

FELL STREET/MASONIC AVENUE INTERSECTION

SUMMARY SHEET OUTLINE

General Project Description

The existing Golden Gate Park Panhandle bike path (administered by the San Francisco Recreation and Park Department) crosses Masonic Avenue at the south side of the Masonic Avenue and Fell Street intersection. This is a high volume bicycle commuter and recreation path and a high volume roadway intersection.

The existing standard parallel-striped crosswalk on Masonic Avenue, on the south side of the Fell Street /Masonic Avenue intersection, is set back approximately 10 feet from the existing intersection corners. This condition reduces visibility for both motorists and bicyclists. Westbound motorists turning left from Fell Street onto southbound Masonic Avenue sometimes cannot adequately see bicyclists and pedestrians using the crosswalk. Westbound bicyclists are particularly difficult for motorists to see, as they can be visually blocked by trees, utility poles and parked vehicles until they have entered into the intersection. Bicyclists cannot easily see approaching left-turning vehicles as they are leaving the path and entering the intersection crosswalk.

The proposed crossing improvement addresses both the visibility and vehicle speeds. Three design options are provided, including: Short-Term, Long-Term 1 and Long-Term 2. The three design conditions are summarized below under Design Segments.

History/Background

This pathway crossing is a recognized concern due to the high volumes of commuter and recreational bicyclists that use the crossing, and due to the high volumes of vehicle traffic using the Fell Street /Oak Street couplet, as well as Masonic Avenue for cross-city travel.

Recent improvements to the path and the crossing include widening, repaving, and lighting the path; establishing a 10 foot red zone along the south side Fell Street approach to Masonic Avenue to improve sight lines, installation of signs directing left turning vehicles to yield to pedestrians and bicyclists, the installation of pedestrian countdown signals, and the construction of wide curb ramps.

A longer No Parking/red zone along the Fell Street approach has been considered but concerns of illegal parking in a long, seemingly unneeded red zone led to the implementation of a 10 foot zone. A longer zone would improve sightlines if it can be kept clear of illegally parked vehicles, either with enforcement or with physical design elements such as a curb extension.

Moving the path crossing closer to the intersection was also considered during the recent path work, but the benefits of doing so without other improvements such as the curb extensions proved to be minimal. Also, a signal pole and a catch basin located in the path of such a crossing reduced the cost benefit ratio to a point where the realignment was not included with the path work.

Design Segments

Option A:

The proposed short-term design relies on the following design features:

- An expanded parking prohibition on Fell Street, extending the No Parking zone from the southeast corner approximately 60 feet east to increase visibility of the Panhandle Path from westbound Fell Street (this would result in the loss of approximately three on-street parking spaces).
- Advance Walk phase to allow bicyclists and pedestrians to get a “head start” on motor vehicles when the signal changes from red to green. Left turning vehicles from Fell Street onto Masonic Avenue will be held for extra seconds to allow path users to establish themselves in the crosswalk.
- High-visibility “ladder” crosswalk will provide higher visibility than existing parallel stripe crosswalk at current crosswalk location.
- Relocated stop limit line for northbound Masonic Avenue to keep vehicles out of the crosswalk and increase safe operating space for bicyclists and pedestrians.
- Installation of unique signage at appropriate height and orientation to ensure visibility to motorists and limit visibility to trail users (to the extent possible). The graphic and/or textual message should focus on encouraging motorists to yield to pedestrians and bicyclists in the crosswalk. Options for unique signage specific to this application are included in the Supplemental Design Guidelines for the Bicycle Plan Update.
- Optional “safe-hit” posts may be installed on the centerline stripe of Masonic Avenue immediately north of the crosswalk stripe in order to encourage left turning vehicles from Fell Street to make slower, tighter radius turns (this optional feature may have a short life-span due to limited durability of safe-hit posts).

Option B:

This proposed design relies on the following design features:

- Curb extensions on both sides of Masonic Avenue on the south side of Fell Street in order to create a tighter turning radius for vehicles and effectively slow turning speeds. This also will create more space for the path to be realigned closer to the intersection.
- An expanded parking prohibition on Fell Street, extending the No Parking zone from the southeast corner approximately 60 feet east to increase visibility of the Panhandle path from westbound Fell Street (this would result in the loss of approximately three on-street parking spaces).
- Advance Walk phase to allow bicyclists and pedestrians to get a “head start” on motor vehicles when the signal changes from red to green. Left turning vehicles from Fell Street onto Masonic Avenue will be held for extra seconds to allow path users to cross more safely.
- Relocated high-visibility “ladder” crosswalk will provide higher visibility than existing parallel stripe crosswalk.
- Relocated stop limit line for northbound Masonic Avenue to keep vehicles out of the crosswalk and increase safe operating space for bicyclists and pedestrians.
- Slight reorientation of path to deliver path users directly to the intersection and new cross-walk to ensure that they are crossing in the most visible location

- Installation of unique signage at appropriate height and orientation to ensure visibility to motorists and limit visibility to trail users (to the extent possible). The graphic and/or textual message should focus on encouraging motorists to yield to pedestrians and bicyclists in the crosswalk. Options for unique signage specific to this application are included in the Supplemental Design Guidelines for the Bicycle Plan Update.
- Optional “safe-hit” posts may be installed on the centerline stripe of Masonic Avenue immediately north of the crosswalk stripe in order to encourage left turning vehicles from Fell Street to make slower, tighter radius turns (this optional feature may have a short life-span due to limited durability of safe-hit posts).

