



# BART Bike Parking Capital Program

Increasing bike access while reducing bikes onboard

April 2015



**EISEN | LETUNIC**  
TRANSPORTATION, ENVIRONMENTAL AND URBAN PLANNING



# BART bike parking capital program

## Table of contents

Introduction .....	1
Proposed bicycle capital program .....	2
Station profiles .....	5
12 <sup>th</sup> Street Oakland.....	6
16 <sup>th</sup> Street/Mission.....	7
24 <sup>th</sup> Street/Mission.....	8
Balboa Park.....	9
Bay Fair.....	10
Castro Valley .....	13
Civic Center .....	12
Colma .....	15
Concord.....	16
Downtown Berkeley.....	19
Dublin/Pleasanton .....	20
El Cerrito Plaza.....	22
Embarcadero.....	23
Fremont .....	25
Glen Park.....	26
Hayward .....	29
Lafayette.....	30
Lake Merritt .....	32
MacArthur .....	34
Millbrae .....	35
Orinda .....	36
Pittsburg/Bay Point.....	38
Richmond.....	39
Rockridge .....	40
San Bruno.....	43
San Leandro .....	44
South Hayward .....	46
South San Francisco .....	47
Walnut Creek.....	48
West Dublin/Pleasanton.....	51
West Oakland .....	52
Table 1: Bicycle parking summary .....	3
Appendix A: Bicycle parking details .....	55
Appendix B: ArcLockers .....	59
Appendix C: Cost to provide recommended bicycle parking .....	61

## Introduction

In 2013, BART commissioned the first BART Bike Parking Capital Program, which recommended specific bicycle parking improvements at the system’s 18 busiest stations in terms of bicycle access. The 2012 BART Bicycle Plan suggested this approach based on the document’s finding that about 25% of cyclists who currently bring their bikes onboard do so because of a lack of secure parking at their origin station.

The urgency of BART’s efforts to increase the supply of secure bicycle parking intensified later in 2013 when the agency’s Board lifted the bicycle blackout period, thereby allowing bikes onboard trains at all times. This policy change made it all the more important to encourage as many passengers as possible to park their bikes at their origin station, leaving space on trains for those who need a bicycle at both ends of their trip.

The original BART Bike Parking Capital Program called for investing in stations with the highest occupancy of existing bicycle parking. As a result, a great deal of new bike parking has been constructed at these stations. This updated capital plan outlines further improvements to 31 stations, including 16 from the original plan – six unchanged and 10 revised as a result of new opportunities – and 15 new stations not addressed originally. See Table 1 for a summary of existing and recommended bicycle parking, and Appendix A for a more detailed accounting of these recommendations.

Bicycles provide an environmentally sustainable way to improve access to BART stations. The BART Bike Parking Capital Program will benefit the entire BART system by encouraging new and existing passengers to bicycle to BART – thus freeing up precious auto parking – and allowing more bike-to-BART passengers to park (rather than bringing a bike

onboard), which will help reduce train car crowding. The program will require monetary resources to make short term investments and for seed money to attract outside grant funds. As important as funding, will be a commitment of staff resources to plan, procure and construct new secure bicycle parking. Successful expansion of secure bike parking will rely on close coordination between BART Customer Access and BART's office of Planning and Development.

### Proposed bicycle capital program

The type of capital investments envisioned to accomplish the twin goals of increasing bicycle access and reducing onboard bicycle carriage include:

- Attended and self-serve Bike Stations
- Electronic lockers<sup>1</sup>, including outdoor "eLockers" BART has been using for years, and ArcLockers, currently under development, being designed for use inside stations (see Appendix B)
- Bicycle racks<sup>2</sup> inside station paid areas or drip lines

These parking types are considered secure either because of their location or limitations on access, or both. Table 1 shows the number of existing and recommended secure bicycle parking spaces at the 31 stations profiled in this report, which will increase BART's stock of secure bicycle parking at these stations by more than 50%.

These improvements are estimated to cost a total of \$6 million. Approximately half of this amount is available through a mix of grant and BART funds, leaving a \$3 million shortfall for full implementation.

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<sup>1</sup> Keyed lockers can be used by just one passenger, who rents it on a quarterly basis. Electronic lockers serve many more passengers and are recommended in all new locations. Replacing keyed lockers with eLockers is recommended at stations with high demand for bicycle parking and limited space to add eLockers.

<sup>2</sup> Inverted U-racks are superior to wave racks and are recommended in most instances because, with two points of contact, they are more stable and more bikes can be parked on them per linear foot; however, where additional racks are recommended alongside existing wave racks, wave racks are recommended for consistency.

Appendix C provides a breakdown of these costs by station and investment type. To enhance the effectiveness of investing in secure bicycle parking, BART could also implement other recommendations from the 2012 Bicycle Plan, including:

- 1.1 Develop and install wayfinding signage
- 1.3 Evaluate and install stairway channels
- 2.2 Fight bicycle theft (with lighting, security cameras)

These features will compliment the secure bicycle parking investments called for in this Capital Program by directing passengers to the most secure bike parking locations, allowing passengers to safely wheel their bikes on stairways so they can reach parking locations not at street level, and creating safer bicycle parking (and pedestrian) environments with improved lighting and security cameras.

### Stations not included in this plan

This plan is a snapshot in time and reflects bicycle parking needs and opportunities at stations throughout the BART system in mid-to-late 2014, when the site visits for this plan took place. While this capital plan was being developed, bike parking shortages became evident at several additional stations (a testament to the rapidly increasing use of bicycles to access BART). Although not formally part of this plan, it is important to note the following BART stations where additional bike parking is needed:

- **North Berkley, Ashby and Union City**  
Use of electronic lockers has reached a level that warrants additional eLockers.
- **Pleasant Hill**  
Bicycle racks and eLockers are approaching capacity. BART staff is exploring a self-serve Bike Station in the neighboring Avalon Bay development.
- **Fruitvale**  
The Bike Station is reaching capacity on busy days; options to expand the Bike Station are being explored.

**Table 1** | Summary of existing and recommended secure bike parking

Station	Existing Total	Recommended to be Added				Total	Rec'd to be Removed	Net Spaces <sup>5</sup>
		Racks <sup>1</sup>	eL <sup>2</sup>	Arc <sup>3</sup>	Station <sup>4</sup>			
12th Street Oakland	42	80	0	0	0	80	30	92
16th Street Mission	77	76	0	51	0	127	77	127
24th Street Mission	70	76	0	51	0	127	70	127
Balboa Park	119	20	8	0	0	28	12	135
Bay Fair	70	71	0	0	0	71	21	120
Castro Valley	80	32	0	0	0	32	0	112
Civic Center	63	124	0	0	89	213	0	276
Colma	72	32	8	0	0	40	0	112
Concord	145	0	0	0	125	125	0	270
Downtown Berkeley	306	0	0	12	0	12	0	318
Dublin / Pleasanton	302	21	36	0	0	57	0	359
El Cerrito Plaza	190	0	56	0	0	56	0	246
Embarcadero	130	0	0	0	0	0	0	130
Fremont	181	0	84	0	0	84	0	265
Glen Park	88	0	0	0	120	120	0	208
Hayward	106	70	32	0	0	102	63	145
Lafayette	155	44	20	0	0	64	21	198
Lake Merritt	184	46	16	0	0	62	16	230
MacArthur	247	0	0	0	200	200	0	447
Millbrae	96	48	0	0	0	48	14	130
Orinda	42	60	14	12	0	86	8	120
Pittsburg/Bay Point	77	20	12	0	0	32	0	109
Richmond	68	40	0	8	0	48	0	116
Rockridge	180	0	68	12	0	80	0	260
San Bruno	67	38	12	0	0	50	7	110
San Leandro	143	0	0	0	119	119	0	262
South Hayward	132	40	40	0	0	80	46	166
South San Francisco	82	0	24	0	0	24	0	106
Walnut Creek	227	60	96	0	0	156	0	383
W. Dublin/Pleasanton	78	10	12	0	0	22	0	100
West Oakland	170	50	84	0	0	134	0	304
<b>TOTALS</b>	<b>3,989</b>	<b>1,058</b>	<b>622</b>	<b>146</b>	<b>653</b>	<b>2,479</b>	<b>385</b>	<b>6,083</b>

**Notes**

1. Wave or inverted U rack spaces
2. Electronic locker spaces
3. ArcLocker spaces
4. Parking spaces in attended or self-service Bike Station
5. Table does not include "If future demand warrants..." recommendations.



# Station profiles

The following pages provide details about the secure bicycle parking recommendations at each of the 31 stations targeted by this effort.

# 12th Street Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended bike parking

There is relatively limited street-level bike parking at the 12th Street station, including 12 popular electronic locker spaces and a number of city-owned racks on Frank Ogawa Plaza. There are also 30 well-used double-decker rack spaces on the concourse level of this station.

### Bicycle Parking Recommendations

BART is in the process of replacing the existing double-decker bicycle racks at 19th Street station because they block station agents' views (these racks will be used at another BART station). BART may want to do the same at 12th Street station, which has the same bike rack configuration. If so these 30 spaces are recommended to be replaced with inverted U-racks. In addition, 10 more inverted U's should be installed directly across from the existing double-decker racks (see photo at left). Forty new inverted U-rack spaces should also be added to the similarly shaped spot on the northern end of the concourse. If demand warrants BART should install ArcLockers on the concourse near the Frank Ogawa Plaza exit.



Site of recommended Arc Lockers

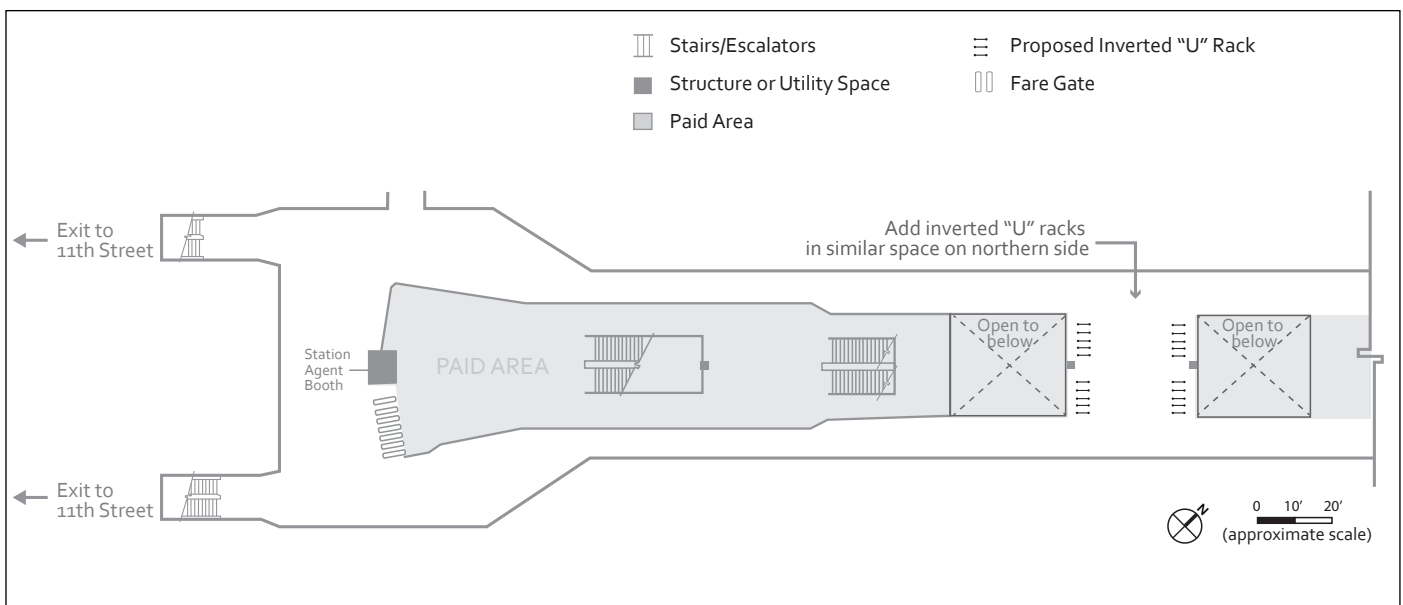
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 30  
Electronic locker: 12  
Total existing spaces: 42

#### Bicycle Parking Recommendations

Inverted U-rack: 80  
Total recommended spaces: 80



Plan view



### Station Characteristics



*Paid area*

The 16th Street/Mission station has the system's most sophisticated stairway channel, which allows bikes to be rolled up and down the stairs that serve this deep station. The street-

level plaza is often crowded, leaving no space for bicycle parking. BART currently provides well-used wave racks for 77 bicycles within the paid area; unfortunately, theft is not uncommon even inside the fare gates.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 77

Total existing spaces: 77

#### Bicycle Parking Recommendations

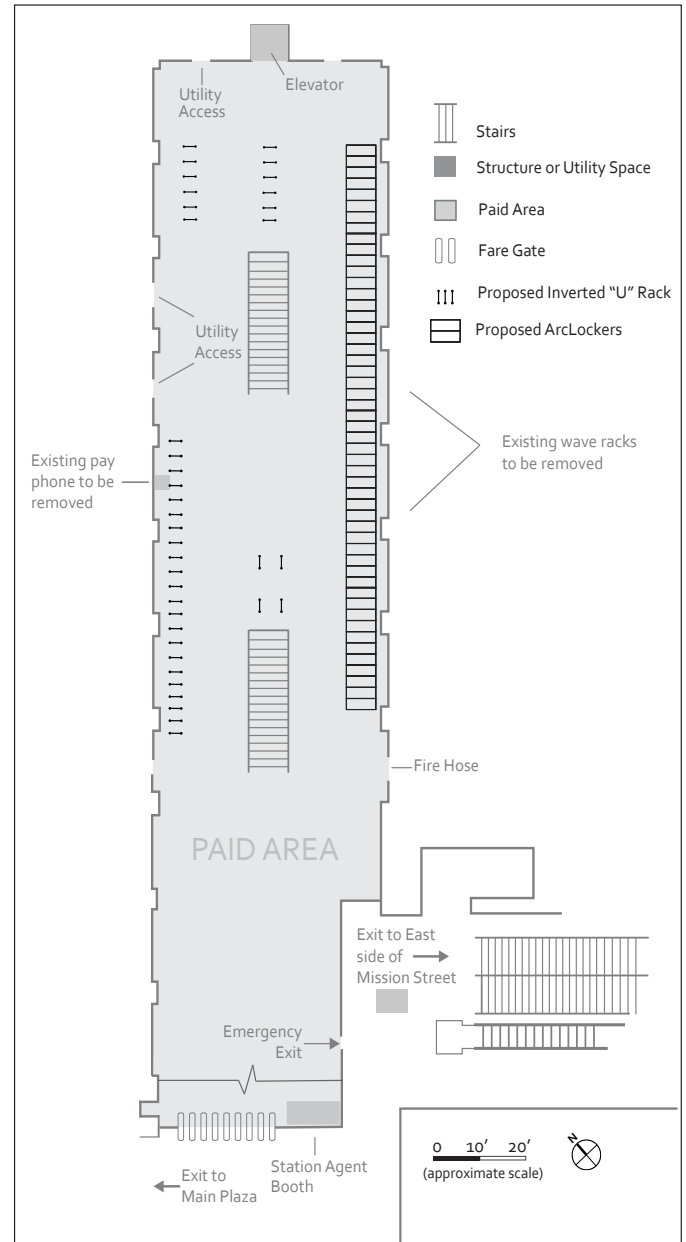
Inverted U-rack: 76

Arc Locker: 51

Total recommended spaces: 127

### Bicycle Parking Recommendations

The only viable space for added secure bike parking at the 16th Street/Mission station is inside the paid area. New inverted U-racks are recommended along the station's west wall and sprinkled on the far side of the escalator and stairwells. In addition, ArcLockers are recommended along the east wall, at and beyond the location of the existing bike racks. In the future, the 16th Street station would be a good candidate for a storefront Bike Station on Mission Street.



*Plan view*

# 24<sup>th</sup> Street / Mission Station

Secure bicycle parking recommendations

## Station Characteristics



Site of recommended Arc Lockers

The 24th Street/ Mission station is identical to 16th/Mission in terms of its design and orientation. The stations have similar bike access figures and

existing bike parking numbers and arrangements.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 70

Total existing spaces: 70

#### Bicycle Parking Recommendations

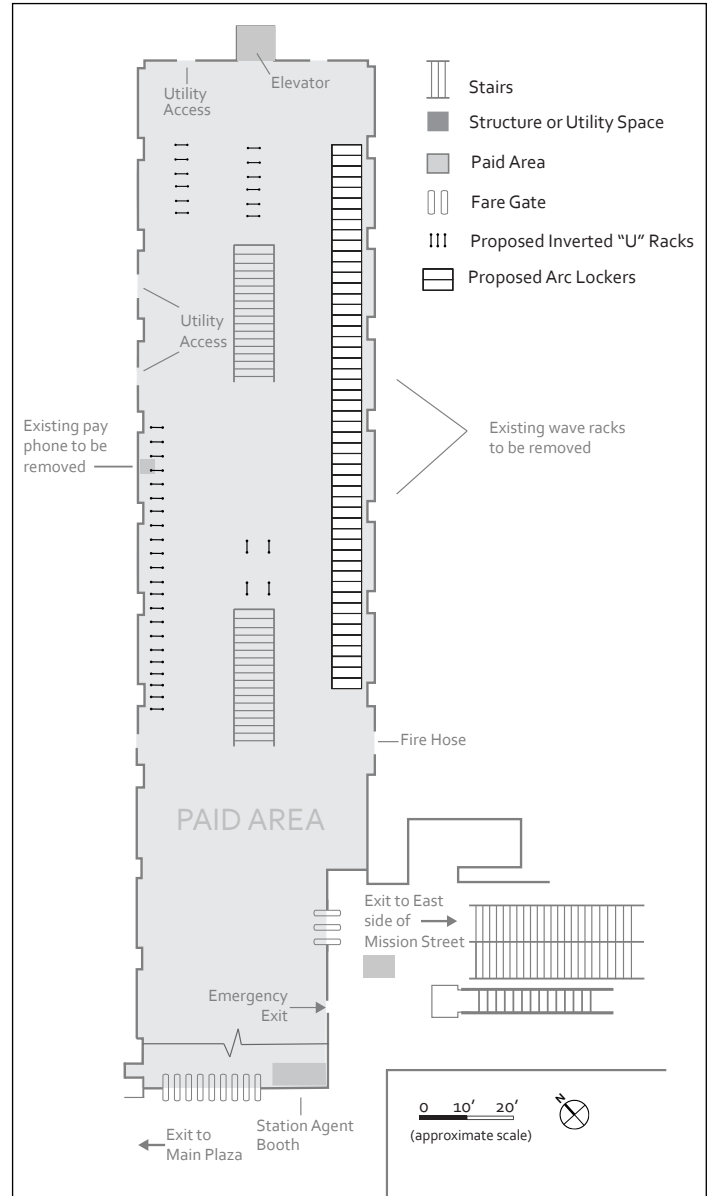
Inverted U-rack: 76

Arc Locker: 51

Total recommended spaces: 127

## Bicycle Parking Recommendations

An identical bicycle parking configuration to 16th Street is recommended for its twin, 24th Street/ Mission station. New inverted U-racks along the station's east wall and sprinkled on the far side of the escalator and stairwells are recommended, as well as ArcLockers along the east wall, at and beyond the location of the existing bike racks. The 24th Street station would be a good candidate for a storefront Bike Station on Mission Street.



Plan view

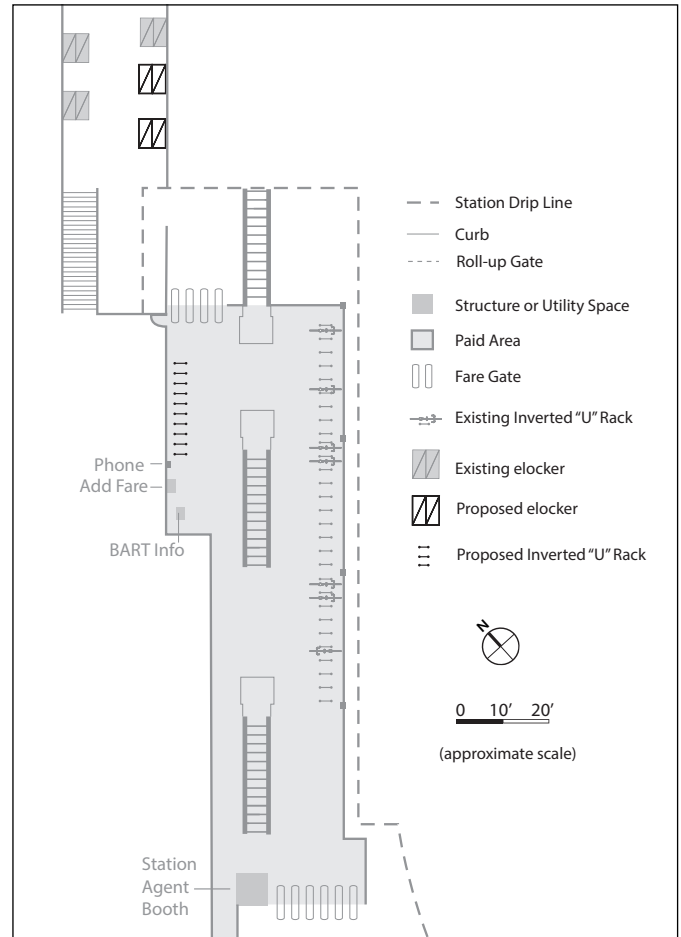
### Station Characteristics



North site of recommended lockers

San Francisco's Balboa Park BART station has 12 keyed bicycle lockers on the Geneva Avenue plaza and 30 inverted-U bike racks inside the station's paid area.

