



# City of Palo Alto

## City Council Staff Report

(ID # 9476)

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**Report Type: Informational Report**

**Meeting Date: 7/30/2018**

**Summary Title: Follow up from June 12 Bike Boulevard Study Session**

**Title: Follow up to June 12 Study Session and Next Steps Regarding the Neighborhood Traffic Safety and Bicycle Boulevard Projects**

**From: City Manager**

**Lead Department: City Manager**

### **Recommendation**

Staff recommends that Council accept this informational report follow up to June 12 study session and next steps regarding the Neighborhood Traffic Safety and Bicycle Boulevard Projects.

### **Introduction**

On June 12, 2018, the City Council held a study session at Mitchell Park Community Center to provide the public with background and an update on the Neighborhood Traffic Safety and Bicycle Boulevards – Phase 1 Project (“NTSBB1 Project”). This memo is a follow up to that session, and outlines next steps for the NTSBB1 Project and Phase 2 of the project (“NTSBB2 Project”).

During the June 12 study session, staff provided a background briefing on the City Council-adopted *Bicycle + Pedestrian Transportation Plan* which includes the NTSBB Project. There was general acknowledgement that while the project design was developed with substantial community and stakeholder engagement, the implementation and start of construction has been met with significant community concern. The level of public outreach and speed of implementation have unintentionally caused significant frustration and concern among the community about the project. Over the past few months, staff has made numerous changes to the implementation of the project with careful consideration of the cost impact of construction contract change orders.

Approximately 150 people attended the June 12 study session with more than 50 individuals providing oral communications. Speakers represented a mix of opinions between those who like the project and those who do not. All of the speakers, regardless of their position, provided valuable feedback to both the City Council and staff and created a better understanding of individual experiences with the project. The views, perspectives, and questions shared were heard, captured and summarized in the Summary of Public Comments and Staff Responses document (**Attachment A** to this memo). There is also Frequently Asked Questions (FAQs) on

the existing project webpage that provides helpful information in response to some concerns. FAQ link: <https://www.cityofpaloalto.org/civicax/filebank/documents/62995>.

## **Discussion**

Six (6) major themes emerged from community testimony. They are outlined below, not in any particular order, and also include staff responses. As previously mentioned, some of the responses to resident questions can be found in the existing FAQs online at <https://www.cityofpaloalto.org/civicax/filebank/documents/62995> or through the summary sheet attached to this memo as **Attachment A**.

### ***Rationale for Bike/Ped Plan***

For many years, the City has pursued the goal of doubling the percentage of commuter trips by bicycling by the year 2020. This is articulated not only in the City's Bike + Ped plan, but also in the Sustainability and Climate Action Plan, Comprehensive Plan and the Parks and Recreation Master Plan. Specifically, the *Bicycle + Pedestrian Transportation Plan* included the implementation of a network of bicycle boulevards – including the NTSBB – that are designed to promote bicycle commuting by reducing motorist speeds, as well as providing enhanced safety for all. The bicycle boulevards were also designed to address desirable improvements identified in the Safe Routes to School program by providing a higher level of safety for students. The project's linkage to the overall effort to increase bike commuting and safety was not readily understood. Additionally, there were community members who questioned the overall rationale of needing such an extensive network of bike boulevards.

### ***Continued Construction***

There were concerns that while the City "paused" construction on the project in late March, some construction continued. On March 28, 2018, staff directed the construction contractor to suspend all work on the project that had not yet already started. Staff sent out a [Community Update](#) about this on April 6, 2018. At that point in time, the raised intersections on Louis Road at Moreno Avenue and Fielding Drive/Amarillo Avenue were already underway. All elements along Ross Road and Moreno Avenue were substantially complete. Throughout the months of April, May, and June, the contractor completed punch-list items (construction quality control) along Ross Road and Moreno Avenue. The completion of work on Louis Road, however, was delayed due to an underground drainage issue. The improvements on Louis Road are now complete except for pavement artwork, scheduled to be installed July 23-27. The construction of permanent improvements on the remaining segments of the NTSBB1 Project have been on hold/pause since April.

### ***Metrics to Assess Improvements***

A number of residents expressed the need for identified metrics to determine whether the intended improvements are occurring, and a way to adjust conditions in the future. Staff will be using the following metrics at six (6) and 12-month intervals to make such determinations:

1. Motor vehicle travel speeds
2. Traffic collisions
3. Traffic volumes for all modes (motor vehicles, bicycles, and pedestrians)
4. Behavior of all users at the roundabouts (including turning movement counts)
5. Survey of residents

6. Survey of representatives of Ohlone Elementary School, Palo Alto YMCA, Palo Alto Buddhist Temple, and other special facilities directly affected by the improvements included in this current construction contract
7. Survey of bicyclists
8. Survey of emergency responders
9. Survey of the general public

Baseline data for many of these metrics is identified in a [2016 staff report](#). Staff will provide the six (6) month and 12-month assessments starting in January 2019.

### ***Project Needs Time to Work***

Residents at the study session reported that their experience riding a bike or driving on Ross Road changed as the construction progressed, and said they felt vehicles were driving slower thus far. They urged the City to give the already implemented elements time to see how they work before making any decisions to reverse elements. Staff agrees with these sentiments.

### ***Better Community Engagement***

The start of construction on Ross Road clearly caught many people by surprise. Many residents felt they were not adequately informed about the design and start of construction. While there was a lot of community engagement from 2014 to 2016 when the project was being designed, many residents said they had not been contacted in the months prior to construction. Staff understands and agrees, and is working to ensure more door-to-door outreach is done, as well as continual community information updates. Staff will also review the community engagement process for future projects.

### ***Not Everybody Rides a Bike***

The last major theme is that these changes are hard for some drivers to adjust to and navigate. In recognizing that not everybody rides a bike and in keeping with this comment, staff will pay close attention to the navigability of street treatments for various types of drivers before installing new traffic calming elements.

### **Next Steps**

As previously noted, the project has been in “pause” mode since April, with construction only happening on elements started prior to this time. The status and plan for each segment of phase one of the NTSBB1 Project segment is provided below. Further details are provided in **Attachment B**.

- **Segments 1, 2, and 3 (Ross Road and Moreno Avenue)** – Now complete, with the exception of punch list items and modifications to the YMCA driveway in response to public comments and staff observations.
- **Segment 4 (Louis Road from Moreno Avenue to Amarillo Avenue)** – Now complete, with the exception of installing pavement artwork in late July, decorative steel bollards, and any punch list items.
- **Segment 5 (Amarillo Avenue)** – Pending direct outreach to the abutting residents, implement a revised plan to install select project elements during the month of August (note: the elements do not include new roundabouts nor planted curb extensions). The select project elements include 1) a shared-use path along the south side of Amarillo Avenue between the new Louis Road enhanced intersections and Ohlone Elementary

School bicycle cage and internal sidewalk network; and 2) high-visibility crosswalks connecting the north side of Amarillo Avenue to Greer Park at the two Tanland Drive intersections. The shared-use path is critical, as it will provide students with a safe, protected route to walk and bicycle from Louis Road directly to the sidewalk leading to the school building and the school bicycle parking, which helps during congested arrival and dismissal periods. The high-visibility crosswalks will provide a connection from the north side of Amarillo Avenue to Greer Park. This increases pedestrian safety at the park.

