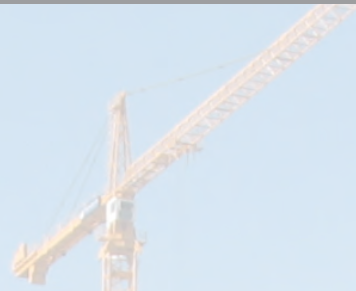


ENTRIPS

EASTERN NEIGHBORHOODS
TRANSPORTATION IMPLEMENTATION PLANNING STUDY



6 SEVENTH AND EIGHTH STREET CORRIDOR



6.1 ISSUES AND OPPORTUNITIES

Seventh and Eighth Street work together as a one-way couplet in the South of Market area, traveling north and south between Market Street and Townsend Street. The 19 Polk provides local transit service every 15 minutes, traveling north on Seventh Street and south on Eighth. Seventh and Eighth Street are designated as major arterials in the City's Congestion Management Plan Network.

These two streets share issues and opportunities that are also common to the other north-south arterials in the South of Market area. All of these streets are designed and managed to carry high traffic volumes during peak periods. Improving the public realm and conditions for other modes on these streets will require some reduction in vehicle capacity. Capacity reductions will have to be carefully designed to avoid unwanted impacts on the surrounding transportation networks, particularly transit operating in mixed-flow traffic.

Seventh Street also has a special role as an Eastern Neighborhoods connector street. Unlike parallel streets, Seventh continues south of Mission Creek, traveling through Showplace Square and intersecting with the Potrero Hill grid at 16th Street. The Eastern Neighborhoods area plans identify Seventh as a "green connector" street.

The Seventh and Eighth Street corridor has three distinct segments. They include:

- **Market Street to Harrison Street.** In this segment, Seventh and Eighth Streets are busy one-way arterials. They carry large volumes of vehicle traffic between the north of Market network and the Interstate 80/US 101 South ramps. They have one-way local bus service provided by the 19 Polk and one-way bike lanes. Sidewalks are ten feet wide. This

segment has been selected as the focus of the EN TRIPS corridor design project and is discussed in more detail below.

- **Harrison Street to Townsend Street.** Between Harrison and Bryant, Interstate 80 on- and off-ramps touch down on both streets. South of these touchdowns, vehicle volumes are far lower than north of the freeways (although vehicle capacity remains the same). One-way bicycle lanes and local transit service continue.
- **Townsend Street to 16th Street.** Eighth Street terminates at a roundabout where it intersects with Townsend, Division, and Henry Adams Streets. Seventh Street continues as a two-way street, running south and east beside the Caltrain right-of-way. It has bicycle lanes on both sides of the street, but sidewalks on just one side. Seventh Street terminates at a complex intersection with 16th Street and Mississippi Streets, just west of the Caltrain tracks and Interstate 280. The future of this intersection is uncertain and discussed in more detail in Sixteenth Street chapter.

The full length of Seventh Street has been designated as a “green connector” street in the Eastern Neighborhoods land use plan and will require investment in the public realm. As a first step, and as an investigation in how to address the set of issues that challenge all of the South of Market’s north-south arterials north of the freeways, the Seventh and Eighth Street couplet between Market and Harrison was selected as an EN TRIPS priority project.

Project Segment – Market Street to Harrison Street

The segments of Seventh and Eighth Streets between Market and Harrison Streets have been prioritized for investment above other parts of the corridor because this segment exemplifies many of the challenges that face other South of Market north-south arterials north of the freeways: high rates of pedestrian and bicycle injury collisions, a bare public realm, high volumes of traffic during peak periods, and high vehicle speeds during off-peak periods. Seventh and Eighth Streets were also prioritized for improvement in the Western SOMA Community Plan. Major issues include

Land Use

Land uses surrounding Seventh and Eighth Streets include a mix of offices, PDR business, and large institutions. Stable residential enclave districts can also be found in the surrounding alleys. Seventh and Eighth Streets cut through the portion of the western South of Market where substantial new development is forecast as the result of recent zoning changes. They also intersect with Market Street in the Mid-Market area, which the City has prioritized for economic development in the coming decades. Trinity Plaza, a large apartment complex at Eighth and Market, is slated for redevelopment with 1,900 housing units. The block of Folsom Street between Seventh and Eighth is envisioned as the core of an emerging neighborhood commercial district.

Transit

The 19 Polk provides local transit service southbound on Eighth and northbound on Seventh at 15-minute headways during peak periods. North of Market Street, Route 19 continues through Pacific Heights to the Marina District. South of Townsend, it continues through Showplace Square and into Potrero Hill. Civic Center BART station, which has an entrance on Market Street between Seventh and Eighth, is a major trip attractor and transit transfer point.

Vehicle Circulation

Like nearly all of the other north-south arterials in the South of Market area, Seventh and Eighth Streets carry vehicle traffic to and from a regional freeway. Interstate 80 westbound on and off ramps touch down at both streets between Bryant and Harrison Streets, and thousands of commuters, visitors, and delivery vehicles travel daily between these ramps and the north-of-Market arterial network. The dominant direction of travel is northbound on Seventh during the A.M. peak and southbound on Eighth during the P.M. peak. Because of this role, Seventh and Eighth Street often have vehicle delays during peak periods but have far more capacity than is needed most of the day. With few vehicles using four one-way lanes on long blocks during off-peak times, speeding is common. Vehicles feed onto Eighth Street from Hyde and Grove Streets, which meet just north of Market. Seventh Street continues for just a short segment on the north side of Market Street, but signals and turn lanes facilitate northbound vehicles making a smooth (and often high-speed) transition from Seventh to McAllister and finally onto Leavenworth.

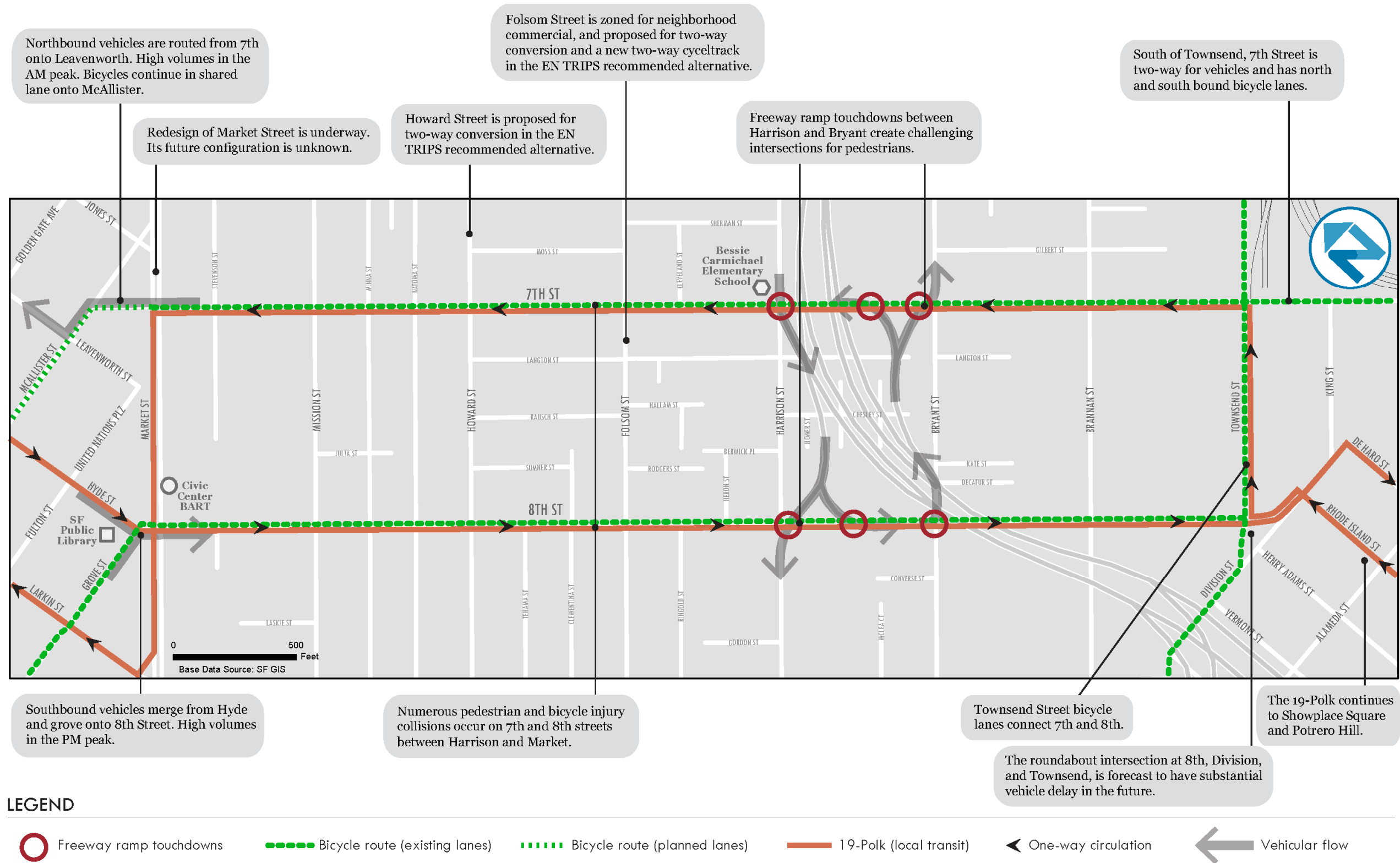
Pedestrian and Bicycle Conditions

The Eastern Neighborhoods area plans envision upgrading the Seventh Street public realm so that it serves as a "green connector" street. However, there are currently few amenities for pedestrians. Sidewalks are 10 feet, which is below Better Streets Plan standards for Mixed Use streets. Crossing distances are wide, and although block lengths are not as long as on east-west arterials, they are longer than is optimal for pedestrians. As on most other north-south SOMA arterials north of Harrison, both streets have high rates of pedestrian injury collisions. Freeway touchdowns limit pedestrian comfort, particularly at Harrison Street.