The small station offers limited opportunities for additional bicycle parking within the paid area; however the recently reconstructed north entrance provides a new opportunity to install eight additional electronic lockers.



Concourse Level, North Entrance

**Bicycle Parking (# spaces)**

**Existing Bicycle Parking**

Rack: 95

Electronic locker: 12

Keyed locker: 12

Total existing spaces: 119

**Bicycle Parking Recommendations**

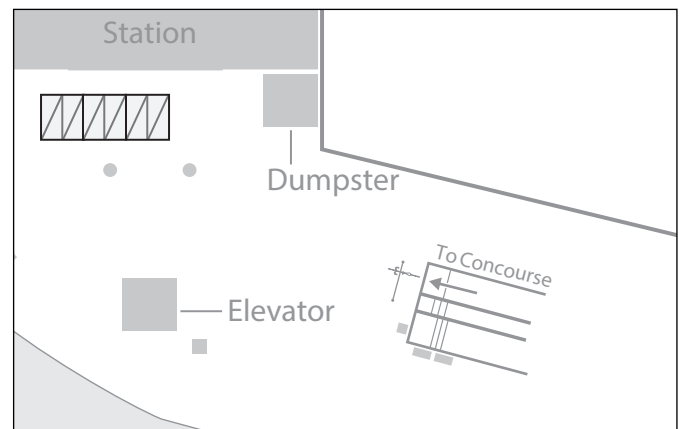
Inverted U-rack: 20

Electronic locker: 8

Total recommended spaces: 28

### Bicycle Parking Recommendations

Given that the keyed lockers often sit empty, it is recommended that they be replaced with electronic lockers. There is space for eight additional electronic lockers at the station's north entrance, and 10 new inverted U-racks (to match the existing stock) inside the paid area. In addition, as demand warrants, the existing keyed lockers near Geneva could be replaced with 12 electronic lockers.



Plaza Level, Geneva Ave, Northside

# Bay Fair Station

## Secure bicycle parking recommendations

### Station Characteristics



South site of recommended parking

The Bay Fair station has entrances on both the north and south sides. Rack spaces represent the largest share of this station's bike parking with 42 spaces outside of the paid area. This station's paid area does not have room for bike parking but there is limited space outside of the west entrance for additional parking.

The Bay Fair station has entrances on both the north and south sides. Rack spaces represent the largest share of this station's bike parking

### Bicycle Parking Recommendations

Seventy-one rack spaces are recommended to be added outside the paid area of the Bay Fair station. The walkway leading from the parking lot to the west entrance has room for 52 inverted U-rack spaces, including 21 replacements of existing wave rack spaces and 31 new spaces. There is also room for an additional rack on the eastern end of the exterior plaza. To match the existing nearby racks, this should be a seven-bike wave rack; however, since this location is isolated, it is only recommended if all other racks are approaching capacity. There is a trash can and bench in this spot that would need to be relocated, perhaps further down the east walkway. Finally, the sidewalk leading from the southern parking lot to the pedestrian undercrossing can accommodate 12 inverted U-rack spaces. There are currently no racks on this side of the station.

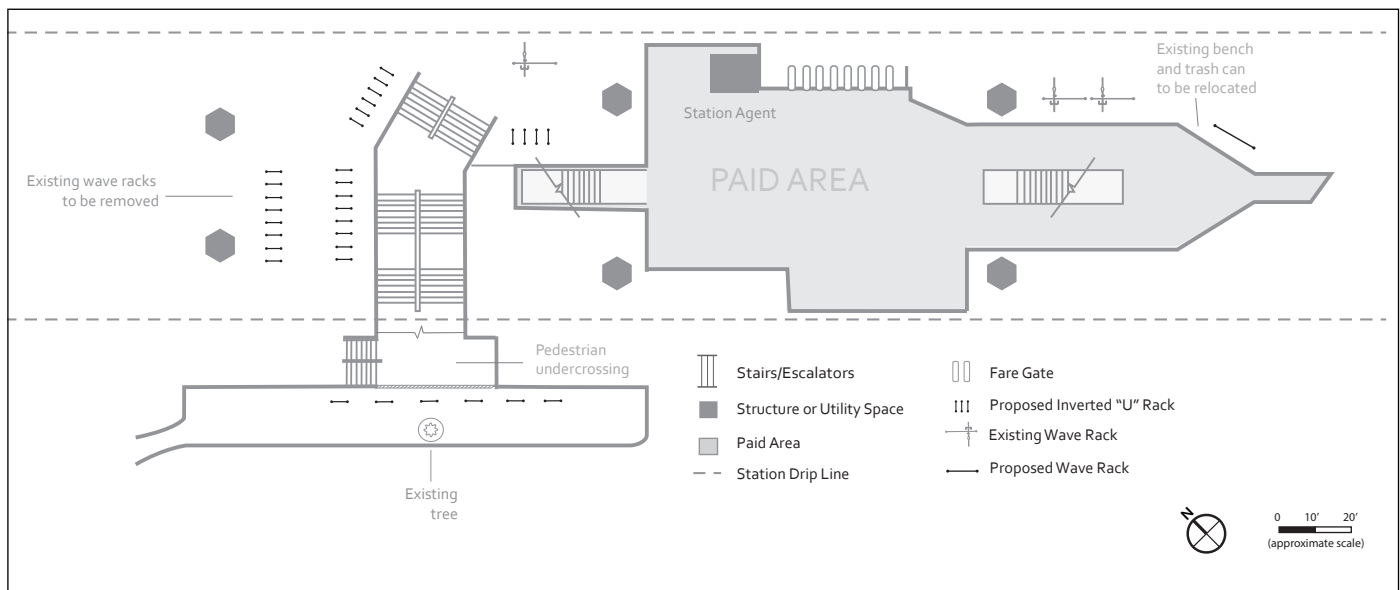
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

- Rack: 42
- Electronic locker: 12
- Keyed locker: 16
- Total existing spaces: 70

#### Bicycle Parking Recommendations

- Inverted U-rack: 64
- Wave rack: 7
- Total recommended spaces: 71



Plan view

### Station Characteristics



Breezeway site of recommended parking

The Castro Valley station has 20 electronic lockers and 20 keyed lockers outside its main entrance.

The station's large breezeway connecting the fare gates to the entrance plaza hosts 20 well-used rack spaces. The paid area is very small at this station and has no room for bike parking; however, the breezeway can hold additional rack spaces.

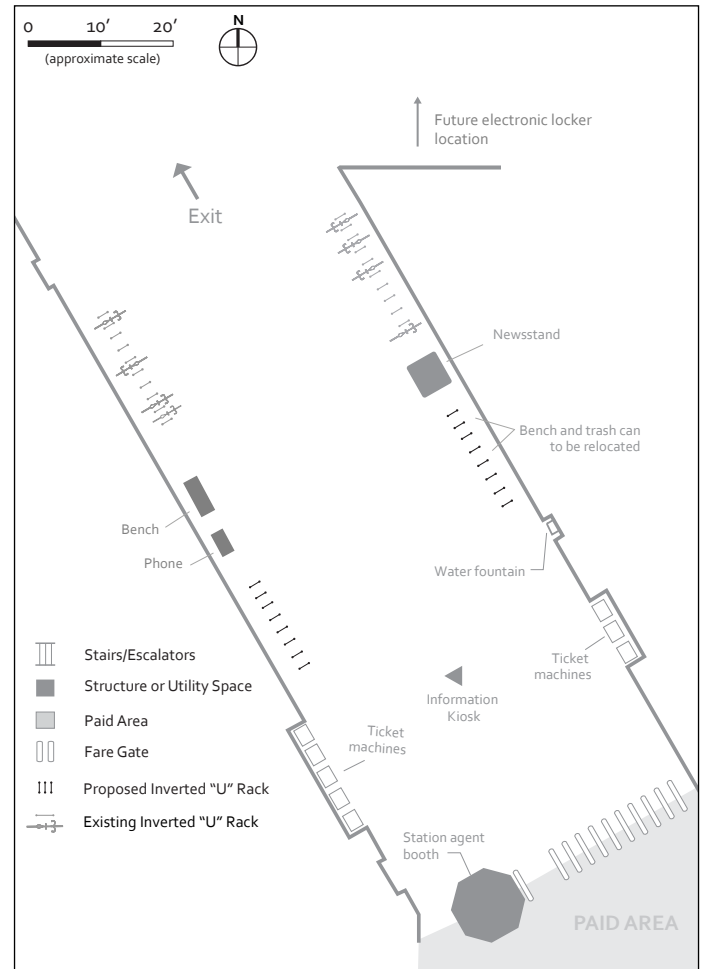
#### Bicycle Parking (# spaces)

##### Existing Bicycle Parking

Rack: 40  
 Electronic locker: 20  
 Keyed locker: 20  
 Total existing spaces: 80

##### Bicycle Parking Recommendations

Inverted U-rack: 32  
 Total recommended spaces: 32



Plan view

### Bicycle Parking Recommendations

There is not space within the Castro Valley station's paid area for bike parking; however, 32 new inverted U-rack spaces are recommended for the nearby breezeway (16 along the west wall and 16 along the east wall, where a bench and trash can will need to be relocated). The 20 keyed locker spaces just west of the breezeway entry can be replaced with the same number of electronic lockers if future demand warrants.

# Civic Center Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of future self-serve Bike Station

There are currently bike racks for 63 bikes inside the paid area at Civic Center station.

The racks are well used and there is clearly demand for additional bike parking despite the need to carry one's bike on several flights of stairs between the street and concourse levels. This station is located at one "entrance" to the most congested portions of Market Street and, with both Muni Metro and BART service available at the station, it's a good spot for many to leave their bikes and continue their trip on transit.

### Bicycle Parking Recommendations

Several bike parking improvements were underway when this report was published. They include a self-serve Bike Station with capacity for 89 bikes, an upgrade to the racks currently in the paid area that will add 32 spaces and 60 new rack spaces adjacent to the controlled access Bike Station. The facility is modular in design and the controlled access portion can be expanded as demand for more secure parking increases. This station should rank high on any list of stations to receive a stair channel. Finally, given the recent increases in bicycle use in San Francisco, this area might also be a good candidate for an attended street level Bike Station.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 63

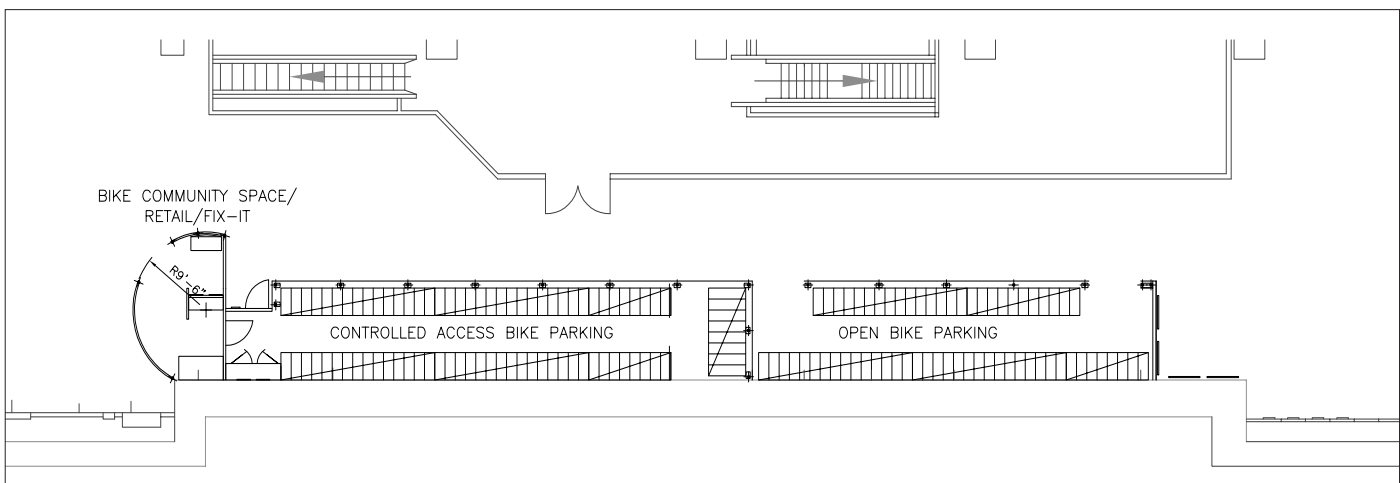
Total existing spaces: 63

#### Bicycle Parking Recommendations

Inverted U-rack: 124

Bike Station: 89

Total recommended spaces: 213



Future self-serve Bike Station

# Civic Center Station

Secure bicycle parking recommendations



*Civic Center self-serve Bike Station concept*

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### Station Characteristics



Site of recommended electronic lockers

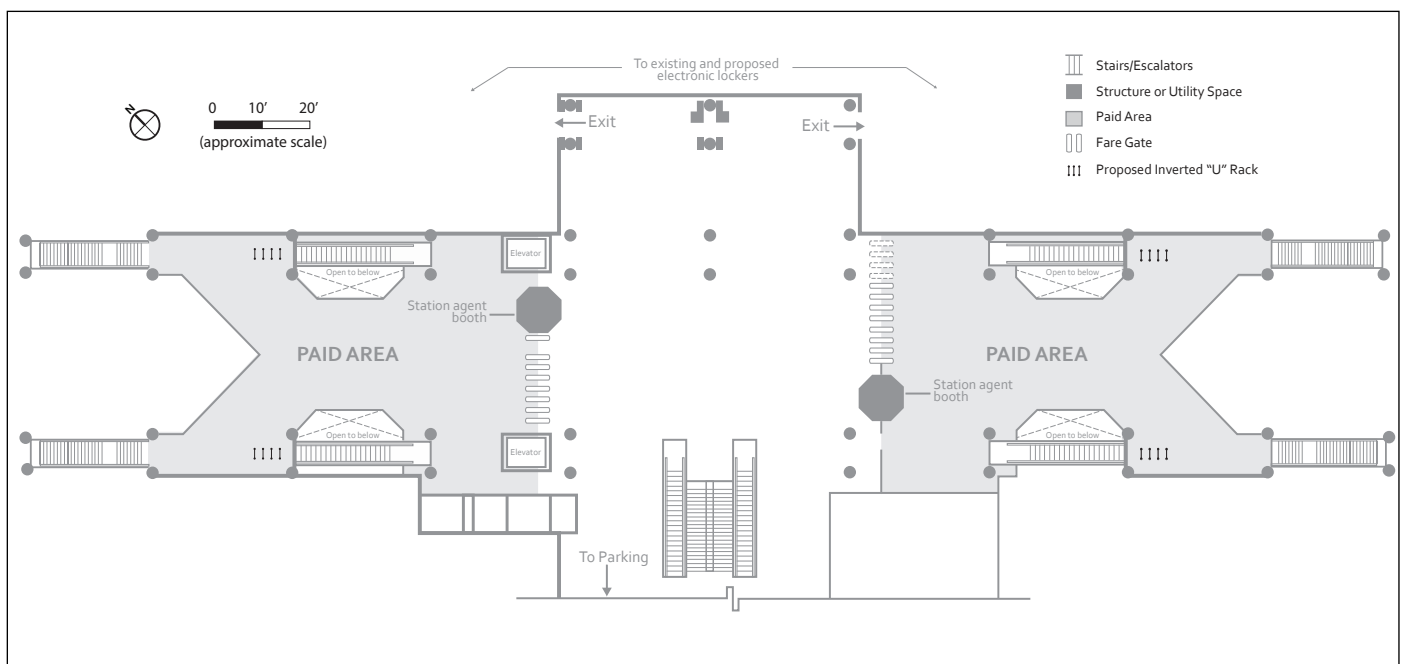
There are small clusters of electronic and keyed lockers outside the main entrance to the Colma station, as well as racks

at each end of the station. Cyclists use the racks on the north end more than those on the south end.

### Bicycle Parking Recommendations

The Colma station can accommodate a variety of added bike parking outside the station and inside the fare gates. There is space for eight new electronic locker spaces on the north side of the station between the bus shelter columns east and west of the existing lockers. The paid area has room for eight rack spaces adjacent to the stairs and escalators in each of the four corners, for a total of 32 spaces.

Bicycle Parking (# spaces)	
<b>Existing Bicycle Parking</b>	<b>Bicycle Parking Recommendations</b>
Rack: 40	Inverted U-rack: 32
Electronic locker: 8	Electronic locker: 8
Keyed locker: 24	Total recommended spaces: 40
Total existing parking: 72	



Plan view

# Concord Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended Bike Station

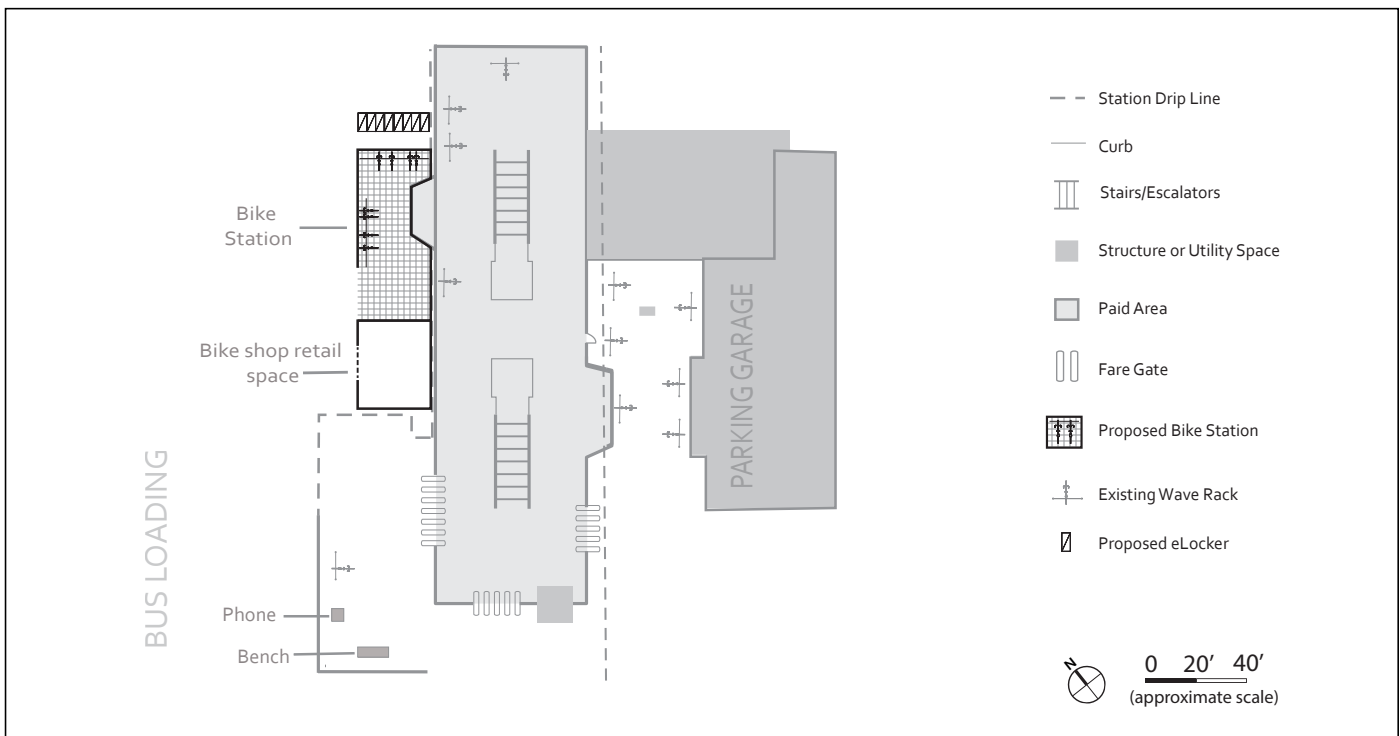
The Concord BART station currently offers 56 shared use electronic lockers. In addition there are a limited number of wave racks in the paid area, and keyed

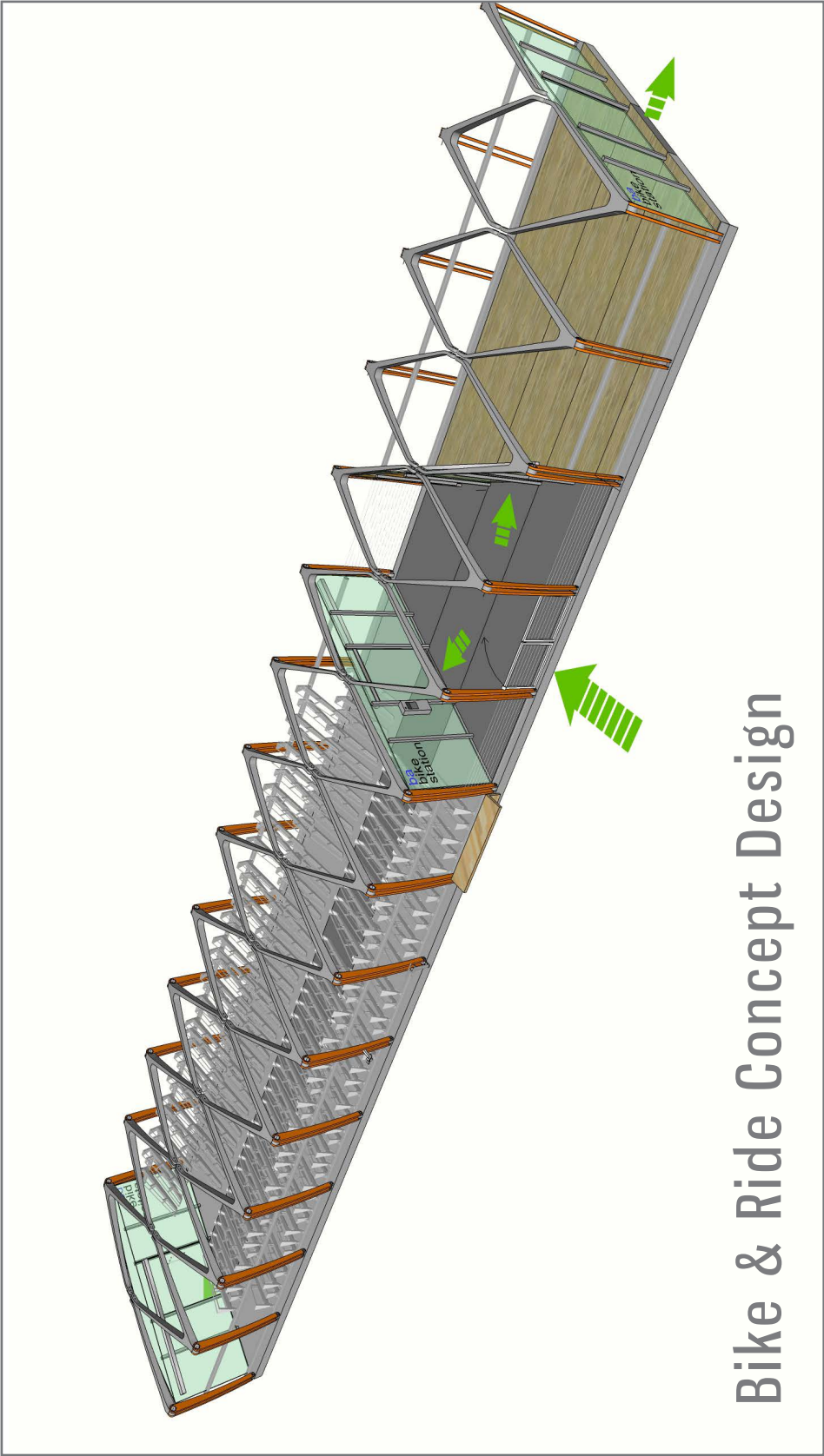
lockers and wave racks outside the paid area on the east and west sides of the station.