- **Segments 6, 7, and 8 (Bryant Street)** – Install bicycle boulevard and wayfinding signs only on Bryant Street between the City of Menlo Park and East Meadow Drive as well as marked crosswalks. These signs and markings will improve navigation for bicyclists, brand the entire stretch of the existing bicycle boulevard with the “Ellen Fletcher Bryant Street Bicycle Boulevard” name, and allow for the installation of “Peninsula Bikeway” sign toppers, which will identify a new regional bicycle route developed by the Managers’ Mobility Partnership (a joint effort of the City of Redwood City, the City of Menlo Park, the City of Palo Alto, the City of Mountain View, and Stanford University).
- **Segment 9 (Louis Road and Montrose Avenue)** – Pending direct outreach to the abutting residents and a community meeting, convert existing substandard bicycle lanes along Louis Road between East Charleston Road and Ross Road to standard bicycle lanes (e.g., at least six-foot-wide adjacent to on-street parking and at least four-foot-wide adjacent to curb) and install bicycle boulevard branding and wayfinding signs, BIKE BLVD stencils, and marked crosswalks along Montrose Avenue between Middlefield Road and East Charleston Road. These changes will affect some on-street parking, but will improve the current conditions where the existing southbound bicycle lane adjacent to on-street parking does not meet current design guidelines and the existing northbound bicycle lane is only part-time with parking allowed in certain segments between 7:00pm and 7:00am.

Pending the completion of the work on Segments 1-5, staff will not proceed with further hardscape concrete improvements at this time. This means that the remaining improvements on Amarillo Avenue, Bryant Street, Louis Road between East Meadow Drive and Ross Road, and East Meadow Drive between Louis Road and Fabian Way will be suspended pending further evaluation and City Council direction.

Beyond the project’s next steps outlined above, staff plans to bring back the six (6) month assessment report in January 2019, and schedule a discussion with both the Planning and Transportation Commission and the City Council on how to proceed with the remaining elements of the *Bicycle + Pedestrian Transportation Plan*. This larger discussion will include the policy direction related to scope and parameters for bicycle boulevards as well as the scheduling, funding, and a comprehensive community engagement process to be used for the design of the uncompleted segments of the NTSBB1 Project and the design of the NTSBB2 Project. It is important to note that the NTSBB2 Project, which includes Maybell Avenue, Park Boulevard, Stanford Avenue, and Wilkie Way, is nearing final design with the concept plans having been approved by City Council in 2015 and 2016. This process will be suspended to ensure that the final design of new bicycle improvements reflects new City Council policy direction.

**Attachments:**

- Attachment A-Summary of Public Comments and Staff Responses
- Exhibits 1-4 to Attachment A (Visuals)
- Attachment B-Further Details on Proposed Work

## **Attachment A**

June 12, 2018 City Council Study Session Regarding the NTSBB Phase 1 Project  
Summary of Public Comments and Staff Responses

### **Background**

Approximately 150 members of the public attended the Study Session on the Neighborhood Traffic Safety Bicycle Boulevard (NTSBB) Phase 1 project, held at Mitchell Park on June 12, 2018. Fifty (50) members of the public expressed their feelings about the project, and a summary of unique comments (no duplicates) with staff responses follow. Similar comments have been consolidated. It is noted that physical improvements outside the boundaries of the Phase 1 project and general opinions (e.g., I like the project, I do not like the project) are not listed. An informal tally indicated that the public speakers were about evenly split between supporting and criticizing the project. You can find a video to the meeting online here: <http://midpenmedia.org/city-council-152-2-3-2-2-3-4-2-2-2/>.

The existing FAQs section on the City webpage provides further information and is available online at: <https://www.cityofpaloalto.org/civica/x/filebank/documents/62995>.

### **Public Comments and Staff Responses**

1. What is the reason for the Bicycle Boulevard project?
  - For many years, the City has pursued the goal of doubling the percentage of commuter trips by bicycling by the year 2020. The *Bicycle + Pedestrian Transportation Plan* adopted in 2012 included the implementation of a network of bicycle boulevards designed to promote bicycle commuting by reducing the speed of motorists, decreasing the delay to bicyclists, and reinforcing the fact that both bicyclists and motorists share the roadway. The bicycle boulevards were also designed to address desirable improvements identified in the Safe Routes to School program by providing a higher level of safety for students and pedestrians.
2. The City said the Phase I project was on "pause." Why has work continued, and in particular on Louis Road?
  - In late March staff directed the construction contractor to suspend all work on the project that had not yet already started. Staff provided a Community Update about this on April 6, 2018. At that point in time, construction of the raised intersections on Louis Road at Moreno Avenue and Fielding Drive/Amarillo Avenue was already underway. All elements along Ross Road and Moreno Avenue were substantially complete. Throughout the months of April, May and June, the contractor completed punch-list items along Ross Road and Moreno Avenue. The completion of work on Louis Road, however, was delayed due to an underground drainage issue. The improvements on Louis Road will be completed in July.
3. Numerous comments speculated on the effect of the improvements in terms of traffic collisions, vehicle speeds and volumes, bicycles volumes, bicycles on sidewalks, safety at roundabouts, impact on pedestrians and the disabled, and the livability of the neighborhood. There were other comments on the need to measure rather than speculate.
  - Objective measures, or metrics, are needed to assess the actual effect of the improvements. A set of metrics has been developed that include both the behavior of the users of the project's streets and sidewalks and the perspective of City residents. A summary of some of the "before" data is available in Exhibit 1 to this Attachment A.

