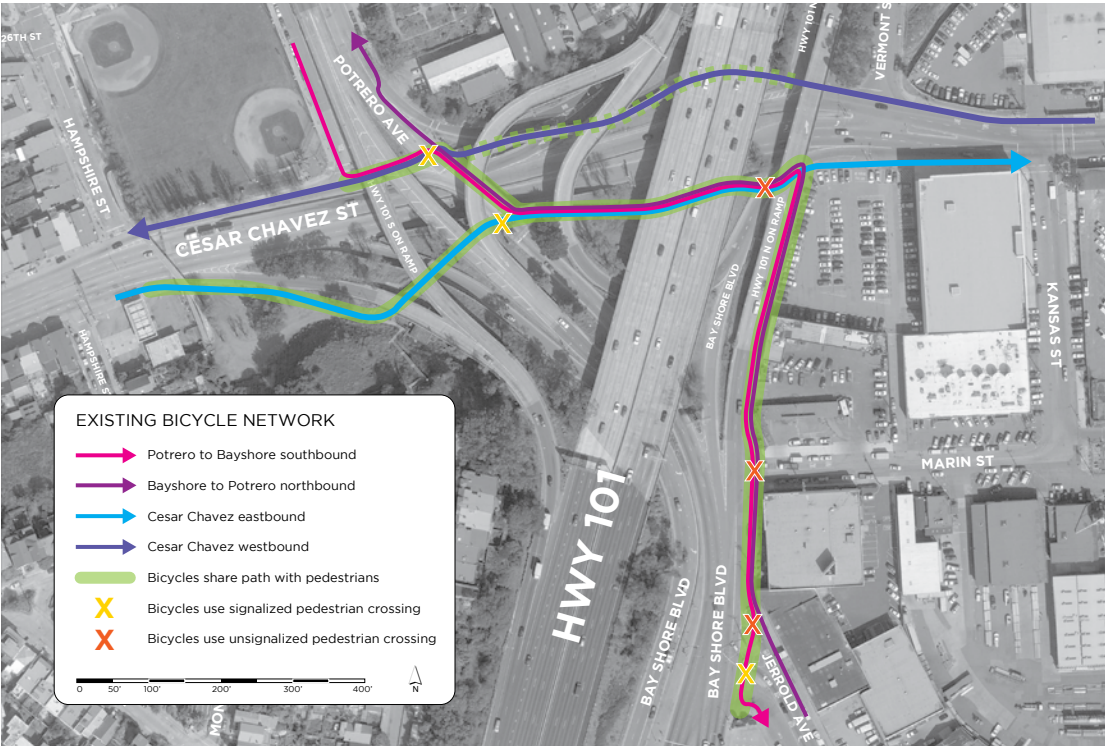


5. Chavez/Potrero/ Bayshore intersection area improvements

The Cesar Chavez/Bayshore/Potrero intersection is built in three levels, with pedestrian and bicycle circulation generally in the middle, ground level, as are Bayshore Boulevard and Potrero Avenue and the northbound connection between them. Cesar Chavez Street is on the lower level. Highway 101 is on the upper level, as is the southbound connection between Potrero Avenue and Bayshore Boulevard. Ramps connecting the streets and highway rise and fall between the three main levels. Because of this complex arrangement, pedestrians and cyclists do not always parallel vehicular travel lanes as in traditional streets with sidewalks and bicycle lanes. Instead, pedestrians and cyclists also use bridges, underpasses, and paths through publicly owned parcels that are often disconnected from the street. Many bicycle routes through the intersection area traverse crosswalks and sidewalks where the official status of bicycles is not immediately clear. When discussing the pedestrian and bicycle network, we are referring to observed, de-facto routes, whatever their official status.