### Bicycle Parking Recommendations

A new Bike Station is proposed for the Concord station, adjacent to the bus loading area. The station will include a 600 square foot bike retail/maintenance area that will be staffed part time, a controlled access self-serve parking area with 120-130 double-decker rack spaces, and 16 electronic locker spaces (relocated from the exterior plaza).

Bicycle Parking (# spaces)	
<b>Existing Bicycle Parking</b>	<b>Bicycle Parking Recommendations</b>
Rack: 77	Bike Station: 125
Electronic locker: 56	Total recommended spaces: 125
Keyed locker: 12	
Total existing parking: 145	





Concord self-serve Bike Station concept

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## Station Characteristics



Site of recommended Arc Lockers

well as a self-serve Bike Station.

Although there are only 18 rack spaces at this station, it is home to a very popular street-level attended Bike Station with amenities such as repair and retail sales, as well as a self-serve Bike Station.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

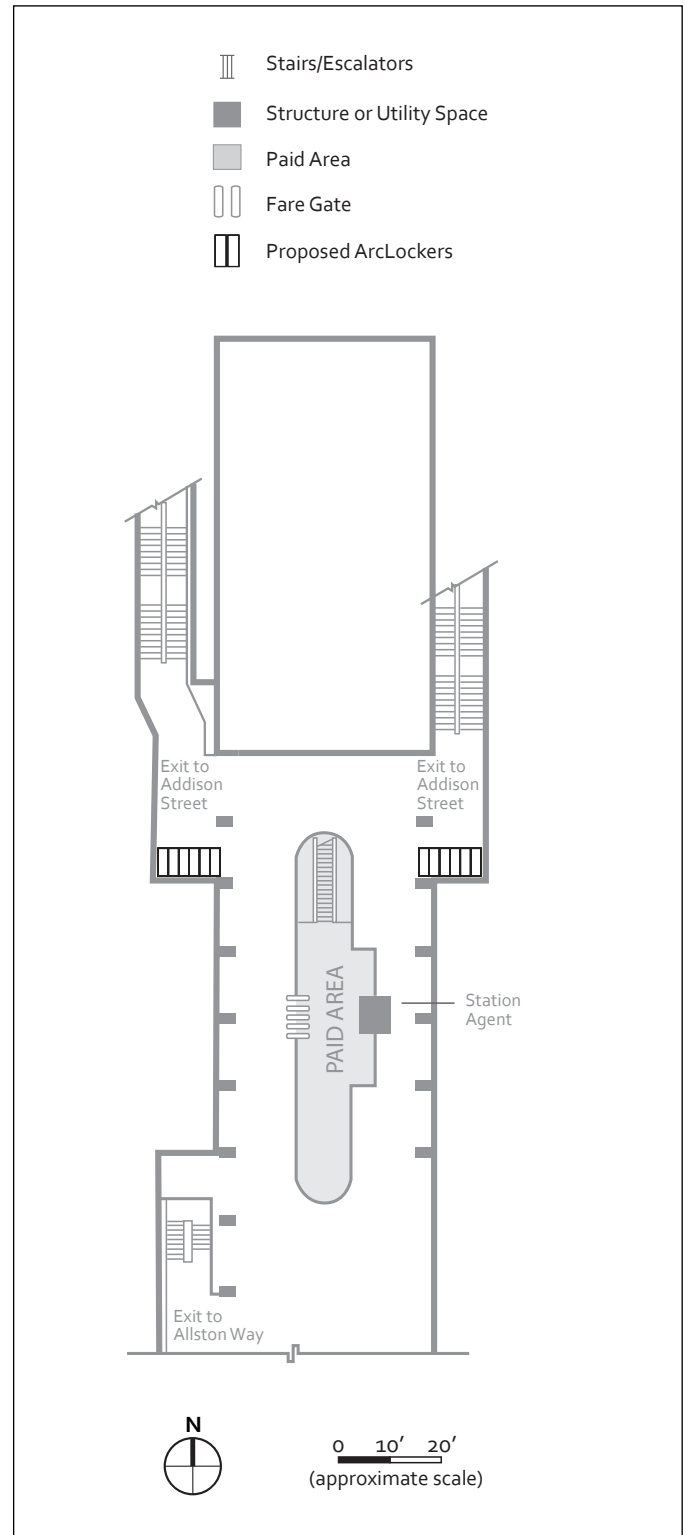
Rack: 18  
 Bike Station (combined attended and self-serve): 288  
 Total existing spaces: 306

#### Bicycle Parking Recommendations

Arc Locker: 12  
 Total recommended spaces: 12

## Bicycle Parking Recommendations

Bike parking for the Downtown Berkeley station is currently provided at the street level Bike Station, in a combination retail/attended parking/self-serve parking facility. It is possible that the current commercial rental market could lead to the need to search for alternatives to the self-serve portion. If so, there is room for a total of twelve Arc Locker spaces in the northeast and northwest corners of the concourse level of the Downtown Berkeley station that could partially serve that purpose. In addition, the street level plaza will be undergoing renovations in the near future. If these renovations reduce the amount of bike parking on the plaza and demand warrants, BART should consider adding rack spaces on the concourse level of the station.



Plan view

# Dublin/Pleasanton Station

## Secure bicycle parking recommendations

### Station Characteristics



*Site of recommended wave racks*

fare gates, they are very well used. The paid area also has a set of very well-used bicycle racks, with room for additional parking.

There are over 300 bike parking spaces at the Dublin/Pleasanton station. Although a majority are outside the

### Bicycle Parking Recommendations

The Dublin/Pleasanton station has many opportunities for additional secure parking outside of the paid area to supplement the paid area parking, which is nearing capacity. There is ample room for 12 electronic locker spaces alongside the existing electronic and keyed lockers on the walkway north of the station's entrance, and 24 south of the entrance. If future demand warrants, there is also room for 40 new electronic lockers across the street from the entrance. Twenty-one wave rack spaces can be added in the paid area near the existing racks, along the north and south concourse walls. This station may also warrant either a self-serve Bike Station on one of the plaza/parking areas or an attended Bike Station within the future TOD development on the Pleasanton side of the station. Dublin/Pleasanton's location adjacent to Hacienda Business Park also provides an excellent opportunity for a bike share system that could connect the large business park with the station.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

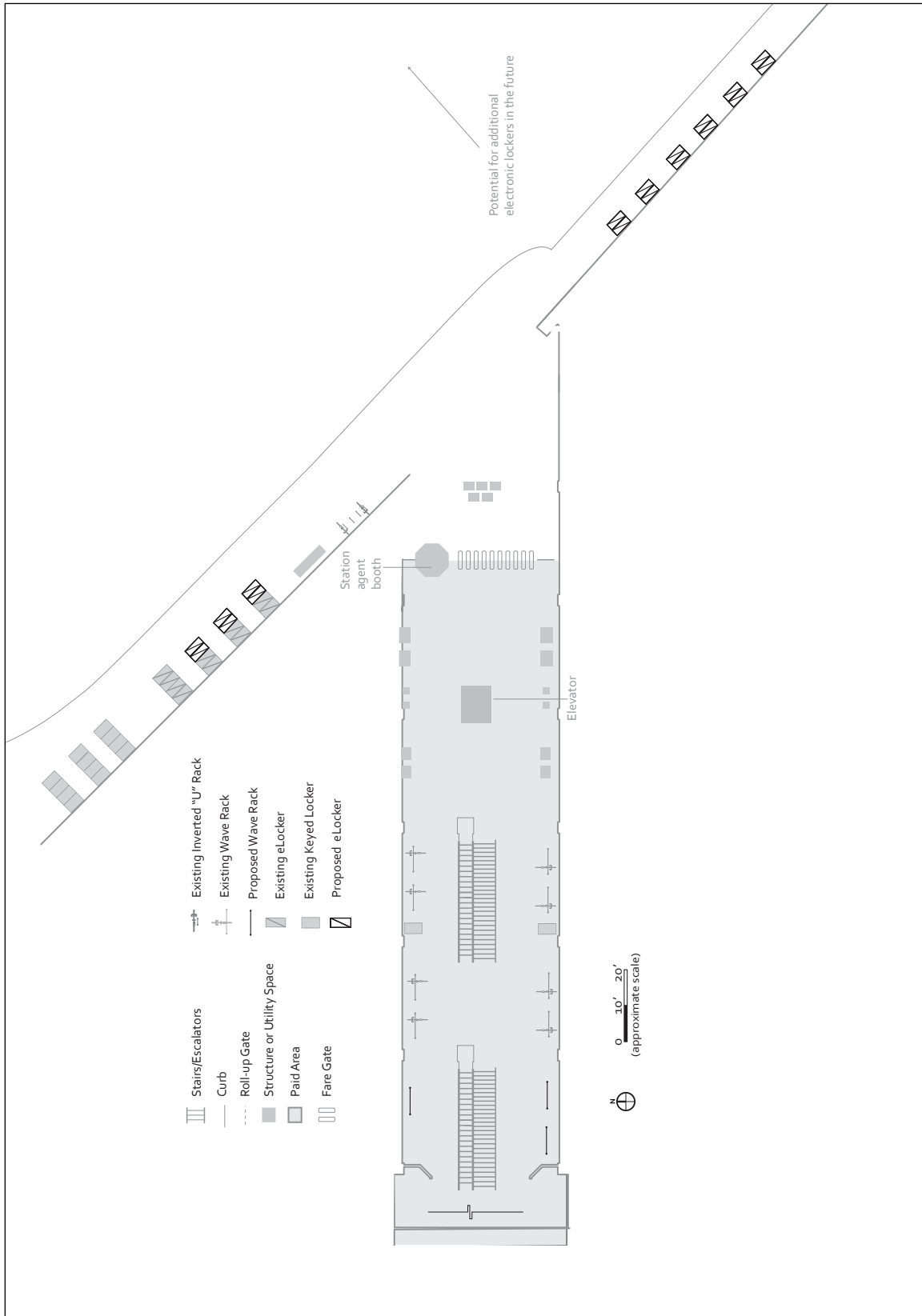
Rack: 250  
Electronic locker: 28  
Keyed locker: 24  
Total existing spaces: 302

#### Bicycle Parking Recommendations

Wave rack: 21  
Electronic locker: 36  
Total recommended spaces: 57

# Dublin/Pleasanton Station

## Secure bicycle parking recommendations



Plan view

# El Cerrito Plaza Station

## Secure bicycle parking recommendations

### Station Characteristics



South site of recommended electronic lockers

The El Cerrito Plaza station offers nearly 100 moderately well-used bicycle racks south of the fare gates, as well as

electronic lockers nearby and on the far side of the Ohlone Greenway. A dirt-filled planter and multiple bus benches limit options for adding bicycle parking.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 94

Electronic locker: 96

Total existing spaces: 190

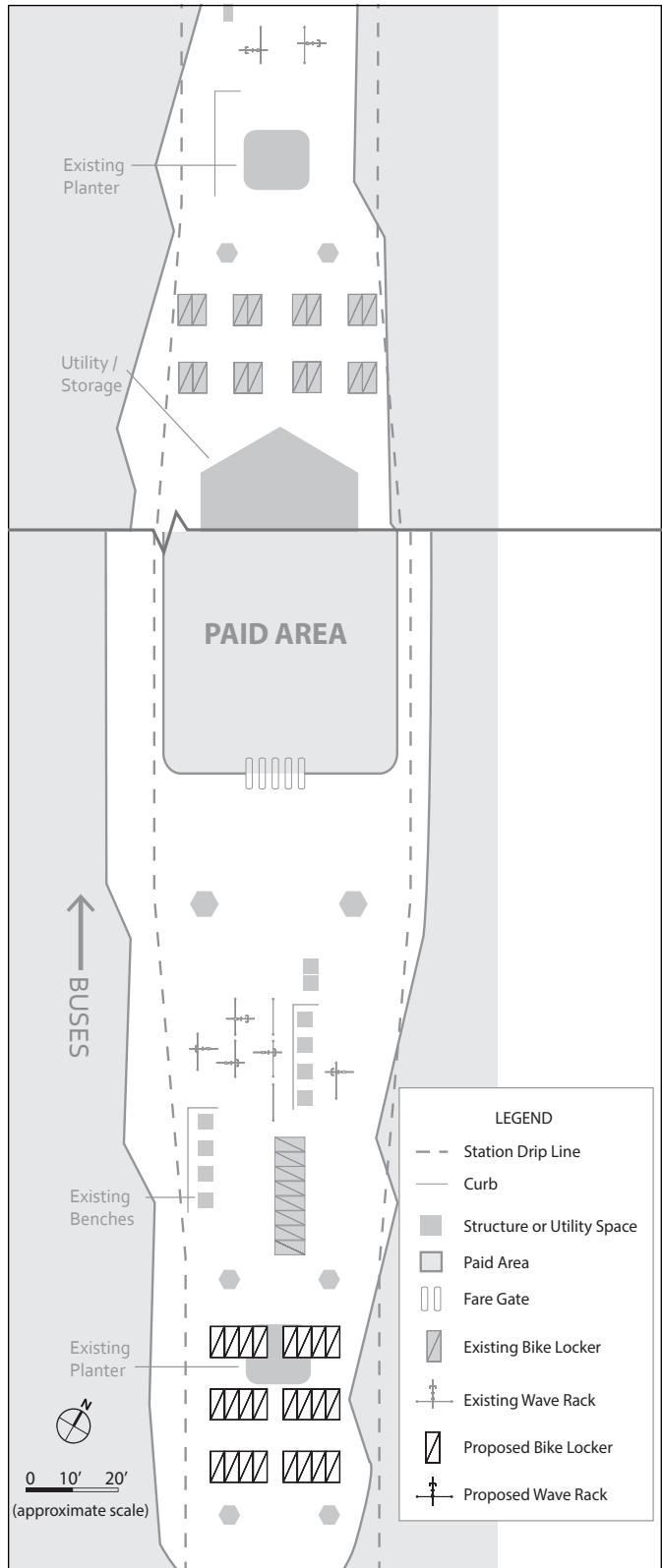
#### Bicycle Parking Recommendations

Electronic locker: 56

Total recommended spaces: 56

### Bicycle Parking Recommendations

Although there is no space for additional bike parking within the paid area of the El Cerrito Plaza station, there is room at the station's north and south ends to double its supply of electronic lockers, assuming the dirt planter is removed.



Plan view



## Station Characteristics

The existing self-serve Bike Station provides all bicycle parking at the Embarcadero station. The facility, which is open at all times the station is open, is located on the concourse level of the station and contains 130 parking spaces in double-decker racks. Bicyclists gain access to the station with a BikeLink Card. Current use is in the range of 40-50 bikes parked per day; the capacity of the facility is 130.

## Bicycle Parking Recommendations

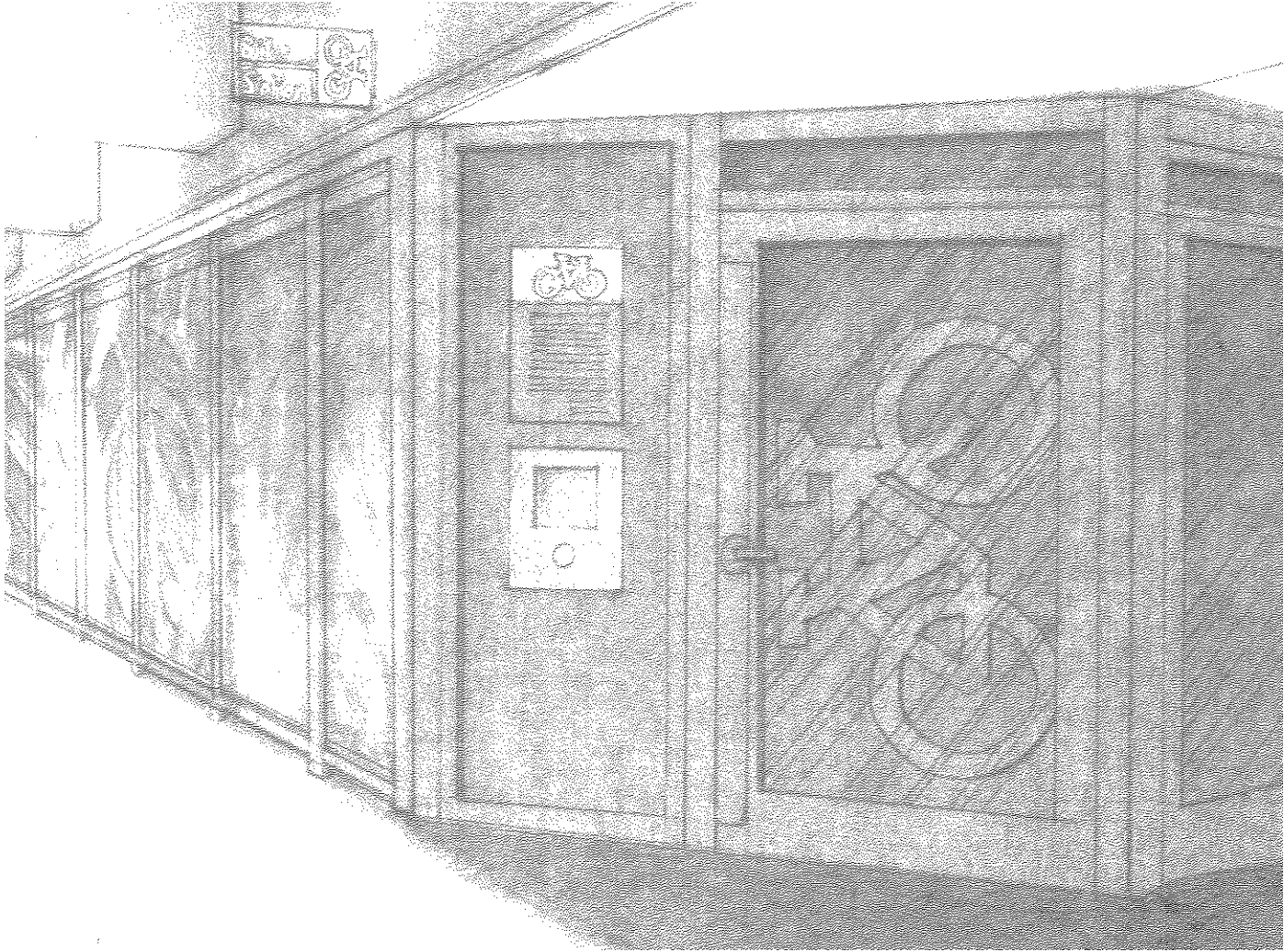
The Embarcadero Bike Station is one of BART's best kept secrets, primarily the result of the entry being tucked into an alcove and the structure being clad in a fairly opaque metal grating. Reorienting the entrance so it faces the main station walkway, constructing it out of a transparent material (i.e., glass), and improving Bike Station signage and branding will all help improve the facility's visibility and users' feeling of security.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Bike Station: 130

Total existing spaces: 130



Embarcadero Bike Station entrance

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### Station Characteristics



Upper Plaza, site of recommended electronic bike lockers

The Fremont station's lower plaza on the west side currently houses 44 electronic lockers. Wave racks on the same plaza as well as wave racks east side of the station near the bus intermodal provide space for 120 or so bikes.

