

FREQUENTLY ASKED QUESTIONS

Charleston/Arastradero Corridor Project – Phase 3



Q: *What are the goals of this project?*

A: The project goals and benefits include:

- Enhance school commute safety for students and improve the quality of the bicycle and pedestrian experience through new design features such as bulb-outs, widened sidewalks, additional high-visibility crosswalks, modifications to intersection geometry, and enhanced bike lanes and facilities.
- Reduce the amount of very high-speed vehicles by incorporating the above-mentioned improvements that serve to enhance roadway safety and operational issues.
- Enhance streetscape and quality of life in the corridor for residents and surrounding community by incorporating landscaped medians, street trees and other streetscape improvements.

Other key aspect of the project is the resurfacing of Charleston-Arastradero from Los Palos Avenue to Alma Street and Middlefield Road to San Antonio Road a continuous dedicated bike lane along the corridor including at the crossing of El Camino Real, and the modification of curb ramps to be ADA (Americans with Disabilities Act) compliant to facilitate the flow of traffic.

Q: *How will these changes make our streets safer?*

A: Project features are designed to moderate speeds, improve sightlines, and make the route less desirable to cut through traffic. Signage and roadway markings alert motorists that the street is home to other modes of transportation. Certain street markings and features create protective buffers between cyclists and motorists.

There is a great deal of research on the effects of traffic calming, especially pertaining to vehicle speeds and survivability in a collision. The Federal Highway Administration (FHWA) also has a useful [Traffic Calming e-primer](#) that includes data on before and after studies of specific traffic calming elements, many of which are included in this project.

[Curb extensions](#) and bulb-outs are examples of “horizontal deflection” and improving sightlines of crossing pedestrians while at the same time reducing vehicle speeds. These bulb-outs also reduce the distance pedestrians are crossing traffic, thus decreasing pedestrian exposure risk and increasing safety. The bulb-outs at intersections also feature a smaller [curb corner radius](#) which expands the pedestrian area, allowing for better pedestrian ramp alignment. When making a turn, a car's speed is indirectly proportional to the corner radius, or in other words, there is a reduction in speed when the corner radius decreases.

[Median refuge islands](#) will be installed at the intersections of Charleston Road with Sutherland Drive and Montrose Avenue, and at the intersections of Arastradero Road with Clemo Avenue. Median refuge islands allow pedestrians and bicyclists to be protected when crossing a larger street and waiting for a gap in vehicle traffic. This also decreases the amount of delay that a bicyclist will experience when crossing a street. These elements will also include new signage, landscaping, trees and green stormwater infrastructure.

Non-safety related project features include signage, new landscaping, and new street trees.

All the traffic calming in this project have been built and tested in communities across the nation. None of the project features are untested and most are already in use in Palo Alto.

Q: *What are some examples of the new features that will be installed, and where can I see one already installed?*

A: Curb extensions and bulb-outs at intersections extend the concrete sidewalk into the current roadway and allow for compliant ADA curb ramps. These features can be seen scattered throughout Palo Alto.



Intersection of E Meadow Drive and Cowper Street showing directional curb ramps



Intersection of University Avenue and Emerson Street

Examples of **median refuge islands** can be found throughout Palo Alto as well as on the Stanford Campus.



Median refuge island at Stanford Avenue and El Camino Real



Median refuge island on Stanford Campus

Q. *Did the City conduct a public outreach process for this project?*

A: The City has conducted a lengthy public community engagement process for this project, and has made a concerted effort to engage community members in the concept planning process and prior to construction. City staff has provided plans and project updates continuously via the City website. The City held community meetings in 2014 and 2015 and provided plans and project updates continuously via the City website. Staff has presented on the project at regularly scheduled public City meetings of the Pedestrian and Bicycle Advisory Committee, Planning and Transportation Commissions, and City Council.

City staff collaborated with local Palo Alto schools and parents, residents, Palo Alto Fire Department, and future developments along the corridor. Designs underwent rigorous review and several iterations based on community feedback before the concept plan line was adopted by City Council in September 2015.

Despite the City's best efforts, we understand that sometimes residents do not hear about our projects until construction is underway. Many have felt that the public outreach did not reach all constituents, and, as a result, the City will be retooling its public outreach strategy in future planning efforts. We sincerely apologize if you were caught off guard by the project's construction. The City will be having a project dedicated Community Relations Manager when in

construction. Until then, the project webpage features a project area map, construction schedule, flyers and regular updates:

Q. *What will the impacts be during construction?*

A. During construction, barricades and cones are often used for the safety of construction crews, temporarily narrowing the roadway and making navigation of the street challenging. Please drive slowly during this time for your safety, the safety of construction workers, and for the safety of cyclists and pedestrians. Many schoolchildren and commuters use Arastradero Road and Charleston Road as a route to school, and we ask for your patience for their safety. One lane in each direction will remain open during construction. No temporary or permanent street closures or diversions are planned as part of this project. Paving work on Arastradero Road and Charleston Road is specified to be done on Saturdays only, and notification will be mailed out and posted along the corridor.