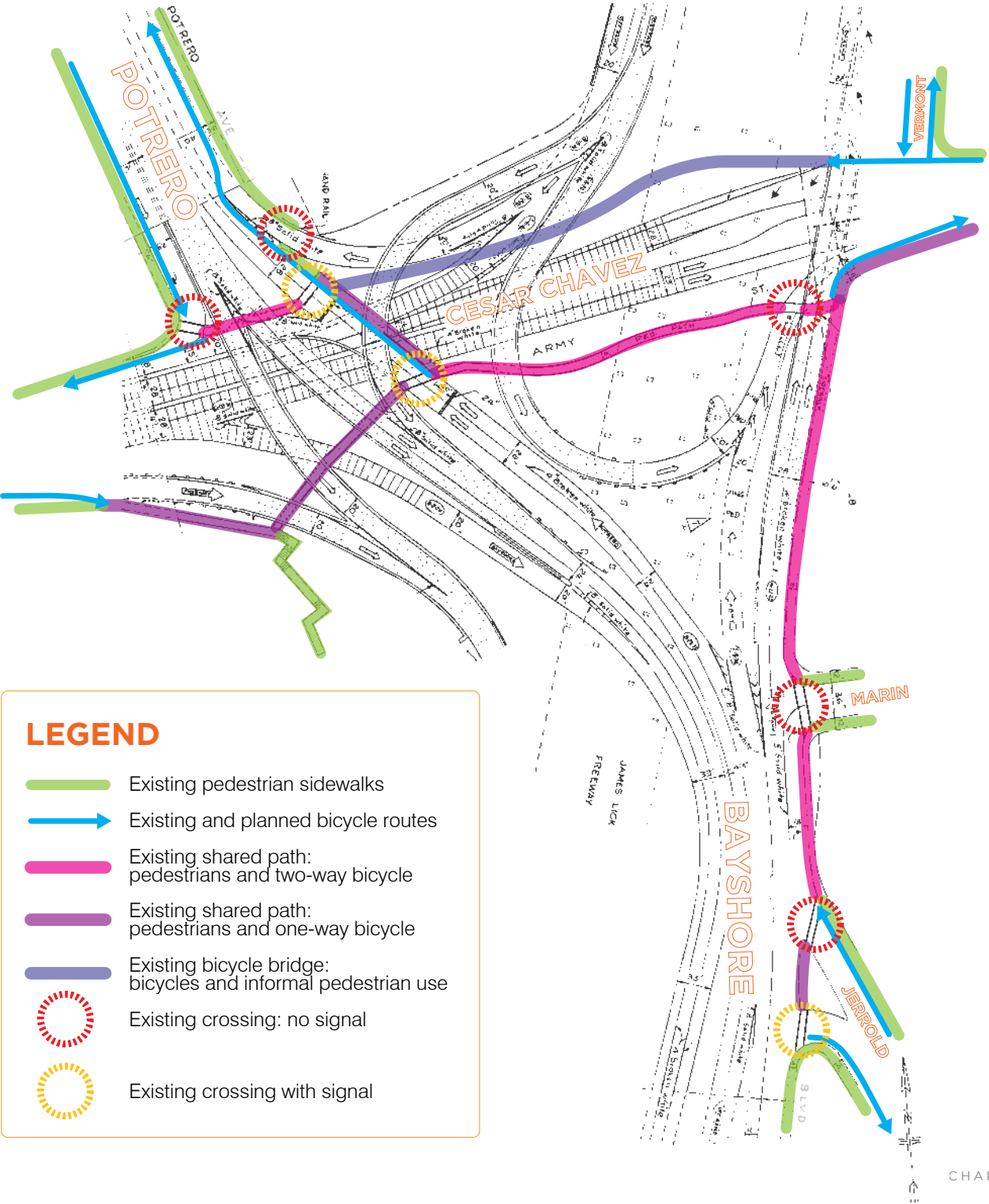
There is no officially sanctioned east-west pedestrian connection on the north side of Cesar Chavez Street, but pedestrians often use the direct westbound bicycle route despite the lack of crosswalks. There is a reasonably direct east-west pedestrian connection through the intersection area on the south side of Cesar Chavez Street, along a shared path that is also the eastbound bicycle route. A portion of this southern east-west path is the “heart” of the pedestrian and bicycle network, and is also part of the north-south route. North-south connections through the Cesar Chavez/Bayshore/Potrero intersection are less direct, as can be seen in the maps on the right. While limited in some respects, the pedestrian and bicycle network includes connections between Cesar Chavez Street and northbound Potrero Avenue that are not possible by car. Viewed in general terms, this existing network has the potential to provide a high level of connectivity to non-motorized users within the framework of the existing highly complex intersection structure. There are however many defects in the network, ranging from the very specific and localized, such as a sign obstructing the path of travel in a particular location, to the more general, such as the ineffective wayfinding system. Following this overview, we discuss existing conditions in specific segments of the pedestrian and bicycle network and recommend improvements to address specific problems. We then discuss more global issues and opportunities, including lighting, wayfinding, landscaping, and public amenities.