4. Several comments suggested halting further work until the performance of the bicycle boulevards is better understood, especially the behavior and impact on motor vehicles, bicyclists and pedestrians at roundabouts. Some felt the improvements actually made things worse while some had the opposite perspective.
  - The actual effect of the improvements, using the identified metrics, will be collected and evaluated. Based on this evaluation the City will be able to make the most informed decision on the next step.
5. Numerous comments criticized the public engagement process for the design and construction phases of the project. In addition, several suggestions were made to improve the process such as use of social media (NextDoor) and use of 3D designs. The lack in communications before construction led some to the belief that the Ross Road bicycle boulevard would be similar to the Bryant Street bicycle boulevard although they are different.
  - The City public engagement process will be reengineered, for both the design and the implementation/construction stages of capital improvements.
6. Several comments expressed concern over the impact that the Ross Road bicycle boulevard design has on seniors, as both motorists and pedestrians.
  - In keeping with this theme, staff will pay close attention to the navigability of street treatments for seniors during the design and before the installation of new traffic calming elements.
7. Several speakers questioned the basic tenants of the bicycle boulevard concept including encouraging bicycles into travel lanes, the use of bicycle lanes, using physical devices to slow the speed of vehicles, the current prohibition of closing streets, and taking a minimalist approach in the use of design elements.
  - Considering the evaluation from the Phase 1 project, the City Council may wish to review the current direction of the bicycle boulevard project and to provide direction for future projects. The current design is based on the understanding that in a traffic-calmed environment, bicyclists are more visible to motor vehicle drivers if they travel in the travel lane instead of in and out of the travel lane. Exhibit 2 to this Attachment shows more information on this.
8. It was reported that fire trucks are no longer using Ross Road and are avoiding the roundabouts; they use alternative routes now.
  - This is inaccurate. All of the City's emergency response vehicles can safely navigate the roundabouts and the Fire Department has indicated that the modifications have not altered their emergency response routes or times. The Fire Department also followed up directly with that constituent to clarify this statement.
9. Motorists at the Ross Road/Moreno Avenue and Ross Road/East Meadow Drive roundabouts and at various bulbouts are striking the curb.
  - The City's current standards call for vertical curb on new streets and for new street features. The roundabouts are designed for operating speeds of 10 MPH. Motorists may take time to adjust their behavior and reduce speeds, as intended.

10. Change the bulbouts at the YMCA driveways.
  - The curb cut at the northernmost YMCA driveway will be modified to make it easier for motorists to turn into and out of the parking lot, while still preserving the traffic calming effects of the curb extensions and the green stormwater infrastructure installed to treat rainwater runoff.
11. Need more traffic enforcement in the area especially with the changes.
  - Transportation staff is working with the Palo Alto Police Department's new Traffic Enforcement unit to increase both motor vehicle and bicycle traffic safety enforcement throughout the city. These specific concerns are being shared with the Transportation staff working with PAPD.
12. Several comments on the need for better education of the roadway users regarding use of roundabouts, cell phone usage, pedestrians (in particular seniors and children), and bicyclists (especially children).
  - Priority attention is being focused on school-aged children through the Safe Routes to School Program.
13. Landscaping should not require lots of water considering our goals to reduce water usage as a community.
  - All of the plants installed as part of the project are drought-tolerant, native varieties.
14. Several comments on the work on Louis Road and the number of stop signs during construction.
  - There were more STOP signs on Louis Road during construction than exist after construction completion. In the completed state there are northbound STOP signs at Amarillo Avenue and the southern leg of Moreno Avenue. In the southbound direction, there are STOP signs at the northern leg of Moreno Avenue and Fielding Drive. For more information about the Louis/Moreno/Amarillo construction, questions and answers can be found here:  
<https://www.cityofpaloalto.org/civicax/filebank/blobdload.aspx?t=69668.41&BlobID=65716>
15. Review the placement of "bike boulevard" signs on Ross. Some are blocking the sidewalk.
  - Wherever possible, new signs were located within the planted curb extension or behind the sidewalk. In some rare instances, signs were installed within the sidewalk. ADA guidelines regarding sidewalk width were considered during the installation and all sidewalk remain accessible to handicapped and disabled individuals.
16. On Amarillo Avenue near Louis Road, where the proposed shared use path is now, consider doing a limited no parking period, or consider doing a shared bike and pedestrian lane to keep the cars and bikes separated.
  - The shared-use path will be raised six-inches above the street and set aside for bicyclists and pedestrians 24 hours per day. It is not possible to permit part-time parking on the shared-use path. Parking surveys conducted during the project concept planning phase indicate that there will be sufficient parking capacity remaining after the removal of on-street parking on the south side and the installation of the shared-use path.