Q: *What's the construction timeline? How many phases of construction are there?*

A. The Charleston-Arastradero Corridor Project is split into three phases due to funding availability. Phase One (Arastradero Road from Foothill Expressway to Clemo Avenue) and Phase Two (East Charleston Road from Alma Street to Middlefield Road) both completed construction in November 2020.

Phase Three: Sections of Arastradero Road between Los Palos Avenue to El Camino Real, West Charleston Road from El Camino Real to Alma Street, and East Charleston Road from Middlefield Road to San Antonio Road is anticipated to start construction Spring 2021 and run for about 9 to 10 months.

Q: *During construction, will roads be closed to traffic?*

A: One lane in each direction will be open to traffic during construction.

Q: *What are the hours of the construction? How much noise can we expect, particularly on weekends?*

A: On weekdays, construction crews will begin working at 9 AM and finish at 4 PM, although these hours may vary slightly depending on the specific work required. When Saturday work is planned for, work hours will be from 9 AM to 5 PM, unless otherwise noted by the engineer. Residents will receive notification prior to construction.

Construction crews are required to comply with the City's noise level regulations. No individual piece of equipment will exceed 110 DbA, measured 25 feet from such equipment.

Q: *Will I receive notice of any construction occurring in front of my home?*

A: Yes. Seven-day and 24-hour notice door hangers will be distributed to residents and businesses for driveway closures and paving work. Temporary street parking restriction signs will be posted 72-hours in advance.

Q: *Will transit routes be detoured?*

A: VTA bus lines and stop locations will be temporarily rerouted and relocated at the discretion of each operator. Palo Alto Shuttle temporary detours and stop relocations will be overseen by the City of Palo Alto.

Q: *How much is this project going to cost me?*

A: The project is locally funded through Capital Improvement Project PE-13011.

Q: *Will I always have access to my driveway?*

A: Residents will have access to their driveways for most of the construction project. There also may be short periods during the day where a resident may not have access to his/her driveway due to roadway construction. If a driveway to a garage or parking area must be closed for work to occur, a notice will be provided stating the approximate time of the work and when the area will reopen. No driveway will be closed overnight.

Q: *How will garbage service be affected?*

A: Trash pickup in the neighborhood will take place on the same day it currently occurs. The contractor will provide access to the neighborhood to garbage trucks for pickup or coordinate with the disposal service providers during the occasional exception throughout the project to minimize inconvenience to the residents.

Q: *I recently saw pink and white markings at the entrance of my street. What do they represent?*

A: The pink and white markings represent the new curb face for selected streetscape improvements that are part of the project. Pink markings were used in areas that would conflict with existing markings which could be confusing for drivers. White paint was used for areas that were not in conflict with existing markings. There is no new striping showing new bike or travel lanes on the street. The striping changes can be viewed on the [Final Project Plans and Cut Sections](#).

Q: *Where did my bike lane go in some areas? I don't see a bike lane, or it seems very minimal with the widened sidewalks.*

A: The final striping for the project will include a continuous dedicated 5 to 6-foot bike lane along the length of the corridor. Depending on the section of the corridor, bike lanes are separated from vehicular traffic by a striped buffer zone, a parking lane, or green pavement marking. There may seem like there is currently no bike lane because it has not been striped with the temporary markings.

Q: *What is a bulb-out and how does it affect drivers and pedestrians?*

A: Bulb-outs or curb extensions serve the following purposes:

- **Drivers:** Curb extensions provide a means to moderate vehicle speeds on the corridor when cars are turning in and out of side streets. Depending on the design of a bulb-out, they can protect drivers when waiting to turn onto the corridor. Bulb-outs used at the end of on-street parking help drivers turning onto the corridor by preventing vehicles from parking in the driver's line of sight.

Similarly, when the bulb-out is on a side street and a car is turning right from the corridor into a side street, the bulb-out protects parked cars from getting hit by cars turning around the corner.

- **Pedestrians:** A curb extension creates a shorter crossing distance resulting in less time being exposed to vehicular traffic. A larger concrete area also provides a larger refuge space for pedestrians to wait at prior to crossing or the mingling to pedestrians and possible bicyclists waiting to cross at a crosswalk. A larger area also provides additional space for directional ADA compliant ramps to be installed that lead pedestrians directly to the crosswalk and not into the intersection or vehicular right of way. Furthermore, drivers can better identify crossing pedestrians because bulb-out force drivers to slow down and the protruding curbs make pedestrians more visible.
- **Bicyclists:** On side streets, bulb-outs force bicycles into the center of the lane, which eliminates vehicles cutting into their path when drivers are making right turns onto the main corridor. Additionally, bulb-outs lower the speed of vehicles entering the bicycle lane to make right turns onto side streets. Slower speeds allow motorists and bicyclists to safely navigate the conflict zone.