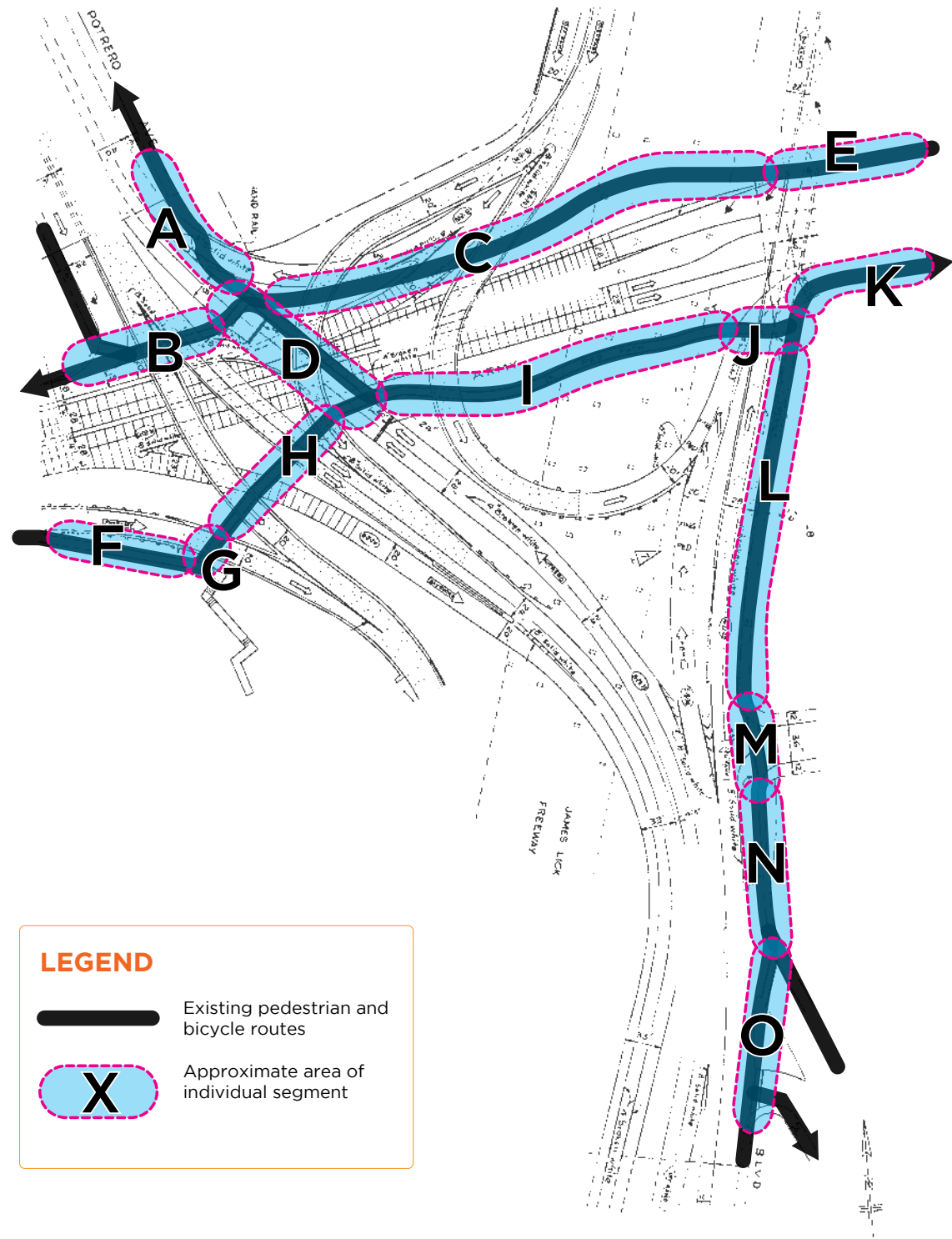
Opposite page, above: Existing pedestrian routes through the Cesar Chavez/ Bayshore/Potrero intersection area. Note that routes are often under ramps and bridges and are thus not visible in aerial photographs.

Opposite page, below: Existing bicycle routes through the Cesar Chavez/ Bayshore/Potrero intersection area. Note that routes are often under ramps and bridges and are thus not visible in aerial photographs.

This page, right: Composite map of the existing bicycle and pedestrian network through the Cesar Chavez/Bayshore/ Potrero intersection area. Note that most segments of the network serve both pedestrians and cyclists.



In order to discuss the pedestrian and bicycle network at a level of specificity suitable for the exploration of localized problems and solutions, the network is divided into segments of more or less uniform character. After a brief overview of existing conditions, we recommend improvements but do not specify most design details, as the SFMTA is currently developing standards for multi-use paths and cycle tracks, including dimensions and intersection layouts. We identify space for widening segments of the existing network where excess right-of-way exists, within the context of the existing ramp structures and existing number of vehicle travel lanes.



Segment A

In segment A, the vehicular circulation network intersects the pedestrian and bicycle network in an environment of challenging grade changes and poor visibility. Vehicles exiting highway 101 southbound toward northbound Potrero Avenue dip below grade while making a sharp right turn. Before the off-ramp rises completely up to street level, it crosses a pedestrian crosswalk that is several steps below sidewalk grade. Pedestrians at the crosswalk can not see vehicles approaching from the off-ramp. Drivers on the ramp have little indication that they are approaching the crosswalk, which is hidden from view by a retaining wall. Following this crosswalk, vehicles must merge left, crossing the northbound bicycle lane. Vehicles have been observed travelling at near-highway speeds while crossing the crosswalk and merging across the bicycle lane.

Recommendations:

A1 Move the crossing north of its present location to increase visibility and improve pedestrian access. This would require removing one of the two existing northbound Potrero Avenue lanes. The excess right-of-way could then be used to extend the sidewalk to the new crossing location. (Note that the diagram of proposed configuration on the right shows a minimal shifting of the crossing, approximately 60' from its present location. It would be possible to shift the crossing much further to the north - the optimal location of the crossing should be evaluated based on visibility, accessibility, access needs of adjacent land uses, and engineering considerations.)

A2 Install pedestrian and cyclist-activated signal at crossing.