#### Bicycle Parking (# spaces)

##### Existing Bicycle Parking

Rack: 121  
 Electronic locker: 60  
 Total existing spaces: 181

##### Bicycle Parking Recommendations

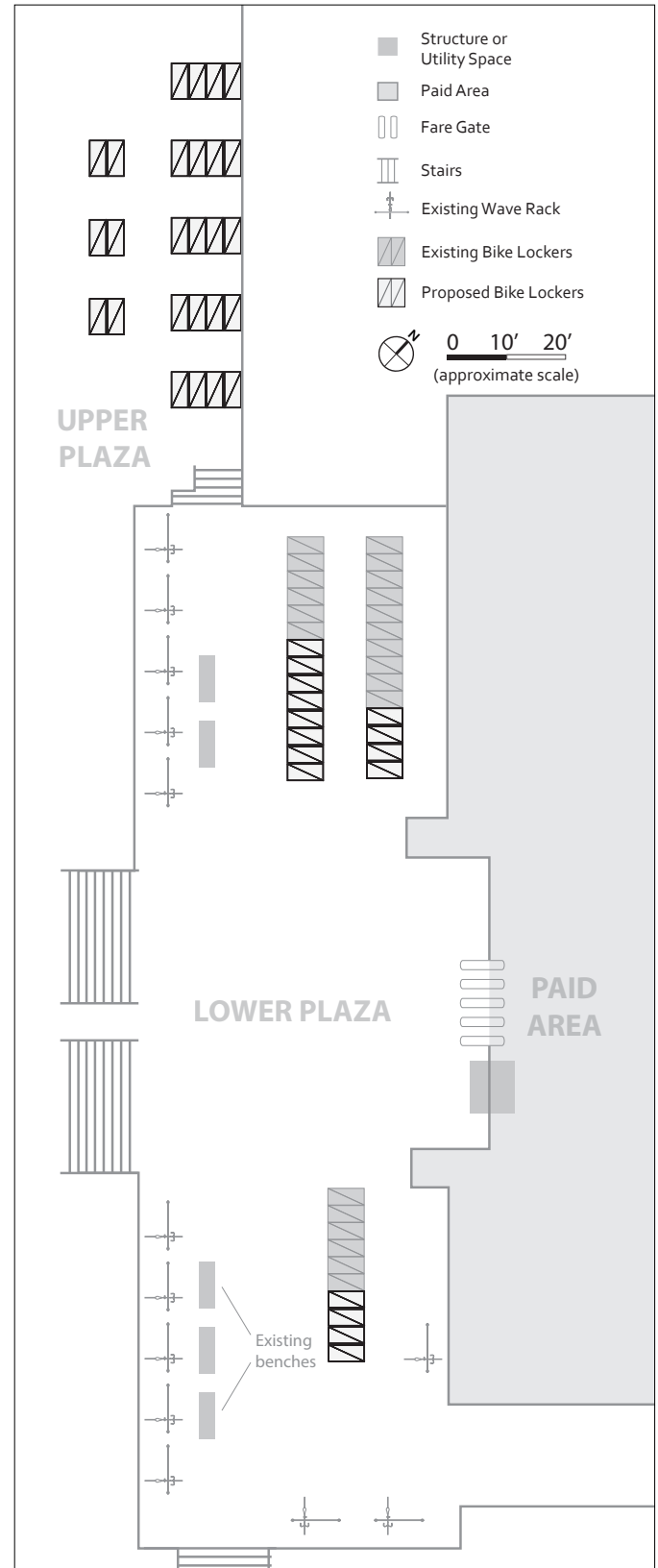
Electronic locker: 84  
 Total recommended spaces: 84

### Bicycle Parking Recommendations

There is space in Fremont station's upper and lower west side plazas for 84 additional electronic locker spaces without interfering with pedestrian circulation or access to or from the fare gates. There is also space on the east side of the station where the bike racks are currently located to construct a controlled access Bike Station if future demand warrants.



East plaza opportunity for future self-serve Bike Station



Plan view

# Glen Park Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended Bike Station

San Francisco's Glen Park station has one entrance and main plaza area. To the southwest of the

entrance and main plaza, two additional plazas step up the incline along Diamond Street. The middle plaza is currently underutilized. The station currently provides wave bicycle racks inside the fare gates, on the main plaza and on the upper plaza.

### Bicycle Parking Recommendations

The racks inside the Glen Park station are used at a much higher rate than those on either of the plazas outside the paid area. While the main plaza cannot accommodate additional bicycle parking, the middle plaza could house a 120-bike self-serve Bike Station.



Site of recommended wave rack

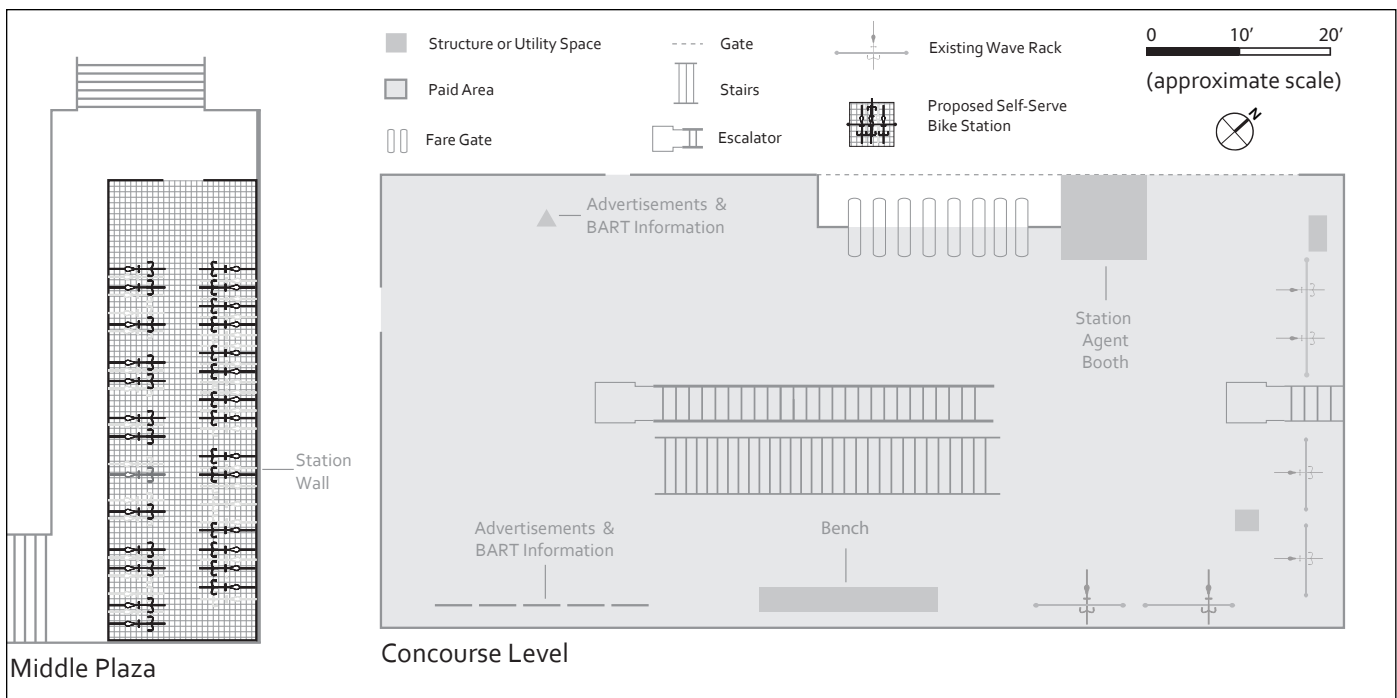
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 64  
Electronic locker: 12  
Keyed locker: 12  
Total existing spaces: 88

#### Bicycle Parking Recommendations

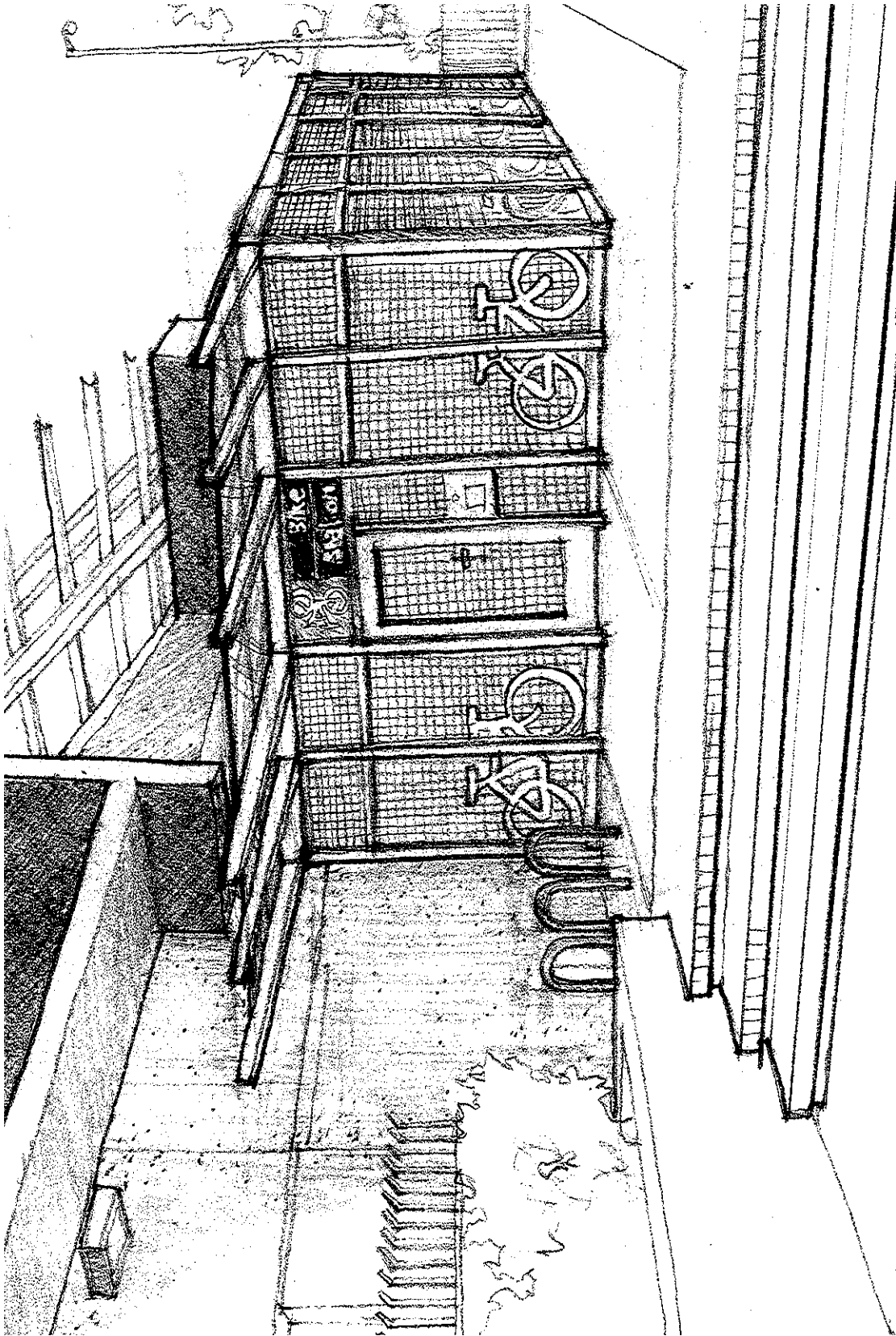
Bike Station: 120  
Total recommended spaces: 120



Sites of recommended bike parking

# Glen Park Station

Secure bicycle parking recommendations



Glen Park self-serve Bike Station concept

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### Station Characteristics



Site for proposed electronic lockers

The plaza on the northeast side of the Hayward station houses a few moderately used electronic lockers, keyed lockers and wave racks. On the

same plaza, cyclists often park their bikes parallel to the existing widely-spaced wave racks, which greatly reduces their capacity.

### Bicycle Parking Recommendations

At the Hayward Station, there is room for 16 new electronic locker spaces alongside the current electronic lockers on the main plaza, replacing 21 existing wave rack spaces. A concrete pad and 16 additional electronic lockers should also be added to the adjacent landscaped area. The racks on the south side of this plaza should be replaced with 70 inverted U-rack spaces to use this space more efficiently and compensate for those removed to accommodate the new lockers.

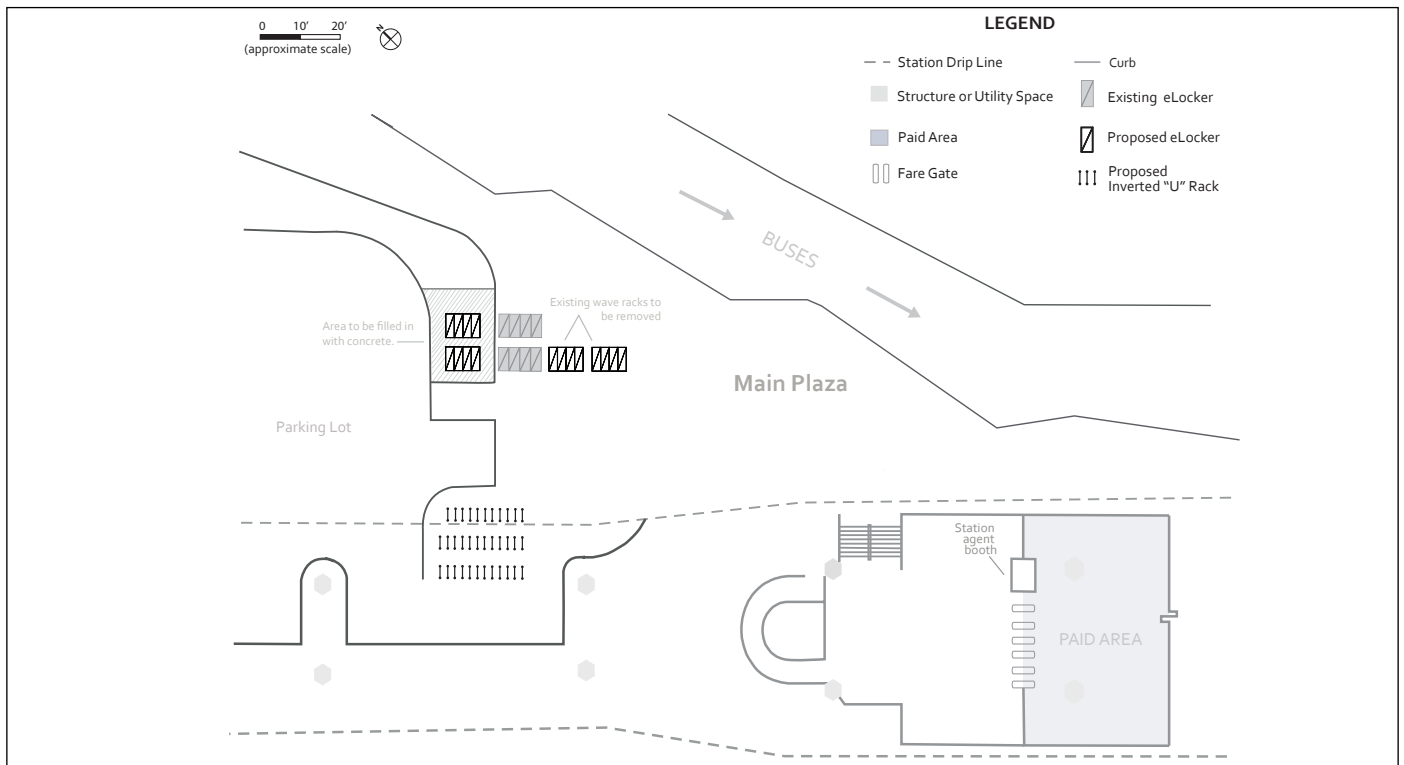
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 70  
 Electronic locker: 16  
 Keyed locker: 20  
 Total existing spaces: 132

#### Bicycle Parking Recommendations

Inverted U-rack: 70  
 Electronic locker: 32  
 Total recommended spaces: 102



Plan view

# Lafayette Station

## Secure bicycle parking recommendations

### Station Characteristics



*South site of recommended electronic lockers*

hold a majority of the station’s keyed lockers, as well as individual inverted U-racks. The south entrance has many well-used racks and electronic lockers at the base of the stairway leading up to the station. There is a breezeway connecting the south entrance to the station area that has very well-used racks and room for additional racks.

The Lafayette station has south and north entrances, with varying types of bike parking surrounding each. The north parking lot and walkway

### Bicycle Parking Recommendations

There are multiple opportunities for additional bike racks and electronic lockers at the Lafayette station, both in the breezeway and adjacent to the south parking lot, as follows. To make better use of the breezeway, the 21 well-used wave racks should be replaced with 44 inverted U-racks (this will require relocating the information panels, perhaps to the west wall of the breezeway). Adjacent to the south parking lot, the wave racks west of the west stairway should be moved to either side of the existing seating/bike parking semi-circle, and be replaced with eight electronic locker spaces. Nearby, 12 electronic locker spaces should be added (with a new concrete pad) east of the east stairway, adjacent to the existing electronic lockers.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 113  
Electronic locker: 12  
Keyed locker: 30  
Total existing spaces: 155

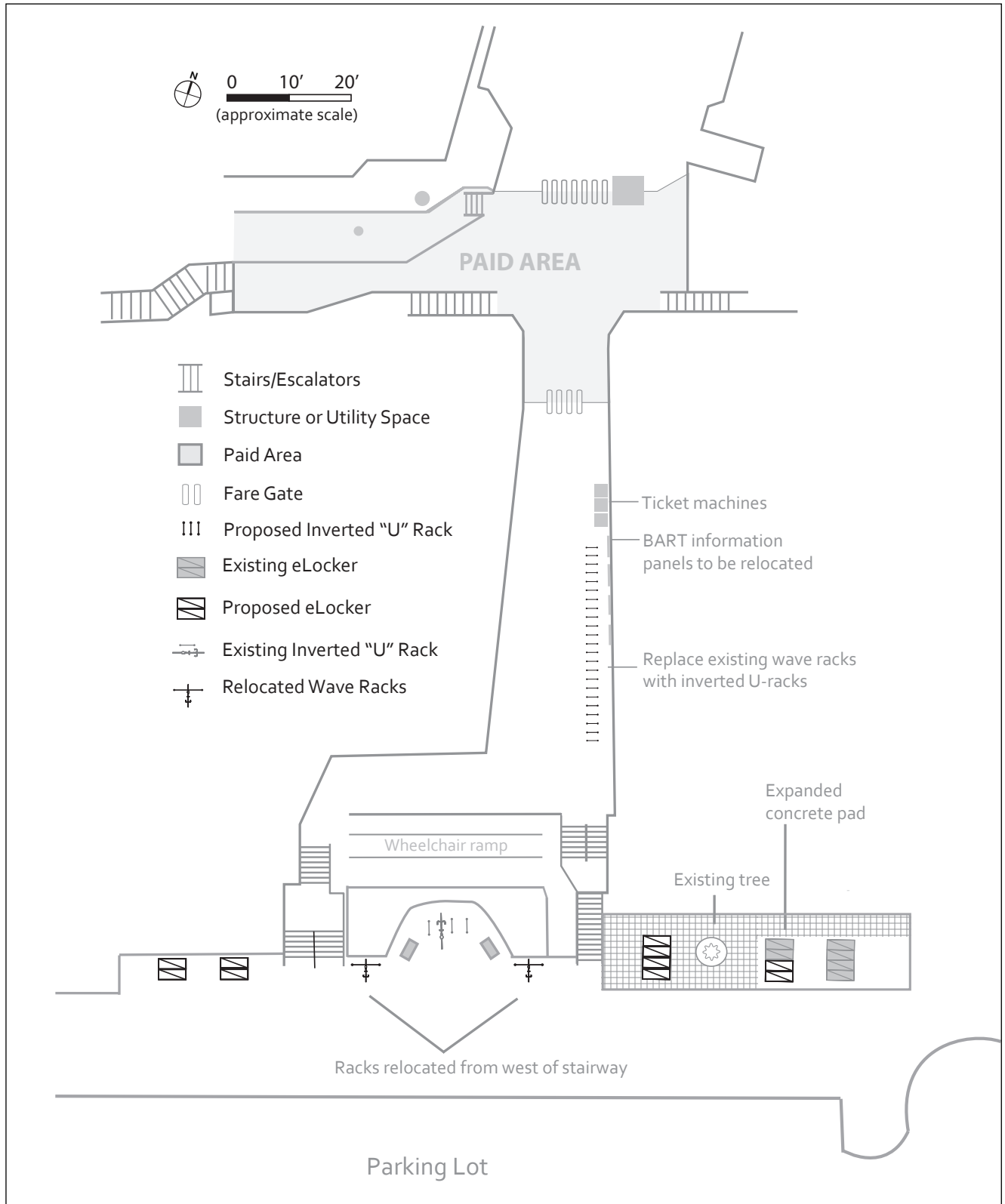
#### Bicycle Parking Recommendations

Inverted U-rack: 44  
Electronic locker: 20  
Total recommended spaces: 64



# Lafayette Station

## Secure bicycle parking recommendations



Plan view

# Lake Merritt Station

## Secure bicycle parking recommendations

### Station Characteristics



The Lake Merritt station has 80 very well-used electronic locker spaces at street level on both

*Site of recommended inverted U-racks*

sides of Oak Street. The rack spaces on the concourse level are often full, so cyclists lock their bikes to station railings and other fixtures.

### Bicycle Parking Recommendations

The Lake Merritt station has abundant space on the street and concourse levels to meet growing demand for secure bike parking. This station's spacious concourse level has room for 30 additional inverted U-rack spaces alongside the inside and outside of glass barriers on the north and south sides of the paid area, all visible to station agents. At street level, it is recommended that BART replace the 16 pie-shaped lockers with new electronic lockers on the south side of the street. The recent and dramatic growth in bike parking at this station indicate that a Bike Station may be warranted to accommodate future demand. The large, rectangular brick planter on the plaza north of Oak Street would be one good location or the Bike Station could be integrated with future development of the plaza.

