

Pre-Design Study for the SR 20 at Discovery Road/Mill Road and SR 20 at Kearney Street Intersections

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WSDOT Olympic Region Multimodal Planning
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Agenda

Purpose: Informational

Background: Informational

Discovery/Mill Road Intersection: Discussion

Kearney Street Intersection: Discussion

Next Steps: Informational

Study Stakeholders

- City of Port Townsend
 - East Jefferson Fire Rescue
 - Jamestown S’Klallam Tribe
 - Jefferson County
 - Jefferson County Chamber of Commerce
 - Jefferson Transit
 - Lower Elwha Klallam Tribe
 - Port Gamble S’Klallam Tribe
- Port of Port Townsend
 - Port Townsend Paper Corporation
 - Port Townsend School District Transportation
 - WSDOT Headquarters & Olympic Region

Why are we here today?

The existing traffic signals are:

- Obsolete, suspended on span wire instead of the preferred mast arms
- Requiring frequent and extensive updates to keep them working

Stakeholder engagement:

- Work with community partners to identify any issues and concerns with the intersection alternative
- Develop an alternative that addresses community issues and concerns

Project Development Process

Project
Identification

Pre-Design

Design

Utility
Easement

Construction

Common considerations in selecting intersection type

- Safety
- Traffic delay
- Maintenance, operations, replacement
- Space needs
- Resiliency
- Cost

Why roundabouts?

- ✓ Improved safety
- ✓ Reduced traffic delay
- ✓ Reduced maintenance costs
- ✓ No replacement needed
- ✓ Works during power outages
- ✓ Cost competitive

Benefits

SAFETY Safety is improved by eliminating more severe crashes.

OPERATIONS Operation is improved with smooth-flowing traffic with less stop-and-go than a signalized intersection.

AESTHETICS Aesthetics are enhanced by the opportunity for more landscaping and less pavement.

Roundabouts save lives by reducing

Fatalities by **90%**

Injury crashes by **76%**

Pedestrian crashes by **30% to 40%**



Did You Know?

Roundabouts are designed to accommodate fire trucks and large vehicles.

Roundabouts are one-way, circular intersections designed to improve safety and efficiency for motorists, bicyclists and pedestrians.



Roundabouts help decrease fuel consumption and carbon emissions by reducing vehicle delay and the number and duration of stops, compared with signalized intersections.

Roundabouts Save Money

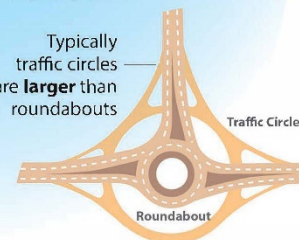


Eliminate the costs to install and repair signal equipment.

Reduce road electricity and maintenance costs by an average of \$5,000 per year.

Provide a long service life instead of a 10-yr. service life of signal equipment.

Typically traffic circles are **larger** than roundabouts



Traffic Circle

Roundabout

Compact roundabout

- Smaller than traditional roundabouts
- Used where space is limited
- Mountable central islands
- Operate the same as larger roundabouts



Shelton, WA



Cashmere, WA

What is different about compact roundabouts?

compact



Shelton, WA



SR 902 east of Spokane

- Mountable curbing
- Traversable central islands
- Shorter and traversable splitter Islands

standard



SR 20 at Thomas St



SR 20 at Thomas St

Where are the intersections?