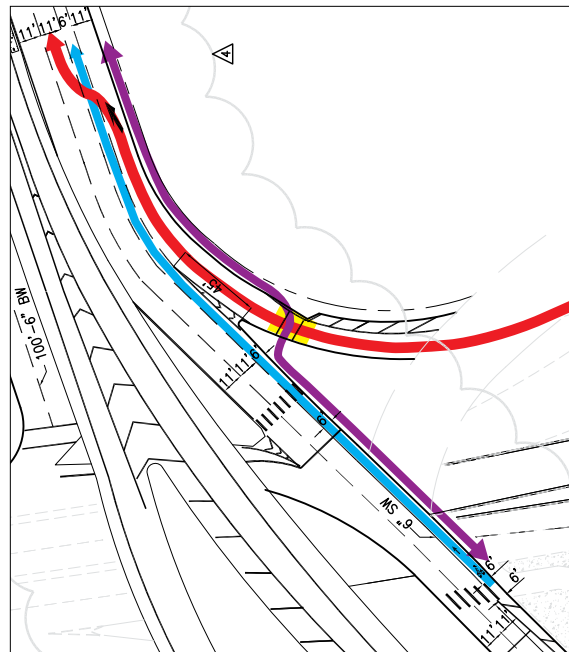
A3 Install rumble strips and/or flashing beacon on off ramp to alert drivers approaching crossing.



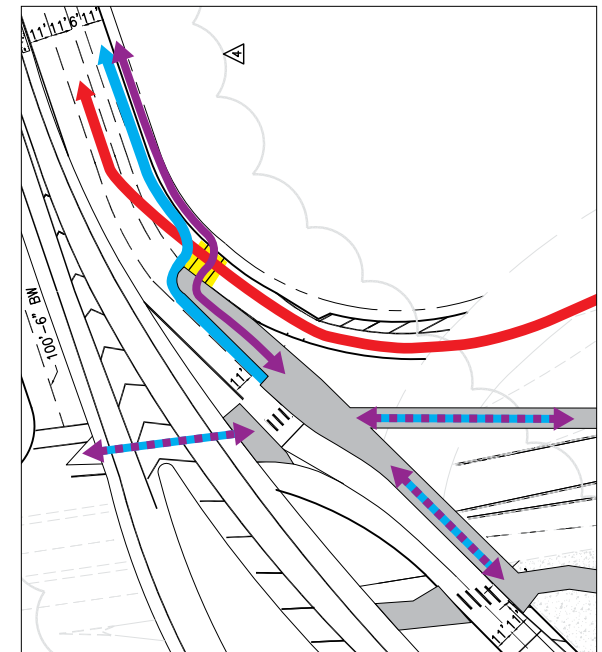
Existing Conditions: Pedestrians' perspective from Potrero Avenue sidewalk looking south. Cars exiting Highway 101 emerge from the left. Note the stairs between sidewalk and crosswalk.



Existing Conditions: Motorists' perspective from Highway 101 off-ramp. Drivers can not see the crosswalk (shown in photo on left) less than 160 feet ahead.



Existing conditions. MTA striping diagram with color added for clarity. Crossing highlighted in yellow; Highway off-ramp traffic in red; Bicycle lane in blue; Pedestrian movements in purple.



Proposed configuration. Relocated crossing in yellow; Off-ramp traffic in red; Cyclists in blue; Pedestrian movements in purple. Dashed blue and purple lines indicate mixed pedestrian and cyclist movements on segments B, C and D

Segment B

Segment B carries two-way bicycle traffic and pedestrians between the Northbound Potrero and Southbound Potrero crosswalks. The existing combined bicycle and pedestrian path is a sidewalk less than 8 feet wide. Pedestrians and cyclists on this segment are vulnerable when vehicles fail to negotiate the left turn from Northbound Bayshore to Westbound Cesar Chavez - a pedestrian was struck and killed by a driver on this sidewalk in December of 2011.

Recommendations:

B1 Move the existing curb southward into the wide striped shoulder, to create a wider two-way multi-use path. Additional expansion space is available north of the existing path.

B2 Expand existing curb ramps at the crosswalks to the east and west of the segment.

B3 Protect pedestrians and cyclists from straying vehicles by placing guardrails, bollards, or landscape elements such as boulders between the multi-use path and the vehicle lane.

B4 Consider additional traffic-calming measures for the northbound Potrero/ westbound Chavez split.



View of segment B from the south, with area for path expansion outlined.

Segment C

Segment C is a bridge intended for westbound bicycle traffic only, but is also used by many pedestrians and some eastbound cyclists. Since there is no alternative pedestrian path on the north side of Cesar Chavez street between Vermont Street and Bayshore Boulevard, and since barring pedestrians from this segment is impossible as a practical matter, the city should acknowledge that pedestrians will use the bridge.

Recommendations:

C1 Use pavement markings and signage to increase safety for both pedestrians and cyclists, either by delineating two narrow parallel paths where cyclists and pedestrians can travel separately, or by increasing awareness of possible conflicts while keeping a single path.

C2 The useable portion of the already narrow bridge is further constricted by the tall, unadorned chain-link fence on both sides of the structure. Investigate reconfiguring this fence to bow out, away from cyclists and pedestrians, to increase the effective width of path.



Eastbound pedestrian on westbound bicycle bridge (segment C).