Seventh and Eighth Streets each have a one-way Class II bike lane, which together make up a key north-south link for cyclists between Potrero Hill through the South of Market area and into the Civic Center area. There are currently high rates of vehicle-cyclist collisions on both streets, and the forecast increases in traffic conditions would further degrade conditions for cyclists.

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Figure 6-1 Seventh and Eighth Street Issues and Opportunities



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6.2 PROJECT OBJECTIVES

In designing improvements in the Seventh and Eighth Street corridor, the project team was guided by the principles listed below. With a limited right-of-way, project design requires tradeoffs. The design alternatives that follow attempt to strike a balance between priorities.

- **Pedestrian conditions.** *Pedestrian connectivity, comfort, and safety should be improved.* The project should seek to improve comfort for pedestrians while reducing the risk of collisions. To respond to pedestrian connectivity challenges such as long blocks and wide streets, the project will seek to add mid-block crosswalks while reducing pedestrian crossing distances.
- **The public realm.** *Open space, landscaping, and other urban design elements should be upgraded.* The public realm including pedestrian and public space, wayfinding, and landscaping should be upgraded on Seventh and Eighth Streets. Public realm investments should be prioritized for Seventh Street because of its designated role as a “green connector” street.
- **Transit performance.** *Transit speed and reliability should be maintained.* The TEP designates the 19 Polk as a Local rather than Rapid route. However, the project should strive to preserve at least the existing levels of transit speed and reliability and improve transit service where possible. Where possible, the project should look for opportunities to consolidate bi-directional transit service on two-way streets.
- **Bicycle conditions.** *A safe, comfortable, and attractive bicycle route should be provided within the corridor.* Bicycling should be made safer, more comfortable, and more attractive with a priority placed on reducing collisions. As both vehicle volumes and demand for cycling may increase over time as overall travel demand grows, the project will seek to develop protected bicycle facilities and/or consolidate directions of travel.
- **Vehicle circulation.** *The project should maintain adequate north-south vehicle capacity in the South of Market network as a whole.* While the project will repurpose some vehicle space on Seventh and Eighth Streets to improve the public realm and conditions for other modes, it should maintain enough vehicle capacity in the network as a whole so that existing South of Market vehicle volumes can continue to be accommodated with undue increases in delay for drivers and transit riders.
- **Parking and loading.** *Parking and loading access to businesses should be maintained.* A supply of on-street parking should be maintained on Seventh and Eighth Streets although the total amount of parking spaces may be reduced to provide space for other needs. Remaining parking should be managed to ensure availability at all times.
- **Deliverability and cost-effectiveness.** *The project should maximize cost-effectiveness and speed delivery of the highest priority improvements.*

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6.3 ALTERNATIVES DEVELOPMENT AND EVALUATION

KEY ●●● Greatest benefit ○ Neutral ●●● Greatest impact

Full list of project alternatives

The SFMTA developed a total of six project alternatives for Seventh and Eighth Streets. These alternatives are described and evaluated for each project objective in the tables that follow. Several of these concepts are very similar to projects developed for Folsom and Howard Streets. These similarities result from the fact that the two sets of streets have the same overall right-of-way dimensions (82.5 feet) and many similar functions. All of these alternatives provide reduced pedestrian crossing distances through pedestrian bulb outs, maintain parking lanes on both streets, and provide bicycle facilities. As with Folsom and Howard, key differences between the alternatives include the directionality of travel for vehicles and transit (there are both one-way and two-way alternatives), the type of bus facilities, the location and type of bicycle facilities, and the width of sidewalks. All six alternatives are summarized and evaluated below. In the next section, the recommended alternative is developed in detail. Finally, in Section 6.5, three other promising alternatives that were evaluated in detail are presented for comparison.

Figure 6-2 Seventh and Eighth Streets: Full List of Project Alternatives

	Description	Cross Section	Pedestrian conditions	The public realm	Transit performance	Transit legibility/consolidation	Bicycle conditions	Vehicle circulation	Parking and loading	Cost comparison	Notes	Disposition
1	Seventh and Eighth Streets: one-way, two lanes, one-way cycletrack		●●●	●●●	●	○	●●●	●	●	\$\$\$	This concept would narrow the roadway to two, one-way lanes on each street and provide important benefits for pedestrians, cyclists, and the public realm with 15-foot sidewalks, greatly narrowed crossing distance, wide cycletracks, and traffic calming. It would not provide for two-way circulation or allow for consolidation of transit routes. It would require the expense of moving curblines on both streets.	Not carried forward due to impact of forecast traffic queues on cross streets including Market.
2	Seventh and Eighth Streets: one-way, three lanes, one-way cycletrack		●●	●	○	○	●●	○	●	\$\$	This concept would narrow the roadway to three, one-way lanes on both Seventh and Eighth Streets and provide one-way buffered bike lanes on both streets. It would provide bulb outs and mid-block crossings but widen the sidewalk on one side of each street rather than both sides. The net gain in pedestrian space would be less than Alternative 1, but the vehicle capacity would be higher, which would result in less transit delay and less impacts on adjacent streets.	Carried forward, recommended alternative.
3	Seventh and Eighth Streets: one-way, three lanes, one-way bike lane		●●	●●	○	○	●	○	●	\$\$	Like Alternative 2, this concept would narrow the roadway to three, one-way lanes on both Seventh and Eighth Streets. It differs from Alternative 2 in that it would provide a Class II bike lane on each street instead of a cycletrack, and widen the sidewalk to 15 feet on both sides providing additional benefit for pedestrians and the public realm.	Not carried forward due to lack of improvement to cycling conditions.

Figure 6-3 Seventh and Eighth Streets: All Alternatives (Continued)

	Description	Cross Section	Pedestrian conditions	The public realm	Transit performance	Transit legibility/consolidation	Bicycle conditions	Vehicle circulation	Parking and loading	Cost comparison	Notes	Disposition
4	Seventh and Eighth Streets: two lanes with buffered bike lane and busway		●	● ●	● ●	○	●	● ●	●	\$\$	This alternative would provide two one-way vehicle lanes and two parking lanes. In a buffered space outside the parking lane, it would provide a wide shared bus/bike lane. This alternative would provide a high level of transit priority. However, on a set of streets with moderate planned transit frequencies (15-minute headways), this may not be the most efficient use of street space.	Not carried forward due to impact of forecast traffic queues on cross streets and an over-emphasis on transit priority.
5	Seventh: two lanes EB, one lane WB with two-way cycletrack Eighth: two lanes WB, two lanes WB		○	●	●	● ●	● ● ●	● ●	●	\$	This alternative would provide two-way circulation on Seventh and Eighth Streets. Seventh Street would have two lanes northbound, one lane southbound, and a two-way cycletrack. Eighth Street would have two lanes in each direction and no bike facilities. Transit would be consolidated on Eighth Street. Sidewalks would remain at 10 feet. This alternative improves bicycle connectivity and consolidates transit. However, it would not improve the pedestrian realm on Eighth Street. Reduced capacity could lead to substantial traffic impacts on other streets, including Market.	Evaluated further and proposed for further consideration if the City can lower vehicle travel demand in this corridor through TDM or diversion.
6	Seventh and Eighth Streets: two lanes EB, one lane WB with one-way cycletrack		● ●	● ●	● ●	● ●	● ●	● ●	●	\$\$	This alternative would allow for three lanes of traffic on each street plus buffered bicycle lanes. Two lanes would operate in the dominant direction of travel (northbound on Seventh and Southbound on Eighth), while a third lane would operate in the opposite direction. A one-way cycletrack would be provided on each street. It allows for transit consolidation but would not improve bicycle connectivity like Alternative 5 and has less total vehicle capacity.	Not carried forward. However, recommended Alternative 2 could be converted to this configuration if the City can lower vehicle travel demand in this corridor through TDM or diversion.

6.4 RECOMMENDED ALTERNATIVE

Based on the evaluation above, the three most promising concepts were selected for additional analysis, design, and community input. After detailed review of these options, the SFTMA recommends Alternative 2, which reduces Seventh and Eighth Streets to three, one-way lanes, invests in pedestrian connectivity and additional pedestrian space, and adds a buffered one-way cycletrack to each street, as the concept that appears to provide the greatest benefits across the full range of project objectives.

In this section, Alternative 2 has been developed in more detail. The following project elements are described and illustrated in the remainder of this section.

- **Operations Concept.** Recommendations for the design of transportation facilities are explored. More detailed specifications for the design of the right-of-way for the full length of the corridor are presented in Appendix B.
- **Circulation Concept.** The circulation pattern for the recommended alternative is presented.
- **Streetscape, landscape, and public realm improvements.** Recommendations for streetscape and landscape improvements are presented. These improvements are integral to the project design and a necessary step towards achieving the vision for this part of the city as laid out in the Eastern Neighborhoods plan.
- **Phasing plan.** A conceptual phasing plan for this alternative is presented at the end of this section. More detailed cost estimates, timetables, and funding sources will be presented in the EN TRIPS Funding and Implementation Plan, to be published under a separate cover.

