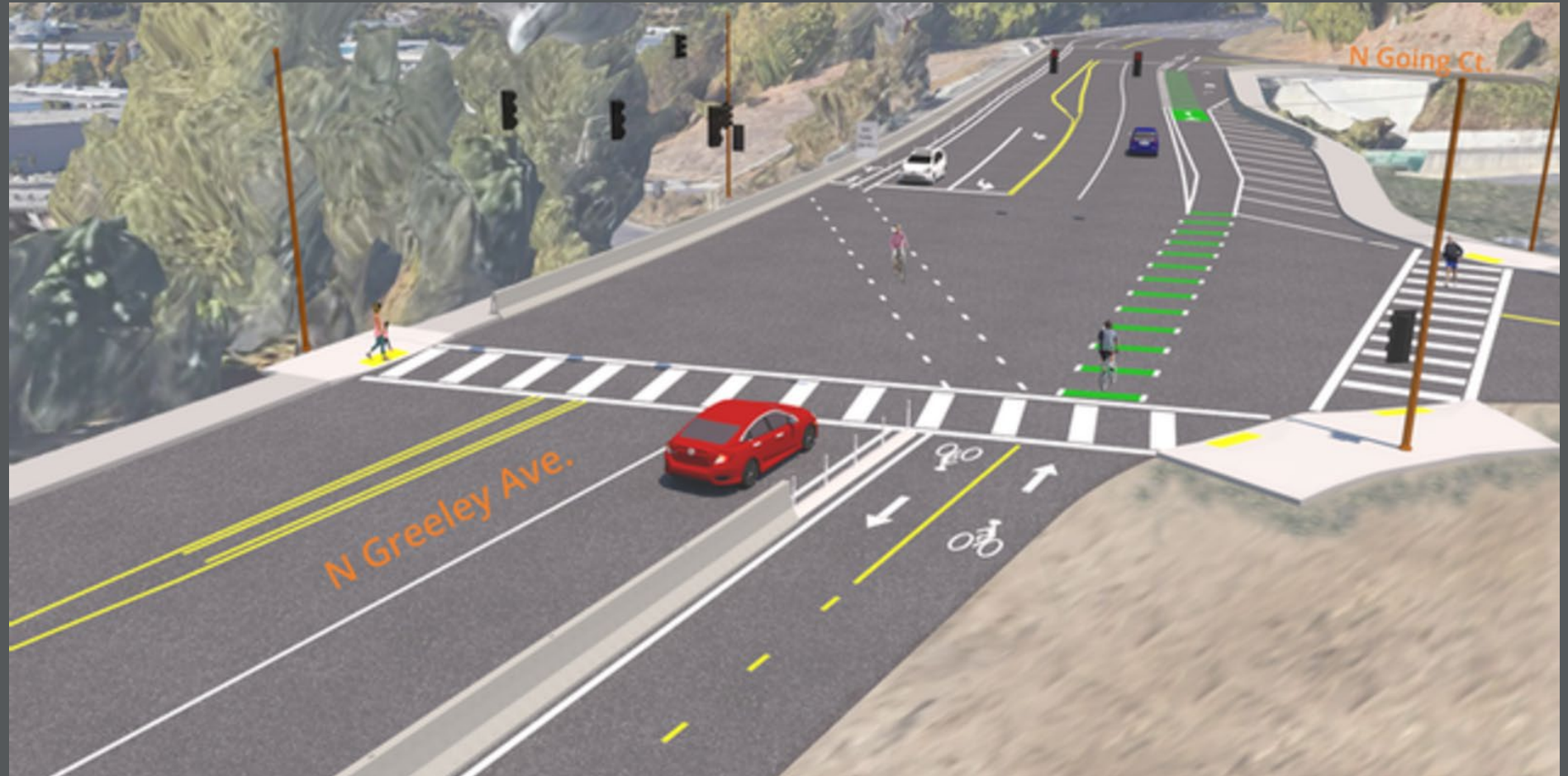


Active Transportation through Innovative Intersections: It's not just about cars

Presentation Overview

- Innovative Intersection Types
- Bicycle and Pedestrian treatments
- Case Studies