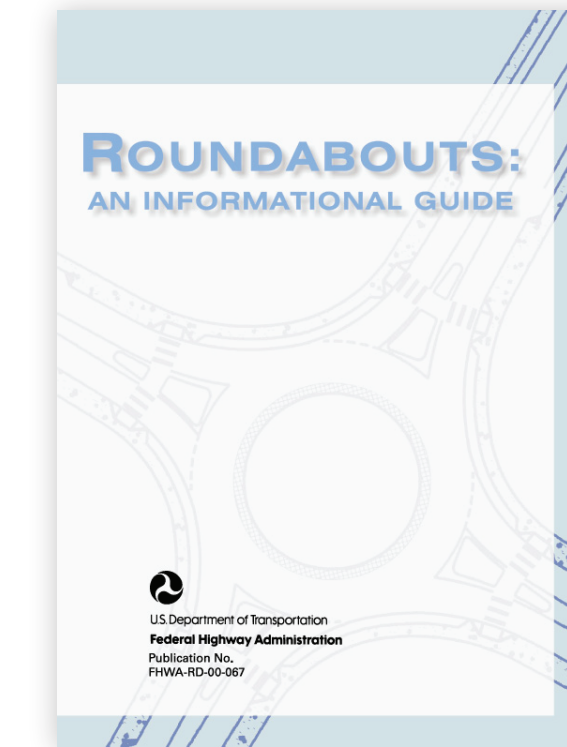
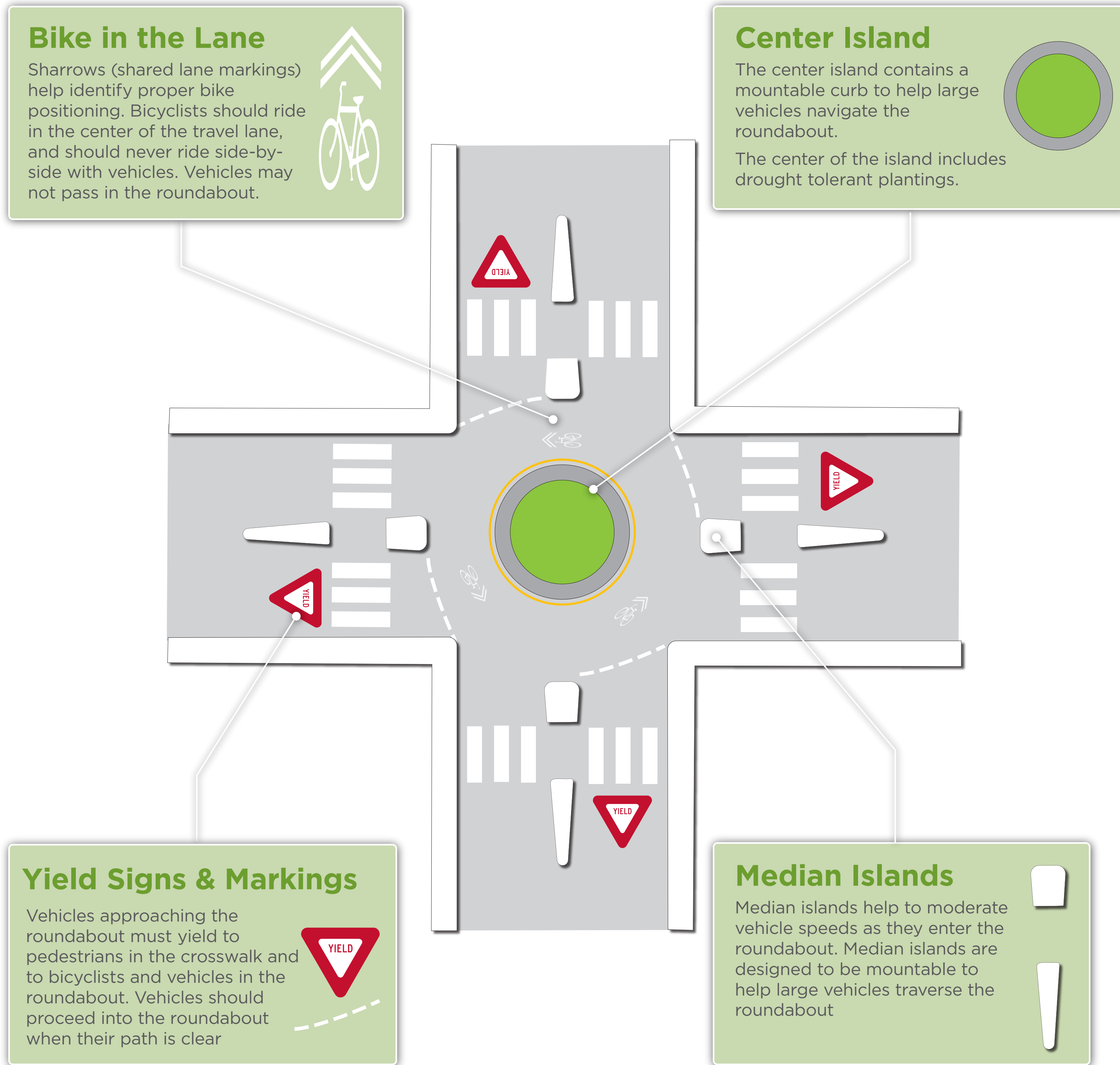
17. The roundabouts hinder the ability of large trucks to navigate an intersection.
  - Most trucks can navigate the roundabouts. Very large rigs however, like a moving truck, may need to use an alternate route. The City will provide information to assist movers/delivery services ([transportation@cityofpaloalto.org](mailto:transportation@cityofpaloalto.org)), and residents should advise movers of the roundabout since that type of information is normally factored into the planning of the mover's route. Similar situations that lead to similar impediments include street closures, one-way streets, and height and weight limitations. Information about the roundabout design and the safety features related to one are included in Exhibits 3 and 4 to this Attachment A.
18. Ensure quality control of the construction contract.
  - As is standard with capital projects, before the contract is closed out, staff will perform a "punch list" with the contractor for them to close any loose ends, including any quality control issues.
19. Put up speed limit signs near the roundabouts (especially Ross and E Meadow) to express the speed you want people to travel at, especially if it is lower than the regular 25mph residential street speed.
  - Additional signage, as needed on the approaches to the two roundabouts, will be installed as part of this Project.
20. Several comments regarded the verification of the Project design elements.
  - On April 23, staff convened an Engineering Roundtable to review the design concerns raised by some residents. Alta Planning + Design, Inc. (Project engineer), TJKM (Peer-reviewer), Toole Design Group, Municipal Resource Group (independent third-party), and staff professional engineers attended the roundtable. Attendees reviewed elements of the construction plans, details, and specifications and made recommendations for design changes on the remaining segments, as well as some modifications at the Ross Road and East Meadow Drive roundabout. A memorandum from Alta Design summarizing the results of this Engineering Roundtable was included in the June 12 Study Session staff report.
21. Several comments about the use of too many street elements.
  - The number, type, and placement of the elements was intended to achieve the desired results of calming traffic and providing for a safer environment for all users of the street. It is possible that a different plan with a different set of devices could have been implemented. This will be considered in future projects, including phased implementation.
22. What would be the cost to rip up all of the changes?
  - A cost estimate is not available at this time.
23. If roundabouts are the right design, why are we removing roundabouts from the Plan?
  - There are three locations where roundabout designs, as shown on the Phase 1 Plan, were removed. At the intersection of Amarillo Avenue and Greer Road the public feedback following the installation of a temporary device was considered, along with unanticipated higher construction costs. At Bryant Street and Palo Avenue a close review of the intersection geometrics was considered. And at Bryant Street and Campesino Avenue the effect of the roundabout was determined to be negligible.

For these reasons it was concluded that the roundabouts should be removed from the plans.

24. At Ross Road and Colorado Avenue and Ross Road and Loma Verde Avenue, there is concrete on a storm drain from the contractor's work.
  - The debris will be removed.
25. Bus routes should be factored into the design of bicycle boulevards.
  - Bus routes and stops, both existing and planned, are considered in the design of all roadway capital improvement projects.
26. The slots in the speed humps place the bicyclist and motorist across the centerline of the travelway.
  - The slot in the center of the roadway is intended for emergency response vehicles who have the right-of-way to use both lanes as needed. A bicyclist may choose to use the slot if safe, or otherwise stay in the travel lane and go over the speed hump like any other normal vehicle.
27. Install speed limit signs on Ross Road between East Meadow Drive and Louis Road.
  - To avoid the clutter of unnecessary traffic control signs in residential areas, 25 MPH Speed Limit signs are generally not installed on local residential streets, except as needed at the entrance to that street from an arterial or collector street with a higher speed limit. Exceptions to this guideline are if it is not obvious that the street qualifies as a residential district, or if the Police Department feels signage will benefit its enforcement efforts. As an effort to reduce speeds all throughout Palo Alto (in response to the recent speed survey conducted), the City will be posting "Welcome to the City of Palo Alto; Speed Limit 25 MPH Unless Otherwise Noted" signs in many places in the city.
28. Why were bricks used in the roadways?
  - The treatment of the pavement surface was intended to enhance the appearance of the roadway and compliment the attractiveness of the neighborhood.
29. Use yield signs in the roundabouts.
  - The need for yield signs will be monitored and adjusted until roadway users are comfortable with the device.