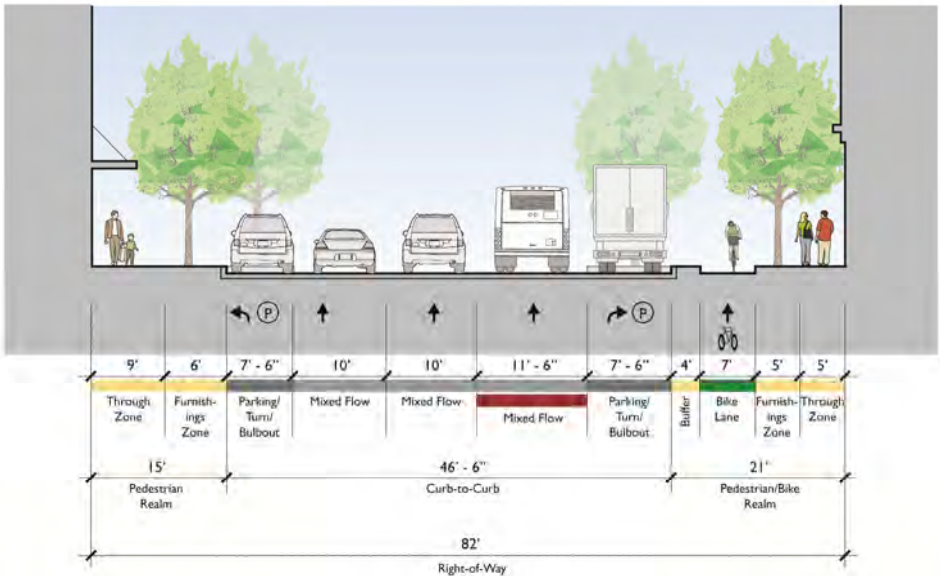
In section 6.5, two other alternatives are summarized with the recommended alternative's key differences highlighted. In addition, the findings of a detailed traffic analysis of the alternatives are provided in Appendix A. These additional options are included for stakeholder review and potential inclusion as alternatives in environmental analysis of the project.

Highlights of Recommended Alternative

The recommended alternative reduces crossing distances and provides fixed-time signalized, mid-block crossings on most blocks to improve pedestrian connectivity and safety. By maintaining one-way circulation, it allows signals to be synchronized to favor a steady progression of vehicles at a moderate speed. A buffered one-way cycletrack on each street would offer a protected space for cyclists moving north and south in the western South of Market area. It would widen sidewalks on the side of the street opposite the cycletrack providing additional space for pedestrians, landscaping, and other amenities. Investment in the public realm on Seventh Street, in particular, will help that street fulfill its role as a “green connector” as identified in the Eastern Neighborhoods area plans. Sidewalk widening would require substantial resources. However, this alternative could be easily phased, with the cycletrack, bulbs, and pedestrian refuges installed in the first phase and sidewalk widening implemented in a second phase when funding becomes available.

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Seventh and Eighth Street Recommended Alternative (Alternative 3)



This alternative maintains both Seventh and Eighth as one-way streets, reducing each to three lanes. A one-way cycletrack would be added on each street, and the sidewalk would be widened on the side of the street opposite the cycletrack.

Pedestrian conditions. In this concept, signals would be timed to encourage steady vehicle travel speeds of 18 miles-per-hour contributing to a safer and more comfortable pedestrian environment. For each street, this concept would widen the sidewalk on one side to provide substantially more pedestrian space and add pedestrian bulbs and pedestrian refuges to further narrow crossing distances. It would add several mid-block crossings with fixed-time signals at key locations. Together, these changes would improve pedestrian connectivity and help to reduce the high pedestrian injury collision rates on these streets.

The public realm. Both the wider sidewalk and the cycletrack buffer space would provide new opportunities for landscaping, while the sidewalk could include pedestrian amenities and small public spaces. Public realm investments would be prioritized on Seventh Street to help it serve the "green connector" street role assigned in the Eastern Neighborhoods area plans.

Transit legibility. This concept would maintain southbound service from the 19 Polk on Eighth Street and northbound service on Seventh. Splitting service by direction in this way makes the transit system somewhat less legible for passengers than consolidating transit on a two-way street.

Transit performance. By maintaining three lanes of traffic capacity, this concept is not forecast to cause vehicle delay greater than the current configuration, so vehicle congestion would not delay buses operating in mixed-flow traffic. In addition, the project would improve northbound transit performance by constructing boarding islands on the west side of Seventh Street, allowing buses to travel in the left lane and thus avoiding right-turning vehicle queues that commonly occur at Folsom Street.

Vehicle circulation. In this concept, Seventh and Eighth Streets would continue to function as a one-way couplet, reduced to three lanes in each direction, with turn pockets provided at intersections. Unlike two-way alternatives, this configuration will not otherwise change vehicle circulation patterns and will not require any new restrictions to vehicle left turn movements. Modeling suggests that vehicle delay would not increase as compared to the current configuration.

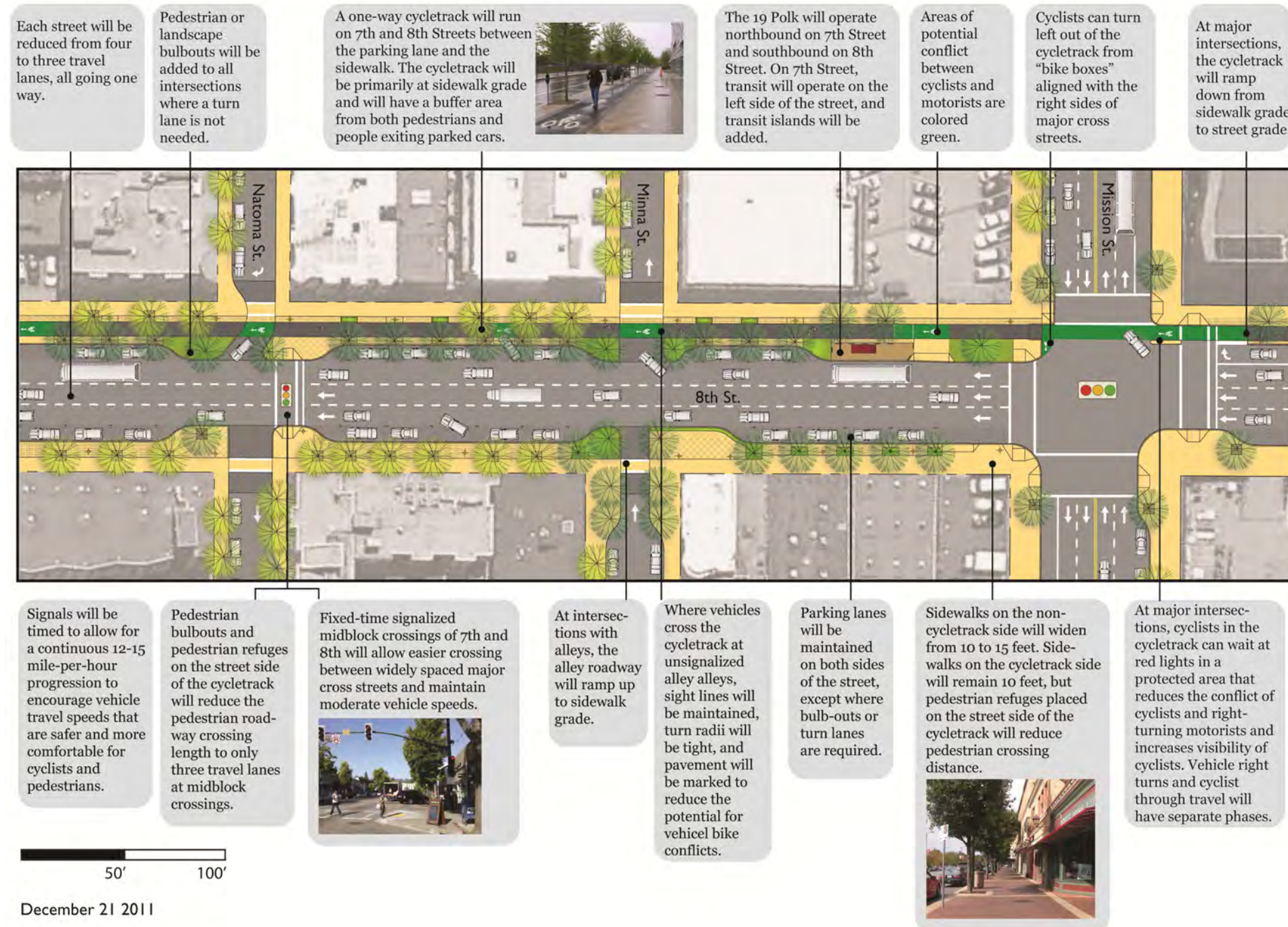
Bicycle conditions. This alternative would provide buffered, one-way bicycle lanes on both streets to improve cyclist comfort. These facilities would be at street grade in the first phase of the project but would be brought up to sidewalk grade in a second phase.

Parking and loading. As in the other alternatives, parking lanes would be maintained on both sides of Seventh and Eighth Streets. Parking would be removed where necessary to provide turn pockets at intersections and provide pedestrian and transit bulb-outs.