Segment D

Almost all pedestrian and bicycle trips through the area must use segment D, which connects segments A, B, C, H and I. The segment consists of an approximately 7'-4" wide sidewalk which carries pedestrians and southbound bicycles, an adjacent 6' wide curbside bicycle lane for northbound bicycles, and two crosswalks used by both pedestrians and bicyclists to cross northbound Potrero Avenue.

The northern and southern ends of the segment are major intersections of the pedestrian and bicycle networks. Presently there is not enough room for pedestrians and cyclists to maneuver safely, and sight lines between pedestrians, cyclists and motorists are obstructed. Many pedestrians and southbound cyclists use the northbound bicycle lane rather than negotiate the narrow and awkwardly configured curb ramps.

Recommendations:

D1 Move the existing curb westwards along the entire length of the segment, to combine the existing sidewalk and northbound bicycle lane into a two-way multi-use path.

D2 Increase maneuverability and improve sight lines where segment D meets segment C by relocating or lowering existing walls and fences.

D3 Re-align the existing crosswalk to connect segment B more directly to the intersection of segments C and D. Ensure that curb ramps are configured to accommodate all users.

D4 Increase maneuverability and improve sight lines where segment D meets segment I by relocating or lowering existing walls and fences and paving adjacent vacant area.

D5 Ensure that curb ramps at the crossing connecting segments D and H are configured to accommodate all users.



Existing conditions with location of recommended two-way multi-use path outlined. Note southbound cyclist in northbound bicycle lane.



Existing conditions at the northern portion of segment D. Note pedestrian in bicycle lane and tight spacing of sidewalk, railings, fences and curb ramps.



Existing conditions at the northern end of segment D with location of recommended two-way multi-use path outlined. Note the lack of maneuvering space – cyclist is waiting to cross Potrero Avenue.



Existing conditions at the southern end of segment D with location of recommended two-way multi-use path outlined. A portion of the landscaped area on the right should be incorporated into the path to increase maneuvering room and visibility at the crossing.

Segment E

Segment E is a westbound bicycle path and a missing link in the pedestrian network, spanning the gap between the north sidewalk of Cesar Chavez Street east of Vermont Street, and the bicycle bridge (also used by pedestrians) approximately 150' to the west.

Recommendations:

E1 provide crosswalks with pedestrian activated signals across Vermont Street and the Highway 101 northbound on-ramp, as well as a sidewalk in the landscaped area between Vermont Street and the Highway 101 northbound on-ramp.

E2 Strengthen pavement markings delineating the existing bicycle lane to increase the visibility of cyclists to turning vehicles.

Segment F

Segment F is a path carrying pedestrians and eastbound bicycles through an undeveloped city-owned lot. The existing path appears too narrow to accommodate all users. The city should further investigate recreational or other uses of this publicly owned parcel, and integrate path enhancements with better utilization of this resource.

Recommendations:

F1 Provide a wider multi-use path or separate paths for pedestrians and cyclists.



Existing conditions, segment E at northbound Highway 101 on-ramp. Pedestrians walking to bicycle bridge (segment C).



Existing conditions, segment F (level path) and segment G (stairs and ramp on right).

Segment G

Segment G carries pedestrians and eastbound cyclists down a steep grade under the 101 southbound on-ramp. The path descends a flight of stairs while a parallel ramp which accommodates bicycles may be too steep for many users. The overhead on-ramp structure provides very little clearance.

Recommendations:

G1 Provide a more accessible path for pedestrians and cyclists to negotiate the elevation change. Due to the complex natural topography and ramp arrangement in this location, achieving a more gentle grade may require retaining walls.



Existing conditions, segment G looking towards segment F. Note the sharp grade of the path on the right.

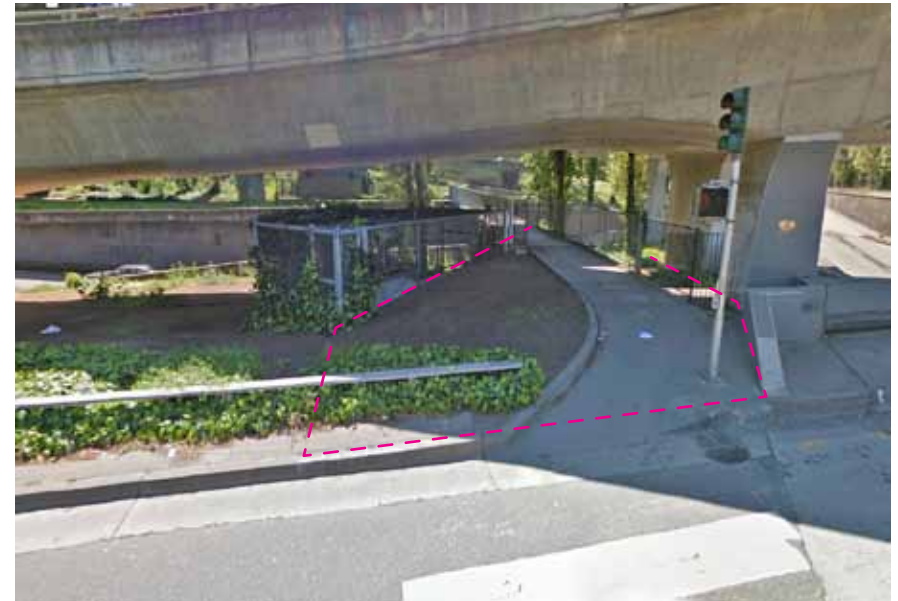
Segment H

Segment H consists of a narrow bridge structure which carries pedestrians and eastbound cyclists under several highway ramps and over a trench carrying vehicles from Cesar Chavez Street to Bayshore Boulevard. The crosswalk at the eastern end of the segment is a crucial node connecting segments C, H and I.

