Dixon Street, west side (Copperfield to ½-mile of the station)*	38
Dixon Street (½-mile of the station to Industrial), as demand warrants	TBD
Subtotal Proposed On-Street Parking Supply	272
Total On- and Off-Street BART Parking Supply	1,362
Existing BART Parking Demand (on-and off-street)	1,379
Proposed Supply – Existing Demand	-17

\*Requires formal expansion of Authority boundary.

Figure 3-7 Preferred Alternative



However, continued accommodation of additional parking would not help BART achieve its long term access goals, including prioritizing pedestrian, transit, and bicycle access. Before expanding the BART parking supply, the Authority should apply parking fees to help maintain parking demand at or just below the current level, and invest in other access improvements to increase BART ridership.

Pedestrian access enhancements could include better lighting and visual connections to the BART station, wayfinding signage, and/or infrastructure improvements (street crossings, removal of obstructions, wider sidewalks, street lights, etc.). Additional crossing improvement is also recommended at the intersection of Dixon Street and Tennyson Road. This intersection is currently controlled by a traffic signal (which will be modified as part of the Dixon Street Improvement Project), but the crosswalk is faded and high-visibility longitudinal lines should be installed. Finally, the Authority should regularly and routinely consult with the City and BART police departments and incorporate Crime Prevention through Environmental Design (CPTED) improvements over time.

The following two chapters discuss parking pricing and the financial impacts associated with this alternative. Chapter 6 outlines an implementation plan and schedule, along with a variety of strategies that should precede implementation of the residential and BART parking permit program, including wayfinding, safety, and pedestrian/bicycle improvements in the station area.



## 4 PRICING PARKING

One way to accommodate the existing demand for parking and provide the flexibility to meet additional future ridership (and subsequent parking demand) is to increase the productivity, or the ratio of vehicles parked to existing parking spaces. Demand management is one of the best ways to increase productivity and essentially do more with the same resources. Because more than half of patrons access the South Hayward BART Station using a private vehicle, adjusting the price of parking is a potentially powerful tool for spreading peak parking demand and increasing off-peak parking demand. In addition, parking pricing can also help manage the number of parkers, while also generating revenue that can be invested in access improvements, which will encourage more patrons to access the station by other modes than driving. If parking fees are set too high and there is little investment in alternative access modes, however, BART may experience a reduction in ridership, which would be opposite of one of the goals of this study.

BART has established parking policies, such as parking pricing and midday and paid reserved spaces, but most BART parking is subsidized: parking fees do not cover the cost of construction, or the \$1.58 cost per space per day for routine operations, maintenance and enforcement.<sup>10</sup> Currently, almost all parking, both on- and off-street, is free at the South Hayward BART station. There are 39 spaces in the Main Lot that cost \$42/month. Only 19 are reserved monthly at this rate. The remaining 20 spaces are available for free daily parking after 10 AM and regularly fill. Because all other passengers at the South Hayward BART Station know that they must arrive by a certain time to get a parking space, a very large number of passengers arrive at the station during a short time window during the morning peak. Finally, because unreserved parking fills to capacity during the peak hour and spills over into on-street spaces, there are few spaces left available to people who wish to ride BART at midday (aside from the reserved spaces), when train capacity is plentiful.

Recently, parking fees between \$1 and \$3 per day have been implemented at neighboring Union City BART station to help manage parking demand after transit-oriented development reconfigured the available parking supply. As the Authority addresses the same issue, it may consider a similar response.

### ESTABLISHING & ADJUSTING PARKING FEES

The Authority should begin to charge for parking at the South Hayward BART Main Lot and in the on-street spaces reserved for BART patrons. The fee of daily and/or monthly parking permits at the station should initially be set to match the fee of existing daily parking rates and monthly reserved permits at adjacent stations. Thereafter fees should be adjusted to reflect demand. This strategy has recently been tested for daily unreserved parking at the Daly City BART Station, where the daily parking fee was raised from \$2 to \$3 in 2009, and then adjusted back to \$2 in

<sup>10</sup> This is the aggregate cost for BART surface lots per BART FY10 Parking Operations and Maintenance Cost Analysis Annual Expense Summary, Jeffrey Ordway, BART Property Development, December 19, 2011.

March 2010 after occupancy rates fell. BART could also charge hourly fees for parking, with a maximum daily fee; however, this would result in additional operations and enforcement costs and is not warranted in the early stages of implementation.

Prior to initiating any fees for parking at the South Hayward BART Station, an on-street and off-street parking occupancy survey at Downtown Hayward BART station should be conducted by the City on behalf of the Authority in order to establish a baseline against which to measure the effects of parking fees at the neighboring South Hayward BART station.

## Phase One Recommendations

### BART Parking Fees

At the introduction of the paid parking system at the South Hayward BART Station, parking fees should correspond with fees at neighboring BART stations. At Union City the daily fee in the BART lot is \$1 and in the city-owned lot \$3. At South Hayward, the introductory and minimum parking fee should be \$1/day and the maximum fee \$5/day.<sup>11</sup> If demand remains high at a fee of \$5/day, the Authority should consider raising the price ceiling with approval from the BART Board. Daily flat rates of \$1 have the advantage of being easy to enforce and are easier to gain acceptance from affected BART riders.<sup>12</sup> Based on BART history, a parking fee of \$1/day has had little long-term impact on parking demand. Therefore, the daily parking fee—for both on- and off-street spaces—should initially be set at \$1/day for daily parking and \$3/day for daily reserved parking. Daily parking fees should be required Monday through Friday from 4:00 AM to 3:00 PM. Long-term and overnight parking fees should be \$5/day. Monthly parking fees for BART patrons should be commensurate with daily parking fees and, in Phase One, set at \$42. The 19 monthly parking passes currently reserved at South Hayward cost \$42 and will remain at \$42 at implementation.

BART recommends reserving no more than 10% of the off-street spaces at the initiation of the program. The remaining spaces would be first come, first serve. The number of reserved spaces can be increased as the program expands. BART's current policy is to make no more than 40% of off-street parking facilities available by reservation. Reserved parking at BART that is not utilized becomes available to the public for the daily fee after 10:00 AM. For the 1,090 off-street spaces in the BART Main Lot and the 271 on-street spaces, the following allocation is recommended at the launch of Phase One:

- 955 daily fee (first come, first serve) spaces (\$1/day) in the BART Main Lot
- 74 monthly reserved spaces (\$42/month) in the BART Main Lot
- 32 daily reserved spaces (\$3/day) and overnight parking (\$5/day) in the BART Main Lot
- 27 ADA spaces (\$1/day) in the BART Main Lot
- 2 employee spaces in the BART Main Lot
- 10 motorcycle spaces in the BART Main Lot
- 272 daily fee spaces (\$1/day) on Mission Boulevard, Tennyson Road, and Dixon Street

<sup>11</sup> A daily fee of \$1 is consistent with fee introductions at other BART Stations. The maximum fee of \$5 was implemented in the Fruitvale BART Paid Parking Program.

<sup>12</sup> Syed, S, A.Golub, & E. Deakin, 2009. "Response of Regional Rail Park-and Ride Users to Parking Price Changes: System wide Results and a Detailed Study of Two Stations." TRB.

To implement the Phase One parking recommendations, on- and off-street spaces would need to be striped (or re-striped) and numbered. Wayfinding signage to direct riders to the faregates and BART parking facilities and enforcement signage to alert drivers of the bounds and rules of the BART parking program are also necessary. BART should install parking validation machines and add-fare machines capable of processing parking payments (refer to Payment & Accounting Mechanisms section).

The impacts of pricing both on-street and off-street parking facilities should be analyzed and fees adjusted preferably every six months to help achieve the desired parking occupancy. For example, if a \$1/day flat rate has no impact on parking demand and lots continue to fill and parking spills over onto residential streets or streets outside the Authority boundary, the parking fee should be ratcheted up to \$1.50/day and so on. However, if after the next six months, occupancy has fallen below 90%, the fee should be recalibrated to the previous dollar amount. On- and off-street parking spaces should be treated as one supply and prices adjusted concurrently in all parking facilities. If parking occupancy exceeds 98%, the fee should be increased until between 90-98% occupancy is achieved. At or below the lower bound (90% target occupancy), approximately 135 spaces would be empty and parking facilities would not be fully utilized; and without other access mode improvements or behavioral change (fewer drivers), BART ridership may be adversely affected. The goal is to allow BART to continue growing its ridership.

#### REINVESTING REVENUE

The Authority will collect all parking fee revenue within the District and use the revenue to administer the parking program. The Authority will contract with a third party vendor to maintain the parking spaces and will pay for the cost of parking regulation, enforcement, and access initiatives both on- and off-street, as elaborated below. The net revenue resulting from BART commuter parking fees should be invested in the neighborhood where the revenue is generated to pay for increased services or transportation and streetscape improvements that the Authority desires.

#### Residential Parking Permit (RPP) District

To avoid adverse impacts on the surrounding neighborhood—particularly after the removal of the BART East Lot and the 33 spaces along Dixon Street—on-street parking management must be addressed in conjunction with the off-street parking fees. Given the existing parking spillover problems in the residential area surrounding the South Hayward BART Station, as well as the likelihood of increased spillover in the near term, it is recommended that the City implement an on-street residential parking permit (RPP) program within the Authority boundaries.

Many cities, including the City of Hayward, implement RPP areas by issuing parking permits to residents.<sup>13</sup> Streets in the neighborhood are posted with signs signaling an RPP area with parking restricted to permit-holders only. These residential parking permits typically allow residents to park within the area at all times while all others are prohibited from parking there during the designated time, sometimes with the exception of 2-hour visitor parking. Around the South Hayward BART Station, the RPP district could take the following form:

- Post signs on affected streets to reserve these on-street spaces within the Authority boundary for residents. Vehicles with a permit would be allowed to park on any street in the district designated RPP.

<sup>13</sup> Generally, the fee of residential parking permits is established by the City Council.