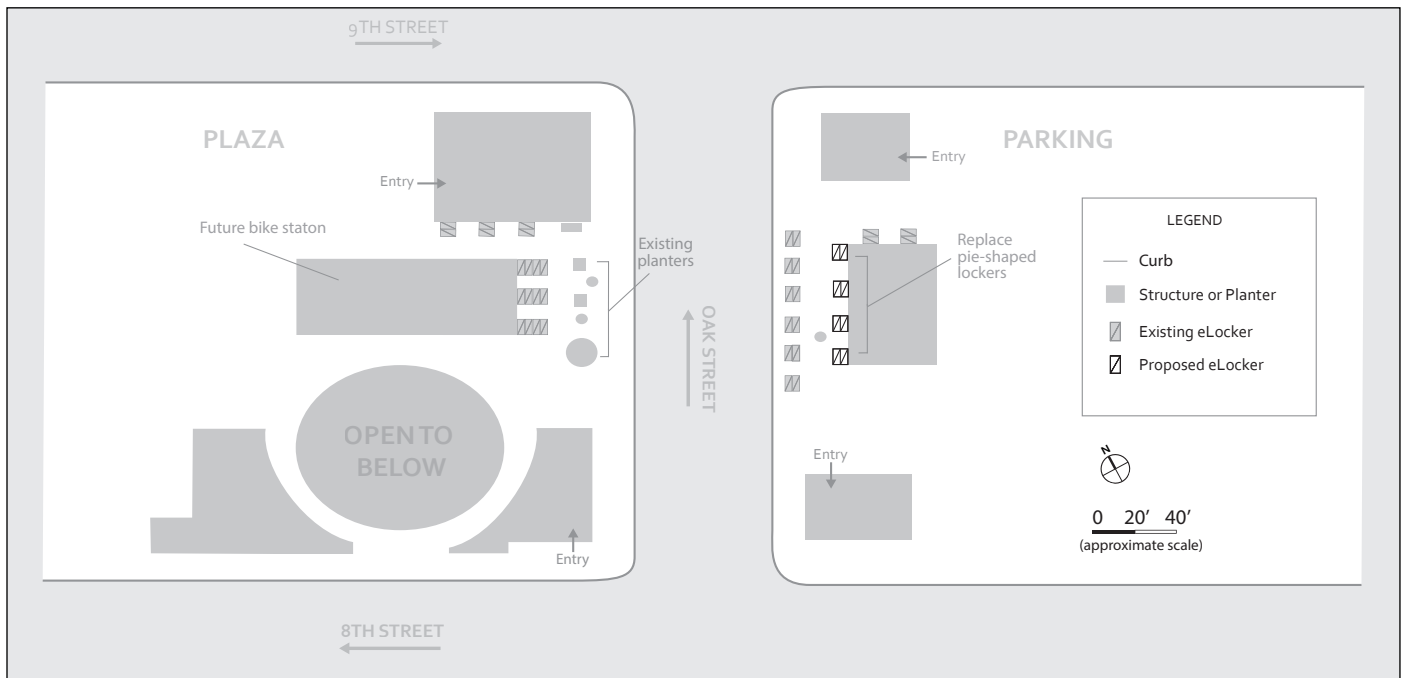
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 104  
 Electronic locker: 80  
 Total existing spaces: 184

#### Bicycle Parking Recommendations

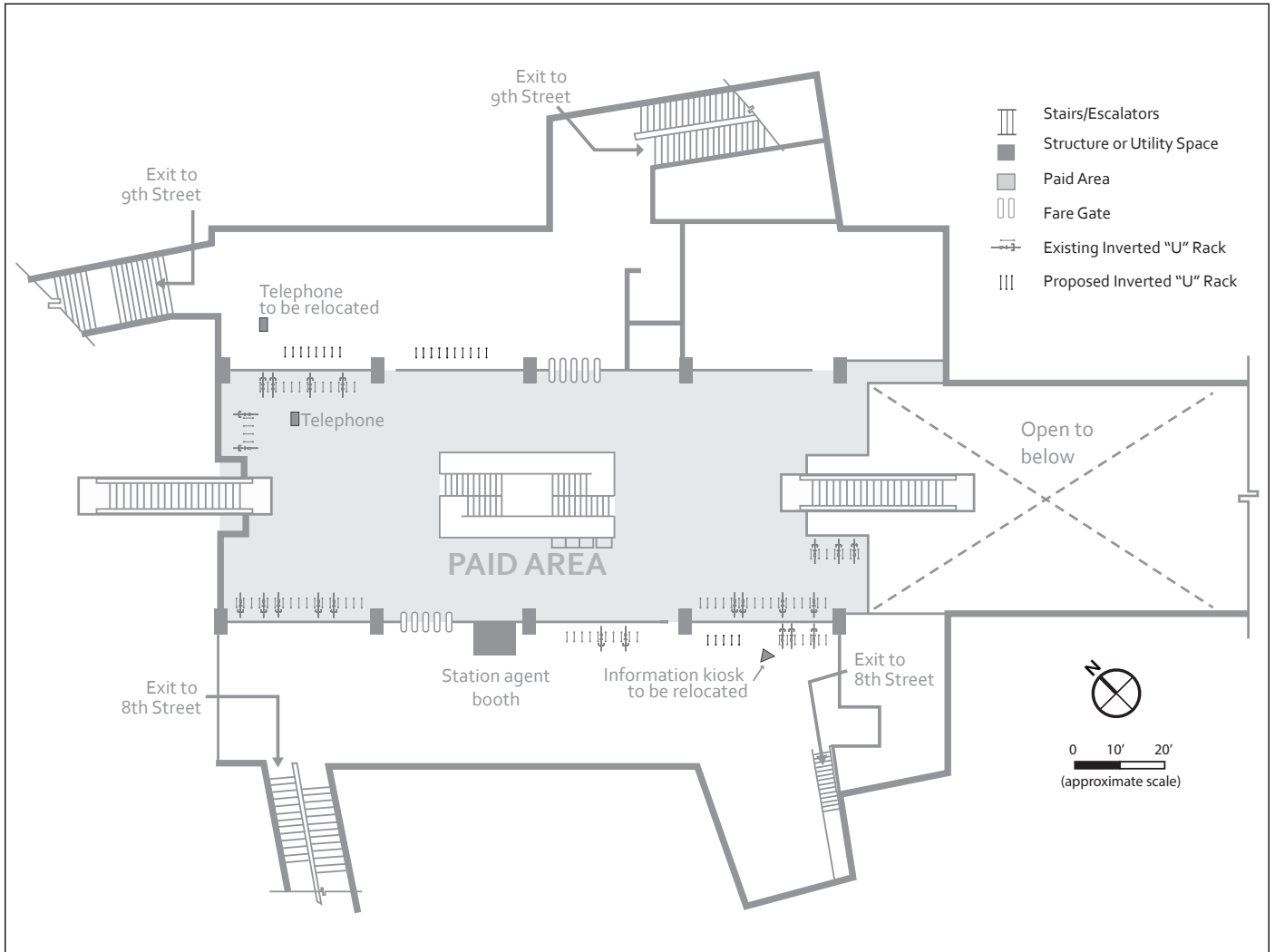
Inverted U-rack: 46  
 Electronic locker: 16  
 Total recommended spaces: 62



*Street level plan view*

# Lake Merritt Station

## Secure bicycle parking recommendations



Concourse level plan view

# MacArthur Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended parking

There are 102 oversubscribed bike parking spaces inside the paid area of the MacArthur station and as many outside the fare gates that are also filled

on a typical day, with 40 electronic lockers nearby. Nonetheless, theft, and the perception of theft, are huge deterrents to leaving a bicycle at this station. There is not space for additional racks within the paid area of the station, but the south side of the plaza area has ample room.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 207

Electronic locker: 40

Total existing spaces: 247

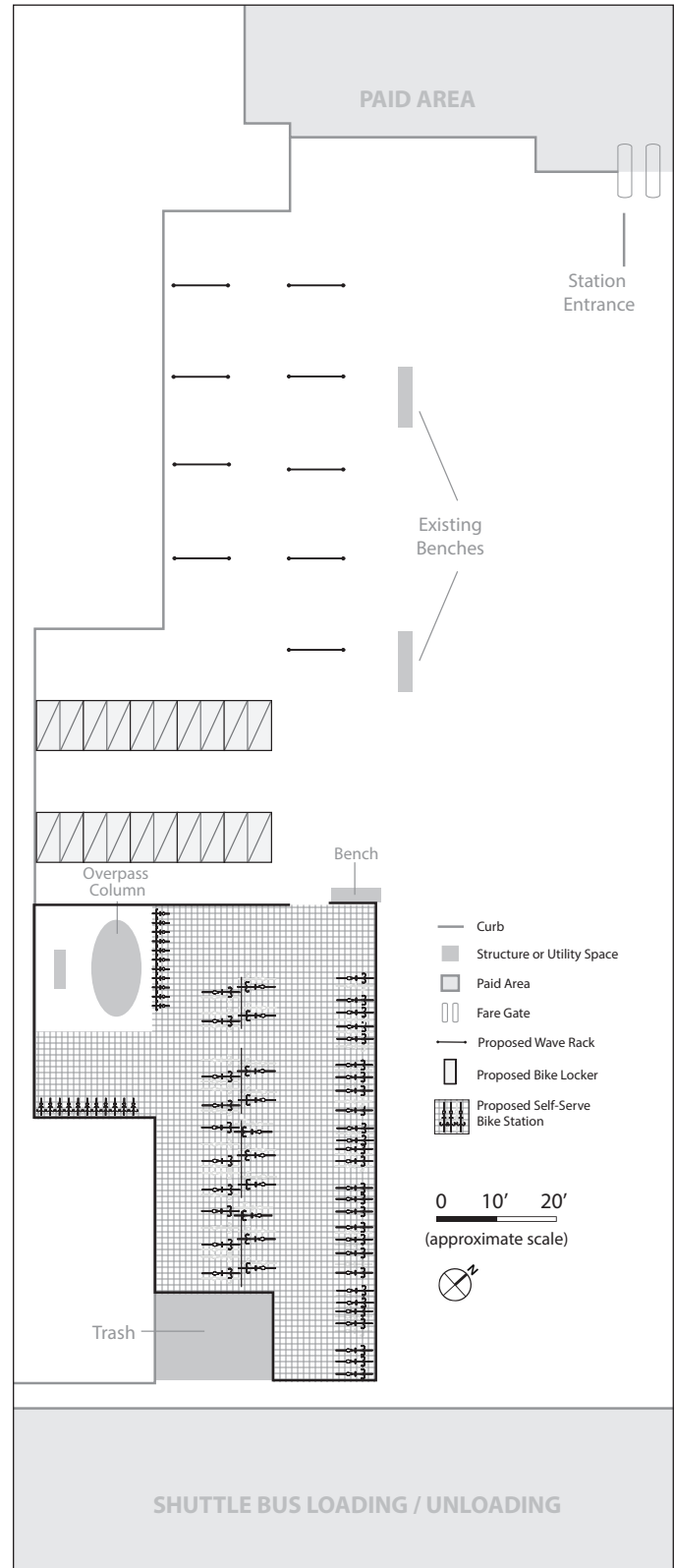
#### Bicycle Parking Recommendations

Bike Station: 200

Total recommended spaces: 200

### Bicycle Parking Recommendations

The recommendation for this station is to add a Bike Station with capacity for approximately 200 bikes on the south side of the plaza. This project is planned as part of a larger plaza renovation that will flip the locations of the existing bike racks and electronic lockers so the racks are located closer to the station agent in an area that is better sheltered from the elements by the freeway above. This station is likely to become BART's most popular biking station (based on recent growth) and, even with the existing racks inside the paid area and the additional 200 spaces, there may be future capacity issues.



Plan view

### Station Characteristics



Site of recommended inverted U-racks

The north and south ends of the Millbrae station's street level have keyed and electronic lockers dispersed along their walkways, as well as a small number of well-

used racks. Space for additional bike parking is limited on this level; however, Millbrae's concourse has plenty of space for additional racks, but cyclists would have to use the elevator or carry their bikes up a long flight of stairs to reach it.

### Bicycle Parking Recommendations

On the ground floor of the Millbrae station, 26 new inverted U-rack spaces should replace the 14 current rack spaces for a total of 12 new rack spaces, in part because the existing racks, which are not a standard type, are more difficult to use than the ones BART typically installs. The station's concourse has a good deal of room for new inverted U-racks. Twenty spaces can fit along the north wall, eight spaces along the southern staircase and eight spaces next to the south elevator.

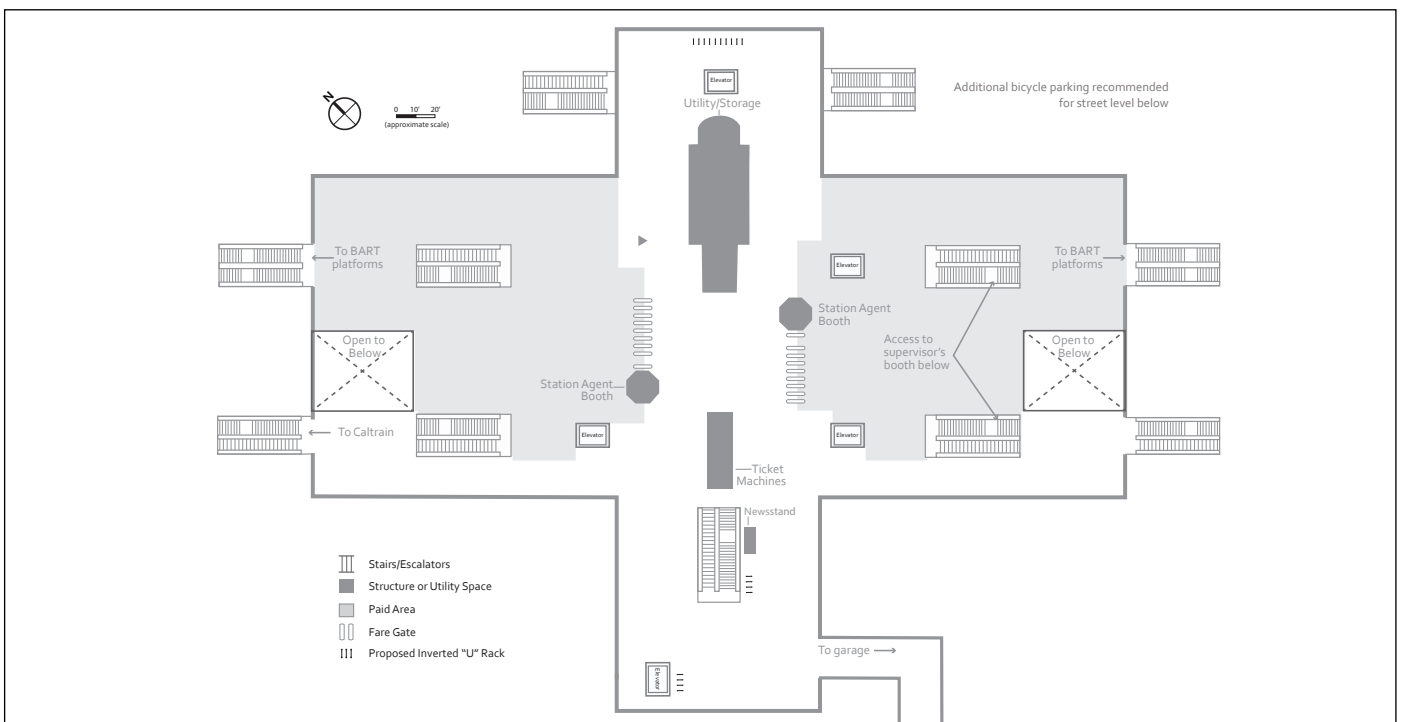
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

- Rack: 40
- Electronic locker: 26
- Keyed locker: 40
- Total existing spaces: 96

#### Bicycle Parking Recommendations

- Inverted U-rack: 48
- Total recommended spaces: 48



Plan view

# Orinda Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended inverted U- racks

The Orinda station offers a few electronic lockers outside the entrance and racks outside the fare

gates. The station area has ample space for additional parking inside of the paid area and on the west entrance walkway.

### Bicycle Parking Recommendations

The Orinda station has room for more electronic lockers outside the station and plentiful bicycle racks inside the paid area. The mechanisms of the eight keyed locker spaces should be replaced to convert them into electronic locker spaces or, if not technically possible, replaced with new electronic lockers. In addition, there is room for six new electronic locker spaces adjacent to the existing electronic lockers. Sixty inverted U-rack spaces will fit nicely in the paid area. When ArcLockers are available, 12 can be located at the far end of the paid area.

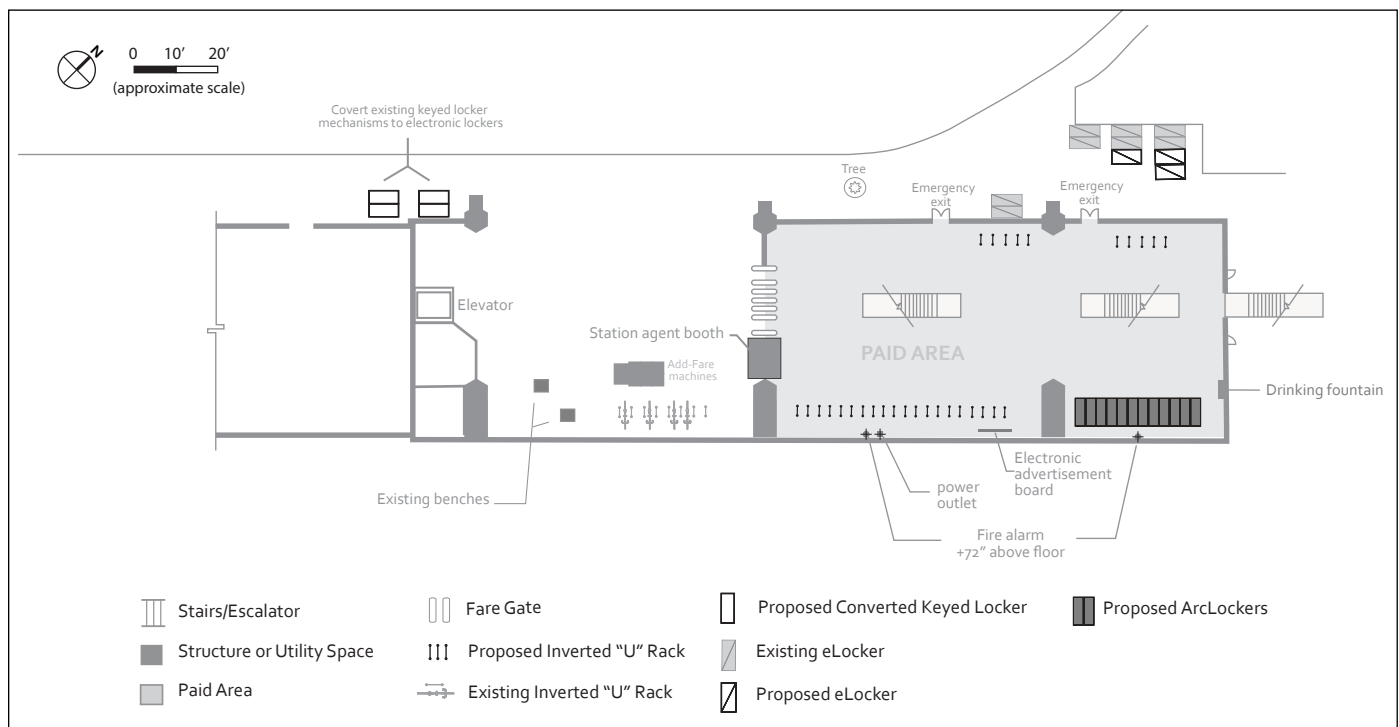
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

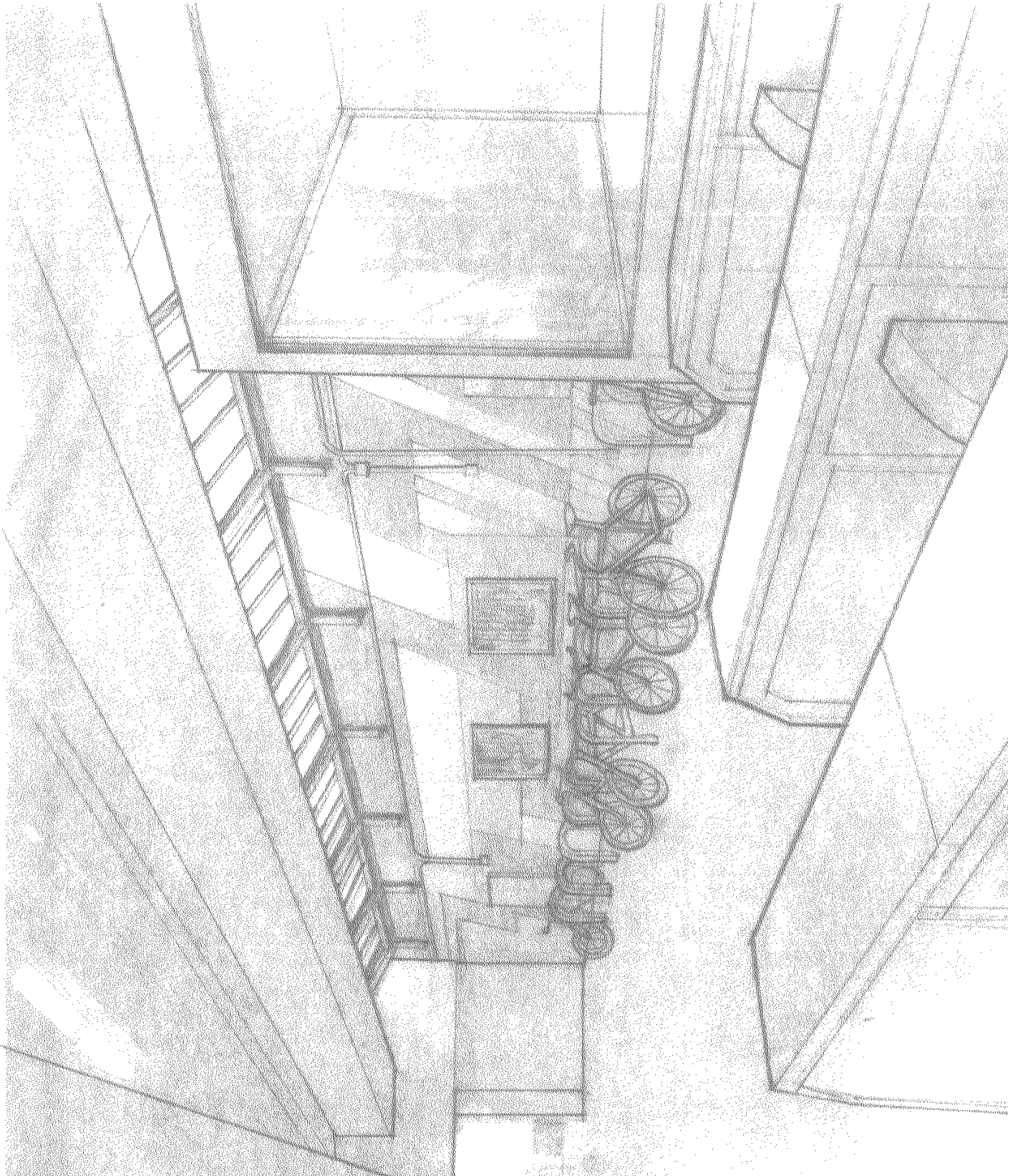
Rack: 26  
Electronic locker: 16  
Total existing spaces: 42