Recommendations:

H1 Expand the pedestrian/cyclists waiting area at the northbound Potrero Avenue crossing, to increase visibility and provide maneuvering room. Ensure that curb ramps at this crossing are configured to accommodate all users.

H2 Investigate options for widening the bridge structure to better accommodate pedestrians and eastbound cyclists.



Existing conditions, segment H at Potrero Avenue crossing with recommended expanded waiting area outlined. Note narrow width of the path towards the west (back of photograph).

Segment I

Segments I is symbolically the “heart” of the pedestrian and bicycle circulation network, carrying pedestrians and two-way bicycle traffic through a large landscaped area and under the main freeway structure. Of all the segments, it offers the best opportunities for community amenities, but is also perceived as a magnet for unsavory activities.

Recommendations:

I1 While the paved path is wider here than in other segments, there is ample room to widen it further to provide a properly marked multi-use path or separate pedestrian and bicycle paths running in parallel.

I2 Ensure path is designed to allow access for maintenance, emergency response, and social services vehicles. Provide parking places where vehicles will not impede pedestrian and cyclists' movements.



Existing conditions, segment I looking east.

Segment J

Segment J is an unsignalized crosswalk carrying pedestrians and two-way bicycle traffic across northbound Bayshore Boulevard between segments I, K and L.

Recommendations:

J1 Install pedestrian and cyclist-activated signal at the existing crossing.

J2 Increase maneuverability and improve sight lines at the western end of the crossing by relocating or lowering existing walls and fences and paving adjacent vacant area. Widen the existing curb ramp to accommodate pedestrians and cyclists.

J3 Increase maneuverability and improve sight lines at the eastern end of the crossing, where segment J meets segments K and L, by relocating existing fences and signs, and paving the adjacent vacant area. Widen existing curb ramp to accommodate pedestrians and cyclists.



Existing conditions, east end of segment J looking west to segment I. Traffic approaches from the left. Note lack of maneuvering room and visibility.

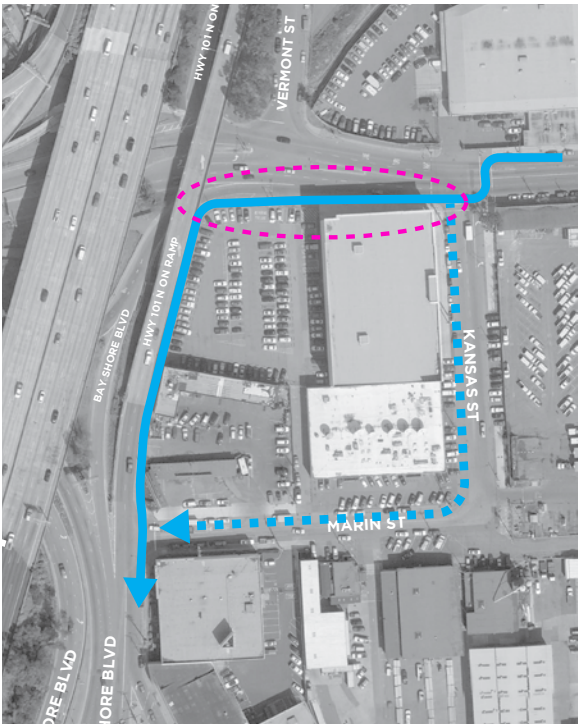
Segment K

Segment K carries pedestrians and two-way bicycle traffic between Segment J and the intersection of Cesar Chavez and Kansas Streets. Eastbound cyclists use the wide curbside vehicle lane of Cesar Chavez Street. The San Francisco Bicycle Plan includes an eastbound curbside bicycle lane in this segment. We observed several cyclists traveling westwards on the sidewalk in segment K, then turning south on segment L heading towards Bayshore Boulevard and points south. Although there are alternative routes for cyclists headed from the east to the south of the Cesar Chavez/Potrero/Bayshore intersection area, formalizing westbound cycling on this segment would facilitate readability of the bicycle network.