SR 20 and Discovery Road/Mill Road Intersection



Westbound SR 20/Mill Road



Eastbound SR 20/Mill Road

SR 20 Discovery Road/Mill Road

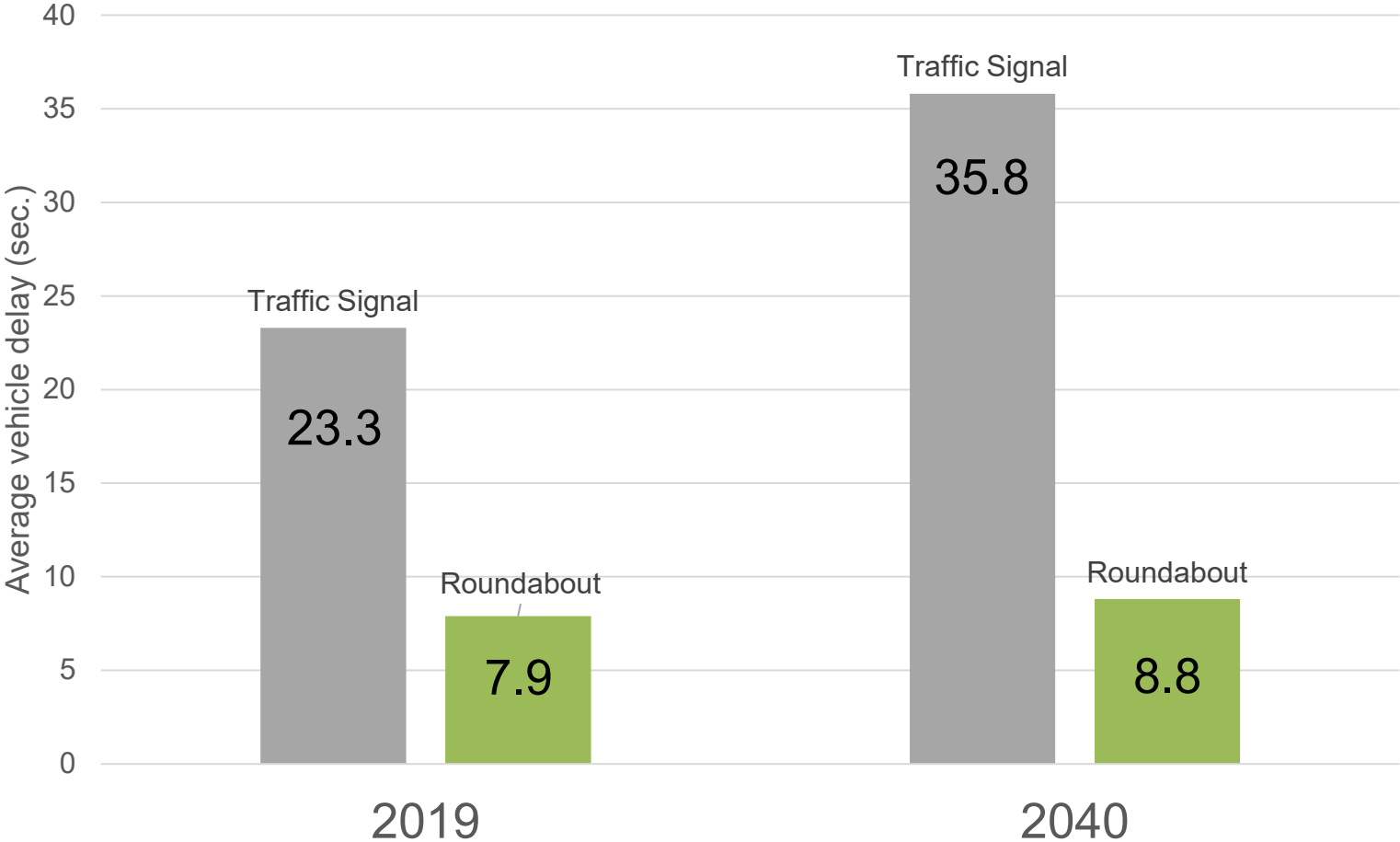
Existing Traffic and Safety Data

- Over 1,800 vehicles during peak hour
- 14 Crashes over 5-year period
 - 7 injury crashes
 - 3 crashes with bicyclists
- Averages over 20 seconds of vehicle delay during peak hour. Increasing to over 35 seconds by 2040

Under 23 U.S. Code § 409 and 23 U.S. Code § 148, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

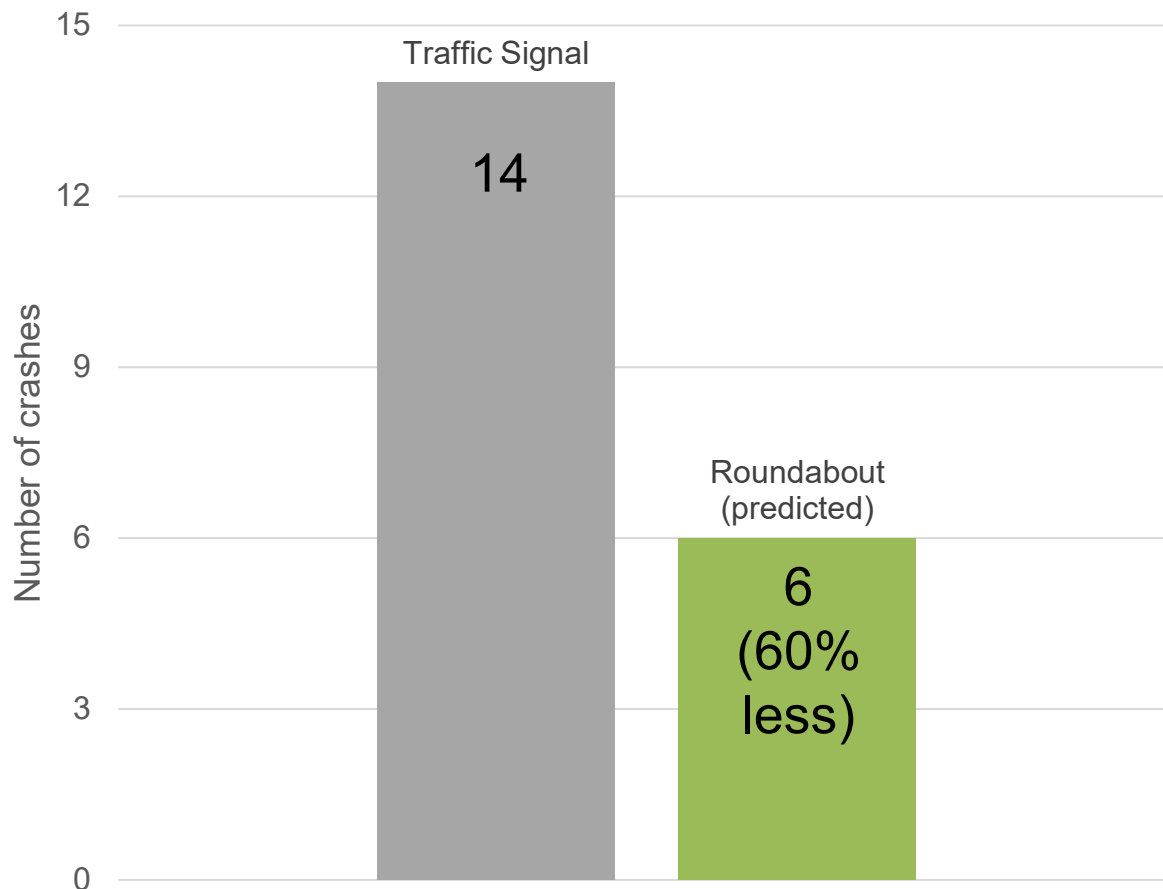
SR 20 Discovery Road/Mill Road Intersection Delay Comparison