#### Bicycle Parking Recommendations

Inverted U-rack: 60  
Electronic locker: 14  
Arc Locker: 12  
Total recommended spaces: 86



Plan view



*Orinda paid area bike parking concept*

# Pittsburg / Bay Point Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended inverted U-racks

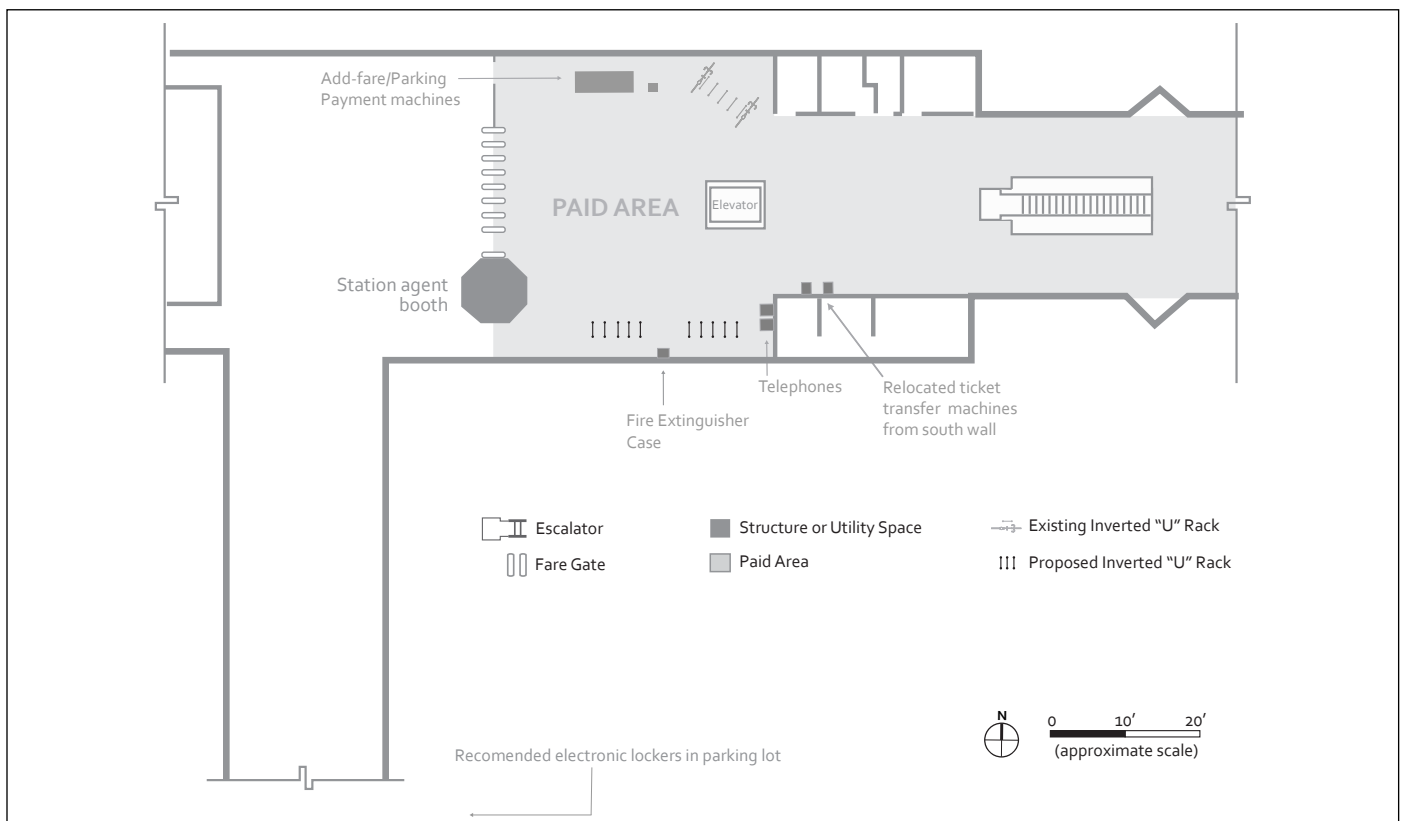
The Pittsburg/Bay Point station has small clusters of lightly used keyed and electronic lockers outside of the south entrance, a few moderately used racks

outside of the main entrance, and a one set of well-used inverted U-racks inside the paid area.

### Bicycle Parking Recommendations

There is room for 20 inverted U-rack spaces along the south wall of the paid area of the Pittsburg/Bay Point station, assuming the bus transfer machines can be relocated, perhaps to around the corner from the telephones. The area outside the south entrance where the electronic lockers are currently located can house at least 12 additional electronic lockers; more if demand for locker parking at this station should increase.

Bicycle Parking (# spaces)	
<b>Existing Bicycle Parking</b>	<b>Bicycle Parking Recommendations</b>
Rack: 45	Inverted U-rack: 20
Electronic locker: 12	Electronic locker: 12
Keyed locker: 20	Total recommended spaces: 32
Total existing spaces: 77	



Plan view



### Station Characteristics



Site of recommended inverted U-racks

The Richmond station offers 24 street-level electronic lockers and two keyed lockers. There are rack spaces inside the station that are not far from the station agent, but are partially obscured from the booth's view by an information kiosk.

agent, but are partially obscured from the booth's view by an information kiosk.

### Bicycle Parking Recommendations

The Richmond station has a modest amount of space for additional secure bicycle parking within the fare gates. A new 16-space inverted U-rack is recommended in front of the mural, which is directly in the station agents' line-of-sight. Outside the fare gates, there is room for 24 inverted U-rack spaces along the south station wall, directly across from the station agent's booth, although a bench, trash can and informational signage will need to be relocated. Further to the west, 10 ArcLocker spaces should be added near the Amtrak entrance. To improve the visibility of the current racks outside the fare gates, the information kiosk currently blocking the station agent's view should be relocated.

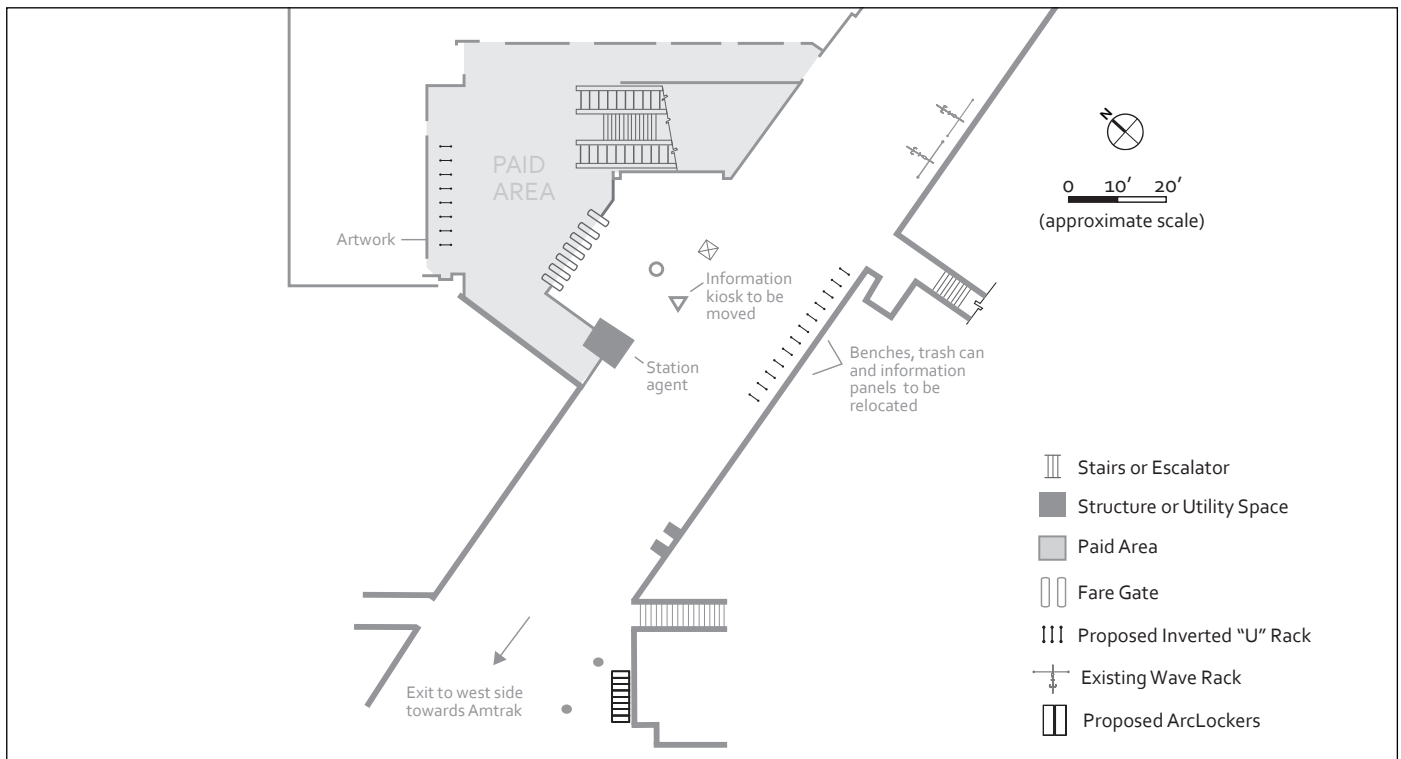
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

- Rack: 42
- Electronic locker: 24
- Keyed locker: 2
- Total existing spaces: 68

#### Bicycle Parking Recommendations

- Inverted U-rack: 40
- Arc Lockers: 8
- Total recommended spaces: 48



Plan view

# Rockridge Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended electronic lockers

Existing parking at the Rockridge station is well used and includes 140 rack spaces and 40 electronic locker spaces

distributed among the plazas on the east and west sides of College Avenue. Although the paid area is too small for additional parking, there is available space at the west end of the pedestrian walkway over College Avenue.

### Bicycle Parking Recommendations

The Rockridge station has room to expand its secure parking inventory via electronic lockers and ArcLockers. Fifty-six electronic locker spaces are recommended for the walkway of the east parking lot and another twelve on the plaza west of College Avenue. Two wave racks will have to be relocated to the walkway north of the station to make room for the easternmost set of recommended electronic lockers. The western end of the breezeway over College Avenue can accommodate 12 new Arc Locker spaces.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 140

Electronic locker: 40

Total existing spaces: 180

#### Bicycle Parking Recommendations

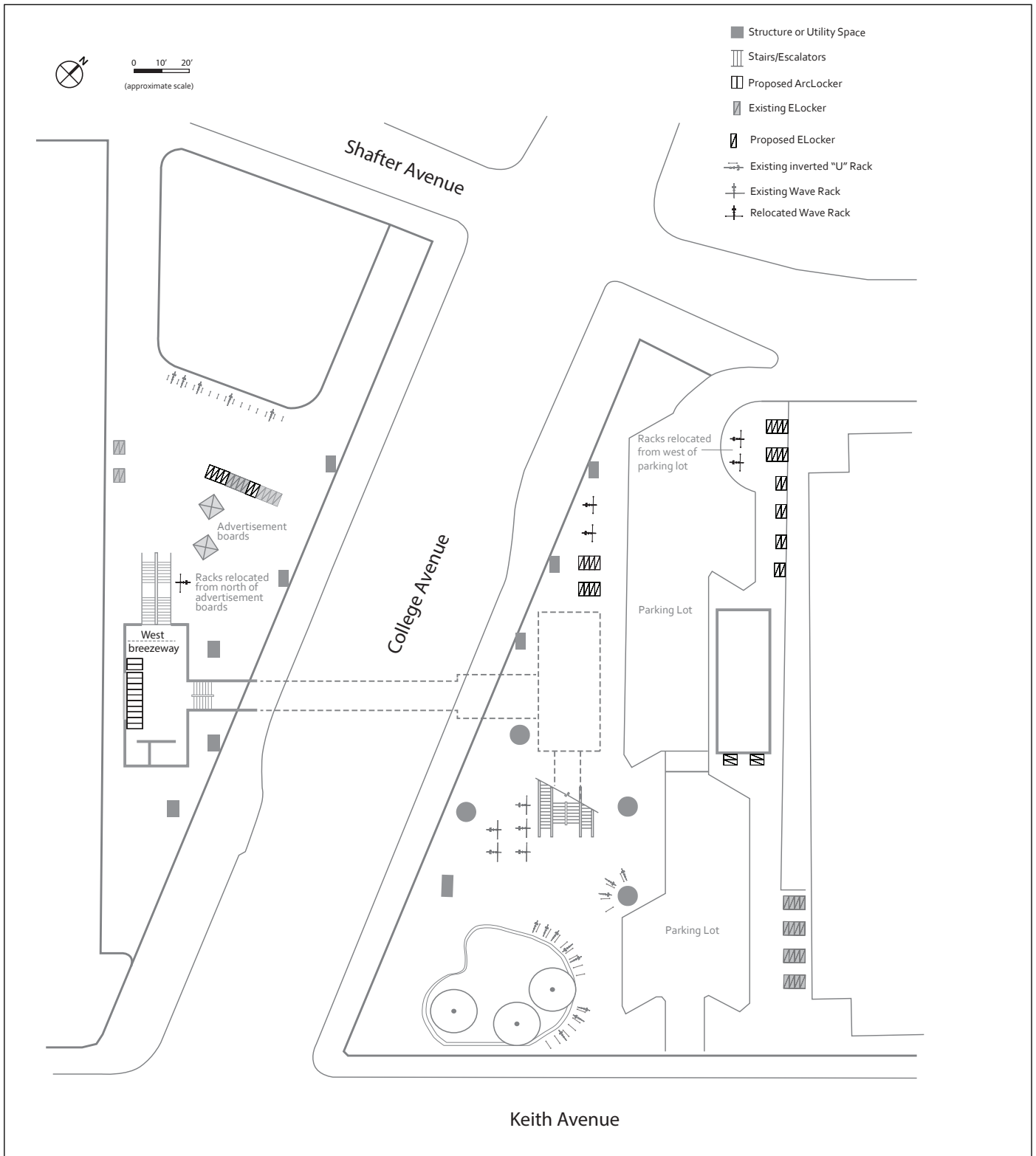
Electronic locker: 68

Arc Locker: 12

Total recommended spaces: 80

# Rockridge Station

## Secure bicycle parking recommendations



Plan view

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### Station Characteristics



Site of recommended inverted U-racks

The San Bruno station sits adjacent to the Tanforan shopping mall. It offers 30 keyed lockers, 12 electronic

locker spaces and 13 bike rack spaces on the street level. In addition, there are a modest number of well-used racks in the paid area, and patrons sometimes lock their bikes to station railings.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

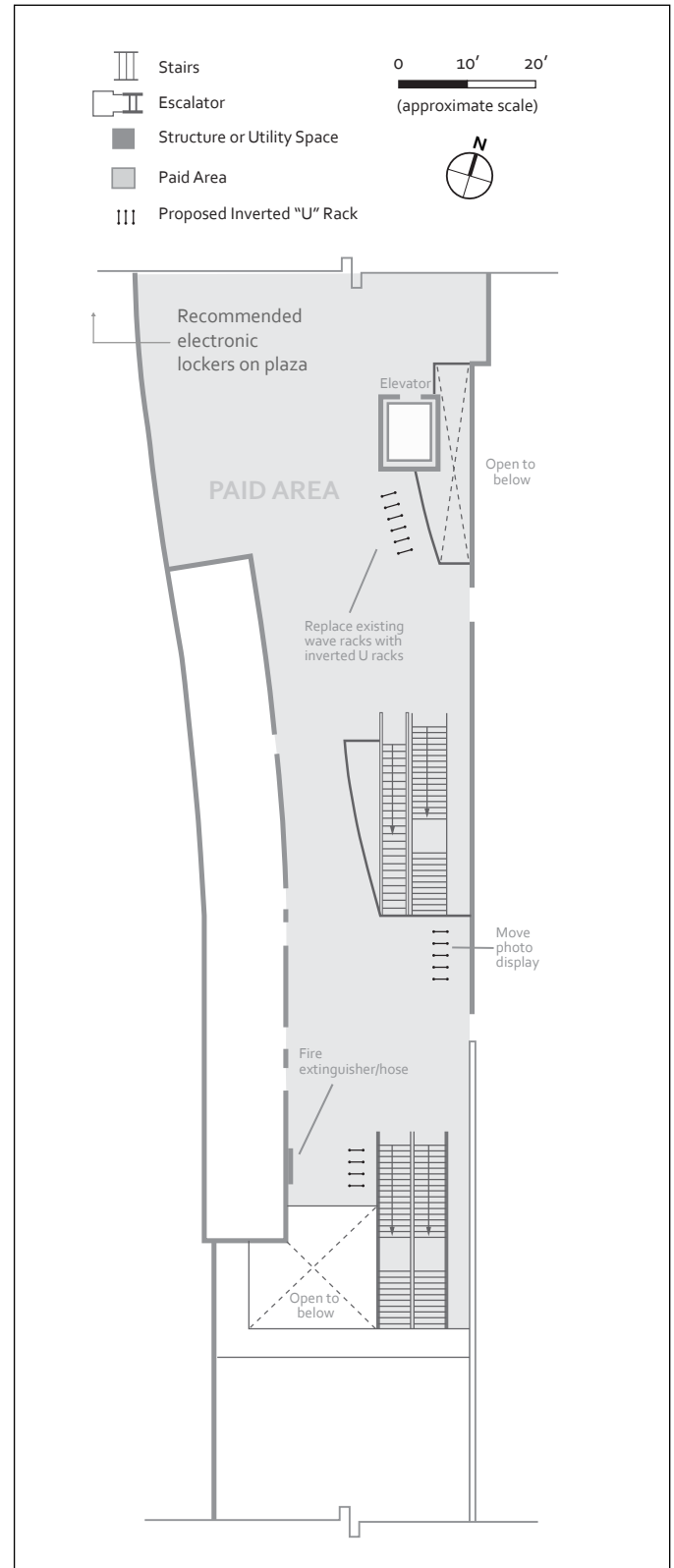
Rack: 25  
 Electronic locker: 12  
 Keyed locker: 30  
 Total existing spaces: 67

#### Bicycle Parking Recommendations

Inverted U-rack: 38  
 Electronic locker: 12  
 Total recommended spaces: 50

### Bicycle Parking Recommendations

The existing wave racks inside the paid area are oversubscribed and should be replaced with higher capacity inverted U-racks. South of the fare gates, out of the flow of pedestrian traffic, there is room for 30 inverted U-rack spaces (the current photo exhibit would need to be relocated for 12 of the spaces). There is also room for one eight-bike inverted U-rack immediately adjacent to the fare gates inside the paid area. In addition, at least 12 new electronic lockers can fit on the north exterior plaza adjacent to the current set.



Plan view

# San Leandro Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended Bike Station

The San Leandro station provides a variety of bicycle parking. There are bike racks outside the fare gates and on the east and south sides of the station, and

40 well-used bicycle lockers near the ticket machines and on the less-traveled west side of the station. San Leandro will be the southern terminus of the AC Transit Bus Rapid Transit project. A Bike Station there can benefit both BART and AC Transit riders.

### Bicycle Parking Recommendations



Existing lockers near site of recommended Bike Station

A self-serve Bike Station for 119 bicycles is proposed for the north end of the station near the existing bike lockers. This location is quite visible from San Leandro Blvd. and has a lot of pedestrian activity due to the nearby kiss and ride zone.