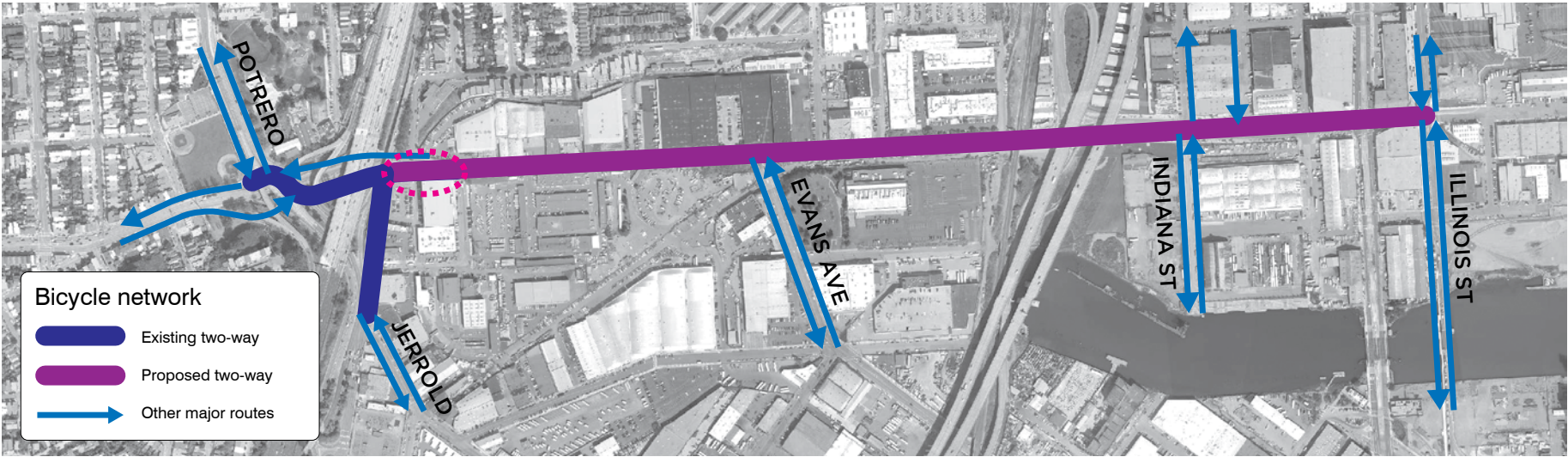
Recommendations:

K1 Construct a two-way cycle track parallel to the existing sidewalk along this segment. Narrowing the extremely wide existing vehicle travel lanes to provide room for the cycle track may also discourage speeding by vehicles approaching the Kansas Street intersection to the east.

Right: In addition to eastbound cyclists, segment K (dashed magenta outline) is also used by cyclists heading from the east to the south (solid blue line), for example from the Potrero Terrace housing to the Alemany Farmers' Market. Although alternative routes are available (dashed blue line), cyclists may prefer not to use Kansas and Marin Streets due to traffic headed to the Highway 101 on-ramp.



Below: Segment K (dashed magenta outline) links existing two-way bicycle facilities with the proposed two-way cycle track between Kansas and Illinois Streets.



Segment L

Segment L carries pedestrians and two-way bicycle traffic. The northern portion of the segment is a 10-foot wide path bordered by a city-owned surface parking lot to the east and the elevated Highway 101 northbound on-ramp to the west. The southern portion of the segment is significantly narrower, squeezed between a privately owned parcel to the east and the elevated Highway 101 northbound on-ramp approximately 7 feet to the west. The path is obstructed by several poles carrying street lights and signage.

Recommendations:

L1 Move poles and other obstructions out of the path of travel throughout the segment.

L2 Widen the northern portion of segment L into the adjacent to the city-owned surface parking lot. Tightening the layout of the parking lot should provide enough space for an adequately dimensioned two-way multi-use path without reducing the number of parking spaces.

L3 Explore options for utilizing the area under the Highway 101 on-ramp for additional parking. Providing additional activity in this location may help perceptions of public safety.

L4 Ensure the northern portion of the path is designed to allow access for maintenance and emergency response vehicles. Provide parking areas where vehicles will not impede pedestrian and cyclists' movement.

L5 Explore opportunities to widen the southern portion of segment L by purchasing the adjacent parcel or a portion of it, should it become available.



Existing conditions, north portion of segment L looking south. City owned surface parking lot is on the left, Highway 101 on-ramp is on the right. Note light poles obstructing path.



Existing conditions, south portion of segment L looking north. Highway 101 on-ramp is on the left, privately owned parcel on the right. Note the narrow clearance and general squalor of the path.

Segment M

SSegment M carries pedestrians and two-way bicycle traffic across Marin Street at an unsignalized crosswalk. This is particularly dangerous since motorists turning right from Marin Street onto the Highway 101 northbound on-ramp often travel at high speeds and do not expect two-way bicycle traffic on the crosswalk. There is little clear space for pedestrians and cyclists waiting to cross, and visibility is an issue.

Recommendations:

M1 Install pedestrian and cyclist-activated signal at the existing crosswalk.

M2 Install corner sidewalk extensions (bulb-outs) on both sides of Marin Street to shorten the crossing, provide waiting space for pedestrians and cyclists, and discourage speeding by tightening turn radii.



Existing conditions, segment M looking north toward the entrance to segment L at the center of the photograph. The car blocking the crosswalk is turning right from Marin Street onto the Highway 101 on-ramp.

Segment N

Segment N carries pedestrians and two-way bicycle traffic between Marin Street and Jerrold Avenue. Southbound cyclists currently share the 6-foot wide sidewalk with pedestrians, while northbound cyclists use the 25 foot wide curbside combined vehicle parking and travel lane of northbound Bayshore Boulevard. The sidewalk is obstructed by street light poles, utility poles and a fire hydrant.