Multimodal Settings

- Roadway context drives the solution for multimodal travel:
 - Surrounding land use
 - Roadway speed
 - User age

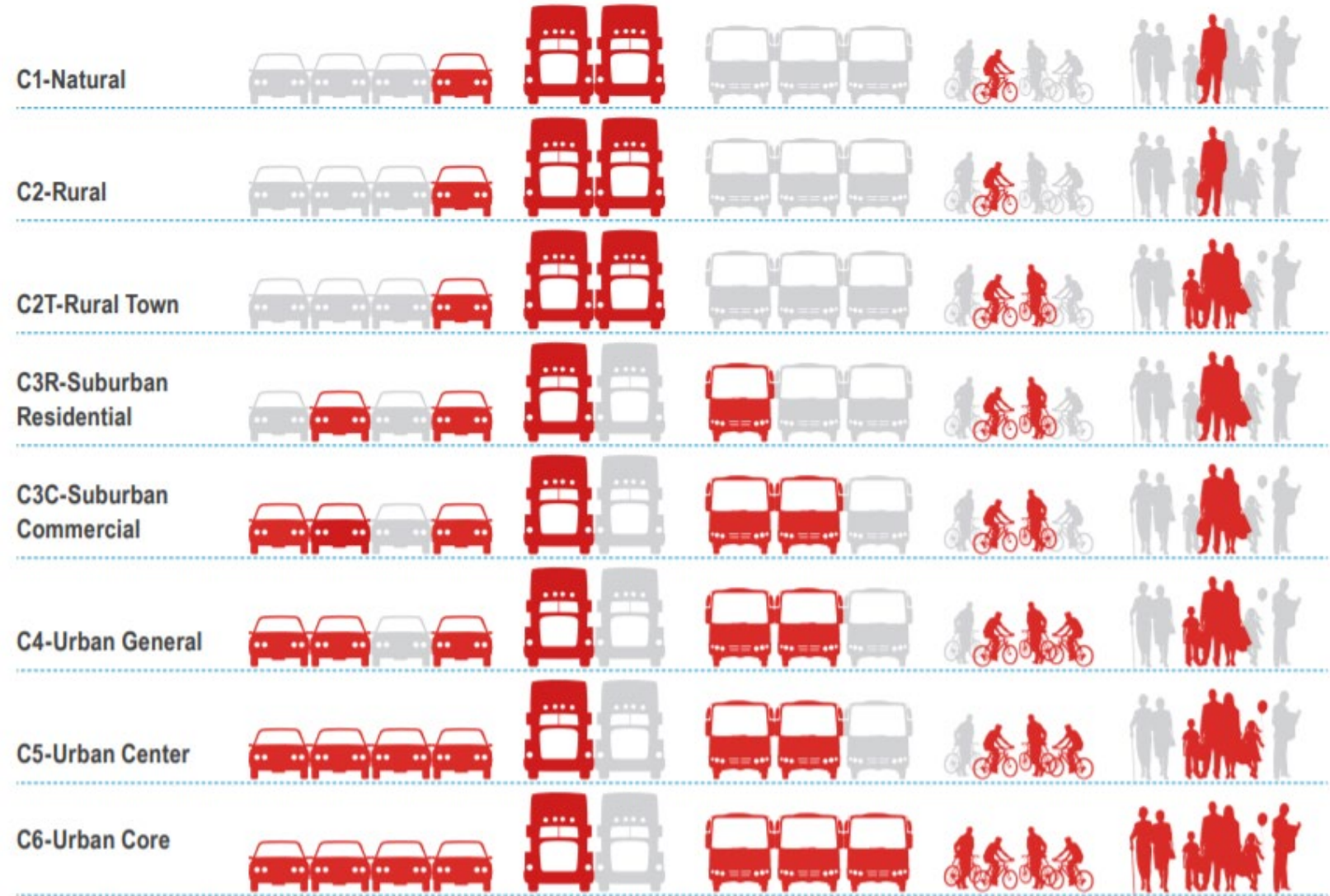
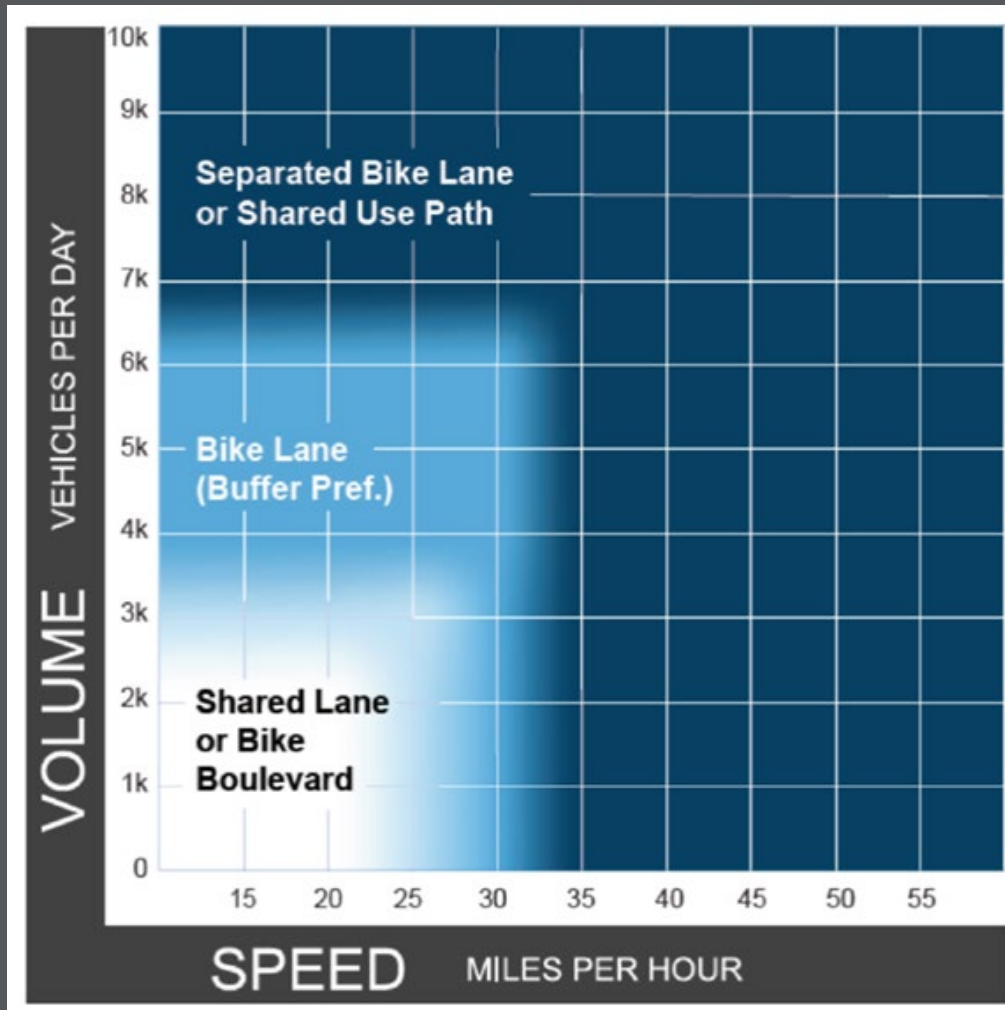