- The Authority covers the costs of residential parking permits for any vehicles registered to addresses within the Authority boundary. Visitor permits will be available upon request.<sup>14</sup>
- 2-hour visitor parking is allowed in all on-street spaces within the RPP district.
- Reserve 272 on-street spaces for BART commuter parking, following the strategy outlined in Alternative 1, the preferred alternative in Chapter 3. These spaces should be striped and numbered, and signage should be installed to inform users of the parking fee requirements.<sup>15</sup>
- Reinvest any net revenue from the parking management program towards neighborhood improvements and administration of the program. Refer to the “Reinvesting Revenue” sidebar for more detailed information.

## Phase Two Recommendations

In Phase Two, if spillover parking beyond the 272 on-street spaces is a problem and residents, businesses, or other parkers (e.g., at the neighborhood church and school) lack sufficient parking in the area, the Authority should take one or more of the following actions:

- Raise parking fees for non-residents
- Consider expanding the boundaries of the parking program and the Authority boundary, if parking demand warrants and the affected residents approve
- Investigate mechanisms to increase the efficiency of parking spaces

One way to increase the efficiency of on-street parking facilities is to remove striping that partitions discrete spaces and open the entire block face to parking. Generally, motorists tend to park more closely when individual stalls are not designated. On-street pay stations on each block would allow motorists to pay for parking rather than for a designated space. For more information, please refer to the Payment & Accounting Mechanisms discussed below. This system could increase the on-street parking supply.

This system would also allow the Authority to convert to hourly on-street parking in Phase Two. Hourly parking fees incentivize parking turnover, especially if fees are more expensive during the peak period. Alternatively, daily passes incentivize parking for the entire day, and monthly passes offer little incentive to choose an alternative to driving to BART after the permit has been purchased. As BART intends to encourage alternative access modes, demand-responsive pricing may be an appropriate tool. Potential technologies for implementing these more dynamic fees are discussed in the following section. Transitioning to a more dynamic parking fee would entail additional capital and ongoing costs to the Authority and may not be financially feasible.

To achieve BART’s long-term access goals, to incentivize parking turnover (particularly if more retail is one day built on a portion of the BART Main Lot) and to increase productivity of the existing supply, more dynamic, demand-responsive parking fee mechanisms may be warranted in Phase Two.

<sup>14</sup> Assuming those multi-family dwellings located on private streets with private on- and off-street parking do not request additional on-street parking permits, it is estimated that approximately 120 households within the Authority Boundary may request two parking permits for a total of 240 spaces. Under the preferred alternative discussed in Chapter 3, 419 spaces would be reserved for residents, which exceeds the 240 predicted demand for permits.

<sup>15</sup> Pricing should be utilized to manage parking demand and maintain current parking demand levels. However, if parking demand consistently proves inelastic to price, one side of the remaining streets within the Authority (south of Tennyson Road) could be utilized for BART-related parking.

## **PAYMENT & ACCOUNTING MECHANISMS**

In Phase One, current demand is intended to be met by a combination of daily and monthly parking in the BART Main Lot and daily parking on some streets surrounding the station. In Phase Two, hourly parking may be extended to some on-street spaces. Off-street spaces in the BART Main Lot should continue to be available for a daily or monthly fee. There are a variety of ways to charge patrons for parking in and around the BART Main Lot, and the appropriate technology depends on the type of fee.

### **Phase One Recommendations**

Innovations in parking meter technology are rapidly changing the way cities across the United States manage parking and collect parking fees. The primary innovation is wirelessly networked, solar-powered pay stations that accept a wide variety of payment forms. The primary hindrance to multi-space pay stations is the initial capital cost of purchasing the pay stations and on-going maintenance of the stations and administration of a technically more rigorous and technology-dependent program. In order to transition to charging for parking on a daily basis at the South Hayward BART station, the two existing pay stations within the faregates should be converted to accept cash, Clipper cards, and BART tickets to pay for parking. In addition, one new Clipper Card reader would need to be installed by BART.

Ease of implementation, previous experience, and the initial low-cost suggest also issuing monthly parking permits in Phase One. The primary benefit of issuing monthly parking permits when establishing a parking management program is its minimal administrative and fiscal burden. Not only are monthly parking permits the least capital intensive payment mechanism, but as an agency, BART has a history of issuing monthly parking permit tags online.

Currently, BART contracts a third party vendor to manage its monthly parking permit program. The program allows customers to purchase parking permits online via a third party parking permit vendor retained by BART. Permits are then either mailed to the customer's address or printed at home and displayed in the vehicle. Due to ease of implementation, economies of scale, and convenience for BART patrons, BART should extend this existing payment mechanism to the South Hayward BART Station for monthly parking permits. The Authority should reimburse BART the costs of administering the permit program.

Residents of the area could request permits from the City. The City has indicated a willingness to make up to four (4) permits per household available, at no charge, to residents for their own personal use and for use by their guests and visitors.

### **Phase Two Recommendations**

If funds are available and the Authority decides on-street meters are warranted, multi-space pay-and-display machines are recommended on streets with high demand to incentivize parking turnover in Phase Two. Transitioning to the use of pay-and-display multi-space meters would cost a minimum of \$10,000 for each meter. Unlike the pay-by-space stations inside the faregates currently recommended for Phase One, pay-and-display meters can be used along curbs without designated parking stalls. In fact, if individual stalls are not striped and numbered, people will often park closer together and more efficiently utilize curbside facilities.

One pay-and-display station should be located along each block face with non-residential parking. Patrons would purchase daily or hourly parking from the multi-space pay station and display the

ticket in the windshield. This system may be less convenient than paying for a specific space at the pay station; however, it would not require striping or numbering of individual spaces and would provide the flexibility to modify the on-street parking arrangement in the future. Installing pay-and-display stations on each block face would carry additional operations and maintenance costs.

## ENFORCEMENT

Enforcement can be a powerful mechanism to promote appropriate behavior. With the initiation of parking restrictions and fees for both on-street and off-street parking spaces, parking regulation enforcement will be critical to educate people who park in the area, promote conformance and safety, and mitigate parking spillover. Enforcement of the program is complicated by cross-agency jurisdiction—the City of Hayward traditionally maintains the City's streets while BART monitors and maintains parking in the off-street BART lots.

The Authority should utilize a single entity to enforce on- and off-street parking fees and provide a level of security in the neighborhoods. Enforcement could take the form of part-time BART Community Safety Officers (CSO), Hayward police department cadets, a third party, or some combination. These personnel would patrol the streets within the Authority and the BART Main Lot, at the expense of the Authority. When Union City initiated parking fees, both on-street and within the City-owned parking lots, the salaries of two part-time police cadets were funded with parking violation proceeds. As the Authority collects revenues from parking permits and parking violation fees, the enforcement program should be funded out of the Authority revenues. Until revenues are collected, the cost of enforcement would be an upfront capital cost (to be reimbursed to the City and BART over time).

It is recommended that enforcement personnel conduct occupancy counts of both on- and off-street parking in October and April annually.<sup>16</sup> These counts would then be used to adjust the daily and monthly parking fees semiannually, preferably in January and July.

As the program grows and funding becomes stable, the Authority may want to consider more advanced technologies that simplify or streamline the enforcement and monitoring procedures. This could include handheld ticket units, curbside sensors, and automated license plate readers.

## MAINTENANCE

BART currently maintains the BART Main Lot, and the City of Hayward maintains the streets surrounding the station. It is recommended that the City of Hayward continue to sweep City streets. As the Authority collects the revenue from the parking program, it should fund additional maintenance activities, including those in the BART Main Lot. Using revenue from the parking permit program and parking violation fees, the Authority should contract a third-party vendor to stripe and keep up the BART Main Lot. However, the Authority and BART should be cognizant of potential BART union issues. Currently, a third party contractor sweeps the parking lot; however, BART personnel maintain the landscaping surrounding the South Hayward BART Station. The Authority should coordinate with BART unions if any existing practice is to be changed.

As maintenance responsibility is shifted to the Authority, it is possible that BART could realize a marginal cost savings. However, until the Authority implements the program and begins receiving revenue, BART should continue to maintain the BART Main Lot and the City should continue maintaining City streets for the first year of the parking pricing program, with consideration of

<sup>16</sup> Nelson\Nygaard will provide parking occupancy survey template for use by the Authority.

the Authority assuming responsibility for maintaining the BART Main Lot and City streets in nine months from implementation.



## 5 FINANCIAL ANALYSIS

The alternatives analysis (Chapter 3) and parking program recommendations (Chapter 4) develop a strategy for meeting the needs of BART patrons who drive to the station and those who live in the neighborhoods around the South Hayward BART station. The following sections assess the revenue expectations and capital and on-going funding needs associated with these recommendations.

### PHASE ONE

This financial analysis assumes the entire existing BART Main Lot will be available for BART-related parking. The 39 spaces currently utilized for monthly reserved permit parking will continue to be reserved for monthly parking. As BART currently leases 19 of these 39 spaces for monthly parking, the Authority should remit to BART its lost revenue (\$42/permit) from the 19 spaces currently reserved monthly.<sup>17</sup> A total of 982 (955 daily fee and 27 ADA daily fee) spaces in the BART Main Lot will be available on a daily basis for \$1/day. Another 32 spaces in the BART Main Lot will be daily reserved parking spaces at a rate of \$3/day. The BART Main Lot will also accommodate 74 monthly reserved spaces for \$42/month. A 2009 study of the BART system found that “introducing daily parking fees of \$1 did not cause significant changes in access mode choice, facility location, or line-haul mode of park-and-ride users.”<sup>18</sup> Therefore, this analysis assumes that occupancy will initially remain at 98% of the off-street parking spaces. At this occupancy level, the analysis assumes that after six months, the Authority would increase the parking fee by 50 cents. Previous experience at other BART stations shows that for approximately two weeks after a fee increase there is a reduction in parking demand. After a few weeks, however, BART patrons resume parking at the station in equal numbers as before the fee increase. While one can only speculate as to the true market price of parking at the South Hayward BART Station, for this analysis, it is assumed that the temporary price elasticity of parking demand holds until parking costs \$3/day. Parking demand at neighboring Union City has stabilized at this price point (\$3/day). Thus for the purposes of the financial analysis, it is assumed that the parking fee increases in 50 cent increments every six months until the fee reaches \$3. All new net revenue would be entirely remitted to the Authority (net of capital and maintenance costs and BART remittance for the 19 existing monthly reserved spaces, discussed below).