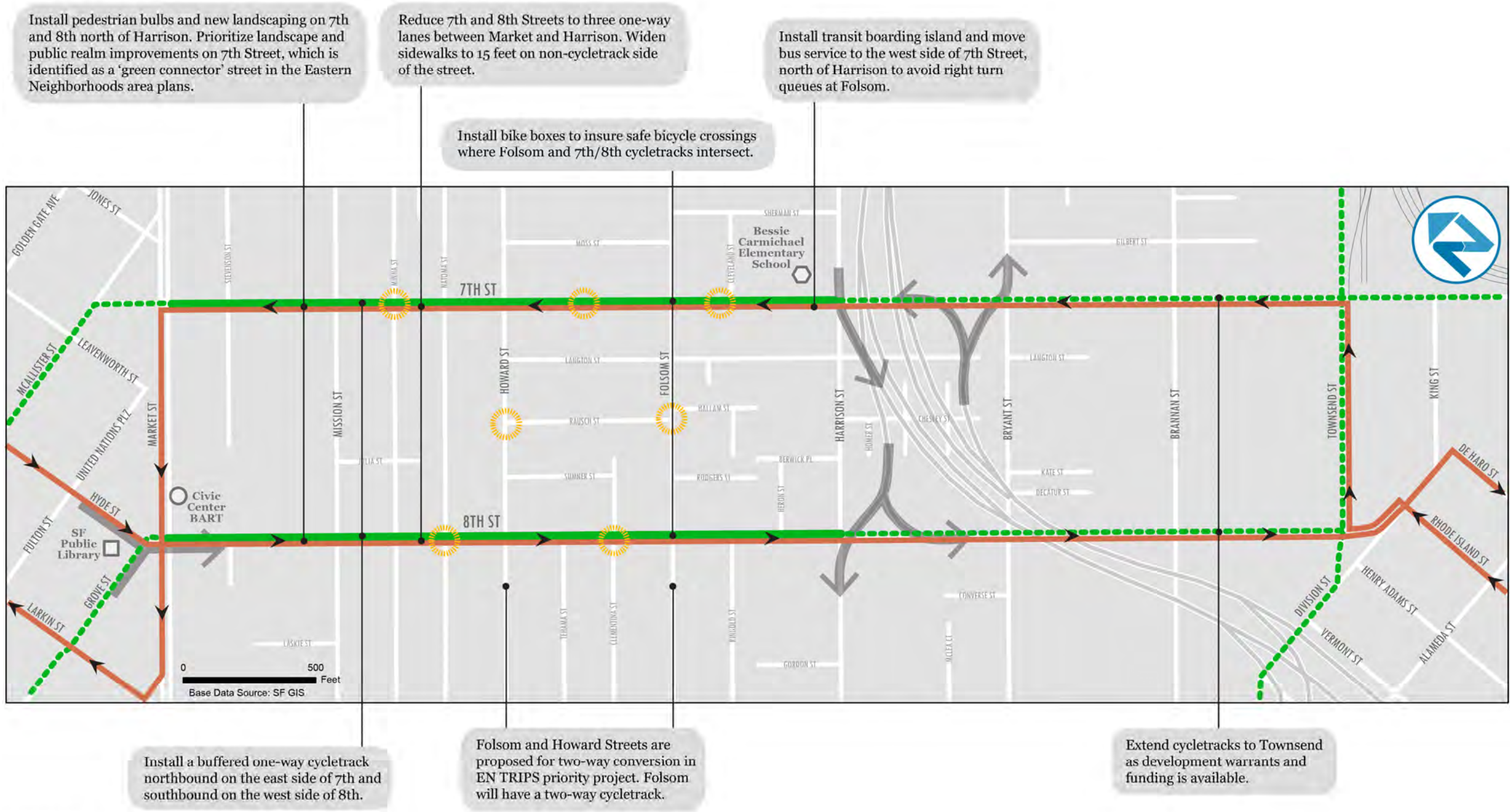
Cost comparison. This project would require moving the curb lines along one side of each street, a large expense. Construction of transit boarding islands on Seventh Street would require additional investment, as would raising the cycletrack to sidewalk grade.

Seventh and Eighth Street Operations Concept (Recommended Alternative)

The concept for 7th and 8th Streets is based on a few key features, including retention of one-way traffic but reduction to three lanes; a protected cycletrack buffered from traffic by the parking lane, and extension of sidewalks on one side of the street.



Seventh and Eighth Street Circulation Concept (Recommended Alternative)



LEGEND

- New mid-block crosswalk
- Bicycle route
- One-way cycletrack
- 19-Polk (local transit)
- One-way circulation
- Vehicular flow

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Seventh and Eighth Street Circulation Concept Detail (Recommended Alternative)

Unlike the two-way concept recommended for Folsom Street, the recommend alternative for Seventh and Eighth Streets requires few changes to the wider circulation networks in the South of Market. Transit routes will remain unchanged, though the northbound 19 Polk will shift to the left lane on Seventh Street. Vehicle, bicycle, and pedestrian connectivity will be affected as follows.

Vehicle circulation

Today, Seventh and Eighth Streets provide a total of eight lanes of vehicle capacity (four northbound on Seventh and four southbound on Eighth). This capacity is currently more than is required to maintain acceptable traffic conditions during peak periods and far more than is required during off-peak periods. The recommended alternative will reduce this total from eight to six, one-way lanes. Unlike the two-way concept proposed for Folsom and Howard Streets, this concept will not require new restrictions on turning movements. Traffic signals will be used as follows.

- **Signalization for through-traffic.** Signals will be timed to favor a moderate progression for all vehicles, a speed that virtually eliminates the possibility of fatal collisions with pedestrians. Fixed-time (rather than pedestrian-actuated) signals at mid-block crossings will encourage drivers to maintain a constant speed. Ideally, the progression on Seventh and Eighth Streets will be timed to between 12 and 15 mph, speeds that will nearly eliminate the possibility of fatal collisions with pedestrians while allowing vehicles, transit, and cyclists to travel at a regular speed. Signal cycle length and progressions speeds will be re-timed for the South of Market as a whole to achieve the optimal combination of north-south and east-west progression speeds.
- **Management of right turns.** Right turns will be permitted at all intersections except those where a one-way cross-street removes the possibility. At the approach to a right turn intersection, the parking lane will be dropped and a right turn pocket will be provided. On both streets, the cycletrack will be on the right side of the street. To reduce conflicts between cyclists and right turning vehicles, signals will be set as follows: during the green time for through vehicles, an initial period of time will be provided for through cyclists with right turns prohibited. Once cyclists have cleared the intersection, cyclist through-movement will be given a red light, and vehicle right turns will be permitted. To further protect cyclists from right-turning vehicles, vehicle stop bars will be set back five feet from the crosswalk, and cyclists will be given space behind a raised buffer at the front of the crosswalk (see Operations Concept).
- **Management of left turns.** As with right turns, left turns off of these one-way streets will be permitted at all intersections except those where a one-way cross-street removes the possibility. At the approach to a left turn intersection, the parking lane will be dropped, and a left turn pocket will be provided.
- **Alleyway entrances and exits.** Where Seventh and Eighth Streets intersect with alleyways, traffic calming treatments will be applied. Turning radii will be tightened with bulb-outs, and the roadway will be raised to the street grade to clearly indicate to drivers that they are entering a space where vehicle through movement is a lower priority. As at the intersection of Seventh and Minna, where this treatment is already in place, tactile

treatments will be applied to indicate to visually impaired individuals that they are crossing a roadway.

Transit

On 8th Street, transit service will be unchanged. The 19 Polk will continue to operate southbound on the west side of the street. On Seventh Street, the northbound Route 19 will be shifted from the east to the west side of the street (the left side, from the perspective of the northbound bus) north of Harrison Street, and transit boarding islands (similar to the one now in use on Seventh near Market Street) will be constructed for loading and unloading passengers.

Bicycle circulation

The recommended priority project alternative calls for a one-way, buffered cycletrack on each street. South of Harrison Street, the existing Class II bicycle lanes will remain, and the circulation pattern for cyclists will not change. A signal progression between 12 and 15 mph will allow many cyclists to progress at a constant speed without hitting a red light.

In their final build-out, these facilities will be primarily at sidewalk grade with a buffer space and a parking lane separating them from traffic. They will ramp down to street grade approaching major intersections. At curb cuts and alleyway crossings of the cycletrack, parking will be set back from the crossing a sufficient distance to ensure clear sight lines.

The edge between the cycletrack and the sidewalk will be clearly marked with a tactile treatment to ensure that visually impaired pedestrians can recognize the boundary between pedestrian and bicycle space. At designated pedestrian crossings of the cycletrack (including mid-block crossings and bus stops), a different tactile treatment will be applied to help visually impaired individuals locate and utilize the crossing. Design treatments will be used to slow cyclists at mid-block pedestrian crossings and indicate that cyclists are entering a pedestrian space. These treatments may include a narrowing of the cycletrack and/or pedestrian actuated flashing beacons.

Southbound cyclists wishing to continue south toward Showplace Square will continue to transition from Eighth to Seventh using the Townsend Street bike lanes. Northbound on Seventh, the cycletrack buffer will terminate mid-way between Mission and Market and as they do today, cyclists will transition into mixed-flow traffic approaching Market Street. Cyclists continuing northbound toward McAllister will stay in the shared center lane until clear of the right turn lane onto Leavenworth, where the westbound McAllister bike lane will begin.