Option C (Dedicated Left-Turn Signal Phase):

A third option for this location is to re-phase and re-time the existing signalization at Fell Street/Masonic Avenue to provide for a dedicated left-turn phase and a protected bike/pedestrian crossing phase. Left-turning vehicles from westbound Fell Street onto southbound Masonic Avenue would be held (with a red turn arrow) during the dedicated bicycle/pedestrian phase. After this phase, left-turning traffic would either receive a green arrow, or a flashing yellow arrow. Under the green arrow scheme, vehicles would have the right-of-way. Under the flashing yellow arrow condition, motorists would be informed to yield to bicyclists and pedestrians using the crosswalk. This long-term feature includes the following:

- Installation of exclusive left turn lane if traffic volumes on westbound Fell Street.
- Modify signal phasing and timing to provide left-turn arrow for westbound Fell Street and protected bicycle and pedestrian phasing across the intersection’s southern leg.
- Revise Fell Street’s lane markings and transitions upstream and downstream of Masonic Avenue.
- No parking removal is required for this option.
- Optional “safe-hit” posts may be installed on the centerline stripe of Masonic Avenue immediately north of the crosswalk stripe in order to encourage left turning vehicles from Fell Street to make slower, tighter radius turns (this optional feature may have a short life-span due to limited durability of safe-hit posts).

Capacity

Option A

- Assuming pedestrians and bicyclists are given a three-second “head-start” by shortening the amount of green time on Fell Street or Masonic Avenue by three seconds, westbound motorist delays would increase by an average of two seconds per vehicle and queue lengths would increase by one to two cars per lane. Westbound vehicle progression would be affected and signal timing along the Fell Street corridor should be evaluated to minimize disruption. The intersection would continue to operate at LOS B conditions.

Option B

- Assuming pedestrians and bicyclists are given a three-second “head-start” by shortening the amount of green time on Fell Street or Masonic Avenue by three seconds, westbound motorist delays would increase by an average of two seconds per vehicle and queue lengths would increase by one to two cars per lane. Westbound vehicle progression would be affected and signal timing along the Fell Street corridor should be

evaluated to minimize disruption. The intersection would continue to operate at LOS B conditions.

Option C

- Under this option, Fell Street's through lanes would be reduced from four to three. During the PM peak hour, over 1,800 vehicles use these lanes. This option would degrade the intersection's level-of-service and would require lane striping to the east of the intersection to merge westbound through traffic into the second lane. After traveling through the intersection, some westbound traffic would move into the first lane. The frequent lane-changing could result in an increase in vehicle collisions. Therefore, if this option were to be further pursued, it is recommended that a large segment of Fell Street be converted to three through lanes for lane balance purposes. This may be a feasible solution after the Octavia Boulevard project has been constructed.

This option requires modeling and careful consideration to determine how the progression on both Fell Street and Oak Street may be effected.

Although the option would provide protected phasing for pedestrians and bicycles, the phase duration would be about one-third of the duration less than it currently is.

Transit

Option A

- There are two weekday evening express lines on Fell Street, the 16AX and the 16BX. On Masonic Avenue there is the 43 Masonic Avenue. Any changes to signal timing or capacity must take Muni operations into account.

Option B

- There are two weekday evening express lines on Fell Street, the 16AX and the 16BX. On Masonic Avenue there is the 43 Masonic Avenue. Any changes to signal timing or capacity must take Muni operations into account.

Option C

- There are two weekday evening express lines on Fell Street, the 16AX and the 16BX. On Masonic Avenue there is the 43 Masonic Avenue. Any changes to signal timing or capacity must take Muni operations into account.

Parking

Option A

- Parking utilization on Fell Street is extremely high. This option would result in the loss of approximately sixty lineal feet of parking, or the equivalent of about three vehicles.

Option B

- Parking utilization on Fell Street is extremely high. This option would result in the loss of approximately sixty lineal feet of parking, or the equivalent of about three vehicles.

Option C

- No Parking Loss

Trucks

Option A

- There are no changes to intersection geometry with this proposal, except for a setback limit line that would improve Fell Street to southbound Masonic Avenue turning movements.

Option B

- Modifications to turning geometry and lane widths must take into account left turning trucks from westbound Fell Street to Masonic Avenue southbound.

Option C

- Modifications to turning geometry and lane widths must take into account left turning trucks from westbound Fell Street to Masonic Avenue southbound.

Pedestrian Concerns

Option A

- Pedestrian safety would be improved with the use of a “head start” for path users. Pedestrians and bicyclists must exercise appropriate yield to one another when using the crosswalk. Motor vehicles are required to yield to pedestrians. Unique signage is required for signal controlled multi-use path crossings. This signage is identified in the San Francisco Bicycle Plan Update Supplemental Design Guideline.

Option B

- Pedestrian safety would be improved with the use of a “head start” for path users. Pedestrians and bicyclists must exercise appropriate yield to one another as well as to motor vehicles. Unique signage is required for signal controlled multi-use path crossings. This signage is identified in the San Francisco Bicycle Plan Update Supplemental Design Guideline.

Option C

- Pedestrian safety would be improved with a dedicated phase for path users. However, crossing time for path users in such a proposal significantly cuts the length of the crossing phase. Pedestrians and bicyclists must exercise appropriate yield to one another as well as to motor vehicles. Unique signage is required for signal controlled multi-use path crossings. This signage is identified in the San Francisco Bicycle Plan Update Supplemental Design Guideline.

Land Use

- Surrounding land use is park and high density residential, with high demand for on-street parking due to local shortage in off-street parking. Crossing improvement is a priority due to prevalence of the Panhandle Multi-Use Path as a commuter and recreational corridor for bicyclists, and popular pedestrian path.

Other Departments or Agencies

- All project alternatives require coordination with San Francisco Recreation and Park Department.

Preliminary Cost Estimate

- Option A: \$8,000.
- Option B: \$50,000.
- Option C: \$100,000.

Next Steps

- To be determined.