On-street parking spaces would be similarly priced, and many of the same demand assumptions are extended to on-street parking spaces. On-street parking is recommended on Dixon Street, Tennyson Road, and Mission Boulevard, for a total of 272 spaces. In Phase One, these spaces are available first come, first served for \$1/day. The remaining block faces in the Authority are

<sup>17</sup> While this revenue may simply be written off by BART, the remittance is included in the cash flow analysis, as a conservative assumption.

<sup>18</sup> Syed, S, A. Golub, & E. Deakin, 2009. “Response of Regional Rail Park-and-ride Users to Parking Price Changes: System wide Results and a Detailed Study of Two Stations.” TRB, 2110 <http://pubsindex.trb.org/view.aspx?id=882277>.

reserved for residents. In other Hayward residential parking permit areas, the citation fee is \$67.50, and it is recommended that the Authority apply the same citation for all parking violations, including those in the off-street parking facility.<sup>19</sup> At a violation rate of 1%,<sup>20</sup> parking violation revenue is estimated at approximately \$229,000, annually. Before implementation, the BART Board and City Council should determine actions to reconcile citations. A detailed Phase One ten-year cash flow analysis, along with assumptions and notes, is shown in Figure 5-1.

## Capital Funding Needs

Capital costs for monthly parking permit hang-tags are relatively minimal. Rather than creating the infrastructure for selling and distributing permits, the most time and cost effective strategy would be to build onto BART's existing program. As effectively an extension of an existing practice, start-up costs would be nominal. This strategy may also allow the Authority to benefit from the lower per permit cost BART can negotiate with the vendor. The Authority would then reimburse BART for the costs of extending BART's current contract to the South Hayward Station.

Charging for daily parking in the BART Main Lot will carry a capital cost. It is recommended that the Authority make the various capital improvements to facilitate BART patron parking and the residential parking permit program for area residents. Such improvements include restriping the main lot, striping the city streets, numbering the spaces on both the lot and the streets, installing enforcement and wayfinding signage, and pedestrian safety improvements. Similar to a loan, the Authority would make various recommendations for improvements, which would then be accomplished as capital improvements by BART (in the main lot) and by the City (on City streets), and thereafter both BART and the City would be reimbursed (with interest) for their respective capital improvements.

In Phase One, all 272 on-street spaces and 1,090 off-street spaces will need to be striped and numbered. BART estimates that to stripe spaces within the BART Main Lot would cost \$200,000. The City estimates that it costs \$50,000 to stripe and number spaces on City streets.

Wayfinding and parking directional signage in Phase One would be critical to communicate to patrons that parking is no longer free. Enforcement signs will also need to be installed on affected streets and in the BART Main Lot. Although the signs themselves do not cost much, developing and installing the wayfinding and enforcement signage program within the BART Main Lot may range in cost from \$60,000 to \$80,000, according to BART Customer Access. To be conservative, this analysis assumes a cost of \$80,000. According to City estimates, installing wayfinding and enforcement signage on City streets may cost \$50,000.<sup>21</sup> Subsequent phases would build upon the monthly permit model and wayfinding system(s) established in Phase One

This analysis assumes that BART currently has surplus standard (Clipper Card, credit card and cash compatible) multi-space pay stations to be used inside the faregates at the South Hayward BART Station; thus the Authority would incur no capital costs for pay stations; however, this should be confirmed by BART Customer Access and Real Estate & Property Development.

<sup>19</sup> At other stations in the BART system, the parking violation fee is significantly lower than \$67.50.

<sup>20</sup> Local experience in the Union City BART Station Area indicates that this violation rate is conservative. At Union City, the parking citation rate is above 2%.

<sup>21</sup> Striping and numbering City streets is a temporary Phase I measure until Phase II is implemented and on-street parking validation machines make numbered on-street spaces unnecessary.

Capital costs would also need to include funding the on- and off-street enforcement activities referred to in Chapter 4—one full-time parking control officer for the first year of the program.<sup>22</sup> It is assumed that capital costs are covered with a loan, amortized over 20 years at an interest rate of 3%. Refer to Figure 5-1 for capital expenses in Phase One.

## Operations & Maintenance Needs

Operations and maintenance (O&M) needs in Phase One for on-street monthly permits include administering permit distribution, maintaining the parking spaces, maintaining two add fare multi-space parking meters inside the faregates, and enforcing parking restrictions. The costs of maintaining wayfinding signage, including graffiti removal, is also included.

To administer the on-street, monthly parking program, the third party vendor currently charges \$2.65/month/space for monthly parking permits at other BART stations, hence this analysis assumes the administrative cost of monthly non-residential (BART) and residential permits is \$2.65/month/space. The administrative cost of processing tickets is assumed to be 10% of the expected revenue.

Administrative costs for the daily parking program are negligible. The City of Hayward and BART currently maintain the existing supply of parking, and this analysis assumes that the City and BART will continue to maintain City streets and the Main Lot, respectively, for the first year after program implementation. However, after the first year of the program, this analysis assumes that the Authority will contract operations and maintenance activities in the station district to a third party vendor, just as neighboring Union City does. Operations and maintenance costs for off-street parking are expected to be \$0.76/space/day based on non-enforcement BART operations costs and estimates from the Victoria Transport Policy Institute. In neighboring Union City, per space maintenance costs are significantly lower for a similarly sized program. The City of Hayward estimates that maintenance of the City streets costs \$42,500/year. This analysis assumes that two part-time or one full-time parking control officer will be contracted through BART to enforce parking regulations at a cost of one full-time equivalent employee,<sup>23</sup> or \$85,000/year based on BART and City labor rates.<sup>24</sup> Other unforeseen O&M expenses are included as a cushion of 10%. The estimated operations and maintenance costs are shown in Figure 5-1 below capital cost estimates.

## Cash Flow Analysis

To be feasible, the capital, operating, and maintenance costs must be balanced against the predicted revenue. When neighboring Union City implemented a similar program, it immediately experienced a budget surplus of almost 50% of gross revenue. The Phase One cash flow analysis in Figure 5-1 demonstrates a surplus in the first year, largely as a result of the cooperative maintenance arrangement for the first year of the program. The cash flow analysis continues to show a budget surplus each year, allowing the Authority to reinvest revenue into future improvements, such as wayfinding, safety, and access improvements not currently accounted for in this analysis. Figure 5-1 shows the annual cost of the program for the first year, if the capital

<sup>22</sup> This recommendation is drawn from the experience of Union City with a similarly sized parking supply surrounding the Union City BART Station.

<sup>23</sup> Neighboring Union City enforces similarly sized on-street and off-street facilities with one full-time equivalent employee.

<sup>24</sup> The first year of enforcement is counted as a capital cost.

costs are paid for with cash. Appendix D displays the Phase One lower bound cash flow analysis, assuming that prices never increase and remain static, and is useful for comparative purposes.

Figure 5-1: Phase One Financial Analysis (2013-2022)

ASSUMPTIONS		
	Units	Notes
<b>General</b>		
Annual Interest Rate	3%	
Loan Period (years)	20	
Maintenance/space	\$0.76	BART
Citation Rate	1%	
Citation Fee	\$67.50	
Workdays per Month	21	
Months per Year	12	
Period in Which Elasticity Applies	10.5	
Total Days per Year	365	
On-street Daily Utilization Rate	90%	
BART Main Lot Daily Fee Utilization Rate	98%	
BART Main Lot Daily Reserved Utilization Rate	90%	
BART Main Lot Monthly Reserved Utilization Rate	100%	
Elasticity	-0.20	Assumed for first two weeks of price increase
Residential Parking Permits	448	Assumed maximum amount of residential parking permits are requested.
CPI (applied to annual O & M costs only)	2.48%	Ten year average
<b>Pricing</b>		
On-street Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1	\$3.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1	\$42	Assumes monthly permit price is equal to existing monthly permit cost. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 1 to 1.5	\$1.50	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1 to 1.5	\$1.50	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1 to 1.5	\$3.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1	\$42	Assumes monthly permit price is equal to existing monthly permit cost. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 1.5 to 2	\$2.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1.5 to 2	\$2.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1.5 to 2	\$4.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1.5 to 2	\$63	Assumes monthly reserved permit price increases to next BART fee grade (currently \$63/month) in tandem with the price increase for daily reserved parking. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1.5 to 2	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 2 to 2.5	\$2.50	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 2 to 2.5	\$2.50	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 2 to 2.5	\$4.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 2 to 2.5	\$63	Assumes monthly reserved permit price increases to next BART fee grade (currently \$63/month) in tandem with the price increase for daily reserved parking. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 2 to 2.5	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 2.5 to 3	\$3.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 2.5 to 3	\$3.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 2.5 to 3	\$5.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 2.5 to 3	\$84	Assumes monthly reserved permit price increases in tandem with the price increase for daily reserved parking. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 2.5 to 3	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
<b>Capital Costs</b>		
Assumes all capital costs are rolled into a single 20-year loan.		
Clipper card reader	\$1,600	Assumed to be paid out with a 20-year loan
Re-stripe and number spaces in BART Main Lot	\$200,000	Assumed to be paid out with a 20-year loan
Stripe and number spaces on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Remove and reinstall fencing (City)	\$97,000	Assumed to be paid out with a 20-year loan
Purchase and issue permits (City)	\$3,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs in BART Main Lot	\$80,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs on City Streets	\$50,000	Assumed to be paid out with a 20-year loan

Other Unforeseen Capital Costs	\$48,210	Assume 10% contingency of total Capital Costs
Implementation Flyers	\$500	Assumed to be paid out with a 20-year loan
<b>O&amp;M Costs</b>		
Enforcement Officer	\$85,000	per year
Monthly Parking Program Administration	\$2.65	per month
Residential Parking Program Administration	\$2.65	per year
Meter Maintenance	\$57	per month according to the District DOT (\$55/mo.), City of Berkeley (or \$29/mo.), City of Long Beach (\$37 - \$57/mo.) Assumes Authority will not maintain meters until Phase Two.
Parking Space Maintenance (BART)	\$0.76	Cost per calendar day according to BART labor & non-labor costs of maintenance & engineering for an individual space in a similarly sized lot in 2010. For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Parking Space Maintenance (City Streets)	\$42,500	Cost per year (City). For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Ticket processing	10%	Cost for routine maintenance of City streets assumed to be the responsibility of the City of Hayward
Other Unforeseen O&M Costs	10%	Cost of off-street program administration assumed to be negligible.