Pedestrian connectivity

This proposal will improve pedestrian connectivity by placing mid-block crossings with fixed-time traffic signals on each block. Where alleys exist, crossings will be placed at or near the alley.

On the non-cycletrack side of each street, sidewalk extensions into the parking lane will be added at mid-block crossings and at corners where turn lanes are not required. On the cycletrack side of the street, a pedestrian refuge will be placed in the parking lane.

Care must be taken to insure that the cycletrack does not impede movement for pedestrians, especially those with disabilities. In the project's first phase, ramps down to the street grade will be added to allow wheelchair crossing to the pedestrian refuge, and the cycletrack will be colored to indicate a point of potential pedestrian/bicycle conflict. In the second phase, the cycletrack will be raised to sidewalk grade, street furniture will be maintained at the existing curb line, and paint

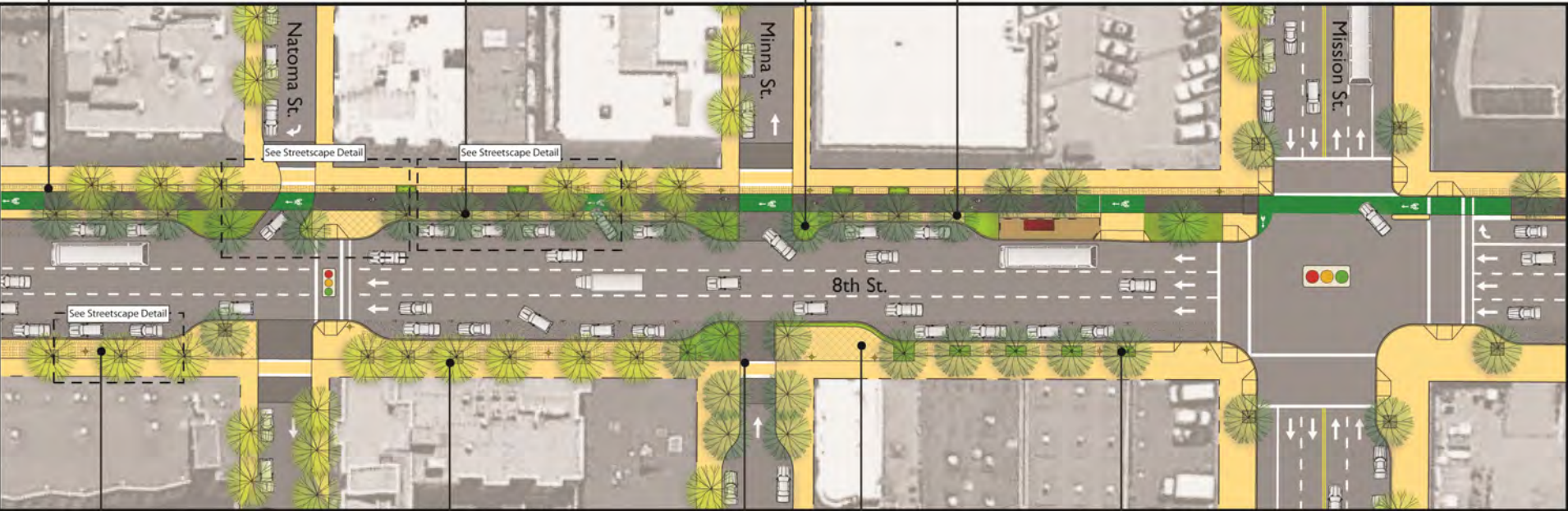
and/or raised markings will be added to clearly delineate the boundary between pedestrian and bicycle space. Color will continue to mark points of potential pedestrian-bicycle conflict. At mid-block crossings and bus stops, a tactile treatment will indicate to visually impaired pedestrians that there is a safe crossing.

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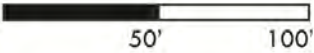
Seventh and Eighth Street Streetscape and Landscape Concept (Recommended Alternative)

The Streetscape/Landscape Concept for 7th and 8th Streets is based around different but complementary approaches to the two sides of the street. On the side of the street with the cycletrack, the streetscape supports the bicycle facility by using paving, landscape, and furnishings to buffer and warn pedestrians and motorists exiting their cars of cyclists riding on the cycletrack, which is at sidewalk grade. On the other side of the street, the streetscape design makes the most of the 15-foot sidewalk width by allowing ample space for walking, furnishings, dining and display, and exiting parked cars. Meanwhile, where 7th and 8th streets cross “SoMa Alleys” such as Minna and Natoma Streets, bulb-outs provide opportunities for stormwater management, landscape features, and public space. This concept draws from the design guidance provided by the City of San Francisco Better Streets Plan.

- Special paving, planter strips, occasional trees, and furnishings create a buffer separating pedestrians from cyclists using the cycletrack.
- New trees are planted with grates, wood platforms, or another walkable surface in the 4-foot buffer area between the parking lane and the cycletrack. These trees create a unified look for the street while existing trees on the other side of the cycletrack can remain.
- Trees near potential conflict points between autos and cyclists on the cycletrack can be pruned to have a 14-foot minimum height of lowest branch to ensure visibility, per Better Streets Plan, while creating a gateway element for alleys.
- A 4-foot area between parking spaces and the cycletrack allows people enough room to exit parked cars and access the sidewalk safely. Treating this area with the same paving as the furnishings zone on the other side of the cycletrack creates the effect of a unified buffer on both sides of the cycletrack.



- The wider, 15-foot sidewalk can be divided into a through zone that allows a comfortable amount of clear space for walking as well as seating or display along buildings; and a furnishings zone with a more textured and/or permeable paving treatment that allows for furnishings, landscape, and room for exiting parked cars.
- Where trees are already present, the width of the furnishings zone can be adjusted to align with the existing trees. Tree grates can allow for enough soil volume without excessively pinching the through zone. An 8-foot through zone should be maintained where feasible.
- At intersections with SoMa Alleys, the alley roadway ramps up to sidewalk grade to create minimal interruption of 7th and 8th Streets’ pedestrian realm.
- Bulb-outs at intersections with SoMa Alleys like Minna Street provide a variety of public open space opportunities that will depend on the adjacent use and community needs, such as seating areas, rainwater gardens, and small community gardens.
- In order to maximize the width of the through zone while allowing for businesses to place cafe seating or display, against their buildings, new tree plantings occur in 4' x 6' or 4' x 8' tree pits that can be planted with other grasses and shrubs, while leaving enough room to exit parked cars.



LEGEND

Existing tree

New tree

Public space opportunity

Planter strip

Permeable paving

Tree grate

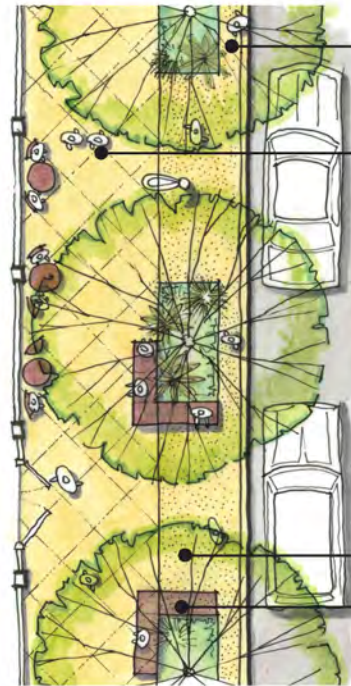
Pedestrian Light

Seventh and Eighth Street Streetscape and Landscape Concept Detail (Recommended Alternative)

7th and 8th Streets

Streetscape Treatment Type: 15-foot Pedestrian Realm - No Cycletrack

This treatment is appropriate for the block faces of 7th and 8th Streets without the cycletrack. The 15-foot pedestrian realm accommodates a balance of multiple needs in a strongly urban setting: it accommodates pedestrian through movement and movement in and out of parked cars, allows for use of space by adjacent uses, provides opportunities for the integration of small-scale public spaces and street greening, and supports tree health.



A 9-foot through zone allows generous space for walking as well as cafe seating, display, window shopping, or other uses along building frontages.



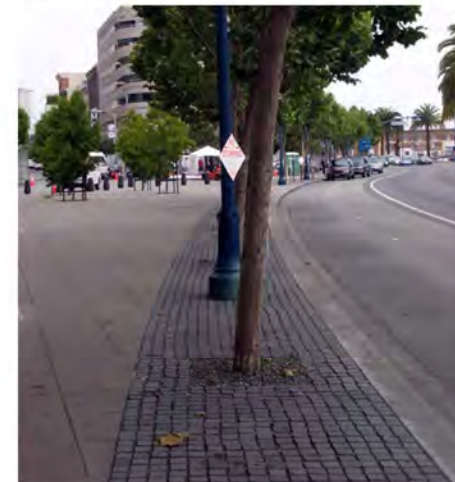
Informal seating walls wrap around tree pits also planted with shrubs and grasses.



An edge zone allows space for people to enter and exit parked cars.



A 4-foot furnishings zone can accommodate trees, other landscape, pedestrian lights, and other street furniture. The furnishings zone's surface is a permeable material such as decomposed granite or cobblestones to reduce impermeable surfaces and to improve tree health.