Average peak hour vehicle delay



SR 20 Discovery Road/Mill Road

Safety performance comparison



Roundabouts save lives by reducing Deaths by **90%** Injury crashes by **76%** Pedestrian crashes by **30%** to **40%**

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Design Considerations

Port Townsend Paper Mill



Kraft Linerboard maximum roll weight of 8,000 pounds



Hopper style truck hauling wood chips to the Mill

- fruit boxes
- pizza boxes
- paper bags
- cardboard displays
- fiber cement siding
- Mailing envelopes
- dozens of other products

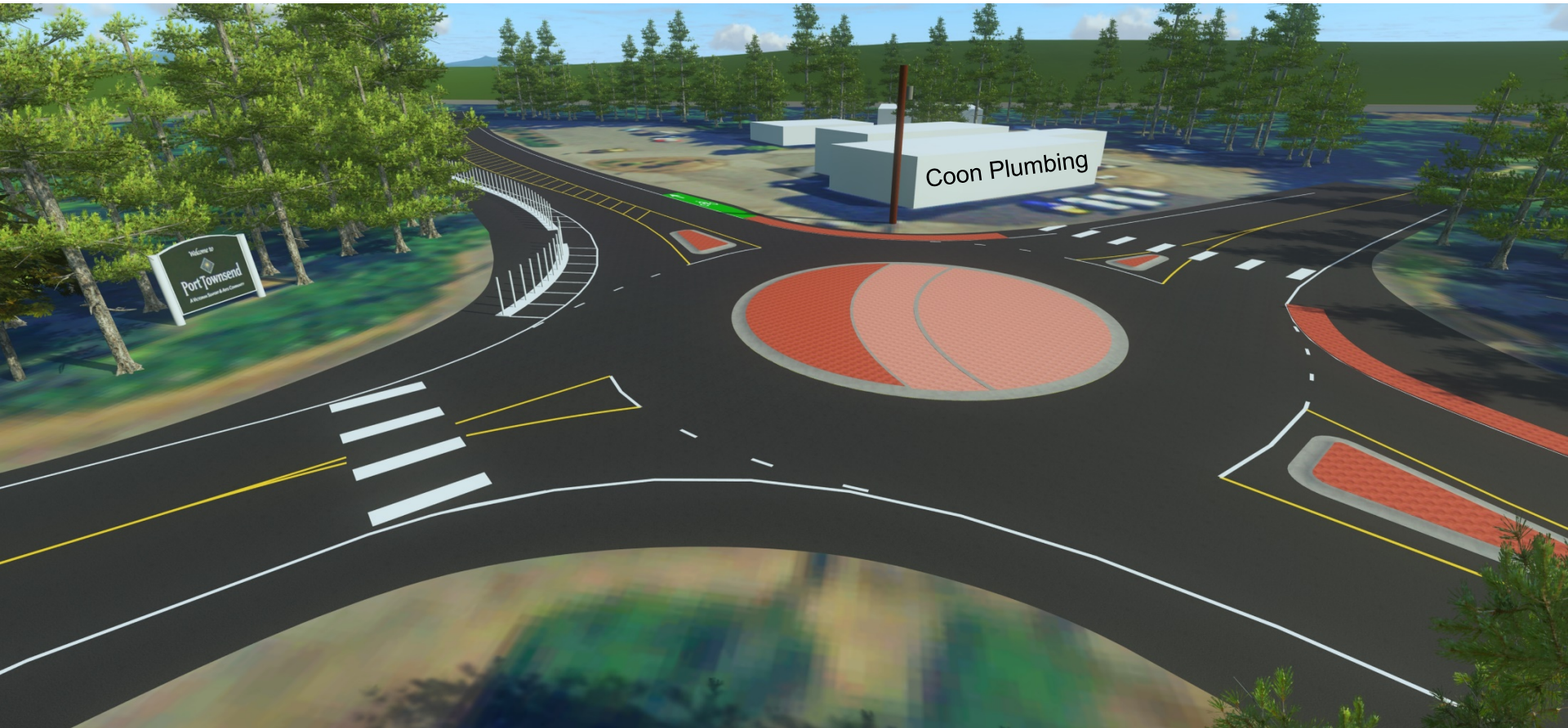
SR 20 Discovery Road/Mill Road

Conceptual Compact Roundabout