Image Source: Florida Department of Transportation

Bicycle Solutions

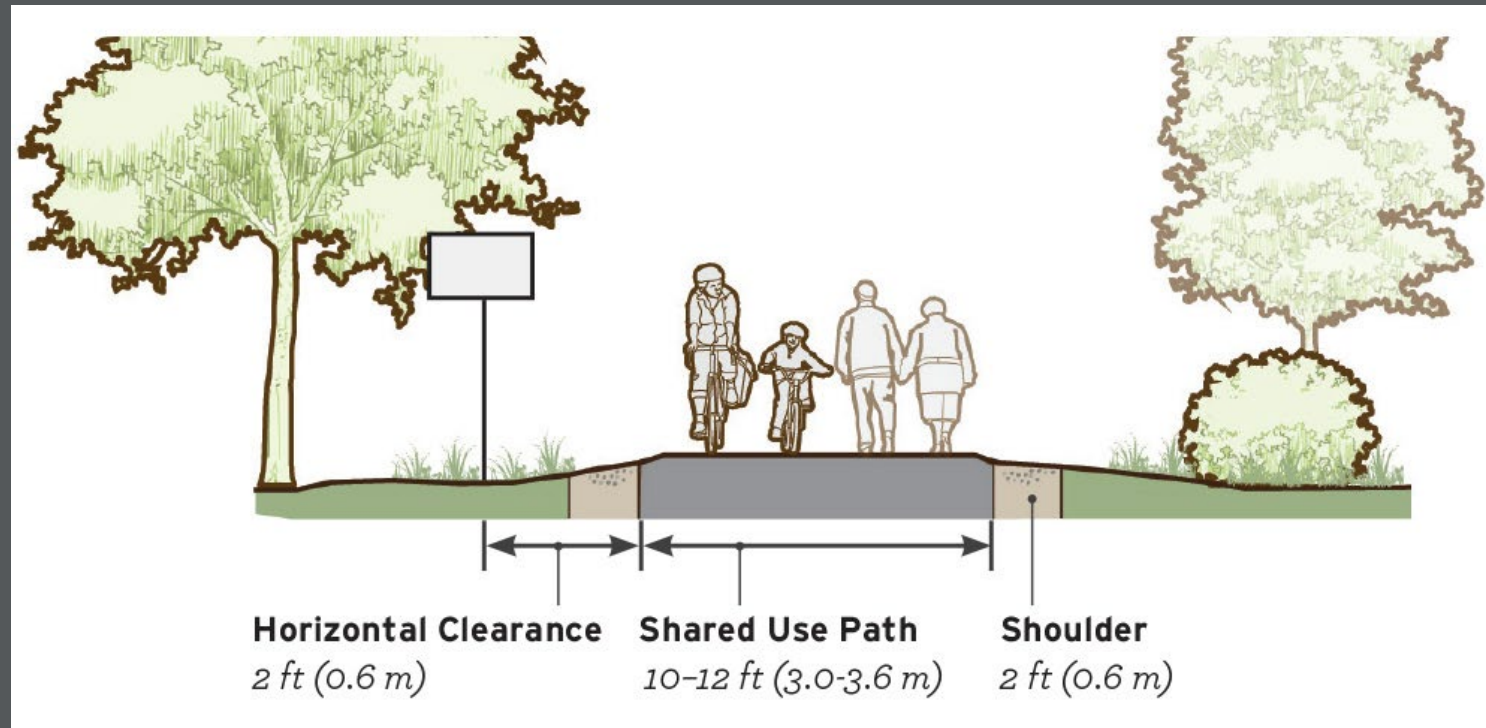
- Capacity constrained roadways will typically warrant separated bicycle facilities.
- Shared use paths can be created by widening existing sidewalks.



Source: FHWA Bikeway Selection Guide

Current Bicycle Treatments

- Multiuse paths
- Buffered bike lanes
- Protected intersections



CASE STUDY: Franklin Boulevard



CASE STUDY: Franklin Boulevard



Accessible Facilities

- Question: how do people navigate an unfamiliar intersection if they have a visual or auditory impairment?



What is an intersection?

A way of controlling access to space

- Management of conflicts of all modes

Set amount of space

Set amount of time

Alternative Intersections/Interchanges: Informational Report (AIIR)