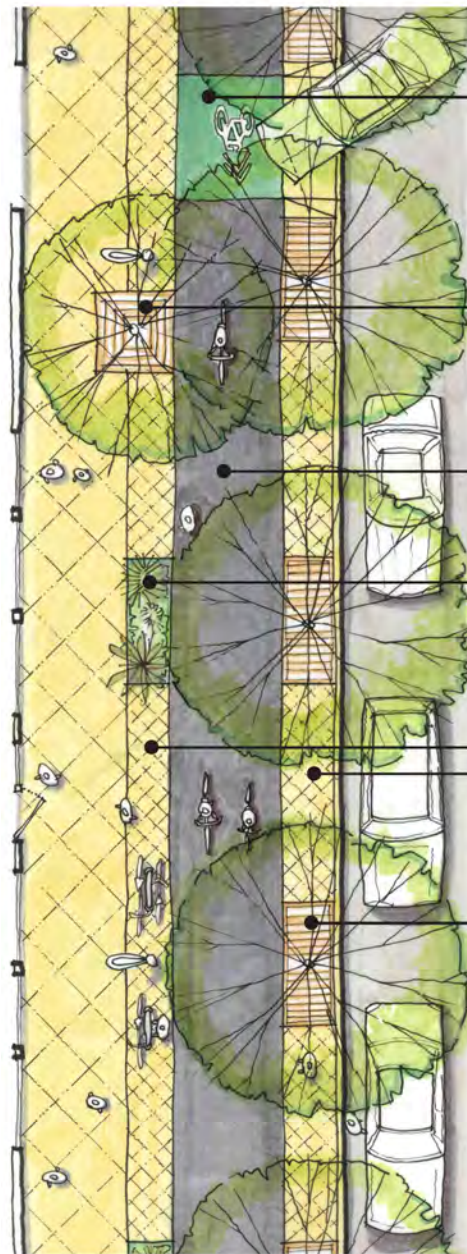


Seventh and Eighth Street Streetscape and Landscape Concept Detail (Recommended Alternative) (Continued)

7th and 8th Streets

Streetscape Treatment Type: 10-foot Sidewalk with Cycletrack

This treatment is appropriate for the block faces of 7th and 8th Streets that include a cycletrack. This design is based on buffering the cycletrack - in part visually, in part physically - from pedestrians and parked vehicles as well as on framing the cycletrack as a civic piece of infrastructure by lining it on both sides with landscape and furnishings that double as streetscape amenities.



Existing street trees can be accommodated into this streetscape. Their vitality can be increased by increasing their tree pit area and the addition of 5-foot-by-5-foot tree grates that will not diminishing the pedestrian through zone.



In the furnishings zone of the pedestrian realm, 4-foot-by-8-foot planter strips alternate with areas for furnishings, such as pedestrian lighting and bicycle racks.



Evenly spaced street trees planted in the 4-foot buffer between the cycletrack and the parking lane are an important unifying feature of the street. Trees are accommodated in a 4-foot-by-8-foot tree grate or other treatment that allows walking across the tree pit area.



Driveways, like other points where cyclist-motorist conflicts are possible, are treated with standard green coloring. The pedestrian realm runs through driveways, uninterrupted.



The cycletrack, at sidewalk grade, is paved with asphalt or other material that visually contrasts with the sidewalk paving.



The pedestrian realm's furnishings zone and the edge zone both have a similar, more intricately scored paving pattern that is distinctive from the sidewalk. This creates a consistent visual buffer on both sides of the cycletrack, reducing the potential for cyclist-pedestrian collisions.

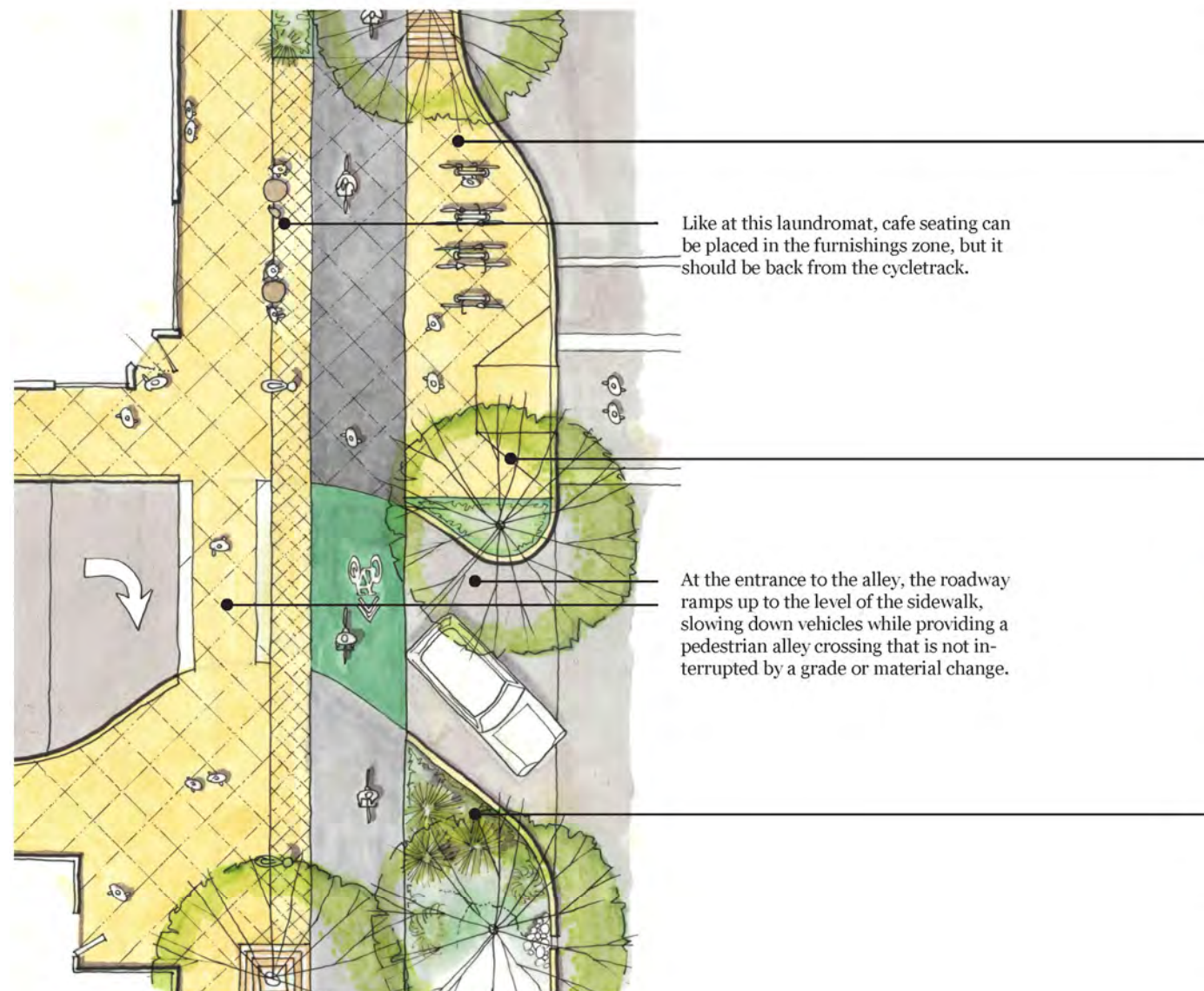


Seventh and Eighth Street Streetscape and Landscape Concept Detail (Recommended Alternative) (Continued)

7th and 8th Streets

Streetscape Treatment Type: Alley Intersection with Cycletrack

This treatment is appropriate where the cycletrack side of 7th and 8th Streets meets an alley cross street, such as Minna or Natoma Streets. The streetscape here is designed to ensure safety of pedestrians, bicyclists, and motorists, and to make the most of the civic potential of these locations by expanding the pedestrian realm, introducing signalized mid-block crossings (where warranted), visually highlighting alley entries/exits, and adding street greening elements.



Like at this laundromat, cafe seating can be placed in the furnishings zone, but it should be back from the cycletrack.

At the entrance to the alley, the roadway ramps up to the level of the sidewalk, slowing down vehicles while providing a pedestrian alley crossing that is not interrupted by a grade or material change.

While the presence of the cycletrack reduces the accessibility of the bulb-out space from the sidewalk, it can be used for bike parking or other street furnishings. Where new mid-block crossings are introduced, this space accommodates waiting pedestrians and cyclists.



Trees in the bulb-out space on either side of the alley function as a alley entry/exit "markers".



Landscaping in bulb-outs between the roadway and the cycletrack discourage crossing 7th/8th in locations where no mid-block crossing is provided. These areas can also be used as rain gardens to infiltrate runoff.



Seventh and Eighth Street Phasing Plan

It is recommended that the Seventh and Eighth Street project be implemented in phases. In the first phase, the cycletrack and pedestrian bulbs will be added, transit boarding islands built, and travel lanes will be reduced from four to three. In the second phase, the sidewalk opposite the cycletrack will be widened to 15 feet. Specific implementation steps and cost estimates are will be detailed in the EN TRIPS Funding and Implementation Plan, to be published under a separate cover.

Figure 6-3 EN TRIPS Folsom/Howard Priority Project Phasing

	Phase 1	Phase 2
Circulation	Reduce Seventh and Eighth Street to three, one-way lanes each.	
Circulation	Re-time signals to favor 12-15 mph vehicle progression on both streets.	
Bike	Stripe two-way, parking-buffered cycletrack on Seventh and Eighth Streets.	Raise cycletrack and buffer to sidewalk grade.
Bike	Upgrade signals to allow split vehicle right turn/bike through phasing.	
Transit	Construct mid-block transit boarding islands (right side of Eighth, left side of Seventh).	
Pedestrian	Construct pedestrian corner bulbs/pedestrian refuges with landscaping.	Widen sidewalk on non-cycletrack side of both streets to 15 feet. Add landscaping and pedestrian amenities.
Pedestrian	Add three pedestrian-actuated signalized, mid-block crossings on Seventh and Eighth.	