**PARKING SUPPLY**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	272	272	272	272	272	272	272	272	272	272
BART Main Lot Daily Fee	982	982	982	982	982	982	982	982	982	982
BART Main Lot Daily Reserved	32	32	32	32	32	32	32	32	32	32
BART Main Lot Monthly Reserved	74	74	74	74	74	74	74	74	74	74
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Priced Supply (excludes employee parking)</b>	<b>1360</b>									

**PARKING DEMAND (W/ TEMPORARY ELASTICITY)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	245	242	239	239	239	239	239	239	239	239
BART Main Lot Daily Fee	962	952	941	939	939	939	939	939	939	939
BART Main Lot Daily Reserved	29	29	29	29	29	29	29	29	29	29
BART Main Lot Monthly Reserved	74	74	73	73	73	73	73	73	73	73
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Demand</b>	<b>1310</b>	<b>1296</b>	<b>1283</b>	<b>1279</b>						

**REVENUE**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	\$61,690	\$106,717	\$165,863	\$180,483	\$180,483	\$180,483	\$180,483	\$180,483	\$180,483	\$180,483
BART Main Lot Daily Fee	\$242,515	\$419,528	\$652,043	\$709,518	\$709,518	\$709,518	\$709,518	\$709,518	\$709,518	\$709,518
BART Main Lot Daily Reserved	\$21,773	\$25,321	\$32,468	\$35,986	\$35,986	\$35,986	\$35,986	\$35,986	\$35,986	\$35,986
BART Main Lot Monthly Reserved	\$14,515	\$18,084	\$25,251	\$28,789	\$28,789	\$28,789	\$28,789	\$28,789	\$28,789	\$28,789
BART Off-Street Reserved (Monthly)	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576
Parking Ticket Revenue	\$222,824	\$220,481	\$218,164	\$217,539	\$217,539	\$217,539	\$217,539	\$217,539	\$217,539	\$217,539
<b>Total Gross Revenue</b>	<b>\$553,741</b>	<b>\$780,555</b>	<b>\$1,084,213</b>	<b>\$1,162,739</b>						

**EXPENSES**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Capital Costs</b>										
Clipper card reader	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108
Re-stripe and number spaces in BART Main Lot	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443
Stripe and number spaces on City Streets	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Remove and reinstall fencing (City)	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520
Purchase and issue permits (City)	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202
Wayfinding & Enforcement Signage Capital Costs (BART)	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377
Wayfinding & Enforcement Signage Capital Costs (City)	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Other Unforeseen Capital Costs	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240
Implementation Flyers	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34
<b>O&amp;M Costs</b>										
Enforcement Officer	\$85,000	\$87,108	\$89,268	\$91,482	\$93,751	\$96,076	\$98,459	\$100,900	\$103,403	\$105,967
Monthly Reserved Parking Program Administration	\$2,353	\$2,412	\$2,471	\$2,533	\$2,595	\$2,660	\$2,726	\$2,793	\$2,863	\$2,934
Residential Parking Program Administration	\$1,187	\$1,217	\$1,247	\$1,278	\$1,309	\$1,342	\$1,375	\$1,409	\$1,444	\$1,480
Meter Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Parking Space Maintenance (BART)	\$0	\$309,865	\$317,549	\$325,425	\$333,495	\$341,766	\$350,242	\$358,928	\$367,829	\$376,951
Parking Space Maintenance (City)	\$0	\$43,554	\$44,634	\$45,741	\$46,875	\$48,038	\$49,229	\$50,450	\$51,701	\$52,984
Ticket processing	\$22,282	\$22,048	\$21,816	\$21,754	\$21,754	\$21,754	\$21,754	\$21,754	\$21,754	\$21,754
Other Unforeseen O&M Costs	\$11,082	\$46,620	\$47,699	\$48,821	\$49,978	\$51,164	\$52,378	\$53,623	\$54,899	\$56,207
<b>Total Expenses</b>	<b>\$157,550</b>	<b>\$548,468</b>	<b>\$560,330</b>	<b>\$572,678</b>	<b>\$585,403</b>	<b>\$598,444</b>	<b>\$611,808</b>	<b>\$625,503</b>	<b>\$639,538</b>	<b>\$653,921</b>

<b>NET REVENUE</b>	<b>\$396,190</b>	<b>\$232,087</b>	<b>\$523,883</b>	<b>\$590,061</b>	<b>\$577,336</b>	<b>\$564,295</b>	<b>\$550,931</b>	<b>\$537,236</b>	<b>\$523,201</b>	<b>\$508,818</b>
<b>BALANCE</b>	<b>\$396,190</b>	<b>\$628,277</b>	<b>\$1,152,159</b>	<b>\$1,742,220</b>	<b>\$2,319,556</b>	<b>\$2,883,851</b>	<b>\$3,434,782</b>	<b>\$3,972,018</b>	<b>\$4,495,219</b>	<b>\$5,004,036</b>

## PHASE TWO

Phase Two should only be implemented if the District transforms into a more commercial destination with a higher need for short-term parking. If this does not materialize, it is recommended that Phase One remain in place. Phase Two examines finances assuming the following best-case scenario:

- Occupancy has stabilized above 90% in both on- and off-street facilities
- The parking fee increases to \$3/day

The Authority may ultimately decide to phase the implementation of Phase Two with a few pay stations installed on key streets to begin with, with additional pay stations installed as demand warrants. For the purposes of this financial analysis, it is assumed that Phase Two is implemented in year five of the parking fee program. Phase Two utilizes the same assumptions detailed in the discussion of Phase One, unless otherwise noted.

### Capital Funding Needs

In Phase Two, capital funding needs will be significantly greater due to additional multi-space parking stations on neighborhood streets and associated wayfinding or informational signage. Assuming one pay station for each block face, the number of pay stations recommended is eighteen in the preferred alternative. Figure 5-2 also lists capital costs associated with on-street parking pay stations, additional wayfinding, and a 10% cushion for other unforeseen capital expenses.

### Operations & Maintenance Needs

Additional multi-space pay stations will incur enforcement and meter maintenance costs. Similar to Phase One, the annual cost to operate and maintain the program include enforcement, residential parking program administration, meter and BART Main Lot maintenance,<sup>25</sup> ticket processing, and a 10% cushion for other unforeseen O&M costs, as shown in Figure 5-2.

### Cash Flow Analysis

The cash flow analysis assumes that the profile of South Hayward BART riders who drive to the station does not change markedly between Phase One and Two; thus, it assumes daily on-street parking. This is a conservative assumption for revenue purposes only. Multi-space parking meters for hourly parking could stimulate parking turnover and generate additional parking and ridership revenue. For a breakdown of expected revenue for daily on- and off-street parking and parking ticket revenue, refer to Figure 5-2.

In spite of the additional capital and maintenance costs associated with multi-space pay stations, Phase Two also is expected to yield a positive balance, as shown in Figure 5-2. While the net balance after implementing Phase Two is less than the expected net balance in Phase One, a variety of scenarios could affect the cash flow analysis. For instance, if Phase Two—moving to multi-space pay stations on streets within the Authority—would occur in conjunction with higher

<sup>25</sup> The cost of meter maintenance is assumed to be \$57/month for each meter. Meter maintenance costs vary by location and type of meter. The City of Long Beach, CA pays between \$38-\$57/month for meter maintenance, while the District of Columbia DOT pays \$55/month. The City of Berkeley, CA pays \$29/month. To be conservative, this study uses a meter maintenance cost of \$57/month.

parking fees and/or more dynamic (e.g., hourly) pricing, revenue would increase above that expected under Phase One. Parking turnover may lead to greater productivity of the existing parking supply and more parking and ridership revenue. Appendix D demonstrates the Phase Two lower-bound cash flow analysis, assuming that prices never increase and remain static, and is useful for comparative purposes.