PUBLICATION NO. FHWA-HRT-09-060

APRIL 2010

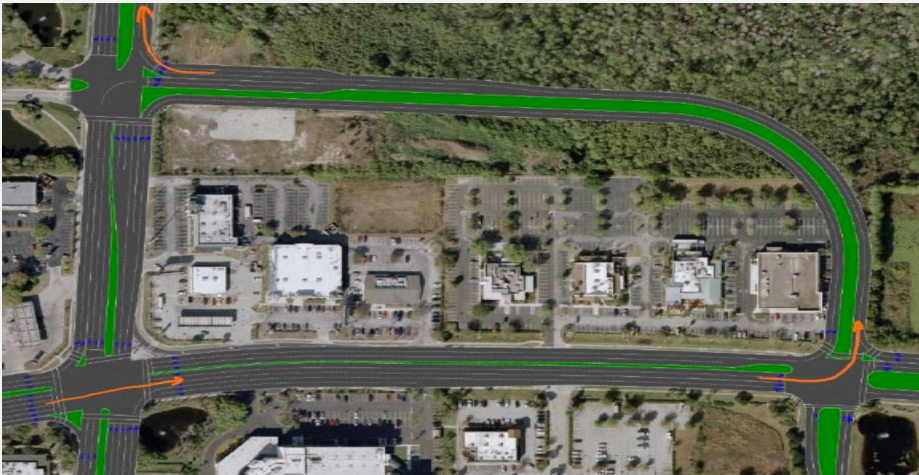


U.S. Department of Transportation
Federal Highway Administration

Research, Development, and Technology
Turner-Fairbank Highway Research Center
6300 Georgetown Pike
McLean, VA 22101-2296