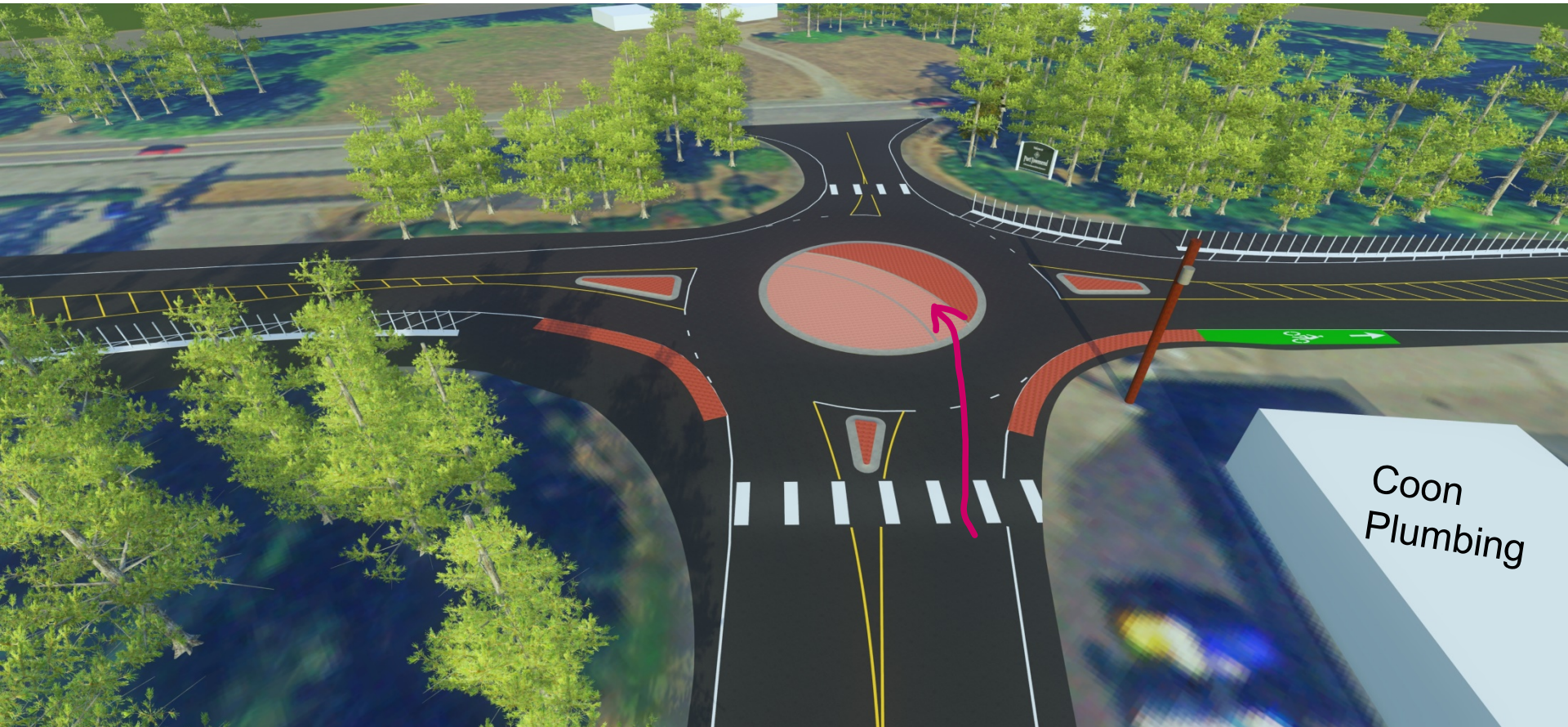
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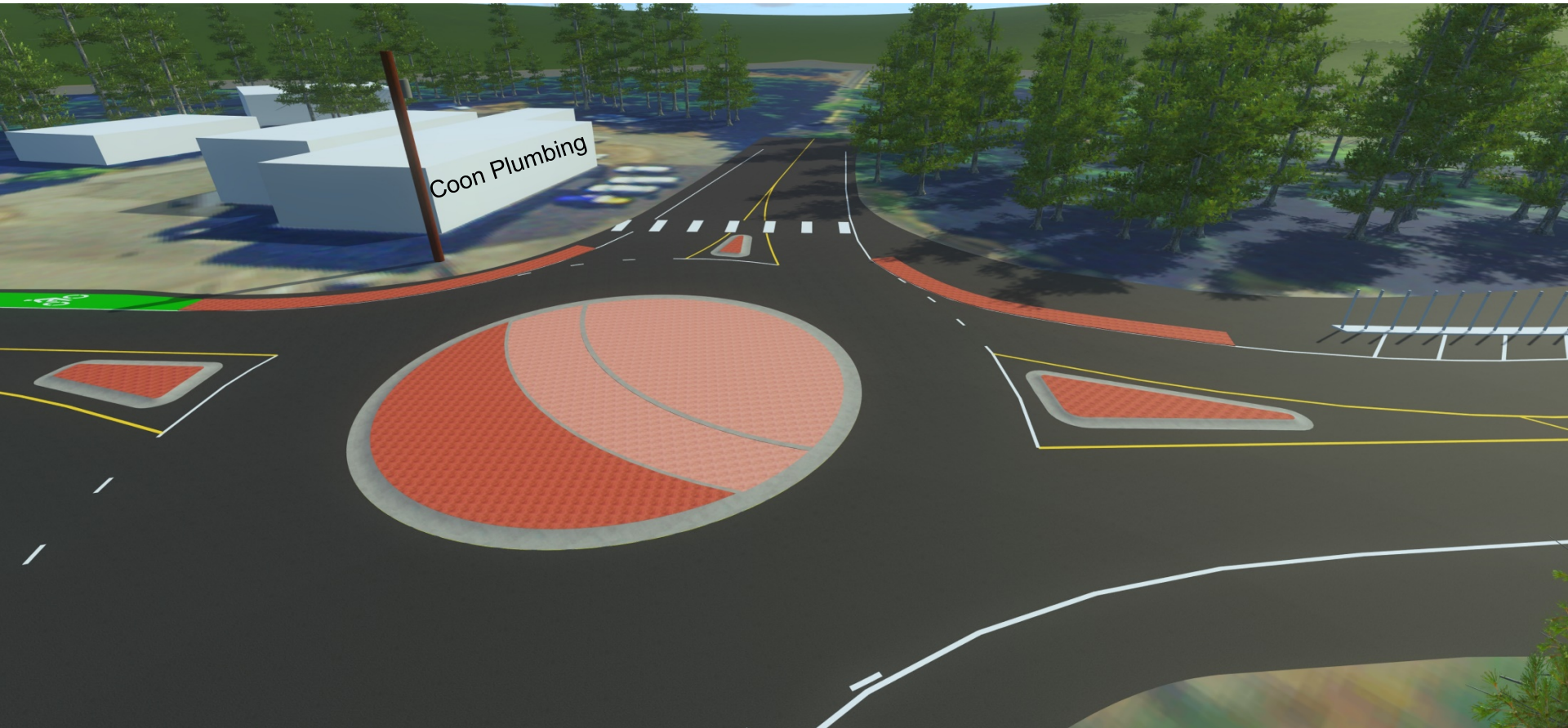
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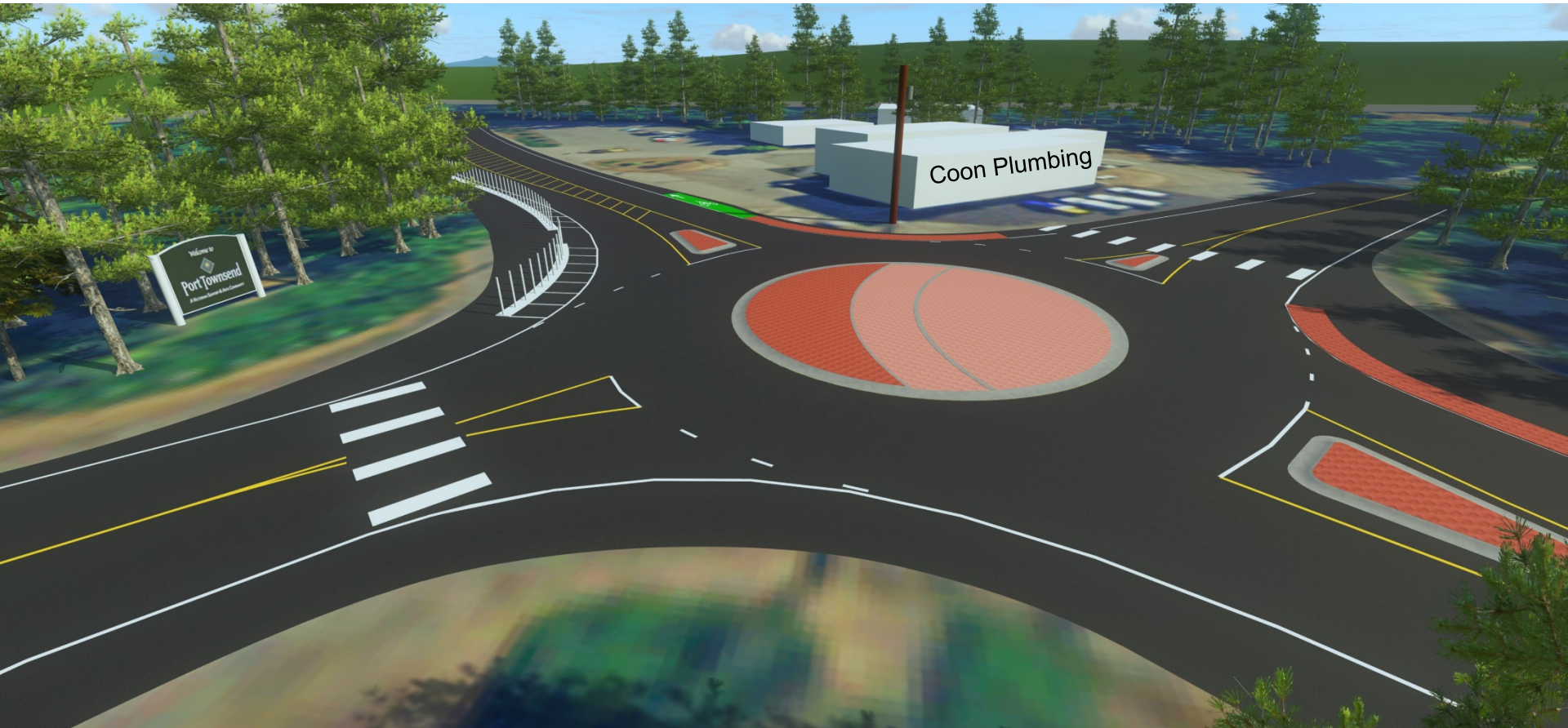
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SR 20 Discovery Road/Mill Road