Figure 5-2: Phase Two Financial Analysis (2013-2022)

ASSUMPTIONS		
	Units	Notes
<b>General</b>		
Annual Interest Rate	3%	
Loan Period (years)	20	
Maintenance/space	\$0.76	BART
Citation Rate	1%	
Citation Fee	\$67.50	
Workdays per Month	21	
Months per Year	12	
Period in Which Elasticity Applies	10.5	
Total Days per Year	365	
On-street Daily Utilization Rate	90%	
BART Main Lot Daily Fee Utilization Rate	98%	
BART Main Lot Daily Reserved Utilization Rate	90%	
BART Main Lot Monthly Reserved Utilization Rate	100%	
Elasticity	-0.20	Assumed for first two weeks of price increase
Residential Parking Permits	448	Assumed maximum amount of residential parking permits are requested.
CPI (applied to annual O & M costs only)	2.48%	Ten year average
<b>Pricing</b>		
On-street Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1	\$3.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1	\$42	Assumes monthly permit price is equal to existing monthly permit cost. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 1 to 1.5	\$1.50	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1 to 1.5	\$1.50	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1 to 1.5	\$3.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1	\$42	Assumes monthly permit price is equal to existing monthly permit cost. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 1.5 to 2	\$2.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1.5 to 2	\$2.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1.5 to 2	\$4.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1.5 to 2	\$63	Assumes monthly reserved permit price increases to next BART fee grade (currently \$63/month) in tandem with the price increase for daily reserved parking. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1.5 to 2	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 2 to 2.5	\$2.50	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 2 to 2.5	\$2.50	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 2 to 2.5	\$4.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 2 to 2.5	\$63	Assumes monthly reserved permit price increases to next BART fee grade (currently \$63/month) in tandem with the price increase for daily reserved parking. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 2 to 2.5	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
On-street Daily Fee - Year 2.5 to 3	\$3.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 2.5 to 3	\$3.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 2.5 to 3	\$5.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 2.5 to 3	\$84	Assumes monthly reserved permit price increases in tandem with the price increase for daily reserved parking. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 2.5 to 3	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
<b>Capital Costs</b>		
Assumes all capital costs are rolled into a single 20-year loan.		
Clipper card reader	\$1,600	Assumed to be paid out with a 20-year loan
Re-stripe and number spaces in BART Main Lot	\$200,000	Assumed to be paid out with a 20-year loan
Stripe and number spaces on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Remove and reinstall fencing (City)	\$97,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs in BART Main Lot	\$80,000	Assumed to be paid out with a 20-year loan
Purchase and issue permits (City)	\$3,000	Assumed to be paid out with a 20-year loan
Enforcement Signage Capital Costs in BART Main Lot - Phase 2	\$80,000	Assumed to be paid out with a 20-year loan. Assumes Phase Two is implemented in Year Five (2017).
Enforcement Signage Capital Costs on City Streets - Phase 2	\$50,000	Assumed to be paid out with a 20-year loan. Assumes Phase Two is implemented in Year Five (2017).
Multi-space pay stations - Phase 2	\$180,000	Assumed to be paid out with a 20-year loan. Assumes one pay station per block face of on-street parking. Assumes each multi-space pay station costs \$10,000. Assumes Phase Two is implemented in Year Five (2017).
Other Unforeseen Capital Costs	\$48,210	Assumes 10% contingency of total Capital Costs
Implementation Flyers	\$500	Assumed to be paid out with a 20-year loan
Implementation Flyers - Phase 2	\$500	Assumed to be paid out with a 20-year loan. Assumes Phase Two is implemented in Year Five (2017).
<b>O&amp;M Costs</b>		
Enforcement Officer	\$85,000	per year
Monthly Parking Program Administration	\$2.65	per month

Residential Parking Program Administration	\$2.65	per year
Meter Maintenance	\$57	per month according to the District DOT (\$55/mo.), City of Berkeley (or \$29/mo.), City of Long Beach (\$37 - \$57/mo.)
Parking Space Maintenance (BART)	\$0.76	Cost per calendar day according to BART labor & non-labor costs of maintenance & engineering for an individual space in a similarly sized lot in 2010. For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Parking Space Maintenance (City Streets)	\$42,500	Cost per year (City). For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Ticket processing	10%	Cost for routine maintenance of City streets assumed to be the responsibility of the City of Hayward
Other Unforeseen O&M Costs	10%	Cost of off-street program administration assumed to be negligible.

**PARKING SUPPLY**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	272	272	272	272	272	272	272	272	272	272
BART Main Lot Daily Fee	982	982	982	982	982	982	982	982	982	982
BART Main Lot Daily Reserved	32	32	32	32	32	32	32	32	32	32
BART Main Lot Monthly Reserved	74	74	74	74	74	74	74	74	74	74
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Priced Supply (excludes employee parking)</b>	<b>1360</b>									

**PARKING DEMAND (W/ TEMPORARY ELASTICITY)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	245	242	239	239	239	239	239	239	239	239
BART Main Lot Daily Fee	962	952	941	939	939	939	939	939	939	939
BART Main Lot Daily Reserved	29	29	29	29	29	29	29	29	29	29
BART Main Lot Monthly Reserved	74	74	73	73	73	73	73	73	73	73
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Demand</b>	<b>1310</b>	<b>1296</b>	<b>1283</b>	<b>1279</b>						

**REVENUE**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	\$61,690	\$106,717	\$165,863	\$180,483	\$180,483	\$180,483	\$180,483	\$180,483	\$180,483	\$180,483
BART Main Lot Daily Fee	\$242,515	\$419,528	\$652,043	\$709,518	\$709,518	\$709,518	\$709,518	\$709,518	\$709,518	\$709,518
BART Main Lot Daily Reserved	\$21,773	\$25,321	\$32,468	\$35,986	\$35,986	\$35,986	\$35,986	\$35,986	\$35,986	\$35,986
BART Main Lot Monthly Reserved	\$14,515	\$18,084	\$25,251	\$28,789	\$28,789	\$28,789	\$28,789	\$28,789	\$28,789	\$28,789
BART Off-Street Reserved (Monthly)	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576
Parking Ticket Revenue	\$222,824	\$220,481	\$218,164	\$217,539	\$217,539	\$217,539	\$217,539	\$217,539	\$217,539	\$217,539
<b>Total Gross Revenue</b>	<b>\$553,741</b>	<b>\$780,555</b>	<b>\$1,084,213</b>	<b>\$1,162,739</b>						

**EXPENSES**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Capital Costs</b>										
Clipper card reader	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108
Re-stripe and number spaces in BART Main Lot	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443
Stripe and number spaces on City Streets	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Remove and reinstall fencing (City)	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520
Purchase and issue permits (City)	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202
Wayfinding & Enforcement Signage Capital Costs (BART)	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377
Wayfinding & Enforcement Signage Capital Costs (City)	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Other Unforeseen Capital Costs	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240
Implementation Flyers	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34
Enforcement Signage Capital Costs in BART Main Lot - Phase 2	\$0	\$0	\$0	\$0	\$5,931	\$5,931	\$5,931	\$5,931	\$5,931	\$5,931
Enforcement Signage Capital Costs on City Streets - Phase 2	\$0	\$0	\$0	\$0	\$3,707	\$3,707	\$3,707	\$3,707	\$3,707	\$3,707
Multi-space pay stations - Phase 2	\$0	\$0	\$0	\$0	\$13,344	\$13,344	\$13,344	\$13,344	\$13,344	\$13,344
Implementation Flyers - Phase 2	\$0	\$0	\$0	\$0	\$37	\$37	\$37	\$37	\$37	\$37
<b>O&amp;M Costs</b>										
Enforcement Officer	\$85,000	\$87,108	\$89,268	\$91,482	\$93,751	\$96,076	\$98,459	\$100,900	\$103,403	\$105,967
Monthly Reserved Parking Program Administration	\$2,353	\$2,412	\$2,471	\$2,533	\$2,595	\$2,660	\$2,726	\$2,793	\$2,863	\$2,934
Residential Parking Program Administration	\$1,187	\$1,217	\$1,247	\$1,278	\$1,309	\$1,342	\$1,375	\$1,409	\$1,444	\$1,480
Meter Maintenance (Phase Two in 2017)	\$0	\$0	\$0	\$0	\$15,088	\$15,463	\$15,846	\$16,239	\$16,642	\$17,054
Parking Space Maintenance (BART)	\$0	\$309,865	\$317,549	\$325,425	\$333,495	\$341,766	\$350,242	\$358,928	\$367,829	\$376,951
Parking Space Maintenance (City Streets)	\$0	\$43,554	\$44,634	\$45,741	\$46,875	\$48,038	\$49,229	\$50,450	\$51,701	\$52,984
Ticket processing	\$22,282	\$22,048	\$21,816	\$21,754	\$21,754	\$21,754	\$21,754	\$21,754	\$21,754	\$21,754
Other Unforeseen O&M Costs	\$11,082	\$46,620	\$47,699	\$48,821	\$51,487	\$52,710	\$53,963	\$55,247	\$56,564	\$57,912
<b>Total Expenses</b>	<b>\$157,550</b>	<b>\$548,468</b>	<b>\$560,330</b>	<b>\$572,678</b>	<b>\$625,020</b>	<b>\$638,472</b>	<b>\$652,258</b>	<b>\$666,385</b>	<b>\$680,863</b>	<b>\$695,700</b>

<b>NET REVENUE</b>	<b>\$396,190</b>	<b>\$232,087</b>	<b>\$523,883</b>	<b>\$590,061</b>	<b>\$537,719</b>	<b>\$524,267</b>	<b>\$510,481</b>	<b>\$496,354</b>	<b>\$481,876</b>	<b>\$467,039</b>
<b>BALANCE</b>	<b>\$396,190</b>	<b>\$628,277</b>	<b>\$1,152,159</b>	<b>\$1,742,220</b>	<b>\$2,279,939</b>	<b>\$2,804,207</b>	<b>\$3,314,688</b>	<b>\$3,811,042</b>	<b>\$4,292,917</b>	<b>\$4,759,956</b>

## 6 IMPLEMENTATION SCHEDULE

This chapter provides a high level implementation schedule with particular focus on the first few months of Phase One. Implementation of Phase One is time-sensitive as a program needs to be in effect by early 2013, when development of the BART East Lot is scheduled to commence. As the parking fee program proposed is very flexible in nature, it is challenging to determine the exact steps that will follow upon the initial implementation. However, the general structure of this schedule should be adhered to in order for the program to be as successful as possible. The Authority is responsible for implementing each item, unless indicated otherwise.