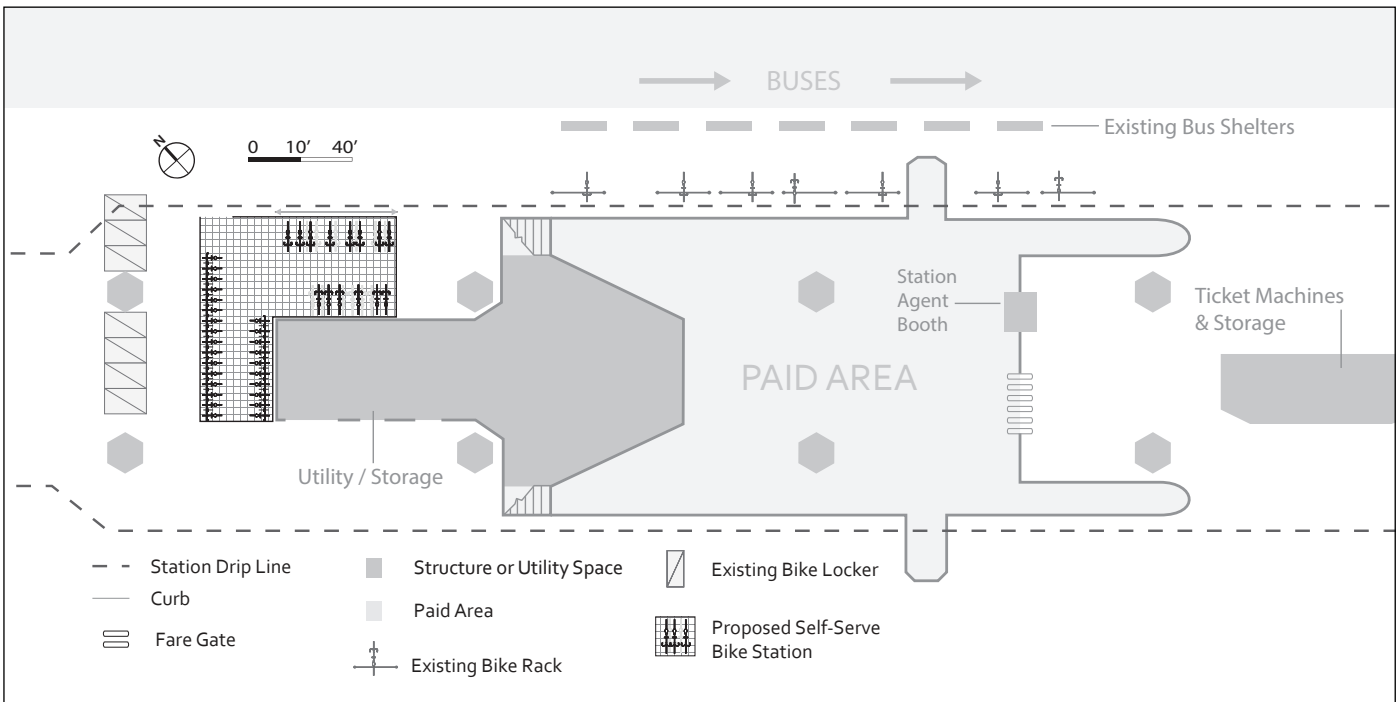
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 91  
 Electronic locker: 40  
 Keyed locker: 12  
 Total existing spaces: 143

#### Bicycle Parking Recommendations

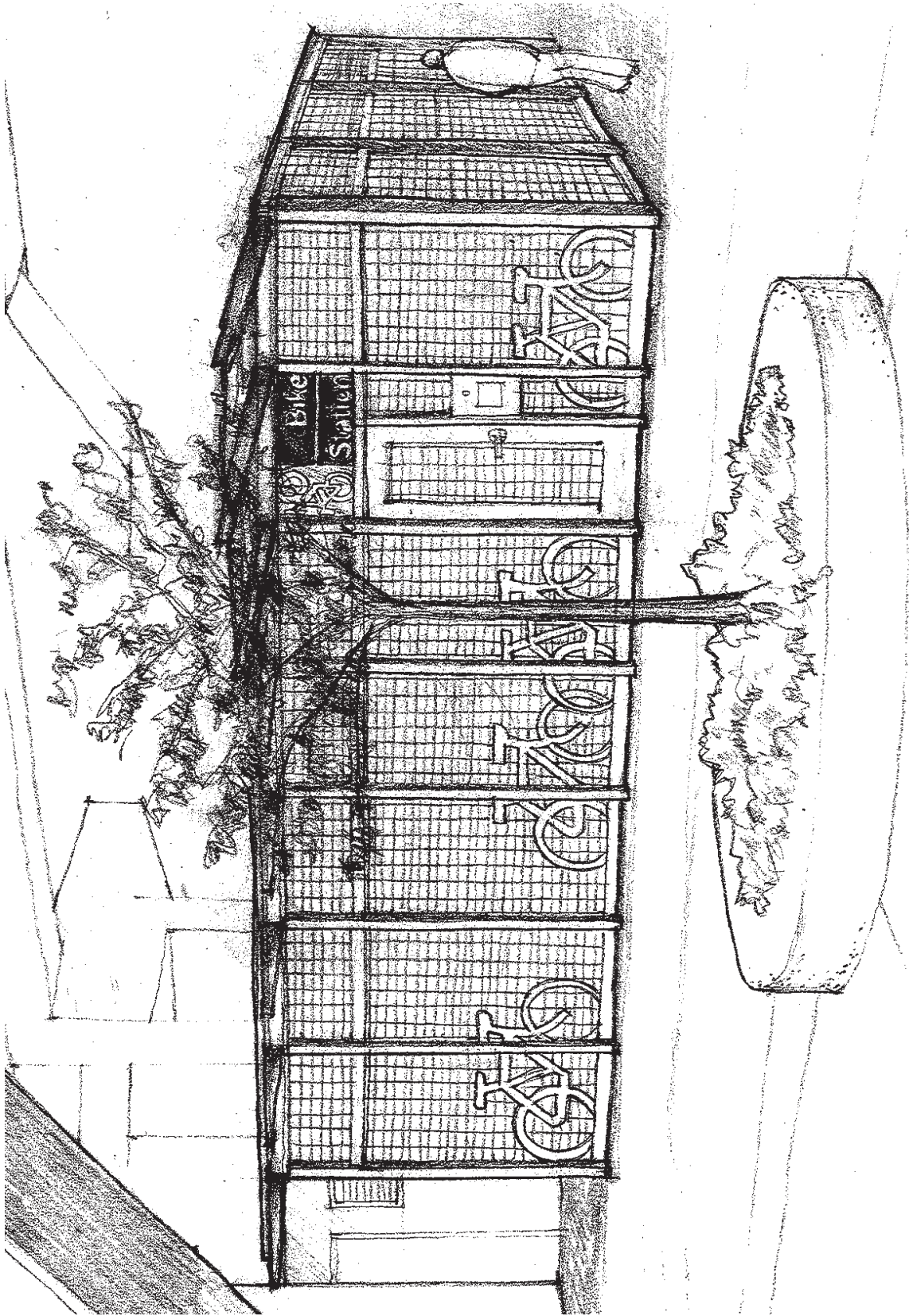
Bike Station: 119  
 Total recommended spaces: 119



Plan view

# San Leandro Station

Secure bicycle parking recommendations

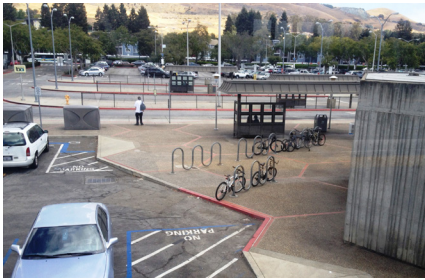


*San Leandro self-serve Bike Station concept*

# South Hayward Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended inverted U-racks

There are 30 keyed lockers and 16 electronic lockers on the walkway surrounding the South Hayward station entrance. Wave racks are clustered at the

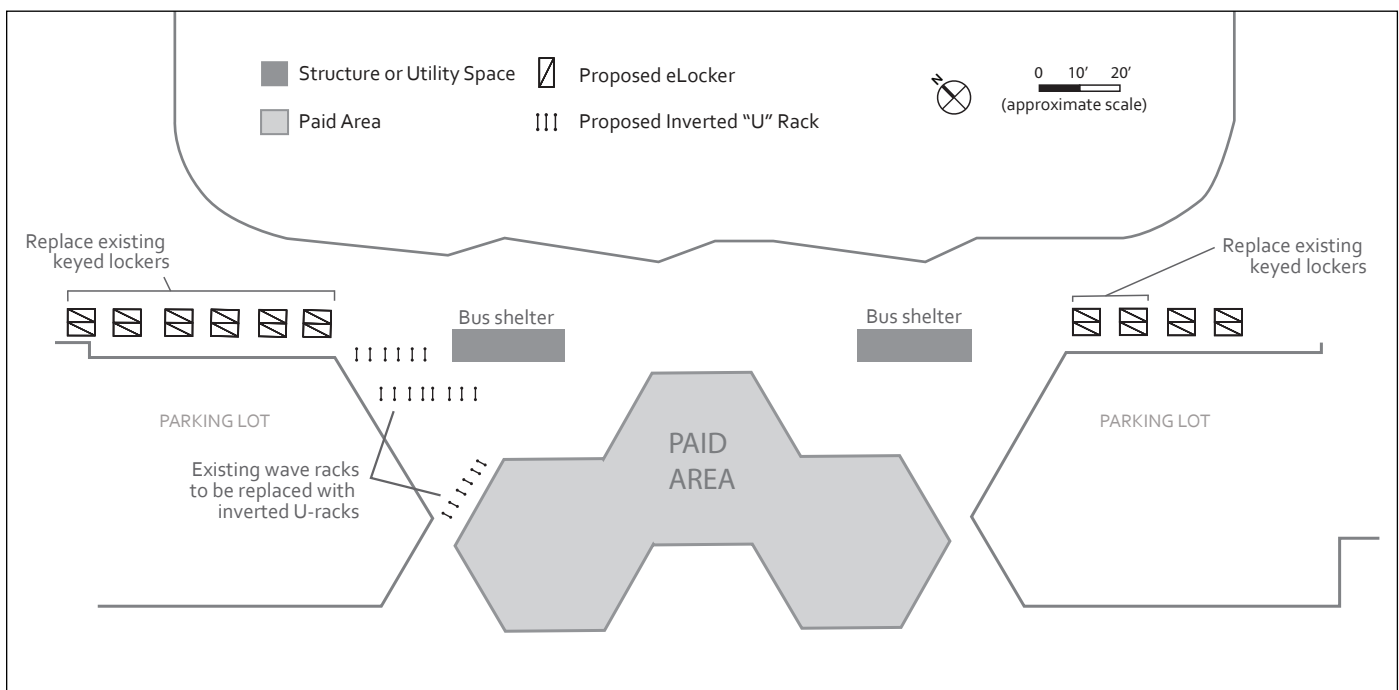
north and south ends of this walkway. The wave racks on the north end are significantly more popular than the south end, where pedestrian traffic is lower.

Wave racks are clustered at the

### Bicycle Parking Recommendations

It is recommended that the existing keyed lockers at the South Hayward station be replaced with up to 40 electronic locker spaces. Bikes were observed locked to the wave racks incorrectly at this station, i.e. parallel to the wave racks rather than perpendicular. When this occurs, each bike takes up more than one space at a time. In order to encourage proper locking and space efficiency, the wave racks on the north end of the exterior plaza should be replaced with inverted U-racks and 40 additional inverted U-rack spaces should be added in this area.

Bicycle Parking (# spaces)	
<b>Existing Bicycle Parking</b>	<b>Bicycle Parking Recommendations</b>
Rack: 86	Inverted U-rack: 40
Electronic locker: 16	Electronic locker: 40
Keyed locker: 30	Total recommended spaces: 80
Total existing spaces: 132	



Plan view



## Station Characteristics

The South San Francisco station has eight electronic locker spaces and 30 rack spaces on the plaza between El Camino Real and the station's south entrance. The north entrance faces El Camino Real High School and has 30 keyed locker spaces. The two wave racks inside the paid area are within view of the station agent and are very well used.

## Bicycle Parking Recommendations

This station has an expansive plaza across the street from its south entrance that can hold at least an additional 24 electronic locker spaces. The existing rack spaces on this plaza should be repositioned so that they are perpendicular to the adjacent retaining wall rather than parallel. The current position and spacing of these racks does not allow enough space for two bikes to lock to either side of a rack nor does it allow a cyclist to lock their frame in two places.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 44

Electronic locker: 8

Keyed locker: 30

#### Bicycle Parking Recommendations

Electronic locker: 24

Total recommended spaces: 24



*Site of long-term recommended parking*

# Walnut Creek Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended pavilion

Bike racks and keyed lockers are currently scattered at numerous locations around the Walnut

Creek station. There is not room within the station's paid area for additional bicycle parking. Although there is ample space outside the fare gates, the windowless back wall of the police station currently blocks a direct visual connection between the fare gates and the most logical location for new bicycle parking. This situation will change when the police command station is relocated as part of future transit-oriented development.

### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 91

Electronic locker: 72

Keyed locker: 64

Total existing spaces: 227

#### Bicycle Parking Recommendations

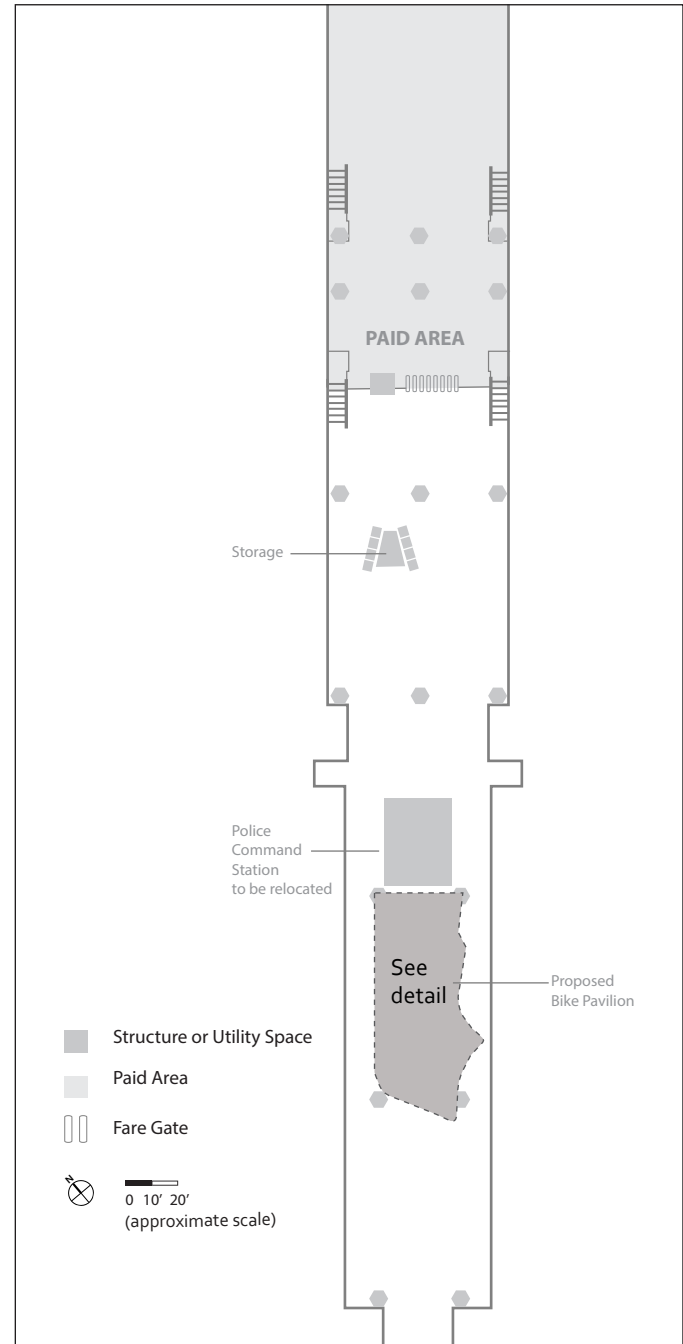
Inverted U-rack: 60

Electronic locker: 96

Total recommended spaces: 156

### Bicycle Parking Recommendations

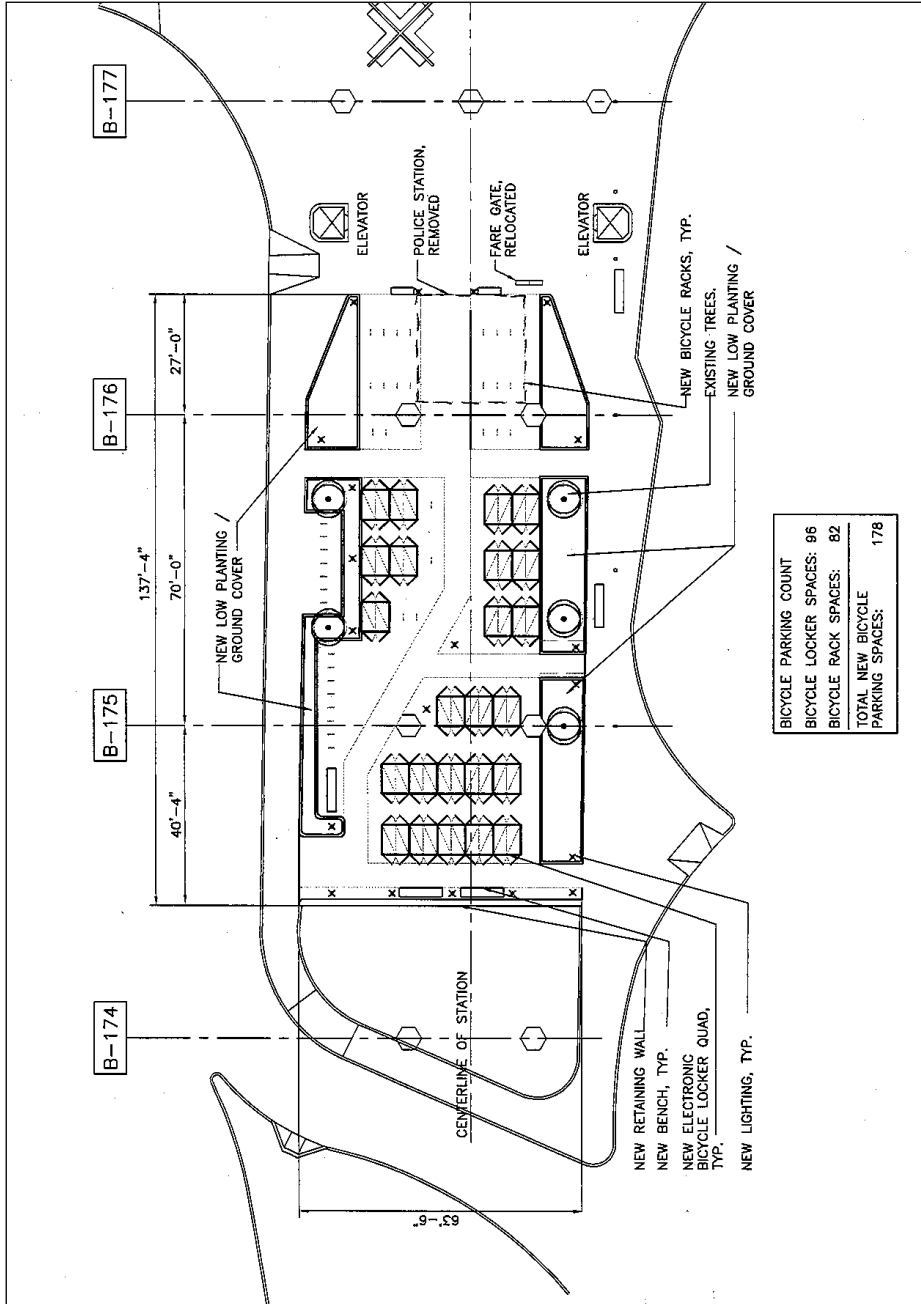
A new "bike pavilion" is currently being designed for the Walnut Creek station, directly across from a station agent booth. This location will be visible to the flow of pedestrian traffic entering and exiting the fare gates when the police station is relocated. The pavilion will provide a mixture of electronic lockers and rack spaces, for a total of 96 locker spaces and approximately 60 bike rack spaces.



Plan view

# Walnut Creek Station

## Secure bicycle parking recommendations



Walnut Creek pavilion concept drawing

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# West Dublin/Pleasanton Station

## Secure bicycle parking recommendations

### Station Characteristics



Site of recommended electronic lockers

station, including electronic lockers and bicycle racks both inside and outside the paid area.

The West Dublin/Pleasanton station is located in the I-580 median, on the border between Dublin and Pleasanton. There are 78 total bike parking spaces at this

### Bicycle Parking Recommendations

There is room for ten inverted U-rack spaces adjacent to the existing racks inside the paid area of the West Dublin/Pleasanton station. Twelve electronic locker spaces should be added along the north parking lot sidewalk on the Dublin side, near the existing electronic lockers (see photo).