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SR 20 and Kearney Street Intersection



Westbound SR 20/Kearney



Eastbound SR 20/Kearney

SR 20 and Kearney

Existing Traffic and Safety Data

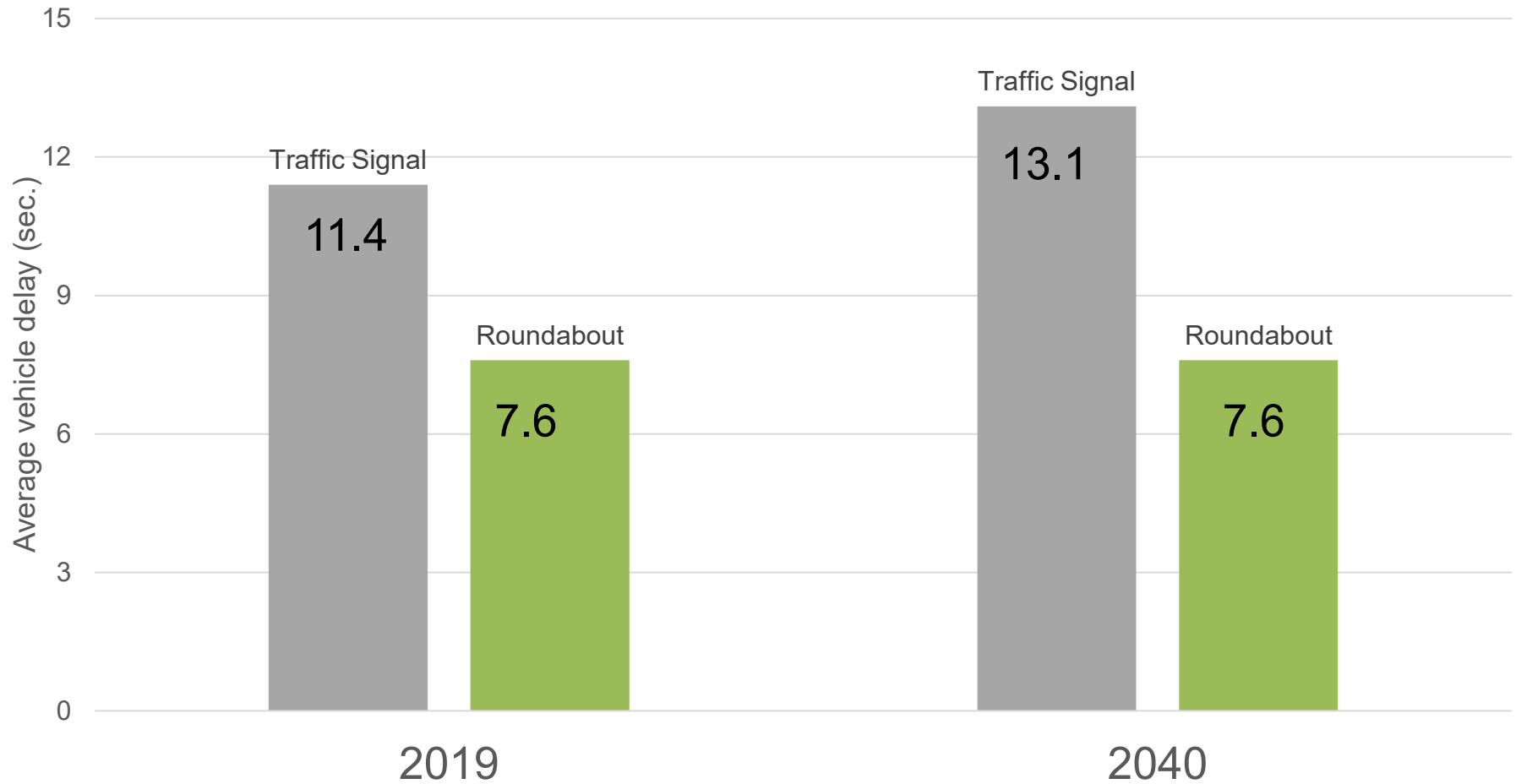
- Over 1,300 vehicles during peak hour
- 17 Crashes over 5-year period
 - 9 injury crashes
 - 2 crashes involved pedestrians
- Averages over 11 seconds of vehicle delay during peak hour