### PHASE ONE

#### Initial Steps

1. Hold public information sessions to provide neighbors an opportunity to review and provide feedback on the draft South Hayward BART Parking & Access Study (City & BART)
2. Finalize the South Hayward BART Parking & Access Study (Authority, City & BART staff)
3. Approve the modification to the Authority boundary and select one of the two Parking Alternatives (Authority & City)
4. Conduct an occupancy survey of parking at the Downtown Hayward BART Station against which to measure the effects of the pricing program at the South Hayward BART Station (City & BART)
5. Conduct a detailed informational meeting for impacted residents prior to processing of RPP district (Authority, City and BART)
6. Consider allowing two hour visitor parking without a permit in the residential areas (City & Authority)
7. Receive authorization to implement parking fees and parking fee change mechanisms (BART, City & Authority)
8. Ensure compliance with Title VI of the Civil Rights Act of 1964 (BART)
9. Approve the Residential Permit Parking (RPP) district (Authority & City)
10. Approve legal aspects of RPP district and what net parking revenue can be spent on
11. Secure funding for initial capital and operating expenses (City & BART)
12. Contract with a vendor in collaboration with BART to process the resident and BART parking permits
13. Issue an agreement with the preferred parking permit provider
14. Conduct a safety assessment of the station area to identify hindrances to universal access and/or potential safety concerns

15. Identify and prioritize wayfinding and low-cost or high-priority pedestrian/bicycle improvements detailed in the 2011 South Hayward BART Station Access Plan (see Appendix C) and potential funding sources
16. Install BART's pay stations within the BART fare gates
17. Stripe and sign all parking stalls in BART's Main Lot and on City streets
18. Order street signs and other wayfinding signage
19. Enter into a Memorandum of Understanding with Hayward Police and BART Police
20. Hire two part-time cadets for parking enforcement and monitoring through BART
21. Conduct soft launch of the parking fee program (Ensure that all components above are ready for implementation)
22. Follow BART and City protocol by sending out a notice to residents within 1/2 mile of the station (or other agreed upon distance) and to patrons of parked cars at the station two weeks prior to hard launch
23. Introduce parking fee program at and around the station
24. Provide warnings instead of actual parking citations during the first four weeks after the launch of the parking program
25. Allow the developer to install a fence along the property line on Dixon Street once the East BART Lot has been closed

## **Phase One to Phase Two Launch**

1. Update the revenue and expense sheet with real data as information becomes available
2. Conduct parking occupancy surveys using Nelson\Nygaard's spreadsheet template twice a year (April and October)
3. Adjust daily and monthly fees accordingly, and by location if warranted
4. Make refinements to wayfinding and consider funding other access improvements (e.g., streetscape, lighting, bicycle facility improvements) as funding becomes available through parking revenue
5. Allow for residents within the Authority boundary to provide ongoing feedback on the parking program
6. Have the Authority Board meet regularly to discuss whether Phase Two is warranted
7. Authority Board must approve introduction of Phase Two, based on parking occupancy data and funding security

## **PHASE TWO**

1. Continue conducting parking occupancy surveys twice a year using Nelson\Nygaard's spreadsheet template
2. Adjust daily and monthly fees accordingly, and by location if warranted
3. Issue RFP to select pay station vendor and technology
4. Determine budget for Phase Two
5. Define bounds of each multi-space pay station and number of initial pay stations
6. Select pay station locations and where to continue using monthly permits, etc.

7. Install pay stations, new signage and wayfinding
8. Conduct soft launch of the updated parking fee program (Ensure that all components above are ready for implementation)
9. Follow BART and City protocol by sending out a notice to residents within 1 mile of the station (or other agreed upon distance) and to patrons of parked cars at the station two weeks prior to hard launch
10. Introduce the updated parking fee program
11. Consider providing warnings instead of actual parking citations during the first four weeks after the launch of the parking program
12. Update the revenue and expense sheet regularly with actual data
13. Make refinements to wayfinding and consider funding other access improvements (e.g., streetscape, lighting, bicycle facility improvements) and larger maintenance projects (e.g. repaving) as funding becomes available through parking revenue



## **APPENDIX A**

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### Future Parking Demand



## Appendix A Future Parking Demand

In the coming years, parking within the Authority boundaries will be affected more dramatically on both the supply side and demand side. The Alternatives listed previously assume constant demand for parking in the near term, and on the supply side, considered only those parking projects currently planned.

In the long term, overall ridership from the South Hayward BART station is expected to grow, and proportionally fewer of these riders will choose to park at the BART station. By 2020, BART predicts significant access mode shift away from the auto. The 2008 BART Station Profile Study indicated that of the 3,420 total daily boardings at South Hayward, the park and ride mode split was 65%, or 2,223 riders. The BART Ridership Model (BRM) predicts that by 2020, ridership will increase 6% to 3,618, while the park and ride mode split will fall in both relative terms and absolute terms to 44% of ridership, or 1,592. Refer to Figure A-1.

Figure A-1 Projected South Hayward Ridership & Mode Split

South Hayward BART Access	2008		2020		% Change (2020-2008)
	Boardings	Mode Split	Boardings	Mode Split	
Park and Ride	2223	65%	1592	44%	-28%
Drop Off	513	15%	724	20%	41%
Transit	171	5%	543	15%	217%
Bike/ Walk	513	15%	760	21%	48%
<b>Total South Hayward Boardings</b>	<b>3420</b>	<b>100%</b>	<b>3618</b>	<b>100%</b>	<b>6%</b>

Source: South Hayward BART Access Study, 2011 & BART Ridership Model

In 2020, the number of boardings by people who drive to the South Hayward BART station and park is expected to decrease by 631 (2,223 to 1,592), translating to a decrease in parking demand of 391 spaces to 988 spaces (based on average vehicle occupancy). The BART Main lot has 1,090 spaces, which is sufficient to meet the predicted parking demand in 2020, barring any changes in the off-street parking supply.

Between 2008 and 2020, parking demand is predicted to be supplanted by increased transit access (transit access is expected to increase by over 200% in the next decade), bicycling and walking to the station, and passenger drop off at the station. For the purposes of this report, it is assumed that these substantial access changes will not materialize in the next couple of years, thus, this analysis focuses on accommodating current parking demand in the near term.



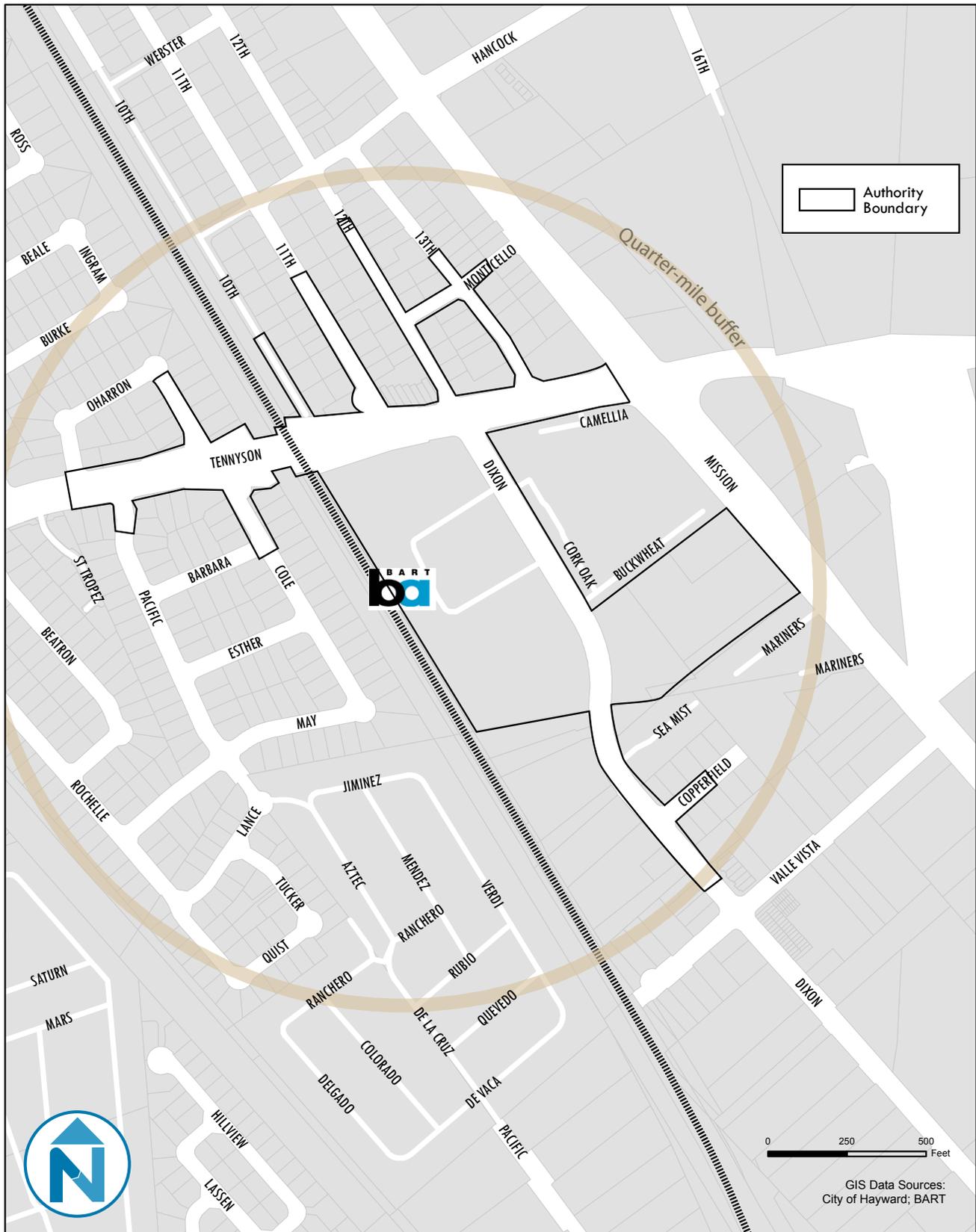
## **APPENDIX B**

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### Joint Powers Authority Boundary



Figure B-1 South Hayward BART Joint Powers Authority Boundary





## **APPENDIX C**

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### Prioritized List of Access Strategies



## Appendix C Prioritized List of Access Strategies

The 2011 BART South Hayward Access Plan Update recommended a number of access strategies. Figure C-1 shows a list of these strategies, organized by mode, to help determine the improvements on which to focus. High-level cost assumptions, the potential usage of the proposed improvement, and timeliness (when the improvement should be introduced, assuming funding is available) all help determine the level of priority a strategy has in relation to other strategies in the table. This list of access strategies has not been formally endorsed by respective agencies, nor have costs been estimated or funding secured for these strategies. Various factors affect the feasibility of implementation, including agency jurisdiction, funding, and neighborhood priorities. The following strategies were developed during the 2011 South Hayward Access Plan Update and are reprinted below.