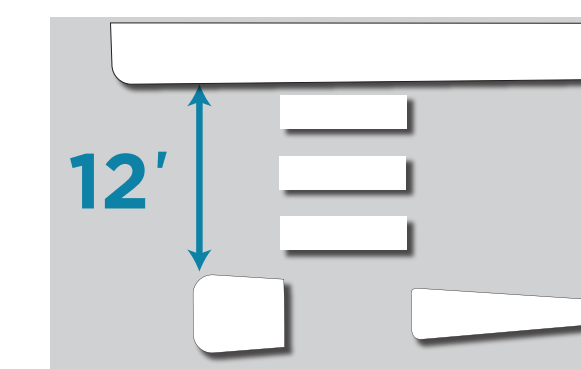
# Roundabouts

## Neighborhood Traffic Safety and Bicycle Boulevards

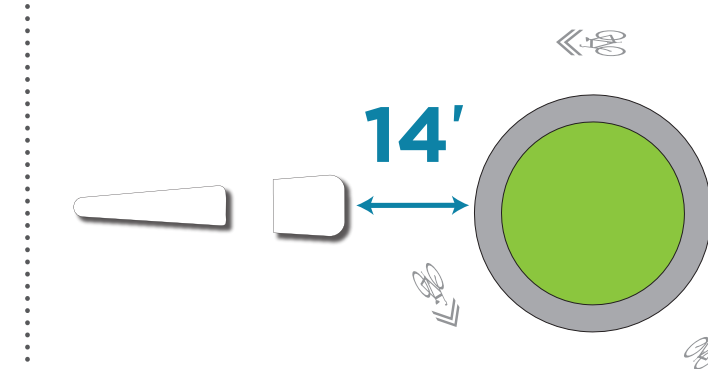


### What are the Appropriate Dimensions of a Mini-Roundabout?

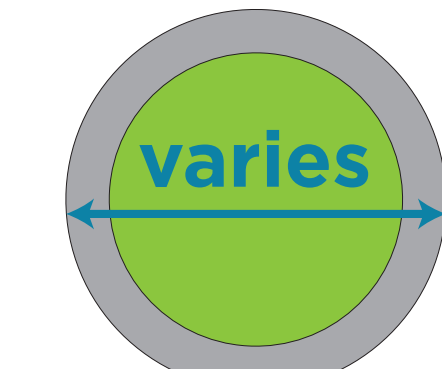
The Federal Highway Administration provides guidance on roundabout design based on actual installations across the United States. The following dimensions were used for the mini roundabouts on these bicycle boulevards.



The **approach lane** width is set to 12' to moderate vehicle speeds as they enter the intersection. The median islands create 'deflection' which help reduce speeds. The roundabouts are designed for 10 MPH travel.



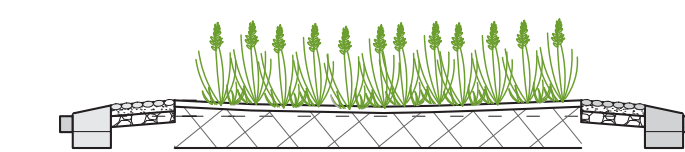
The **center lane** width is set to 14' to allow enough room for all vehicles to use the mini roundabout, while discouraging vehicles from traveling next to bicyclists or other users.



The **center island** width varies, depending on the dimensions of the intersection. The size is adjusted to make the operation of each mini-roundabout similar.



The roundabout design was tested for large vehicles, including trucks, buses, and emergency response vehicles. In some cases, the roundabouts restrict left or right turns by buses and trucks.

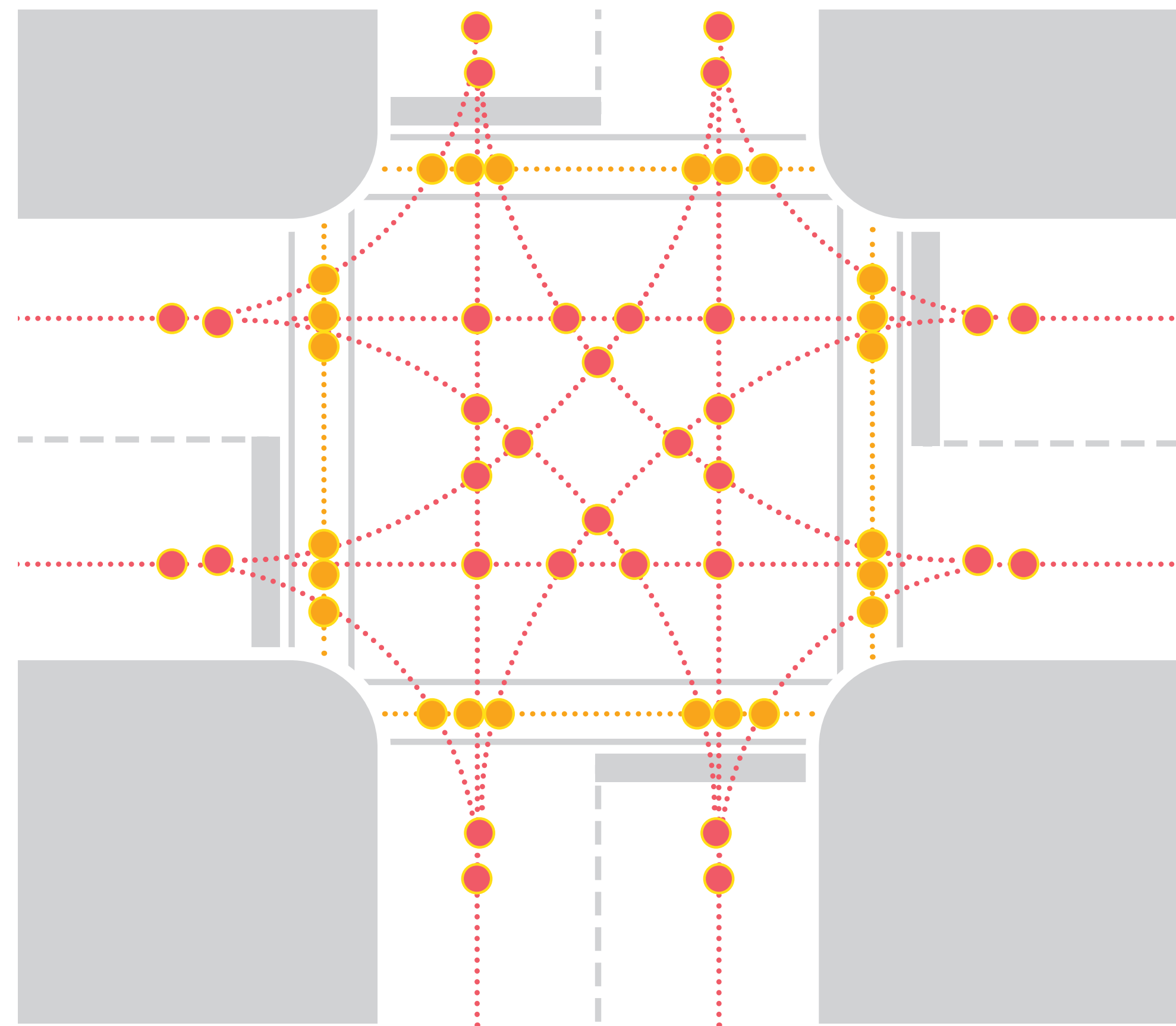


The center island is planted. This is the one item that varies from FHWA guidance (which recommends a fully traversable median). This change was made based on community input and does not change the operation of the mini-roundabout.