It's All About the Turns

Quadrant Road



Continuous Flow Intersection/
Displaced Left Turn Intersection



Diverging Diamond Interchange

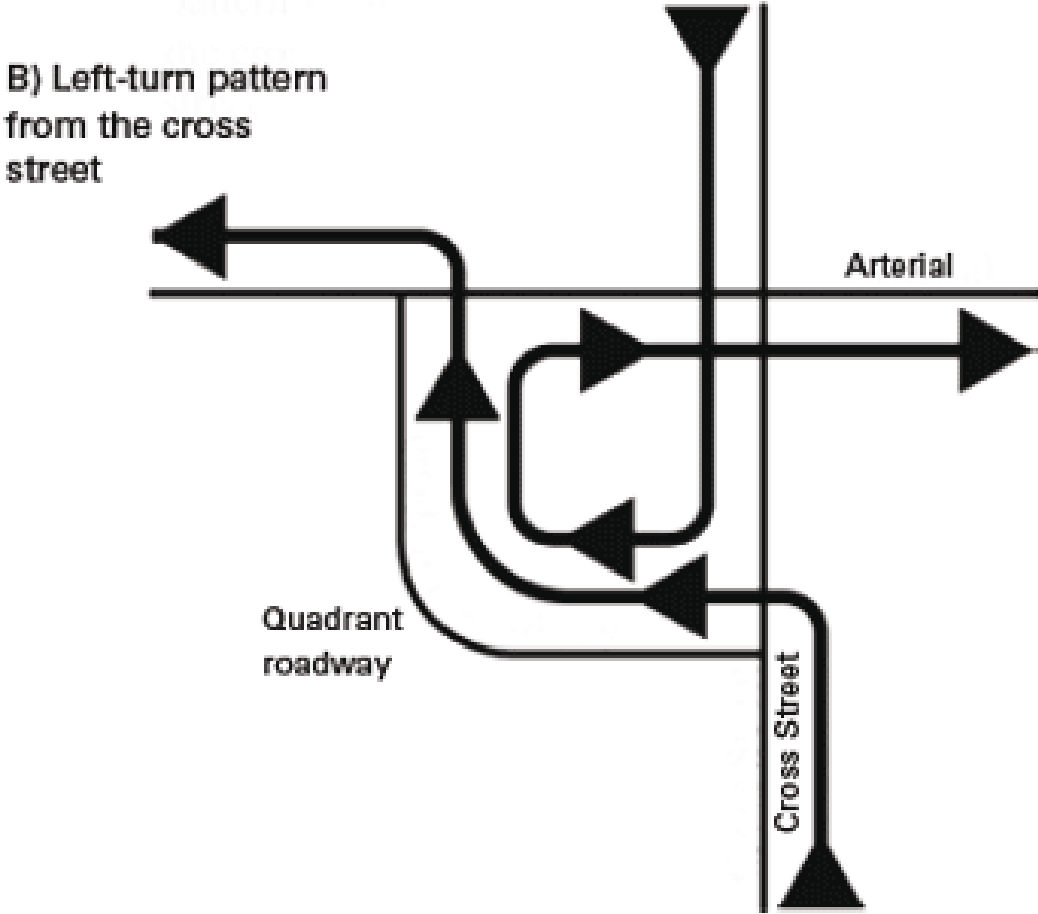
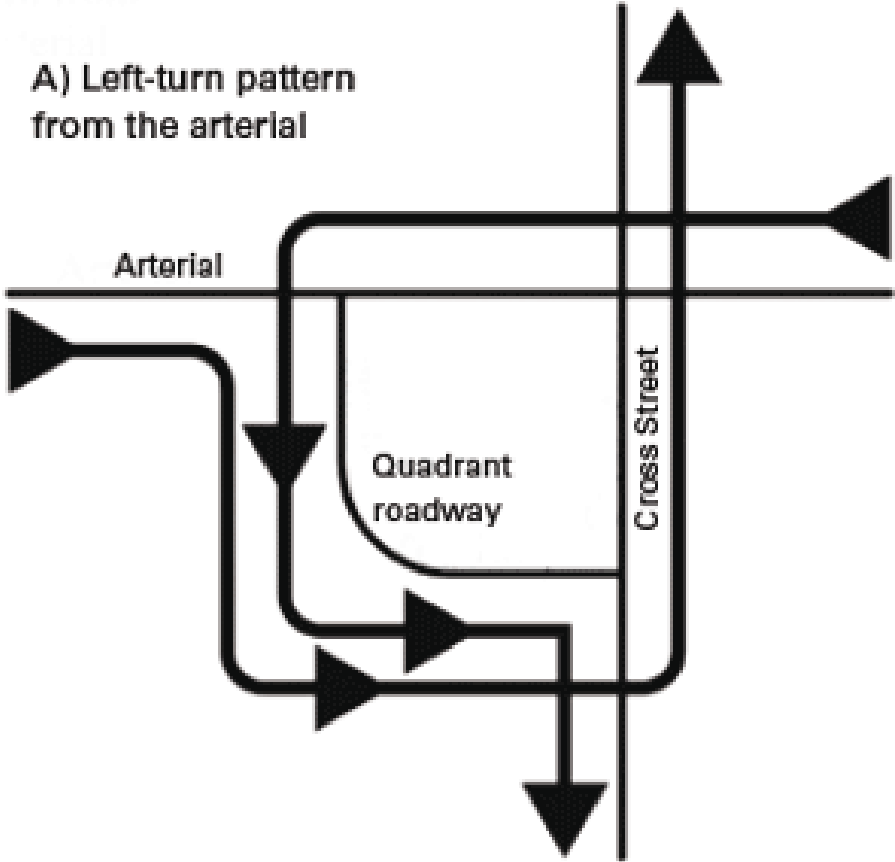