Figure C-1 Proposed Access Improvements to the South Hayward BART Station and Neighborhood

Project	Cost	Usage	Timeliness	Priority	Other Comments
Streets					
New streets southeast of BART Station	High	Moderate	Low	Moderate	Creating more streets, interconnecting Dixon and Mission is dependent on development of large parcels between the two streets.
Wayfinding	Low	Moderate	High	High	Wayfinding will encourage new and existing residents and visitors to use transit by effectively guiding them to the BART station.
Pedestrian					
Enhanced walkways within half mile of the station	Moderate	Moderate	Moderate/High	Moderate/High	Includes sidewalk completion and other improvements in the station area.
Pedestrian bridge over Tennyson Road to connect to Nuestro Parquecito or future multi-use pathway	Moderate/High	Moderate	Moderate	Moderate/High	Would complete the bicycle/pedestrian network to BART from Nuestro Parquecito. A less expensive solution may be to construct new pedestrian paths from 10 <sup>th</sup> and 11 <sup>th</sup> Streets down to Tennyson Road.
Enhanced connections under BART tracks	Moderate/High	Low	Moderate	Moderate	Specific improvements may include upgrading the tunnel outside Bowman School and the bridge at Sorenson.
Ped/bike corridor along UP alignment	High	Moderate	Low/Moderate	Moderate	Could be combined with new west entrance to station.

Project	Cost	Usage	Timeliness	Priority	Other Comments
Ped/bike connection between Dixon and Mission Blvd on Caltrans right of way	Low	Moderate	Low	Moderate	Planned pathway linking Mission and Dixon through a new park will create better neighborhood connectivity.
Bicycle					
Replace single-user lockers with electronic lockers, and if demand warrants it, implement a bicycle station	Low	Low	Moderate	Moderate	Part of system-wide upgrade. Once demand supports the implementation of a bicycle station, secure funding for such implementation.
Restripe and sign existing Class II bike lanes on Tennyson Road	Low	Low	Moderate	Moderate	The route will be better utilized if properly maintained.
Bike boxes and bike actuated traffic signals	Low/ Moderate	Low	Low	Low	On streets with bike lanes on Tennyson Road and on Dixon Street in the station area.
Transit and Shuttles					
AC Transit/Shuttle service	Moderate	Low	Low	Low	May be appropriate in conjunction with increased development at key destinations.
Vehicles and Parking					
Tennyson On-Street Parking	Low	Moderate	High	High	The City estimates that 159 parking spaces could be introduced on Tennyson for BART patrons in the future.
Preferred Carpool/Vanpool Parking in BART structure	Low	Moderate	Moderate	Moderate	As demand increases for BART's carpool parking program, increase the number of carpool spaces available. Also, do marketing of the carpool program to drivers.
Shared Parking	Low	Low	Moderate	Moderate	Once parking is unbundled, creating a framework where parking is shared will maximize use of all parking spaces.
Real-time information signage	Moderate	Moderate	Moderate	Moderate	Improve parking access by implementing real-time parking availability signs.
Transportation Demand Management					
Unbundled Parking	Low	Moderate	High	High	Unbundled residential parking will increase the opportunity for shared parking with other users, such as BART commuters.

## SHB Parking & Access Study Report

Project	Cost	Usage	Timeliness	Priority	Other Comments
Parking Benefit District	Moderate	Low	Moderate	Moderate	On-street parking will need active management following new development and reduced BART parking. This concept could be used in both residential neighborhoods around the station as well as in the immediate station area.
Easy Pass Program	Moderate	Moderate	High	High	By providing free AC Transit passes (Easy Passes), residents will have a readily available choice of taking the bus, potentially increasing overall transit usage. This will be provided to affordable and senior housing residents.
Parking Cash Out	Low	Low	Moderate	Moderate	Parking cash out, while effective, may not be appropriate for all uses at the South Hayward BART Station at this time, but should be considered for future development in the station area.
Carsharing	Low	Moderate	Moderate	Moderate	The station area currently does not have access to carsharing. However, the SHMU development may trigger implementation.
TDM Coordination	Low	Moderate	High	High	An emphasis should be made on existing services and ensuring that individuals are aware of all transportation options.



## **APPENDIX D**

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### Lower Bound Cash Flow Analysis



Appendix D-1: Phase One Financial Analysis (2013-2022) Lower Bound: Constant Parking Prices

ASSUMPTIONS		
	Units	Notes
<b>General</b>		
Annual Interest Rate	3%	
Loan Period (years)	20	
Maintenance/space	\$0.76	BART
Citation Rate	1%	
Citation Fee	\$67.50	
Workdays per Month	21	
Months per Year	12	
Period in Which Elasticity Applies	10.5	
Total Days per Year	365	
On-street Daily Utilization Rate	90%	
BART Main Lot Daily Fee Utilization Rate	98%	
BART Main Lot Daily Reserved Utilization Rate	90%	
BART Main Lot Monthly Reserved Utilization Rate	100%	
Elasticity	-0.20	Assumed for first two weeks of price increase
Residential Parking Permits	448	Assumed maximum amount of residential parking permits are requested.
CPI (applied to annual O & M costs only)	2.48%	Ten year average
<b>Pricing</b>		
On-street Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1	\$3.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1	\$42	Assumes monthly permit price is equal to existing monthly permit cost. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
<b>Capital Costs</b>		
		Assumes all capital costs are rolled into a single 20-year loan.
Clipper card reader	\$1,600	Assumed to be paid out with a 20-year loan
Re-stripe and number spaces in BART Main Lot	\$200,000	Assumed to be paid out with a 20-year loan
Stripe and number spaces on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Remove and reinstall fencing (City)	\$97,000	Assumed to be paid out with a 20-year loan
Purchase and issue permits (City)	\$3,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs in BART Main Lot	\$80,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Other Unforeseen Capital Costs	\$48,210	Assume 10% contingency of total Capital Costs
Implementation Flyers	\$500	Assumed to be paid out with a 20-year loan
<b>O&amp;M Costs</b>		
Enforcement Officer	\$85,000	per year
Monthly Parking Program Administration	\$2.65	per month
Residential Parking Program Administration	\$2.65	per year
Meter Maintenance	\$57	per month according to the District DOT (\$55/mo.), City of Berkeley (or \$29/mo.), City of Long Beach (\$37 - \$57/mo.) Assumes Authority will not maintain meters until Phase Two.
Parking Space Maintenance (BART)	\$0.76	Cost per calendar day according to BART labor & non-labor costs of maintenance & engineering for an individual space in a similarly sized lot in 2010. For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Parking Space Maintenance (City Streets)	\$42,500	Cost per year (City). For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Ticket processing	10%	Cost for routine maintenance of City streets assumed to be the responsibility of the City of Hayward
Other Unforeseen O&M Costs	10%	Cost of off-street program administration assumed to be negligible.

PARKING SUPPLY										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	272	272	272	272	272	272	272	272	272	272
BART Main Lot Daily Fee	982	982	982	982	982	982	982	982	982	982
BART Main Lot Daily Reserved	32	32	32	32	32	32	32	32	32	32

BART Main Lot Monthly Reserved	74	74	74	74	74	74	74	74	74	74
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Priced Supply (excludes employee parking)</b>	<b>1360</b>									

PARKING DEMAND (W/ TEMPORARY ELASTICITY)										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	245	245	245	245	245	245	245	245	245	245
BART Main Lot Daily Fee	962	962	962	962	962	962	962	962	962	962
BART Main Lot Daily Reserved	29	29	29	29	29	29	29	29	29	29
BART Main Lot Monthly Reserved	74	74	74	74	74	74	74	74	74	74
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Demand</b>	<b>1310</b>									

REVENUE										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690
BART Main Lot Daily Fee	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515
BART Main Lot Daily Reserved	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773
BART Main Lot Monthly Reserved	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515
BART Off-Street Reserved (Monthly)	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576
Parking Ticket Revenue	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824
<b>Total Gross Revenue</b>	<b>\$553,741</b>									

EXPENSES										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Capital Costs</b>										
Clipper card reader	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108
Re-stripe and number spaces in BART Main Lot	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443
Stripe and number spaces on City Streets	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Remove and reinstall fencing (City)	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520
Purchase and issue permits (City)	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202
Wayfinding & Enforcement Signage Capital Costs (BART)	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377
Wayfinding & Enforcement Signage Capital Costs (City)	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Other Unforeseen Capital Costs	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240
Implementation Flyers	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34
<b>O&amp;M Costs</b>										
Enforcement Officer	\$85,000	\$87,108	\$89,268	\$91,482	\$93,751	\$96,076	\$98,459	\$100,900	\$103,403	\$105,967
Monthly Reserved Parking Program Administration	\$2,353	\$2,412	\$2,471	\$2,533	\$2,595	\$2,660	\$2,726	\$2,793	\$2,863	\$2,934
Residential Parking Program Administration	\$1,187	\$1,217	\$1,247	\$1,278	\$1,309	\$1,342	\$1,375	\$1,409	\$1,444	\$1,480
Meter Maintenance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Parking Space Maintenance (BART)	\$0	\$309,865	\$317,549	\$325,425	\$333,495	\$341,766	\$350,242	\$358,928	\$367,829	\$376,951
Parking Space Maintenance (City)	\$0	\$43,554	\$44,634	\$45,741	\$46,875	\$48,038	\$49,229	\$50,450	\$51,701	\$52,984
Ticket processing	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282
Other Unforeseen O&M Costs	\$11,082	\$46,644	\$47,745	\$48,874	\$50,031	\$51,216	\$52,431	\$53,676	\$54,952	\$56,260
<b>Total Expenses</b>	<b>\$157,550</b>	<b>\$548,726</b>	<b>\$560,843</b>	<b>\$573,260</b>	<b>\$585,985</b>	<b>\$599,025</b>	<b>\$612,389</b>	<b>\$626,085</b>	<b>\$640,120</b>	<b>\$654,503</b>