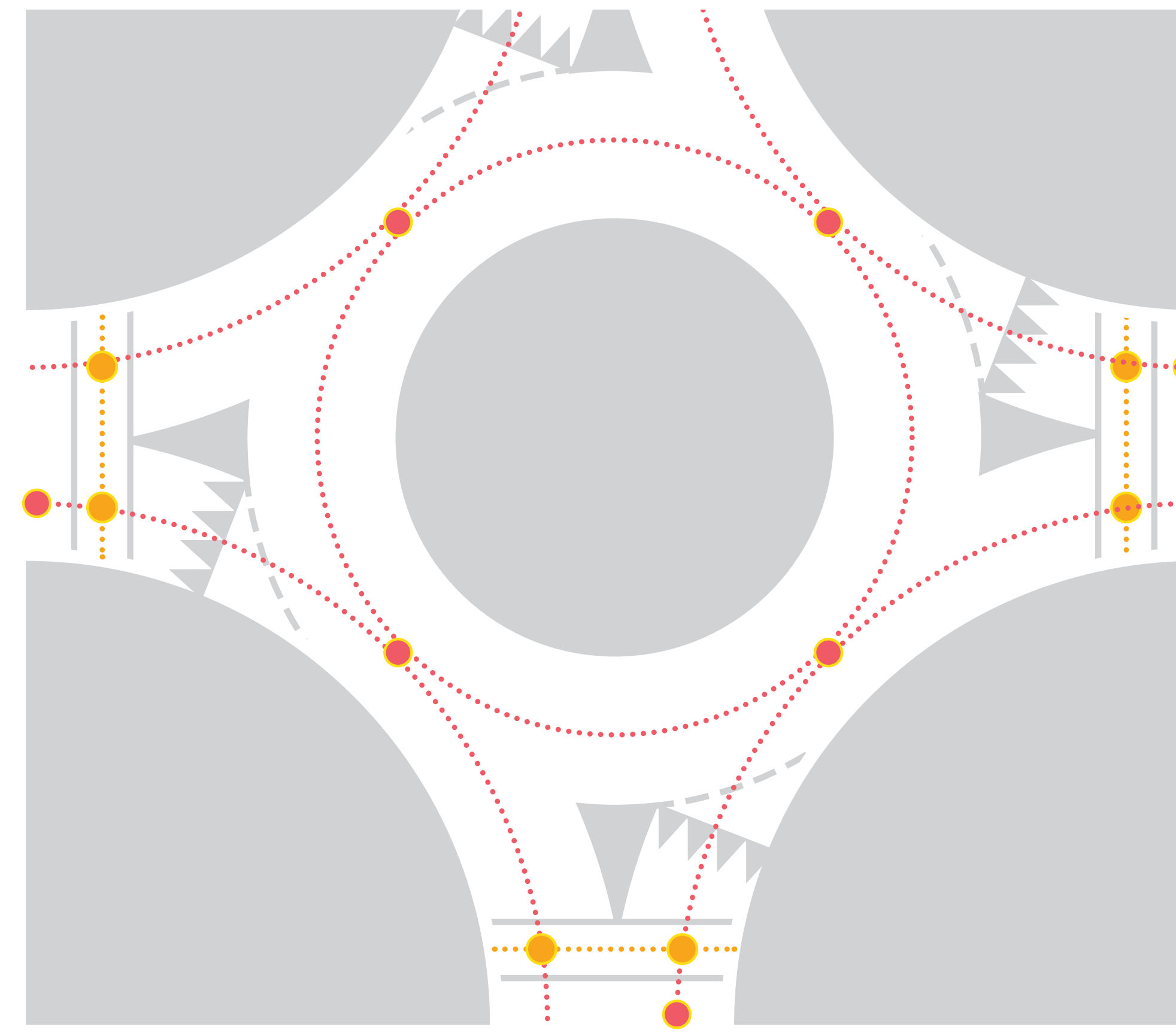
# Roundabouts and Safety

## Neighborhood Traffic Safety and Bicycle Boulevards

### INTERSECTION CONFLICT POINTS



**Four Way Stop**



**Roundabout**



### EMERGENCY ACCESS

The Fire Department was part of the design process, and we have tested our apparatus on the completed roundabouts and traffic calming devices. The community is being served well, and we continue to exceed our emergency response performance target of 8 minutes or less 90 percent of the time.

- CITY OF PALO ALTO

# Sharing the Road

## Neighborhood Traffic Safety and Bicycle Boulevards

**Be Visible to Cross Traffic**

Drivers have limited sight lines at intersections. Biking near the curb can take you out of drivers site lines.

Riding in the lane also makes you more visible to drivers turning across traffic who may not look to the side.

**Door Zone**

The 4 feet adjacent to a parked car where an opening door can hit and seriously injure a cyclist.