6.5 OTHER PROMISING ALTERNATIVES

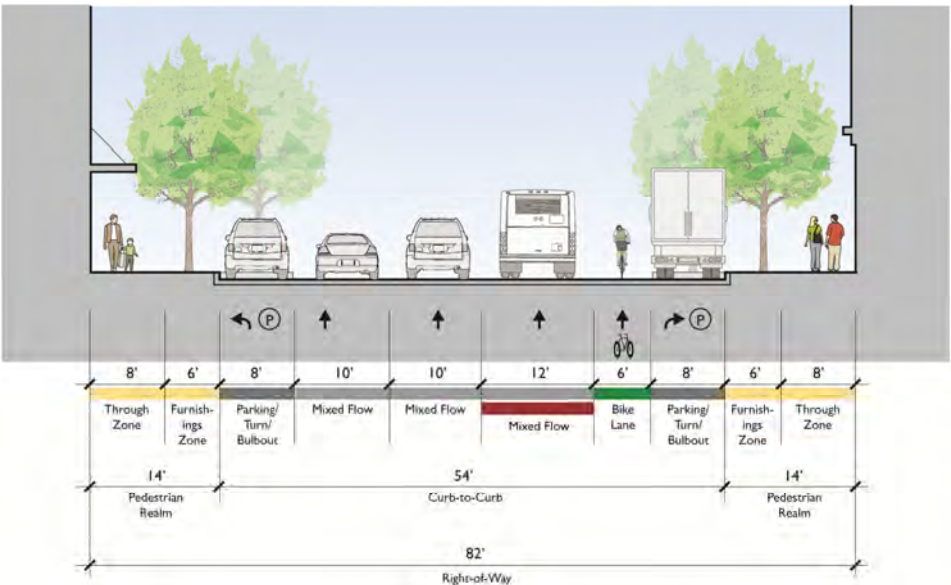
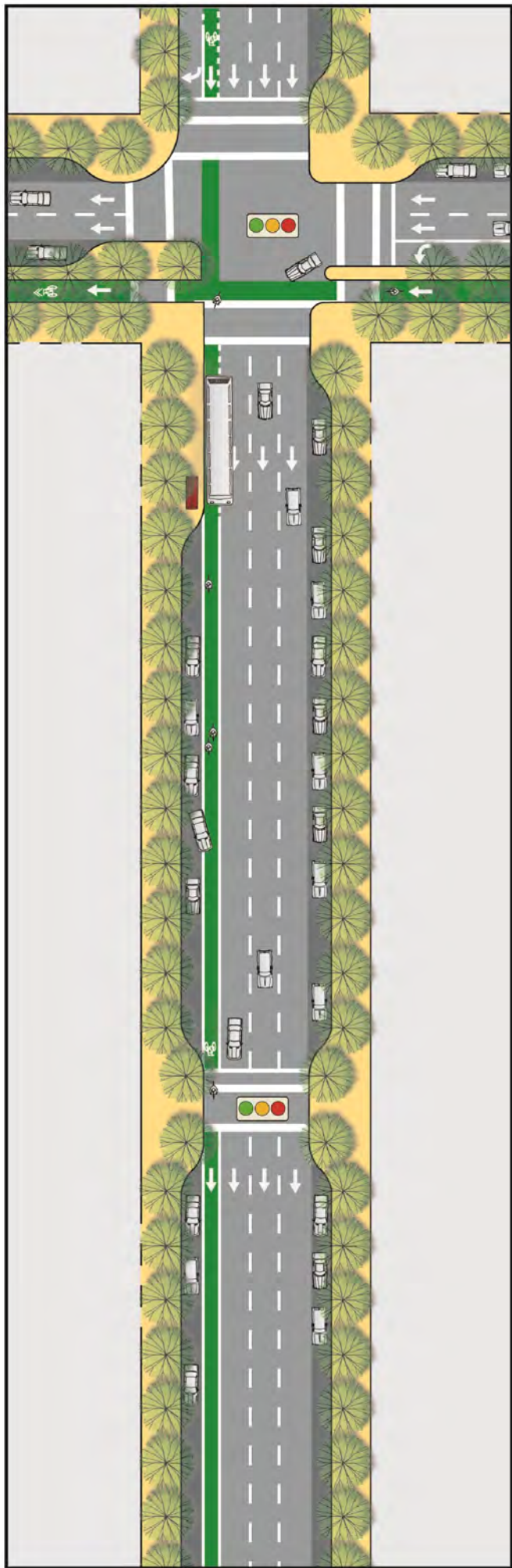
In addition to the recommended alternative described above (Alternative 2), two other concepts were selected for additional analysis, design, and community input prior to selection of a recommended alternative. These include a one-way option that differs only slightly from the recommended alternative and a two-way concept that introduces more substantial circulation changes. These additional options are described and illustrated below for stakeholder review and potential inclusion as alternatives in environmental analysis of the project.

Key differences between these concepts and the recommended alternative are summarized below. In addition, the findings of a detailed traffic analysis of the four alternatives are provided in Appendix A.

- **Alternative 3: One-way with wide sidewalks.** Like Alternative 2, this concept would narrow the roadway to three, one-way lanes on both Seventh and Eighth Streets, and make no other changes to wider circulation networks. It differs from Alternative 2 only in that it would provide a Class II bike lane on each street instead of a cycletrack and widen the sidewalks to 15 feet on both sides, providing additional benefit for pedestrians and the public realm and further emphasizing Seventh Street as a “green connector” street.
- **Alternative 5: Two-way Seventh and Eighth with bicycles on Seventh and transit on Eighth.** This alternative would provide two-way circulation on Seventh and Eighth Streets while minimizing project costs by keeping curb lines intact. Seventh Street would be configured like the recommended Folsom Street alternative with two lanes northbound, one lane southbound, and a two-way cycletrack. Eighth Street would have two lanes in each direction and no bike facilities. Transit would be consolidated on Eighth Street. Sidewalks would remain at 10 feet. This alternative improves bicycle connectivity and consolidates transit. However, it would do nothing to improve the pedestrian realm on Eighth Street, which would have two lanes of traffic in each direction, with no bicycle facilities or added pedestrian space. Because of the degree to which it reduces vehicle capacity, this alternative would likely cause very long vehicles queues if present vehicle volumes persist. Vehicle queues in the P.M. peak would regularly backup from Eighth and Mission across Market Street, potentially disrupting transit service. However, this alternative offers enough benefits (including shorter, more efficient transit routes and better bicycle connectivity) that it could be revisited in the environmental review process as part of a scenario that includes more robust TDM assumptions.

Each alternative is presented more fully below.

Seventh and Eighth Street Alternative 3



This concept maintains both Seventh and Eighth as one-way streets, reducing each to three lanes. As today, a one-way bicycle lane would be provided on each street, and the sidewalk would be widened to 15 feet on both sides of the street.

Pedestrian Conditions. The principal advantage of this concept is that it would provide a great deal of new sidewalk space, which could be used to accommodate higher pedestrian volumes, add landscaping, pedestrian amenities, and small public spaces. Like other alternatives, it would also add pedestrian bulbs and refuges to further narrow crossing distances, time signals to encourage steady vehicle progression at moderate speed, and signalized, mid-block crossings at key locations.

The public realm. The wide sidewalks would provide generous space for landscaping, pedestrian amenities, and small public spaces. Public realm investments would be prioritized on Seventh Street to help it serve the “green connector” street role assigned in the Eastern Neighborhoods area plans.

Transit legibility. Like the recommended alternative, this concept would maintain southbound 19 Polk service on Eighth Street and northbound service on Seventh. Splitting service by direction in this way makes the transit system somewhat less legible for passengers than consolidating transit on a two-way street.

Transit performance. Like the recommended alternative, implementation of this concept is not excepted to further delay buses operating in mixed-flow traffic. It would improve northbound transit performance by constructing boarding islands on the west side of Seventh Street, allowing buses to travel in the left lane and thus avoiding right-turning vehicle queues that commonly occur at Folsom Street.