Q: *I am a bicyclist and I'm afraid that I will be clipped by drivers when we are both turning onto the side street. How is this safer?*

A: Furthermore, curb extensions protect bicyclists by keeping them in the line of sight of drivers. Without curb extensions, there is a possibility of a bicyclists being stuck between the vehicle and the curb ramp, which is highly dangerous. According to the right of way rules, cars need to yield to bicyclists when turning in and out of side streets.

Q: *The bulb-outs make the openings to the side streets too narrow. How will I be able to turn onto these side streets if there is a vehicle already waiting there?*

A: Every side street will have an opening at least 25-feet wide with many of the streets having much wider openings. A standard travel lane (including those on Arastradero and Charleston) is 10 to 12-feet meaning that every side street will have a minimum of two 12-foot lanes. Vehicles in California are limited to 8.5-feet in width with most passenger vehicles being in the 6 to 7-foot range. This will allow plenty of space for two vehicles to pass freely.

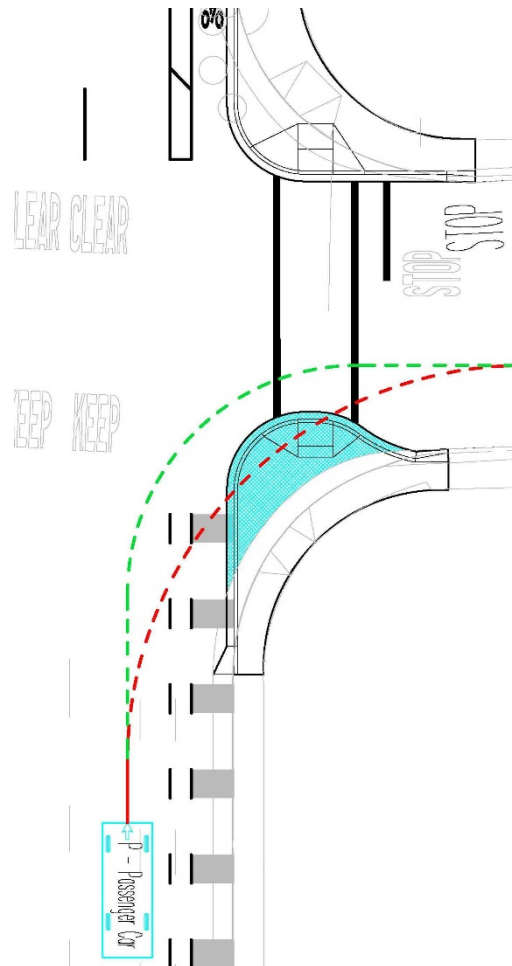
Q: *I must slow down significantly when making right turns off Arastradero and Charleston with the bulb-outs. I am worried I may be hit by the vehicle following me.*

A: The bulb-outs are designed to slow vehicle traffic making right turns off the corridor. The many benefits of bulb-outs are listed in the questions above. Furthermore, the Charleston-Arastradero Corridor is classified as a residential-arterial with a posted speed limit of 25 mph. Many of the changes along the corridor, including the bulb-outs, are designed to lower vehicle speeds and create a safer street for bicycles, pedestrians and motorists. Slower speeds will make it safer for trailing motorist to slow down and allow you to make your turn. This will also increase the safety of motorist turning into driveways along to corridor as they must slow to even lower speeds to complete their turns.

Q: *The markings of the bulb-outs are protruding into my turning path. Will I still be able to make right turns after the bulb-outs are constructed?*

A: Yes. The bulb-outs will force drivers to delay the start of their turn until they are closer to the intersection and to make a tighter, slower turn. The diagram below shows the typical paths of a vehicle making a right turn around a bulb out. The red line shows the vehicle path without a bulb-out. The green line shows the vehicle pulling up further to make a tighter turn around the bulb-out (bulb-out colored blue).

Many of the bulb-outs will have a radius of 15-feet which is consistent with what was constructed during Phase 1 and Phase 2 as a compromise between resident concerns and the safety goals of the project. Additionally, the City will be including additional striping of a dividing line at side streets to aid drivers. Many of the dividing lines will not be aligned with the centerline of the street but shifted to create a larger receiving lane for those turning right.



Q: *I never see any pedestrians on Charleston/Arastradero. Why are we spending money on pedestrian upgrades?*

A: Charleston and Arastradero may not be full of people like University Avenue, but there is significant pedestrian traffic along the corridor. During the planning and design phase, pedestrian counts were conducted to confirm the usages for pedestrian facilities. Furthermore, many of the pedestrians using these roads are children and teenagers who attend one of the 11 schools along the corridor. It is city policy to make safety the priority of citywide transportation planning and this project will greatly improve pedestrian safety without significantly impacting vehicle traffic. To learn more about the data used to design this project, check out the staff reports under the Project Documents header on the Charleston/Arastradero Corridor Project page.

Q: *How do I find out more information, contact the project team, or receive updates?*

A: For the most up to date information on the project, please visit our website; [CAC Corridor Project](#). To contact us, please email us at pwecips@cityofpaloalto.org.