Recommendations:

N1 relocate poles and other obstructions to provide adequate clearance on the existing sidewalk. Alternatively, expand the sidewalk into the extremely wide curbside lane.

N2 Construct a two-way cycle track parallel to the sidewalk by removing curbside parking and reducing the width of the curbside lane from 25 feet to 11 feet.



Existing conditions, segment N looking north. Note the obstructed sidewalk and pedestrian and cyclist using the extremely wide vehicle travel lane, which leads to the Highway 101 on-ramp.

Segment O

Segment O carries pedestrians and southbound cyclists across Jerrold Avenue. The existing crossing includes two crosswalks joined by a median island. The northern crossing is not signalized. Since the rightmost lane of westbound Jerrold Avenue meets northbound Bayshore Boulevard at a very shallow angle, vehicles can ignore the “yield” sign and turn right at high speeds.

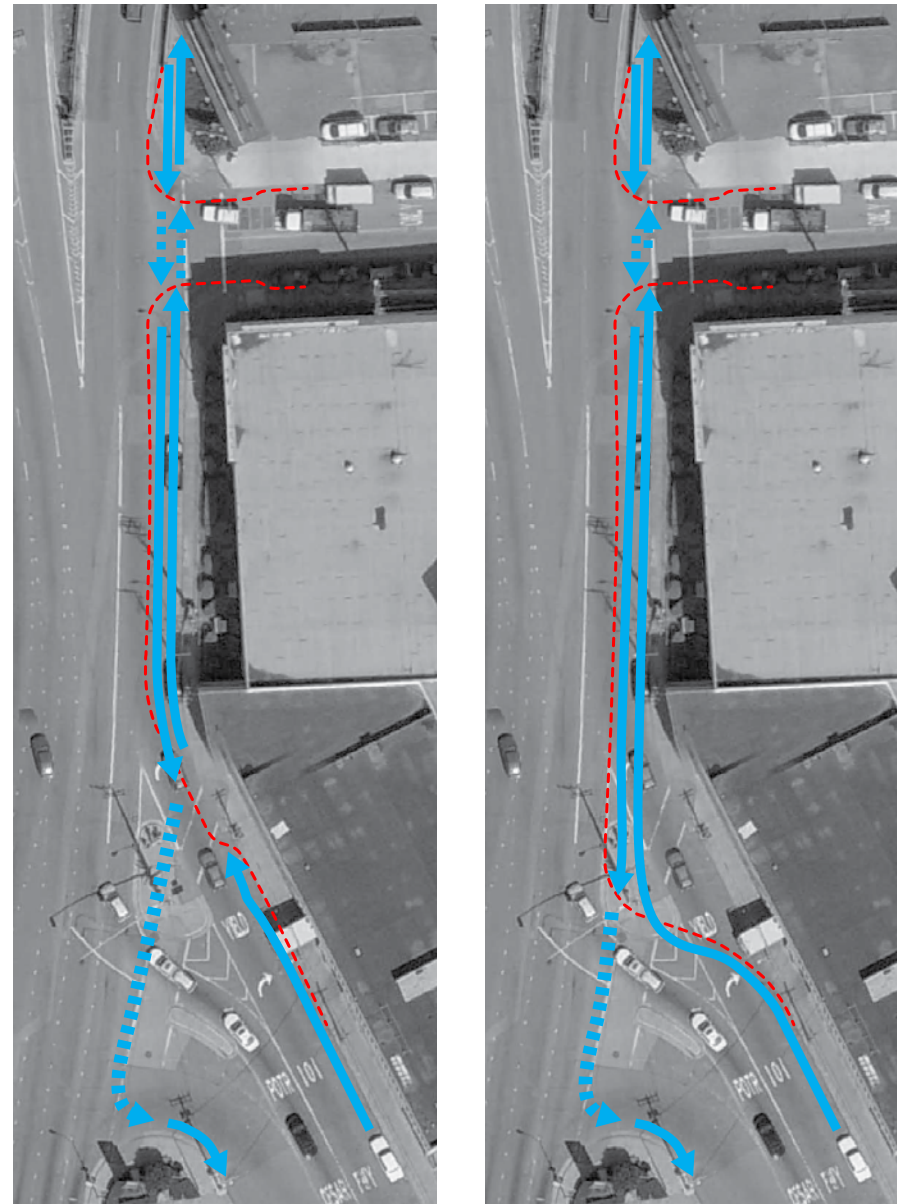
Recommendations:

O1 Install pedestrian and cyclist-activated signal at the existing northern leg of the crosswalk, or

O2 Alternatively, close the existing “free right” lane of Jerrold, and add a right turn lane at the existing signalized southern leg of the crosswalk. The existing median island can then be joined to the north sidewalk of Jerrold Avenue.



Existing conditions, segment O. The signalized crossing is on the left, the unsignalized crossing is on the right.



Segments M, N and O with recommended improvements including O1 (left) and O2 (right). Bicycle lanes shown solid blue lines, bicycle movements at crossings shown broken blue line, new curbs shown dashed red.