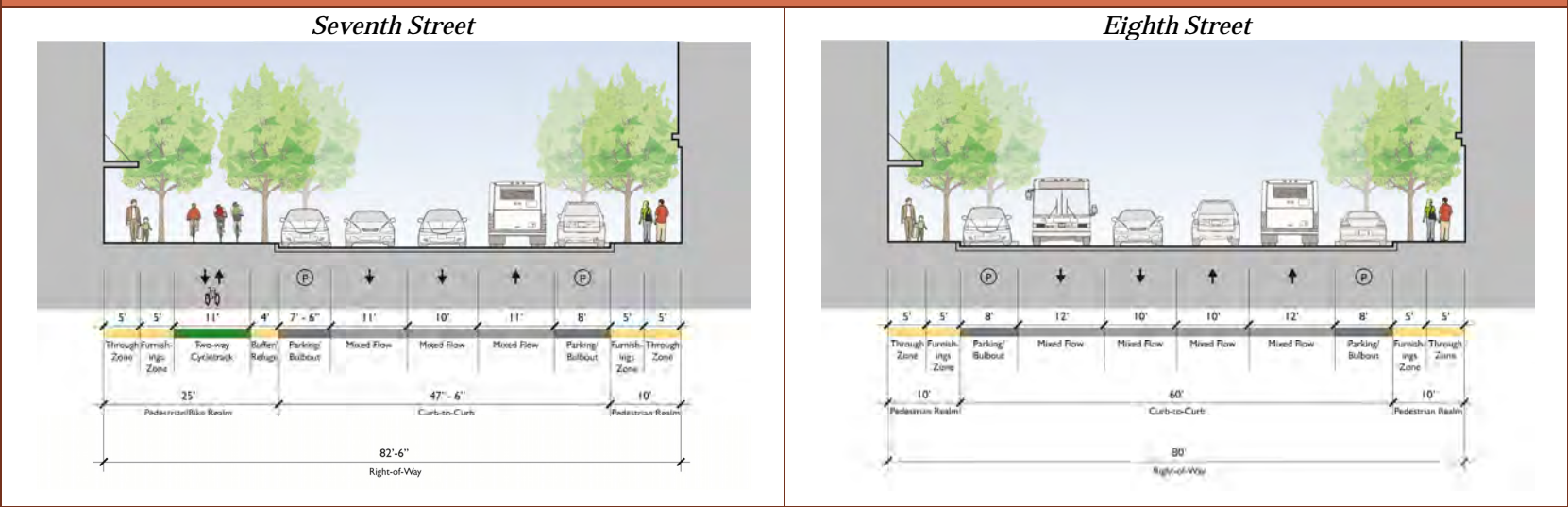
Vehicle circulation. Like the recommended alternative, Seventh and Eighth Streets in this concept would continue to function as a one-way couplet, reduced to three lanes in each direction, with turn pockets provided at intersections.

Bicycle conditions. This alternative would maintain the existing present condition for cyclists, with a Class II bicycle lane on each street. Because it does not improve conditions for cyclists, this concept fails to meet a major project objective.

Parking and loading. As in the other alternatives, parking lanes would be maintained on both sides of Seventh and Eighth Streets. Parking would be removed where necessary to provide turn pockets at intersections and pedestrian and transit bulb-outs.

Cost comparison. This project would require moving the curb lines along both sides of each street, a large expense. Construction of transit boarding islands on Seventh Street would require additional investment.

Seventh and Eighth Street Alternative 5



This concept would provide two-way circulation on Seventh and Eighth Streets. Seventh Street would have two lanes northbound, one lane southbound, and a two-way cycletrack. Eighth Street would have two lanes in each direction, with two-way transit service and no bike facilities. Sidewalks would remain at 10 feet. The principle advantage of this concept is that it consolidates directions of travel for cyclists and transit on the street that provides the strongest connectivity for each mode. Its principle disadvantage is that with no additional policy change, it would likely increase delay greatly for transit and vehicles.

Pedestrian conditions. This concept would not widen sidewalks on either street. On Seventh Street, it would reduce crossing distances by introducing pedestrian refuges on the street side of the cycletrack and adding signalized, mid-block crossings. On Eighth Street, four vehicle lanes would be maintained and improvements for pedestrians would be minimal.

The public realm. This concept would allow for additional landscaping and bulbs on Seventh but minimal public realm improvements on Eighth.

Transit. By consolidating bus service on Eighth Street, this concept not only improves legibility through bi-directional transit service but also prevents the 19 Polk from having to divert out-of-direction to go northbound on Seventh Street, which would reduce travel time and operating costs for SFMTA. However, by reducing vehicle capacity and introducing left turn conflicts, modeling suggests that this alternative would increase delays substantially for vehicles and transit operating in mixed-flow lanes. In forecasts using current vehicle volumes, queues from Eighth and Mission would reach back to Market Street potentially disrupting Market Street transit service as well. Ideas for managing this traffic impact are discussed below under vehicle circulation

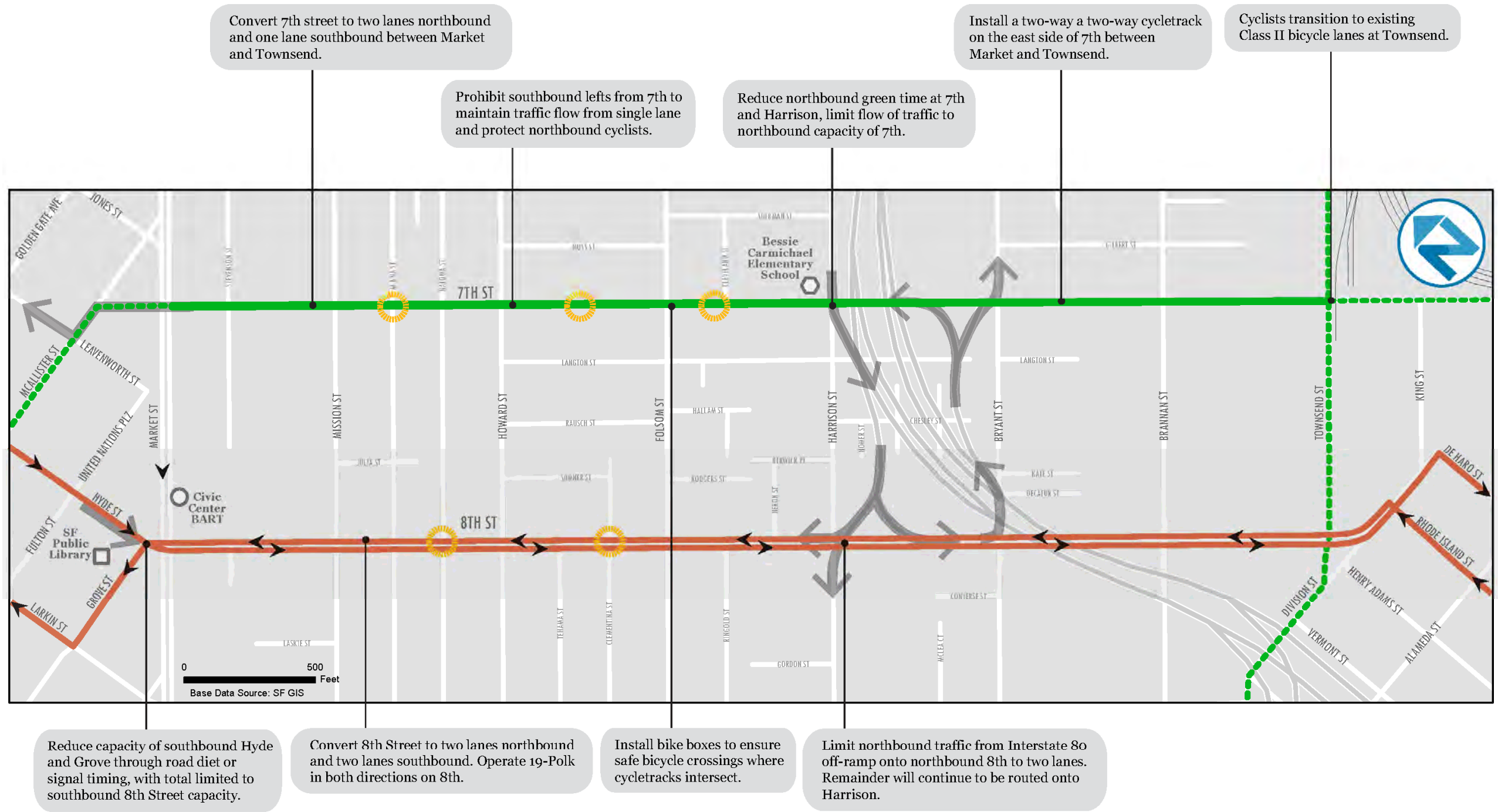
Vehicle circulation. In this concept, vehicles would travel north and south on both Seventh and Eighth Streets. On Seventh, there would be two northbound lanes and one southbound lane. Southbound lefts from the single lane would be prohibited in order to maintain traffic flow and protect cyclists traveling north in the cycletrack from left turning vehicles. To manage northbound vehicle demand, the City could consider limiting signal time for northbound vehicles at Harrison and/or Folsom Street, limiting flow through those intersections to the capacity of the downstream intersections. Doing so would cause vehicles to queue back toward the freeway, perhaps to the main line of I-80. Similarly, the City could manage southbound traffic by limiting the capacity of Hyde Street. Any vehicle backup that occurred would then queue north of Market Street, thereby avoiding impacts on Market Street transit service.

Bicycle conditions. This alternative would provide wide buffered bicycle lanes with a two-way cycletrack on Seventh Street. This facility would have optimal connectivity to the Seventh Street bicycle lanes that continue on Seventh Street south of Townsend, and to the McAllister bike lanes north of Market.

Parking and loading. As in the other alternatives, parking lanes would be maintained on both sides of Seventh and Eighth Streets. Parking would be removed where necessary to provide turn pockets at intersections and pedestrian and transit bulb-outs.

Cost comparison. This project would not require moving the curb lines, which would reduce its cost compared to other alternatives. It would require major changes to signalization.

Figure 6-4 Seventh and Eighth Street Alternative 5 Circulation Concept



LEGEND

- New mid-block crosswalk
- Bicycle lanes
- Two-way cycletrack
- 19-Polk (local transit)
- One-way circulation
- Vehicular flow