**12-27% OF COLLISIONS**

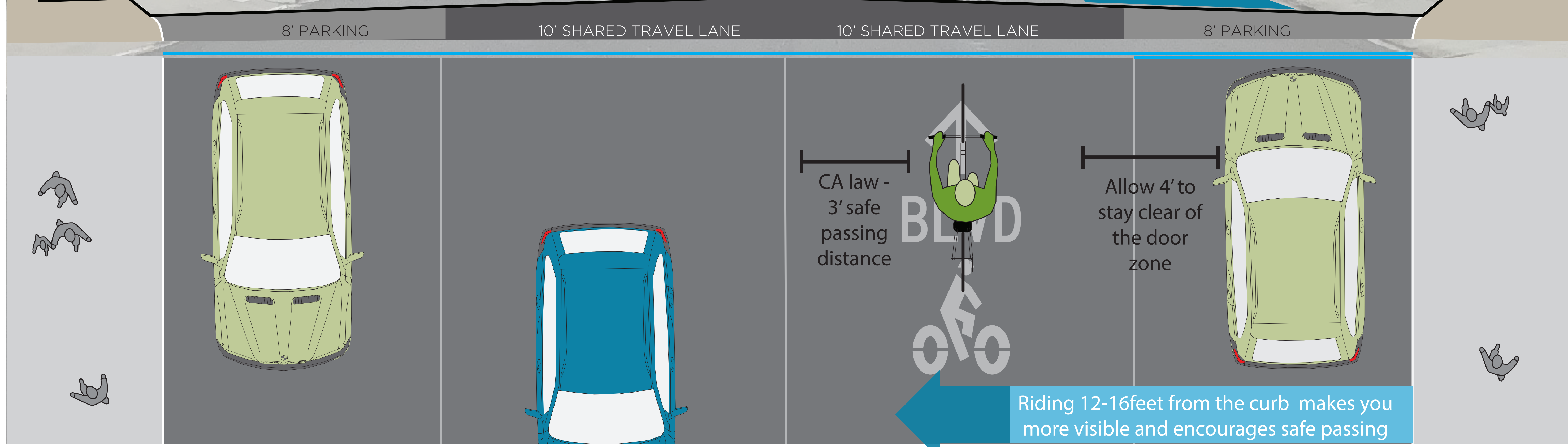
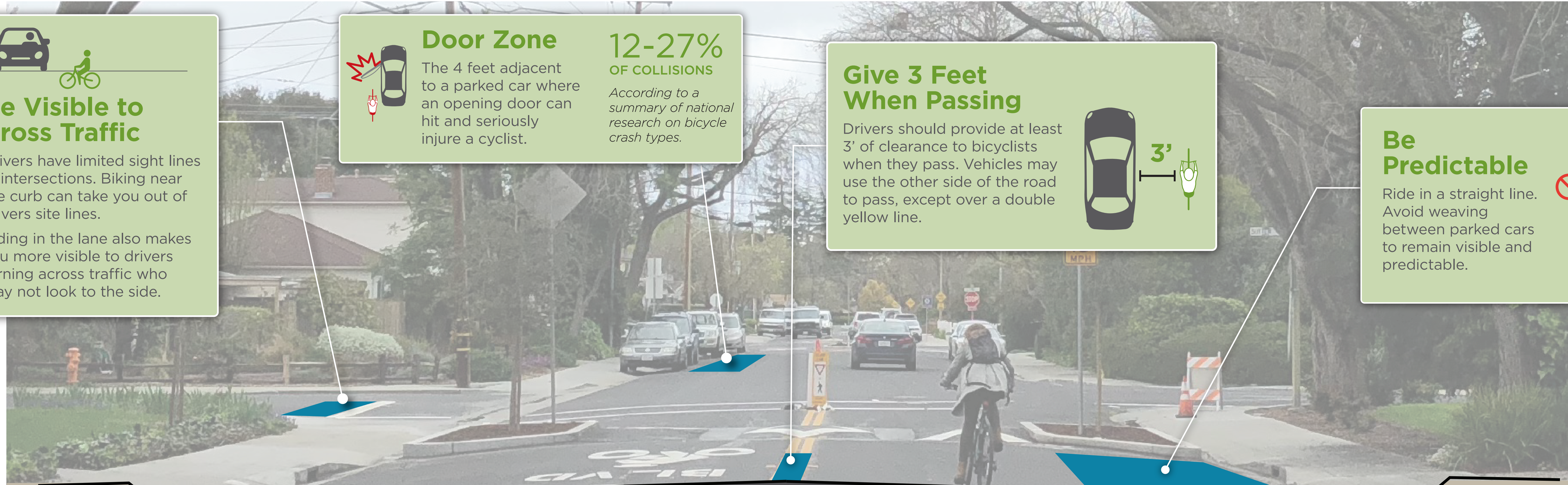
*According to a summary of national research on bicycle crash types.*

**Give 3 Feet When Passing**

Drivers should provide at least 3' of clearance to bicyclists when they pass. Vehicles may use the other side of the road to pass, except over a double yellow line.

**Be Predictable**

Ride in a straight line. Avoid weaving between parked cars to remain visible and predictable.




# Ross Road: Speed, Volume & Safety Data

## Neighborhood Traffic Safety and Bicycle Boulevards

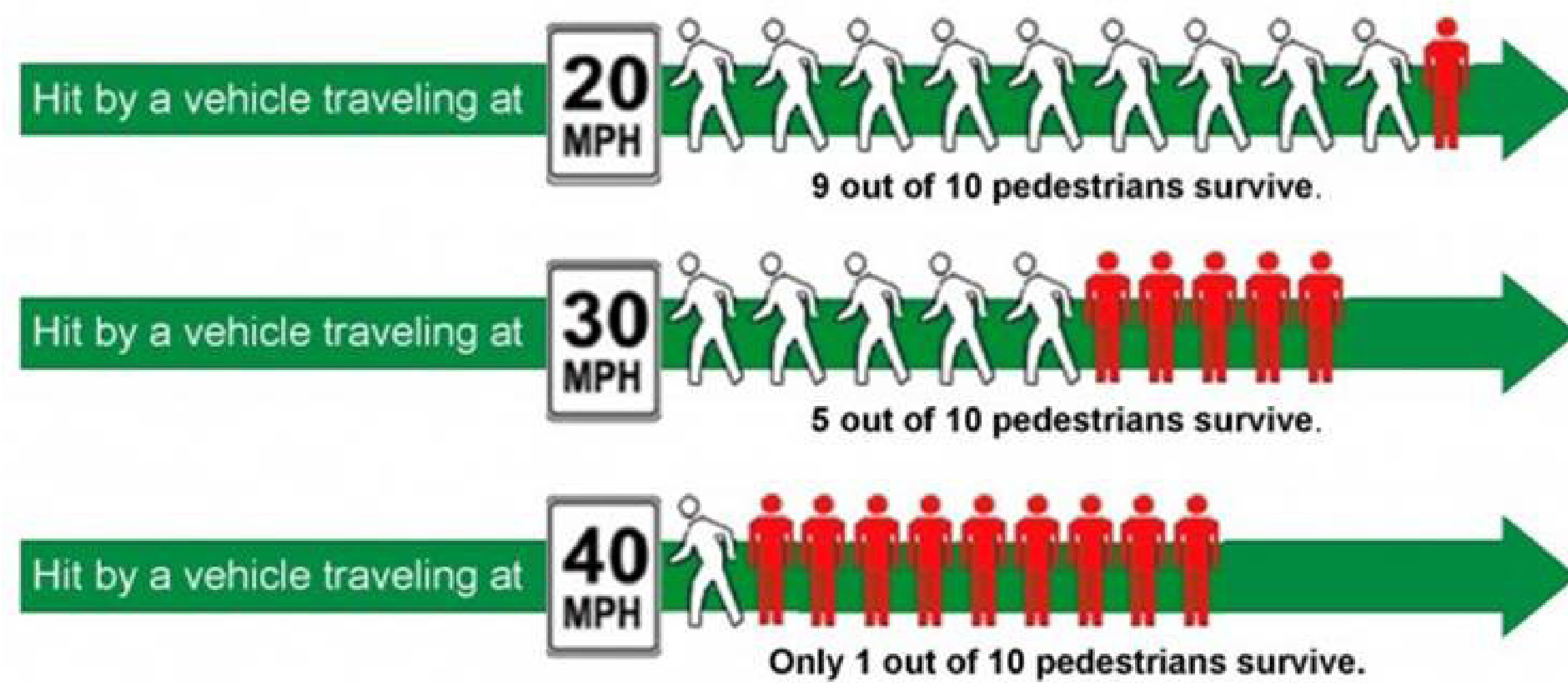
### SPEED & VOLUME DATA

SEGMENT	85TH PERCENTILE SPEED (MPH)	AVERAGE DAILY VEHICLES	AVERAGE DAILY BICYCLISTS
Amarillo (Tanland - Greer)	30.2	1,261	82
Amarillo (Greer - Louis)	27.7	1,412	73
Moreno (Rosewood - Middlefield)	22.6	1,179	30
Greer (N Tulip - S Tulip)	32.2	1,832	86
Greer (Colorado - Maddux)	24.6	2,733	128
Greer (Maddux - Morris)	32.7	535	122
Greer (Janice - Thomas)	29.5	606	18
Ross (Clara - Wintergreen)	25.5	2,063	121
Ross (Ames - Stone)	28.2	2,703	116