<b>NET REVENUE</b>	<b>\$396,190</b>	<b>\$5,014</b>	<b>-\$7,102</b>	<b>-\$19,519</b>	<b>-\$32,244</b>	<b>-\$45,285</b>	<b>-\$58,649</b>	<b>-\$72,344</b>	<b>-\$86,379</b>	<b>-\$100,762</b>
<b>BALANCE</b>	<b>\$396,190</b>	<b>\$401,205</b>	<b>\$394,102</b>	<b>\$374,583</b>	<b>\$342,339</b>	<b>\$297,054</b>	<b>\$238,405</b>	<b>\$166,061</b>	<b>\$79,682</b>	<b>-\$21,080</b>

Appendix D-2: Phase Two Financial Analysis (2013-2022) Lower Bound: Constant Parking Prices

ASSUMPTIONS		
	Units	Notes
<b>General</b>		
Annual Interest Rate	3%	
Loan Period (years)	20	
Maintenance/space	\$0.76	BART
Citation Rate	1%	
Citation Fee	\$67.50	
Workdays per Month	21	
Months per Year	12	
Period in Which Elasticity Applies	10.5	
Total Days per Year	365	
On-street Daily Utilization Rate	90%	
BART Main Lot Daily Fee Utilization Rate	98%	
BART Main Lot Daily Reserved Utilization Rate	90%	
BART Main Lot Monthly Reserved Utilization Rate	100%	
Elasticity	-0.20	Assumed for first two weeks of price increase
Residential Parking Permits	448	Assumed maximum amount of residential parking permits are requested.
CPI (applied to annual O & M costs only)	2.48%	Ten year average
<b>Pricing</b>		
On-street Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday
BART Main Lot Daily Fee - Year 1	\$1.00	Assumes price only implemented Monday-Friday. Assumes ADA spaces are also subject to a fee, but the two employee spaces are not.
BART Main Lot Daily Reserved - Year 1	\$3.00	Assumes price only implemented Monday-Friday. Assumes 3% of off-street spaces (excluding ADA and employee spaces) are daily reserved.
BART Main Lot Monthly Reserved - Year 1	\$42	Assumes monthly permit price is equal to existing monthly permit cost. Assumes 7% of off-street spaces (excluding ADA and employee spaces) are monthly reserved.
Existing BART Main Lot Monthly Reserved - Year 1	(\$42)	Includes remitting existing monthly parking permit revenue to BART (\$42/month) of the 19 existing monthly reserved spaces in the BART Main Lot
<b>Capital Costs</b>		
		Assumes all capital costs are rolled into a single 20-year loan.
Clipper card reader	\$1,600	Assumed to be paid out with a 20-year loan
Re-stripe and number spaces in BART Main Lot	\$200,000	Assumed to be paid out with a 20-year loan
Stripe and number spaces on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Remove and reinstall fencing (City)	\$97,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs on City Streets	\$50,000	Assumed to be paid out with a 20-year loan
Wayfinding & Enforcement Signage Capital Costs in BART Main Lot	\$80,000	Assumed to be paid out with a 20-year loan
Purchase and issue permits (City)	\$3,000	Assumed to be paid out with a 20-year loan
Enforcement Signage Capital Costs in BART Main Lot - Phase 2	\$80,000	Assumed to be paid out with a 20-year loan. Assumes Phase Two is implemented in Year Five (2017).
Enforcement Signage Capital Costs on City Streets - Phase 2	\$50,000	Assumed to be paid out with a 20-year loan. Assumes Phase Two is implemented in Year Five (2017).
Multi-space pay stations - Phase 2	\$180,000	Assumed to be paid out with a 20-year loan. Assumes one pay station per block face of on-street parking. Assumes each multi-space pay station costs \$10,000. Assumes Phase Two is implemented in Year Five (2017).
Other Unforeseen Capital Costs	\$48,210	Assumes 10% contingency of total Capital Costs
Implementation Flyers	\$500	Assumed to be paid out with a 20-year loan
Implementation Flyers - Phase 2	\$500	Assumed to be paid out with a 20-year loan. Assumes Phase Two is implemented in Year Five (2017).
<b>O&amp;M Costs</b>		
Enforcement Officer	\$85,000	per year
Monthly Parking Program Administration	\$2.65	per month
Residential Parking Program Administration	\$2.65	per year
Meter Maintenance	\$57	per month according to the District DOT (\$55/mo.), City of Berkeley (or \$29/mo.), City of Long Beach (\$37 - \$57/mo.)
Parking Space Maintenance (BART)	\$0.76	Cost per calendar day according to BART labor & non-labor costs of maintenance & engineering for an individual space in a similarly sized lot in 2010. For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Parking Space Maintenance (City Streets)	\$42,500	Cost per year (City). For the first year of program, maintenance of the BART Main Lot and City Streets assumed to be covered by others.
Ticket processing	10%	Cost for routine maintenance of City streets assumed to be the responsibility of the City of Hayward
Other Unforeseen O&M Costs	10%	Cost of off-street program administration assumed to be negligible.

PARKING SUPPLY										
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	272	272	272	272	272	272	272	272	272	272
BART Main Lot Daily Fee	982	982	982	982	982	982	982	982	982	982
BART Main Lot Daily Reserved	32	32	32	32	32	32	32	32	32	32

BART Main Lot Monthly Reserved	74	74	74	74	74	74	74	74	74	74
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Priced Supply (excludes employee parking)</b>	<b>1360</b>									

**PARKING DEMAND (W/ TEMPORARY ELASTICITY)**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	245	245	245	245	245	245	245	245	245	245
BART Main Lot Daily Fee	962	962	962	962	962	962	962	962	962	962
BART Main Lot Daily Reserved	29	29	29	29	29	29	29	29	29	29
BART Main Lot Monthly Reserved	74	74	74	74	74	74	74	74	74	74
Existing BART Main Lot Monthly Reserved	19	19	19	19	19	19	19	19	19	19
<b>Total Demand</b>	<b>1310</b>									

**REVENUE**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
On-street Daily Fee	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690	\$61,690
BART Main Lot Daily Fee	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515	\$242,515
BART Main Lot Daily Reserved	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773	\$21,773
BART Main Lot Monthly Reserved	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515	\$14,515
BART Off-Street Reserved (Monthly)	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576	-\$9,576
Parking Ticket Revenue	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824	\$222,824
<b>Total Gross Revenue</b>	<b>\$553,741</b>									

**EXPENSES**

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Capital Costs</b>										
Clipper card reader	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108	\$108
Re-stripe and number spaces in BART Main Lot	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443	\$13,443
Stripe and number spaces on City Streets	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Remove and reinstall fencing (City)	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520	\$6,520
Purchase and issue permits (City)	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202	\$202
Wayfinding & Enforcement Signage Capital Costs (BART)	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377	\$5,377
Wayfinding & Enforcement Signage Capital Costs (City)	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Other Unforeseen Capital Costs	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240	\$3,240
Implementation Flyers	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34	\$34
Enforcement Signage Capital Costs in BART Main Lot - Phase 2	\$0	\$0	\$0	\$0	\$5,931	\$5,931	\$5,931	\$5,931	\$5,931	\$5,931
Enforcement Signage Capital Costs on City Streets - Phase 2	\$0	\$0	\$0	\$0	\$3,707	\$3,707	\$3,707	\$3,707	\$3,707	\$3,707
Multi-space pay stations - Phase 2	\$0	\$0	\$0	\$0	\$13,344	\$13,344	\$13,344	\$13,344	\$13,344	\$13,344
Implementation Flyers - Phase 2	\$0	\$0	\$0	\$0	\$37	\$37	\$37	\$37	\$37	\$37
<b>O&amp;M Costs</b>										
Enforcement Officer	\$85,000	\$87,108	\$89,268	\$91,482	\$93,751	\$96,076	\$98,459	\$100,900	\$103,403	\$105,967
Monthly Reserved Parking Program Administration	\$2,353	\$2,412	\$2,471	\$2,533	\$2,595	\$2,660	\$2,726	\$2,793	\$2,863	\$2,934
Residential Parking Program Administration	\$1,187	\$1,217	\$1,247	\$1,278	\$1,309	\$1,342	\$1,375	\$1,409	\$1,444	\$1,480
Meter Maintenance (Phase Two in 2017)	\$0	\$0	\$0	\$0	\$15,088	\$15,463	\$15,846	\$16,239	\$16,642	\$17,054
Parking Space Maintenance (BART)	\$0	\$309,865	\$317,549	\$325,425	\$333,495	\$341,766	\$350,242	\$358,928	\$367,829	\$376,951
Parking Space Maintenance (City Streets)	\$0	\$43,554	\$44,634	\$45,741	\$46,875	\$48,038	\$49,229	\$50,450	\$51,701	\$52,984
Ticket processing	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282	\$22,282
Other Unforeseen O&M Costs	\$11,082	\$46,644	\$47,745	\$48,874	\$51,540	\$52,763	\$54,016	\$55,300	\$56,616	\$57,965
<b>Total Expenses</b>	<b>\$157,550</b>	<b>\$548,726</b>	<b>\$560,843</b>	<b>\$573,260</b>	<b>\$625,601</b>	<b>\$639,053</b>	<b>\$652,839</b>	<b>\$666,967</b>	<b>\$681,445</b>	<b>\$696,282</b>

<b>NET REVENUE</b>	<b>\$396,190</b>	<b>\$5,014</b>	<b>-\$7,102</b>	<b>-\$19,519</b>	<b>-\$71,861</b>	<b>-\$85,313</b>	<b>-\$99,099</b>	<b>-\$113,226</b>	<b>-\$127,704</b>	<b>-\$142,541</b>
<b>BALANCE</b>	<b>\$396,190</b>	<b>\$401,205</b>	<b>\$394,102</b>	<b>\$374,583</b>	<b>\$302,723</b>	<b>\$217,410</b>	<b>\$118,311</b>	<b>\$5,085</b>	<b>-\$122,619</b>	<b>-\$265,160</b>