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SR 20 & Kearney

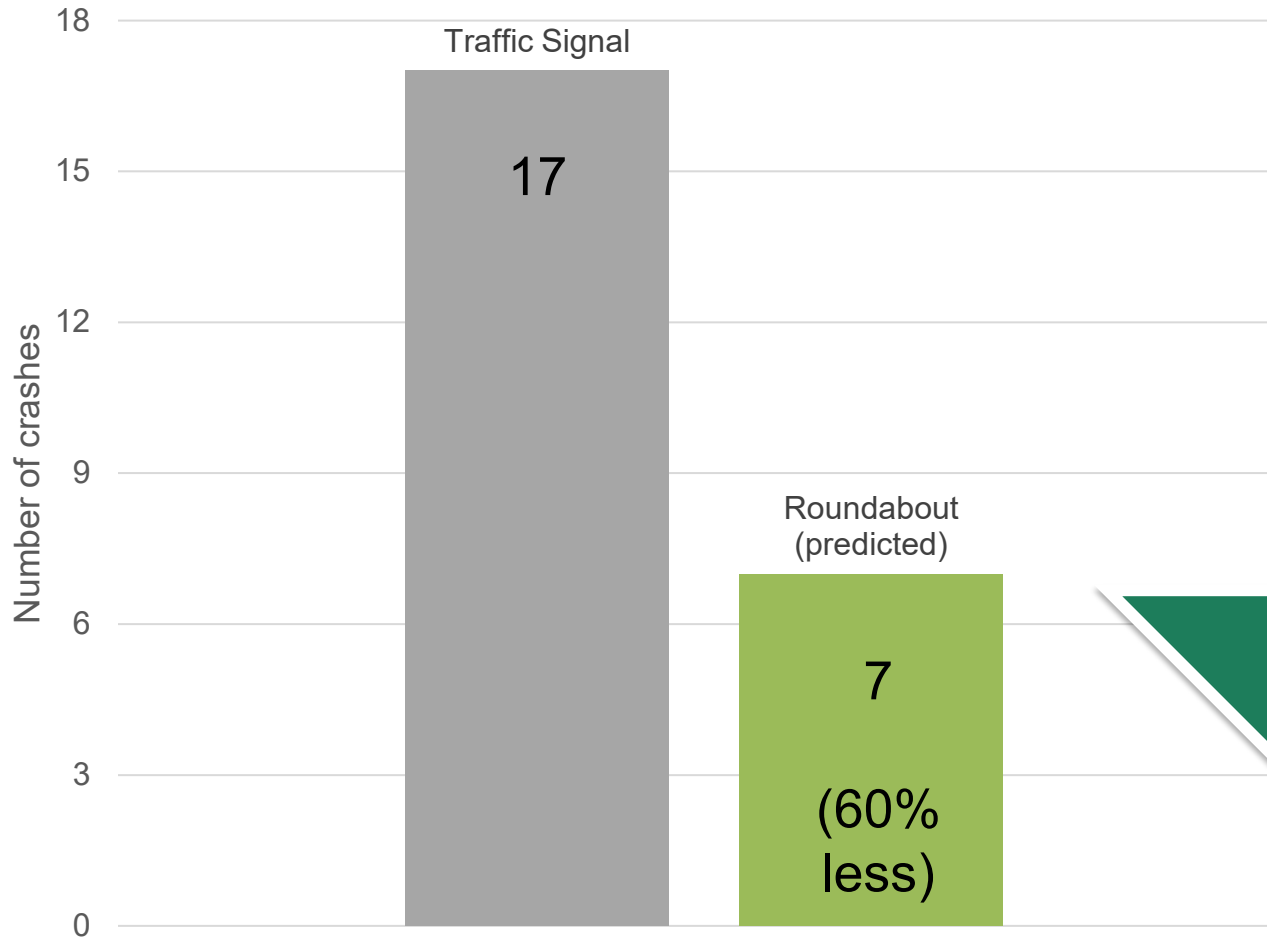
Intersection Delay Comparison

Average peak hour vehicle delay



SR 20 & Kearney

Safety performance comparison



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SR 20 Kearney Street

Conceptual Compact Roundabout



SR 20 Kearney Street

Conceptual Compact Roundabout



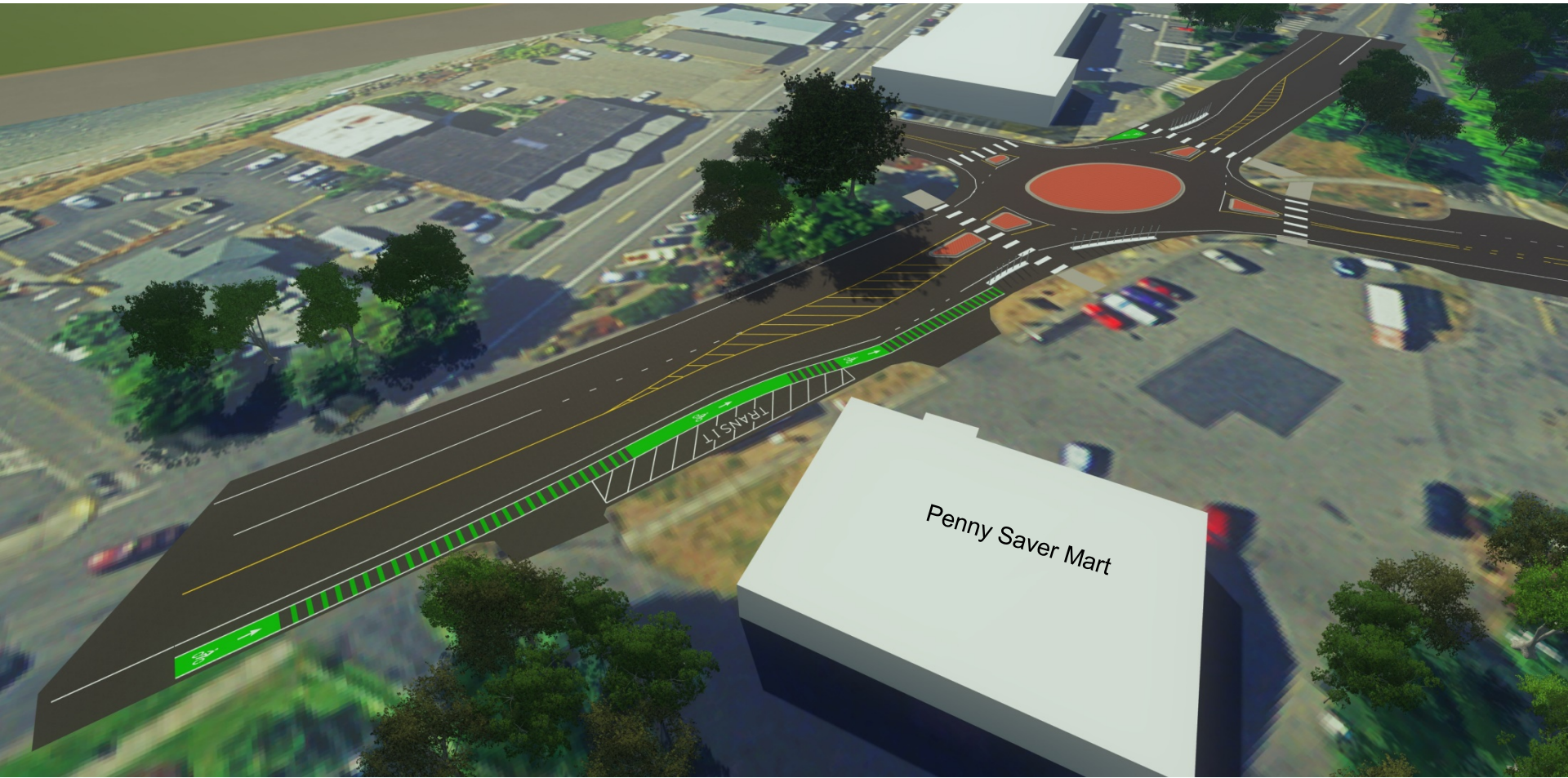
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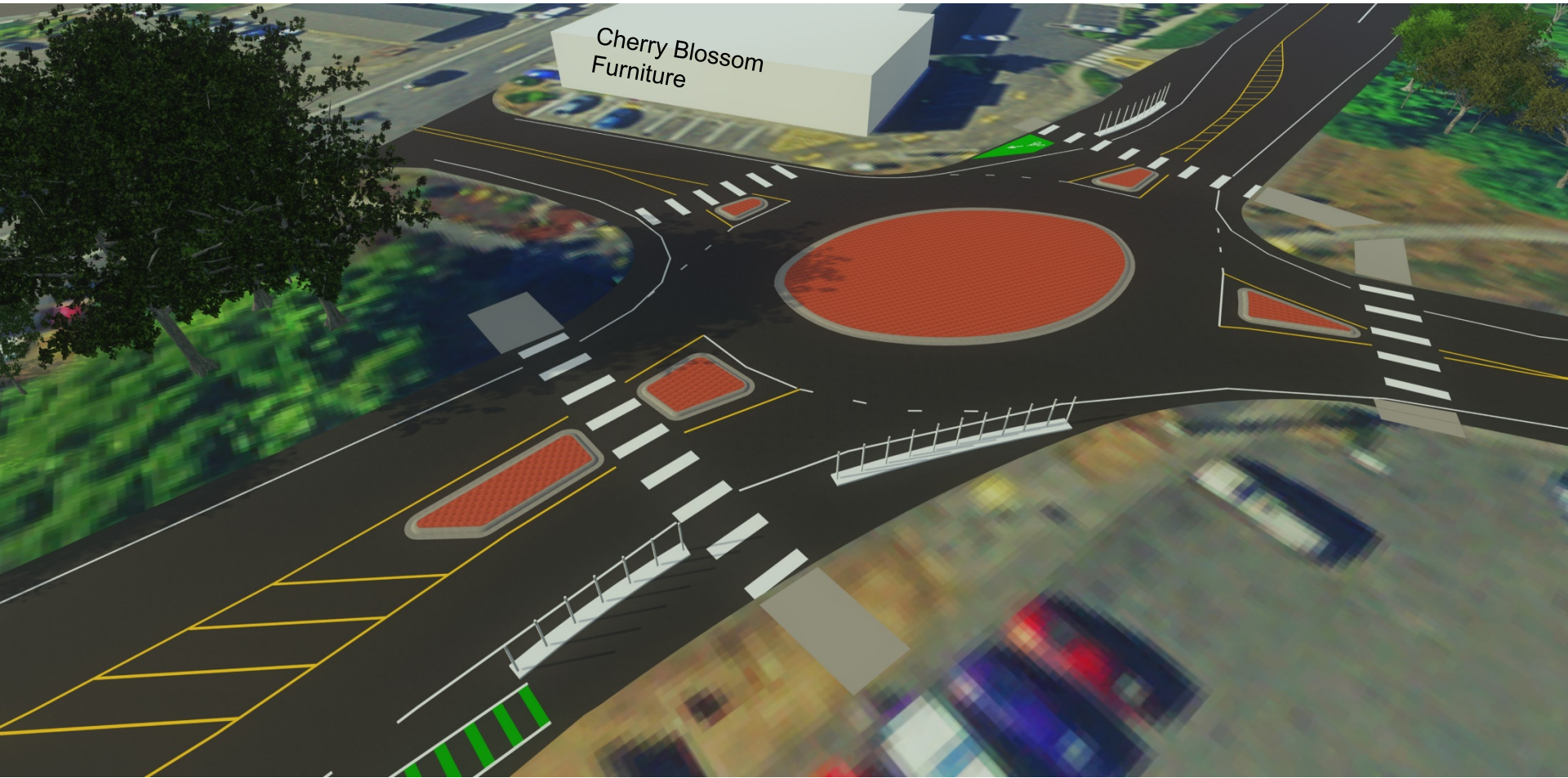
SR 20 Kearney Street

Conceptual Compact Roundabout



SR 20 Kearney Street

Conceptual Compact Roundabout



SR 20 Kearney Street

Design Considerations – Emergency Vehicles



Example educational brochure

What to do when an...

EMERGENCY VEHICLE

APPROACHES A ROUNDABOUT

After you exit the roundabout, move to the right and stop so the emergency vehicle can safely pass.

Do not enter a roundabout when an emergency vehicle is approaching from another direction.

Prior to entering the roundabout, move to the right so the emergency vehicle can safely pass.

If you are already in the roundabout, **do not stop** because the emergency vehicle may not be able to safely pass.


KEY

- Stopped
- Yielding
- In Motion
- Ambulance

EMERGENCY VEHICLES

Drivers are trained to pull over when an emergency vehicle is coming because it's the law. In the case of roundabouts, the Wisconsin Department of Transportation (WisDOT) states that motorists must clear a roundabout if they hear (or see) an emergency vehicle coming.

Motorists should immediately exit the roundabout at the next right.



What is the study schedule?

SR 20 Discovery Rd & Kearney St Intersection Roundabouts Pre-Design Study Schedule April – December 2020

Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Research and data collection								
						Meeting 1		
						Additional Analysis?		
							Meeting 2?	
								Final Report
						Community Outreach & Study Webpage		

Next Steps



- ❑ Online community outreach: October 2020
- ❑ Draft and finalized report: December 2020

- Project design: January 2021
- Utility Easements: November 2021
- Construction: October 2022

Thank You!



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