- Existing conditions are optimal for Bike Boulevard
- Conditions appropriate for Bike Boulevard with enhanced features
- Existing conditions are not optimal for Bike Boulevard



Bicycle boulevards are appropriate when actual speeds are less than **30 MPH** and there are fewer than **3,000 vehicle trips** on an average day



### SAFETY DATA

**12** ROSS ROAD AUTOMOBILE COLLISIONS  
 from January 1, 2011 to December 31, 2016

INTERSECTION	REPORTED COLLISIONS	# WITH INJURIES	BIKE RELATED	PED RELATED
East Meadow Road	4	2	0	0
Moreno Avenue	2	0	0	0
Other Locations	3	2	2	0
Oregon Expressway	3	2	0	0
<b>Total</b>	<b>12</b>	<b>6</b>	<b>2</b>	<b>0</b>

3 of 4 collisions were broadside (or "T") collisions

1 bike collision was from changing lanes, 1 was with a parked vehicle

## Attachment B

### Further Details on Project Work to Be Completed and Project Work to Be Deferred:

- A. Modifications/Adaptations to Already Installed Road Treatments:
1. **YMCA Driveways:** Rebuild the YMCA driveways on Ross Road to be rounded curb-return style, instead of current apron style. This will make it easier for motorists to turn in and out of the driveway, while preserving the curb extensions, which enhances safety and includes green stormwater infrastructure.
- B. Finish Work Already Started:
1. **Louis Road Enhanced Intersections:** Complete the installation of stamped asphalt, koi fish artwork, and decorative steel bollards along Louis Road at Moreno Avenue and Amarillo Avenue/Fielding Drive. This work is nearly complete and will improve safety for pedestrians and bicyclists traveling along the Amarillo-Moreno Bicycle Boulevard to and from Ohlone Elementary School, Greer Park, and the Midtown Shopping Center.
- C. Remaining Contractual Work to Be Completed:
1. **Bryant Street Signing and Marking:** Install bicycle boulevard branding and wayfinding signs, BIKE BLVD stencils, and marked crosswalks along Bryant Street between Menlo Park and East Meadow Drive. These are relatively low-impact features that assist bicyclists with positioning and navigation and notify motorists that they are travelling along a bicycle boulevard. The branding signs will also be standardized to read "Ellen Fletcher Bryant Street Bicycle Boulevard." Currently, the signage is inconsistent and irregular. Installation of the wayfinding signs will also allow the City to install the "Peninsula Bikeway" sign toppers consistent with other cities. The "Peninsula Bikeway," a portion of which follows the Ellen Fletcher Bryant Street Bicycle Boulevard, is a cooperative effort of Redwood City, Menlo Park, Palo Alto, Mountain View, and Stanford University.
  2. **Amarillo Avenue Shared-use Path and Crosswalks:** Pending direct outreach to the abutting residents, implement a revised plan to install select project elements during the month of August (note: the elements do not include new roundabouts or planted curb extensions). The select project elements include a) shared-use path along the south side of Amarillo Avenue between the new Louis Road enhanced intersections and Ohlone Elementary School bicycle cage and internal sidewalk network; and b) high-visibility crosswalks connecting the north side of Amarillo Avenue to Greer Park at the two Tanland Drive intersections. The shared-use path will provide students with a safe, protected route to walk and bicycle from Louis Road directly to the sidewalk leading to the school building and the school bicycle parking, which helps during congested arrival and dismissal periods. The high-visibility crosswalks will provide a connection from the north side of Amarillo Avenue to Greer Park. This increases pedestrian safety to the park.
  3. **Louis Road Bicycle Lane Improvements:** Pending direct outreach to the abutting residents and a community meeting, convert existing substandard bicycle lanes along Louis Road between East Charleston Road and Ross Road to standard bicycle lanes (e.g., at least six-feet-wide adjacent to on-street parking and at least four-feet-wide adjacent to curb). The bicycle lane on the south side is currently part-time, with overnight parking permitted between 7:00pm and 7:00am. This bicycle lane will be converted to a full-time bicycle lane, which will require the removal of overnight

parking, which has very low utilization. A similar bicycle lane reconfiguration was completed along North California Avenue between High Street and Middlefield Road in 2016 and opposition was very limited. The Louis Road approach to East Charleston Road will be restriped to work in conjunction with intersection improvements included in the Charleston-Arastradero Corridor Project, which is currently under construction.

4. **Montrose Avenue Signing and Marking:** Pending direct outreach to the abutting residents and a community meeting, install bicycle boulevard wayfinding signs, BIKE BLVD stencils, and marked crosswalks along Montrose Avenue between Middlefield Road and East Charleston Road. These are relatively low-impact features that assist bicyclists with positioning and navigation and notify motorists that they are travelling along a bicycle boulevard. High-visibility crosswalks and bicycle lane approaches will be added to the Middlefield Road intersection, which is a high-collision location as state in the most recent *2017 Traffic Safety and Operations Report*. The approach to East Charleston Road will be restriped to work in conjunction with intersection improvements included in the Charleston-Arastradero Corridor Project, which is currently under construction.

D. Project Work to Be Deferred:

1. **Curb Extensions:**

- Amarillo Avenue at Ohlone Elementary School (2)
- Amarillo Avenue at Tanland Drive west
- Amarillo Avenue at Tanland Drive east
- Bryant Street at Everett Avenue

2. **Raised Intersections:**

- Bryant Street at Homer Avenue
- Bryant Street at Channing Avenue

3. **Roundabouts:**

- Amarillo Avenue at Greer Road
- Bryant Street at Palo Alto Avenue
- Bryant Street at Addison Avenue (rebuild)
- Bryant Street at Kingsley Avenue
- Bryant Street at North California Avenue
- Bryant Street at Campesino Avenue
- Louis Road at Ross Road
- Louis Road at East Meadow Drive
- East Meadow Drive at East Meadow Circle

4. **Speed Humps:**

- Amarillo Avenue between Greer Road and Tanland Drive
- Bryant Street between El Verano Avenue and East Meadow Drive (2)

5. **Other Elements to be Deferred:**

- Median and chicanes on Amarillo Avenue at West Bayshore Road
- Medians on Lowell Avenue at Bryant Street
- Enhancements on Bryant Street at Matadero Creek Bridge
- Medians on El Verano Avenue at Bryant Street