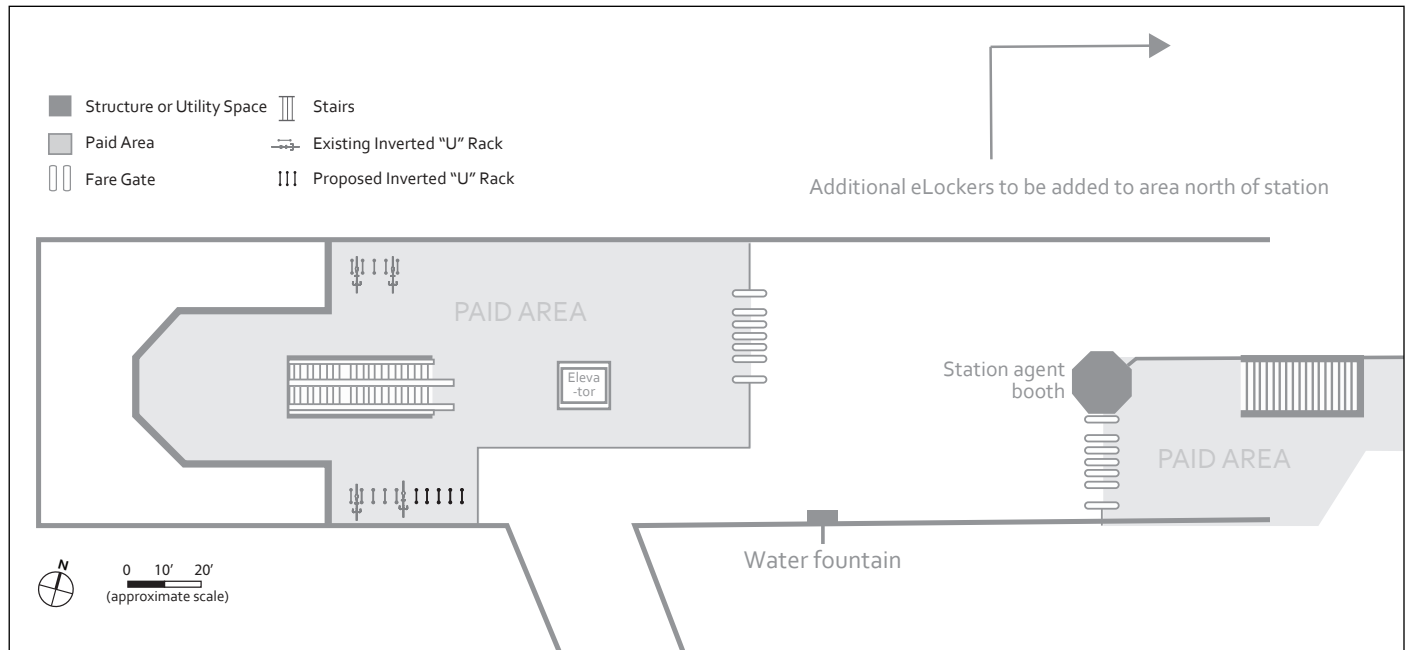
### Bicycle Parking (# spaces)

#### Existing Bicycle Parking

Rack: 62  
Electronic locker: 16  
Total existing spaces: 78

#### Bicycle Parking Recommendations

Inverted U-rack: 10  
Electronic locker: 12  
Total recommended spaces: 22



Plan view

# West Oakland Station

## Secure bicycle parking recommendations

### Station Characteristics



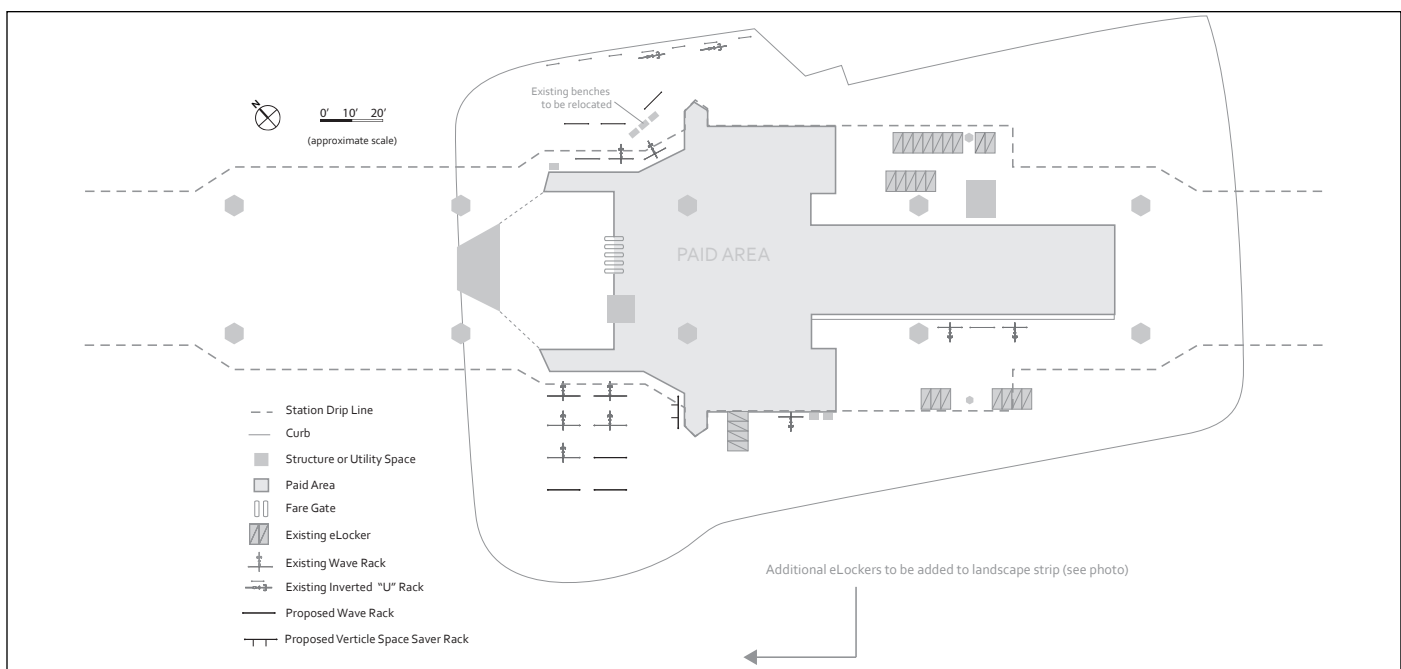
South site of recommended wave racks

The West Oakland station provides bicycle racks on the street and parking lot sides of the station entrance, and lockers in two locations farther to the southeast. With the exception of the locker area on the northeast (street) side of the station, there is a lot of pedestrian activity at West Oakland, as it is surrounded by an established neighborhood and new multi-family housing. As the last East Bay station before the Transbay Tube, it attracts many cyclists who use BART to cross the Bay.

### Bicycle Parking Recommendations

More bicycle parking is needed at this busy station, including additional racks near the station entrance and new electronic lockers. There is space for 21 wave rack spaces on the station's north plaza (a bench will need to be relocated) and 21 wave rack spaces and eight vertical space saver rack spaces on the south plaza, outside the station entrance. Eighty-four electronic locker spaces can be constructed on the landscaped strip in the parking lot west of the station, just across the access road. If these additions prove to be insufficient to keep up with demand for secure bicycle parking, BART should consider constructing a self-serve Bike Station on the entrance plaza.

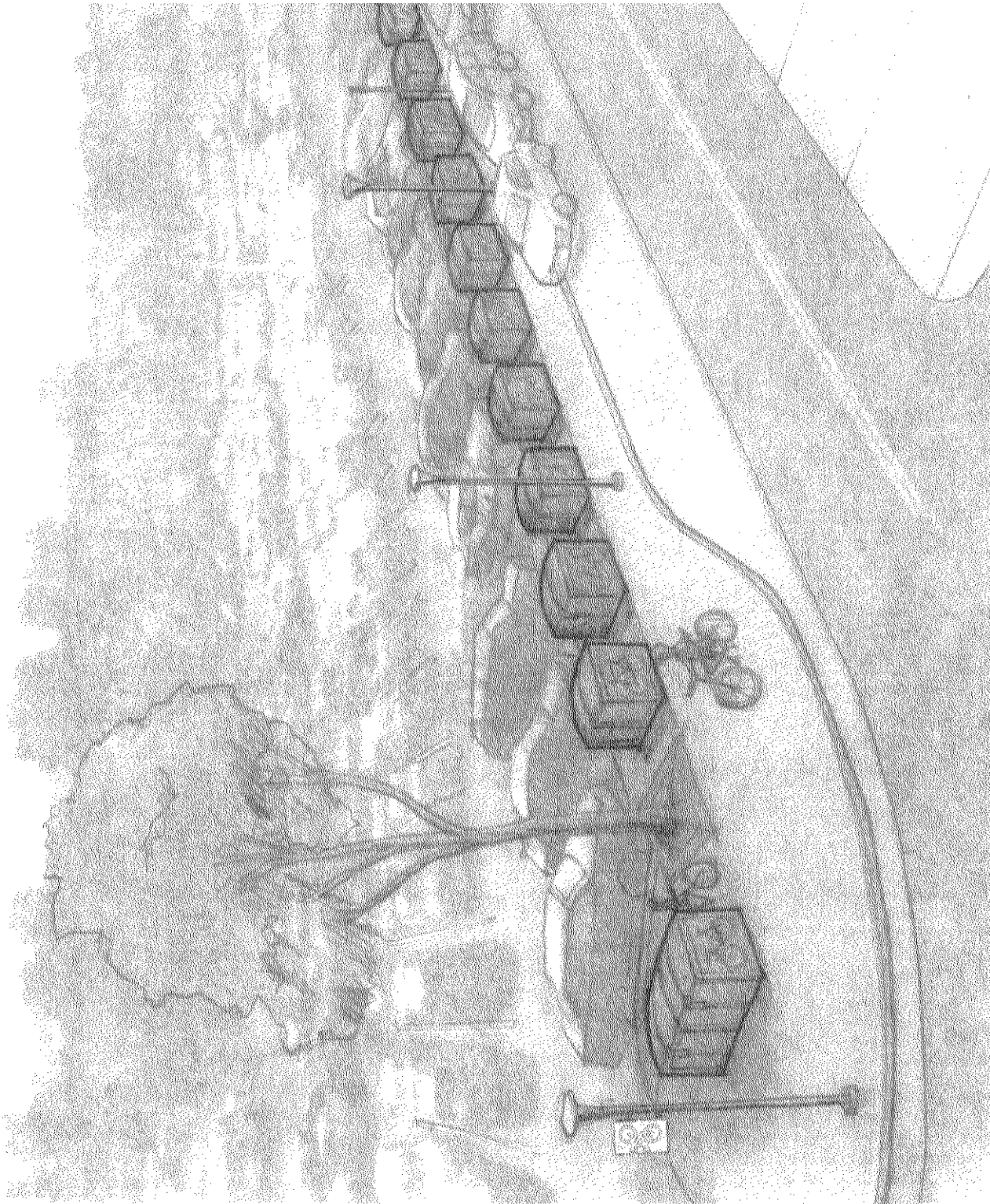
Bicycle Parking (# spaces)	
<b>Existing Bicycle Parking</b>	<b>Bicycle Parking Recommendations</b>
Rack: 104	Wave rack: 42
Electronic locker: 58	Vertical space-saver rack: 8
Keyed locker: 8	Electronic locker: 84
Total existing spaces: 170	Total recommended spaces: 134



Plan view

# West Oakland Station

Secure bicycle parking recommendations



*West Oakland electronic locker concept*





## Bicycle parking details

Table A1 details existing and recommended bicycle parking at each of the stations profiled in this report.

**Table A1 | Bicycle Parking Details**

Station	Existing					New						
	Rack <sup>1</sup>	eL <sup>2</sup>	Key <sup>3</sup>	Station <sup>4</sup>	Total	U-r <sup>5</sup>	Wave <sup>6</sup>	Vert <sup>7</sup>	eL	Arc <sup>8</sup>	Station	Total
12th Street Oakland	30	12	0	0	<b>42</b>	80	0	0	0	0	0	<b>80</b>
16th Street Mission	77	0	0	0	<b>77</b>	76	0	0	0	51	0	<b>127</b>
24th Street Mission	70	0	0	0	<b>70</b>	76	0	0	0	51	0	<b>127</b>
Balboa Park	95	12	12	0	<b>119</b>	20	0	0	8	0	0	<b>28</b>
Bay Fair	42	12	16	0	<b>70</b>	64	7	0	0	0	0	<b>71</b>
Castro Valley	40	20	20	0	<b>80</b>	32	0	0	0	0	0	<b>32</b>
Civic Center	63	0	0	0	<b>63</b>	124	0	0	0	0	89	<b>213</b>
Colma	40	8	24	0	<b>72</b>	32	0	0	8	0	0	<b>40</b>
Concord	77	56	12	0	<b>145</b>	0	0	0	0	0	125	<b>125</b>
Downtown Berkeley	18	0	0	288	<b>306</b>	0	0	0	0	12	0	<b>12</b>
Dublin / Pleasanton	250	28	24	0	<b>302</b>	0	21	0	36	0	0	<b>57</b>
El Cerrito Plaza	94	96	0	0	<b>190</b>	0	0	0	56	0	0	<b>56</b>
Embarcadero	0	0	0	130	<b>130</b>	0	0	0	0	0	0	<b>0</b>
Fremont	121	60	0	0	<b>181</b>	0	0	0	84	0	0	<b>84</b>
Glen Park	64	12	12	0	<b>88</b>	0	0	0	0	0	120	<b>120</b>
Hayward	70	16	20	0	<b>106</b>	70	0	0	32	0	0	<b>102</b>
Lafayette	113	12	30	0	<b>155</b>	44	0	0	20	0	0	<b>64</b>
Lake Merritt	104	80	0	0	<b>184</b>	46	0	0	16	0	0	<b>62</b>
MacArthur	207	40	0	0	<b>247</b>	0	0	0	0	0	200	<b>200</b>
Millbrae	40	16	40	0	<b>96</b>	48	0	0	0	0	0	<b>48</b>
Orinda	26	16	0	0	<b>42</b>	60	0	0	14	12	0	<b>86</b>
Pittsburg/Bay Point	45	12	20	0	<b>77</b>	20	0	0	12	0	0	<b>32</b>
Richmond	42	24	2	0	<b>68</b>	40	0	0	0	8	0	<b>48</b>
Rockridge	140	40	0	0	<b>180</b>	0	0	0	68	12	0	<b>80</b>
San Bruno	25	12	30	0	<b>67</b>	38	0	0	12	0	0	<b>50</b>
San Leandro	91	40	12	0	<b>143</b>	0	0	0	0	0	119	<b>119</b>
South Hayward	86	16	30	0	<b>132</b>	40	0	0	40	0	0	<b>80</b>
South San Francisco	44	8	30	0	<b>82</b>	0	0	0	24	0	0	<b>24</b>
Walnut Creek	91	72	64	0	<b>227</b>	60	0	0	96	0	0	<b>156</b>
W. Dublin/Pleasanton	62	16	0	0	<b>78</b>	10	0	0	12	0	0	<b>22</b>
West Oakland	104	58	8	0	<b>170</b>	0	42	8	84	0	0	<b>134</b>
<b>TOTALS</b>	<b>2,371</b>	<b>794</b>	<b>406</b>	<b>418</b>	<b>3,989</b>	<b>980</b>	<b>70</b>	<b>8</b>	<b>622</b>	<b>146</b>	<b>653</b>	<b>2,479</b>

**Notes**

1. Wave or inverted U-rack
2. Electronic locker
3. Keyed locker
4. Attended or self-service Bike Station
5. Inverted-U rack
6. Wave rack
7. Vertical space-saver rack
8. ArcLocker
9. Double decker rack
10. Table does not include "If future demand warrants..." recommendations.

U-r	Removed					Net spaces (existing + new - removed)						Station
	Wave	DD <sup>9</sup>	Key	eL	Total	Rack	eL	Key	Arc	Station	Total <sup>10</sup>	
0	0	30	0	0	30	80	12	0	0	0	92	12th Street Oakland
0	77	0	0	0	77	76	0	0	51	0	127	16th Street Mission
0	70	0	0	0	70	76	0	0	51	0	127	24th Street Mission
0	0	0	0	12	12	115	8	12	0	0	135	Balboa Park
0	21	0	0	0	21	92	12	16	0	0	120	Bay Fair
0	0	0	0	0	0	72	20	20	0	0	112	Castro Valley
0	0	0	0	0	0	187	0	0	0	89	276	Civic Center
0	0	0	0	0	0	72	16	24	0	0	112	Colma
0	0	0	0	0	0	77	56	12	0	125	270	Concord
0	0	0	0	0	0	18	0	0	12	288	318	Downtown Berkeley
0	0	0	0	0	0	271	64	24	0	0	359	Dublin / Pleasanton
0	0	0	0	0	0	94	152	0	0	0	246	El Cerrito Plaza
0	0	0	0	0	0	0	0	0	0	130	130	Embarcadero
0	0	0	0	0	0	121	144	0	0	0	265	Fremont
0	0	0	0	0	0	64	12	12	0	120	208	Glen Park
0	63	0	0	0	63	77	48	20	0	0	145	Hayward
0	21	0	0	0	21	136	32	30	0	0	198	Lafayette
0	0	0	0	16	16	150	80	0	0	0	230	Lake Merritt
0	0	0	0	0	0	207	40	0	0	200	447	MacArthur
14	0	0	0	0	14	74	16	40	0	0	130	Millbrae
0	0	0	8	0	8	86	30	-8	12	0	120	Orinda
0	0	0	0	0	0	65	24	20	0	0	109	Pittsburg/Bay Point
0	0	0	0	0	0	82	24	2	8	0	116	Richmond
0	0	0	0	0	0	140	108	0	12	0	260	Rockridge
0	7	0	0	0	7	56	24	30	0	0	110	San Bruno
0	0	0	0	0	0	91	40	12	0	119	262	San Leandro
0	28	0	18	0	46	98	56	12	0	0	166	South Hayward
0	0	0	0	0	0	44	32	30	0	0	106	South San Francisco
0	0	0	0	0	0	151	168	64	0	0	383	Walnut Creek
0	0	0	0	0	0	72	28	0	0	0	100	W. Dublin/Pleasanton
0	0	0	0	0	0	154	142	8	0	0	304	West Oakland
14	287	30	26	28	385	3,098	1,388	380	146	1,071	6,083	



## ArcLockers

ArcLockers are a new variation of a shared use electronic bike locker currently in the final stage of development by eLock Technologies for BART and others interested in providing secure, long-term bike parking. Like the electronic lockers that BART currently uses, one bicycle will be stored in each ArcLocker, so bike, wheels, seats, lights and panniers will be secure. ArcLockers are being designed with maximum transparency so transit security personnel can confirm that they're being used to store bicycles, and passengers have an easier time finding their parked bike. ArcLockers will also be reserved remotely or rented on a first come-first served basis and a nominal hourly fee will be charged to discourage long-term use.

Since traditional electronic lockers require access to both sides of these 2-bike units and ample space for

their 3' x 6' footprint, they are not appropriate for stations without plazas, parking lots or other spacious locations. BART will install ArcLockers, whose curved shape will relate to station architecture, against walls in the concourse or paid area of stations. Each ArcLocker will house one bicycle with single-sided access and smaller footprint than traditional electronic lockers. They will operate with the same BikeLink interface as BART's current electronic lockers, which will be smart phone app- and Clipper-ready. ArcLockers will also be networked so users can track real-time usage and availability information before biking to a station.

ArcLockers are expected to be available for installation at BART stations in 2016 or 2017.



eLock Technologies LLC



## Cost to provide recommended parking

The table in this appendix summarizes the recommended secure bike parking recommendations at each station, and a breakdown of the cost of each.





Table C1 | Cost summary

Station	Recommended Secure Parking						Total Cost <sup>5</sup>	Funding Status <sup>6</sup>
	Racks <sup>1</sup>		eLockers <sup>2</sup>		Bike Stations <sup>3</sup>			
	# <sup>4</sup>	\$	# <sup>4</sup>	\$	SF	\$		
12th Street Oakland	80	\$12,000	0	\$0	0	\$0	\$12,000	●
16th Street Mission	76	\$11,400	51	\$173,910	0	\$0	\$185,310	○
24th Street Mission	76	\$11,400	51	\$173,910	0	\$0	\$185,310	○
Balboa Park	20	\$3,000	8	\$27,280	0	\$0	\$30,280	●
Bay Fair	71	\$10,650	0	\$0	0	\$0	\$10,650	●
Castro Valley	32	\$4,800	0	\$0	0	\$0	\$4,800	●
Civic Center	124	\$18,600	0	\$0	1,614	\$750,510	\$769,110	●
Colma	32	\$4,800	8	\$27,280	0	\$0	\$32,080	○
Concord	0	\$0	0	\$0	1,600	\$744,000	\$744,000	○
Downtown Berkeley	0	\$0	12	\$40,920	0	\$0	\$40,920	●
Dublin / Pleasanton	21	\$3,150	36	\$122,760	0	\$0	\$125,910	○
El Cerrito Plaza	0	\$0	56	\$190,960	0	\$0	\$190,960	○
Embarcadero <sup>7</sup>	0	\$0	0	\$0	0	\$0	\$0	○
Fremont	0	\$0	84	\$286,440	0	\$0	\$286,440	○
Glen Park	0	\$0	0	\$0	800	\$372,000	\$372,000	○
Hayward	70	\$10,500	32	\$109,120	0	\$0	\$119,620	○
Lafayette	44	\$6,600	20	\$68,200	0	\$0	\$74,800	●
Lake Merritt	46	\$6,900	16	\$54,560	0	\$0	\$61,460	●
MacArthur	0	\$0	0	\$0	1,800	\$837,000	\$837,000	○
Millbrae	48	\$7,200	0	\$0	0	\$0	\$7,200	○
Orinda	60	\$9,000	26	\$88,660	0	\$0	\$97,660	●
Pittsburg/Bay Point	20	\$3,000	12	\$40,920	0	\$0	\$43,920	○
Richmond	40	\$6,000	8	\$27,280	0	\$0	\$33,280	○
Rockridge	0	\$0	80	\$272,800	0	\$0	\$272,800	○
San Bruno	38	\$5,700	12	\$40,920	0	\$0	\$46,620	○
San Leandro	0	\$0	0	\$0	870	\$404,550	\$404,550	○
South Hayward	40	\$6,000	40	\$136,400	0	\$0	\$142,400	○
South San Francisco	0	\$0	24	\$81,840	0	\$0	\$81,840	○
Walnut Creek	60	\$9,000	96	\$327,360	0	\$0	\$336,360	●
W. Dublin/Pleasanton	10	\$1,500	12	\$40,920	0	\$0	\$42,420	●
West Oakland	50	\$7,500	84	\$286,440	0	\$0	\$293,940	●
Total Cost							\$5,885,640	
Approximate available funds							\$3,000,000	
Approximate shortfall							\$3,000,000	

**Notes**

- Inverted U, wave, double decker or vertical space-saver racks
- Electronic lockers or ArcLockers
- Attended or self-service Bike Stations
- Number of racks, eLockers or ArcLockers
- Costs were estimated as follows and rounded up to the nearest \$1,000:
  - Racks: \$150/space
  - eLockers: \$3,410/space
  - Bike Stations: \$465/sq ft (Includes design, engineering, construction and bike racks, and are based on historical costs for constructing BART's existing bike stations.
- : Fully funded
  - : Partially funded
  - : Unfunded
- Embarcadero cost is to make Bike Station more visible and accessible.