

Transition at Arroyo Parkway

Slide 1: Intro

Our final presentation on the Union Street Protected Bikeway Project is on the transition at the west end of the Union Street corridor, at Arroyo Parkway.

Slide 2: Background

For a quick refresher, the Union Street Protected Bikeway Project is a two-way protected bike lane project that runs along East Union Street from South Arroyo Parkway to North Hill Avenue. The design process is in its final stages and construction is anticipated to be complete by spring 2022. More information on the project as a whole can be found in the first video of this series. This video will discuss how the bikeway transitions at its western terminus at Arroyo Parkway.

Slide 3: Project Transition at Arroyo

Union Street is one-way westbound for motor vehicles. With the construction of this project, there will also be a two-way protected bike lane along the south side of the corridor.

As the project transitions at Arroyo Parkway, the dedicated space for bicycles ends. Bicycles continuing along Union Street or turning onto Arroyo will need to move into the general travel lanes. West of Arroyo Pkwy, these general travel lanes will be shared with motor vehicles and bicycles.

Slide 4: Transition at Arroyo

All signalized intersections throughout the Union Street Protected Bikeway Corridor will have new dedicated bicycle signals except for this transition at the end of the bikeway at Arroyo Parkway. At Arroyo, westbound bicyclists will follow the pedestrian signal on the north east corner of the intersection as shown in the images to enter a bicycle box and continue in a shared travel lane with vehicles.

The image on the left shows a pedestrian signal with red hand illuminated indicating a red “DO NOT WALK”. If bicyclists approach the intersection on this signal or a flashing version of the red “DO NOT WALK” hand, they will need to come to a stop.

The image on the right shows the illuminated “WALK” signal on the pedestrian signal. If a bicyclist approaches the intersection while this pedestrian walk signal is illuminated, they may proceed into the bike box, which I will show you on the next slide.

Slide 5: Bike Box at Arroyo

Here’s an image of how the bike box at Arroyo Parkway will look from above.

At the end of the Union Street protected bikeway corridor, there is a green bike box with two bicycle symbols. This box is positioned in advance of the vehicle stop bar or limit line and has enough space for

a bicyclist to turn and position themselves to align with westbound Union Street vehicles. This bicycle box area is a designated space for bicyclists to wait and enter the shared travel lane as they leave the protected bicycle lane and proceed through the intersection.

One of the benefits of this bike box is that it puts bicyclists out in front of motor vehicles, making them more visible to drivers.

Slide 6: How it Works

In the next few slides, I'm going to explain how this intersection works for bicyclists, and where motor vehicles need to stop. Pedestrians will follow the pedestrian signals as they do at all other intersections throughout the City of Pasadena – by following the red "DO NOT WALK" or the white "WALK" signal.

The image on the screen as well as the rest of this presentation is a graphic of the intersection of Arroyo Parkway and Union Street from above. We will be using several different colors of arrows and lines to show you an example of how motor vehicles, pedestrians, and bicycles move through the intersection, as well as when they will need to wait or stop and who needs to be yielding.

Here you'll see a couple of different traffic signals and arrows. The orange arrows shown here represent the pedestrian movement. When the light turns green for westbound union street, pedestrians shown in orange can start moving through the intersection.

Slide 7: How it Works

At the same time as the pedestrians can move across the intersection, motor vehicles have the green signal. The motor vehicle movement is shown in purple.

Slide 8: How it Works

Both the through movement and the turning movement of motor vehicles traveling westbound on Union Street have the green signal; however, turning vehicles will still need to yield to pedestrians as they would be at any signalized intersection that does not specifically have a green left- or right-turn arrow.

Slide 9: How it Works

While the signal is still green for westbound Union Street, you'll see a blue arrow representing a bicyclist moving followed by a lighter blue line with a dash on the end indicating a bicyclist stopping and waiting behind the stop line and within the protected islands. This first step is located near the blue circle with the number one in it.

When bicyclist approaches the end of the Union Street Protected Bikeway corridor while the westbound Union Street traffic has a green signal, the pedestrian signal shows a red "DO NOT WALK" for

pedestrians trying to cross the east leg of Union Street. This pedestrian signal also applies to the bicyclists at this location. There's a bicycle stop bar indicating to bicycles where they need to stop prior to entering the intersection, much like how a pedestrian would stop before a crosswalk when cars are traveling past them.

Slide 10: How it Works

This next slide shows the westbound traffic signal for Union Street turning yellow, and motor vehicles completing their movement.

At this point, the pedestrian red "DO NOT WALK" red hand is still illuminated as the cross street will soon have a green signal. Bicyclists approaching the end of the Union Street Protected Bikeway corridor will still see a red "DO NOT WALK" and will need to stop and cannot yet proceed into the bike box or intersection.

Slide 11: How it Works

Then, the traffic signal for westbound Union Street turns red. Seconds later, the traffic signal for the cross street, Arroyo Parkway turns green. At the same time, the pedestrian signal illuminates the white "WALK" symbol allowing pedestrians to cross Union Street.

As vehicles and pedestrians cross Union Street on Arroyo Parkway, bicycles who have been queued and waiting at the bicycle stop bar are able to proceed across Union into the bike box.

When entering the bike box, the bicyclist will then turn and face west. Once bicyclists are in the bike box they are positioned in the shared vehicular travel lane and are operating as part of Vehicle traffic.

On your bike, as you would in a car, if you would like to make a left-hand turn it's recommended that you stay closer to the left side of that bike box and align yourself with that left-through lane of motor vehicle traffic. If you would like to stay straight or turn right on Arroyo Parkway moving farther to the right in that bike box is going to be a better option.

For vehicles approaching the intersection, it's important to stop prior to the bike box. There will be a sign indicating the location of the stop bar. Encroachment on the bicycle box is considered running the red signal and could be potentially dangerous for bicyclists entering that dedicated space.

Note that right turns on red from Union to Arroyo will be prohibited.

Slide 12: How it Works

Next, the traffic signal on Arroyo Parkway turns yellow. Vehicles will complete their movements through the intersection. Bicycles are stopped waiting in the bike box for that green on Union. Any new bicyclist approaching the intersection at this point once the pedestrian signal is illuminated with a red "DO NOT WALK" should stop and wait behind the stop bar for the next signal cycle.

Slide 13: How it Works

Finally, the signal will turn green again for westbound Union Street, allowing vehicles, pedestrians and bicycles to start moving through the intersection.

Slide 14: How it Works

Since bicycles and motor vehicles are both controlled by the green signal, they may start moving together as a single traffic stream. Motor vehicles are starting just a couple of feet behind any bicyclist who had been waiting in that bike box. Both bicyclists and motor vehicles making turns onto Arroyo Parkway will need to yield to any pedestrians in the crosswalk, just like at any crosswalk across a signalized intersection.

The pedestrian signal adjacent to the bike box is showing a red “DO NOT WALK” at this part of the cycle, so any new bicyclists approaching the intersection at this point will need to wait behind the bicycle stop bar between the protected islands until the pedestrian walk signal shows an illuminated “WALK” signal on the next cycle.

Slide 15: Thank you

There are four other public information videos as part of the Union Street Protected Bikeway series that provide more details about each these design features:

1. **General overview**
2. **Parking and Passenger Loading Zone**
3. **Two-Stage Turn-Queue Boxes**
4. **Driveway Treatments**

Thank you so much for taking the time to watch this video.

For more information related to this project, watch the rest of the videos in the series, and check out the project website at saferstreets.cityofpasadena.net