Restricted Crossing U-Turn



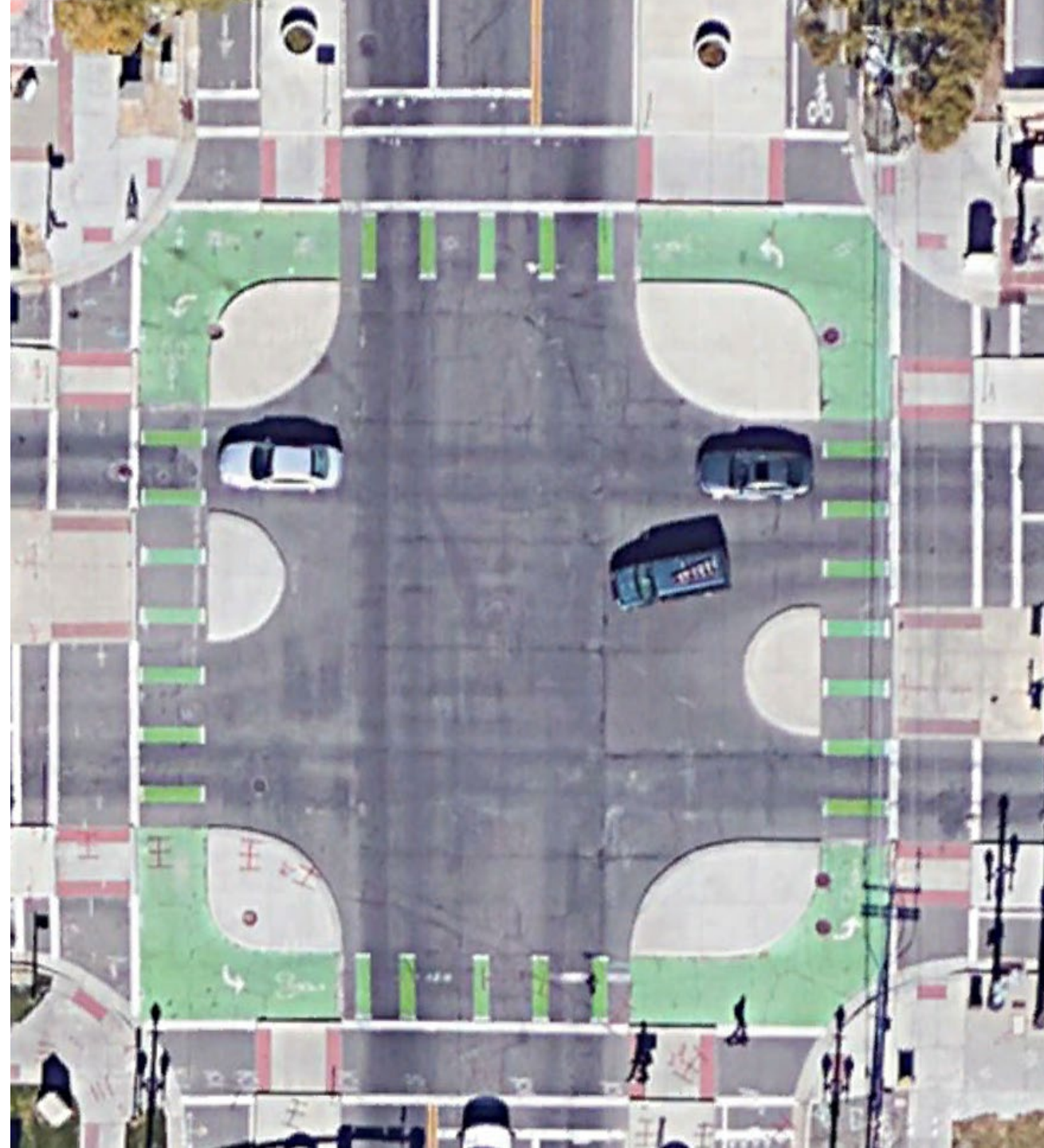
Left Turn Removal – Quadrant Road

- Main signal is two-phase

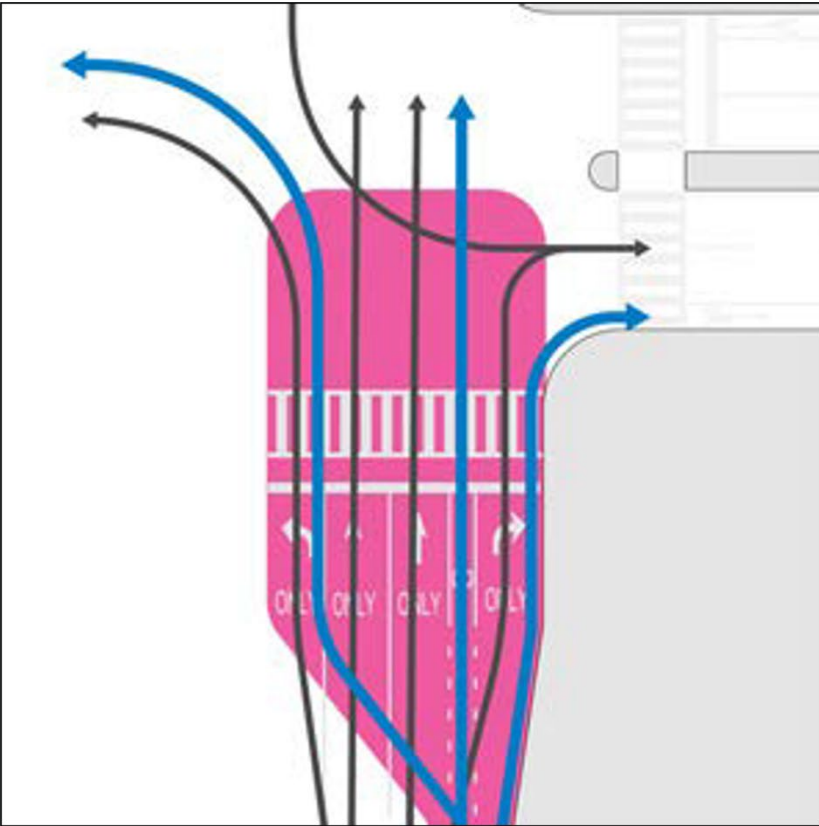


Protected Intersections

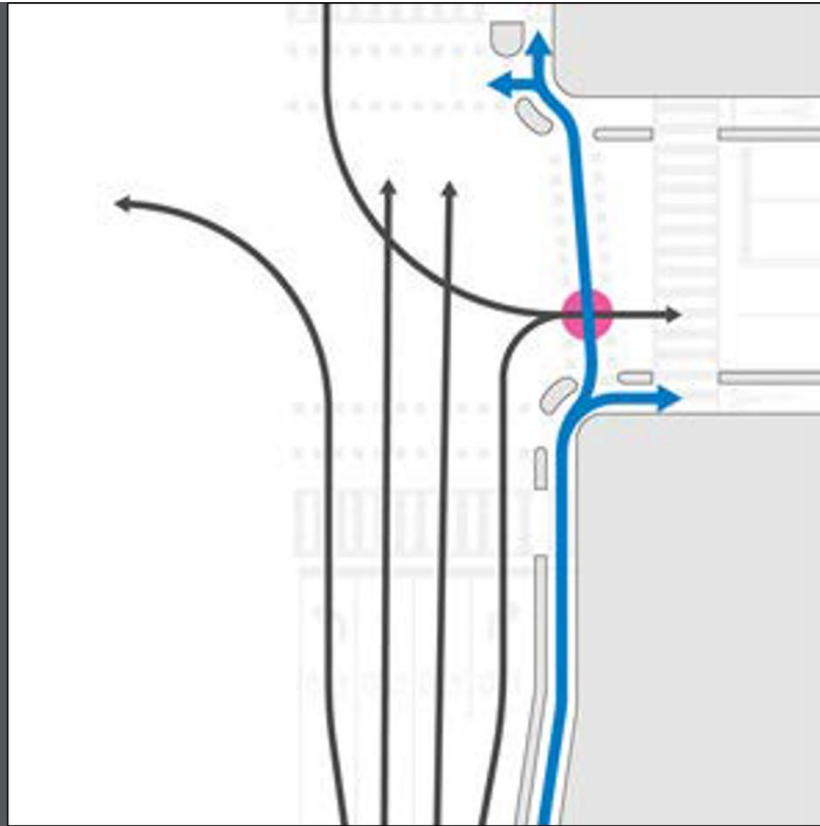
- Bike approaches are typically one-way physically separated cycleways
- Approaches are outside of turn bays or turn bays are removed
- Effectively a signalized bicycle rotary within a typical intersection
- Bikes do not use pedestrian crosswalks



Comparison of Bicyclist Exposure at Intersections



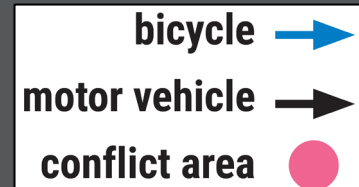
Conventional Bike Lanes
or Shared Lanes



Protected Intersection

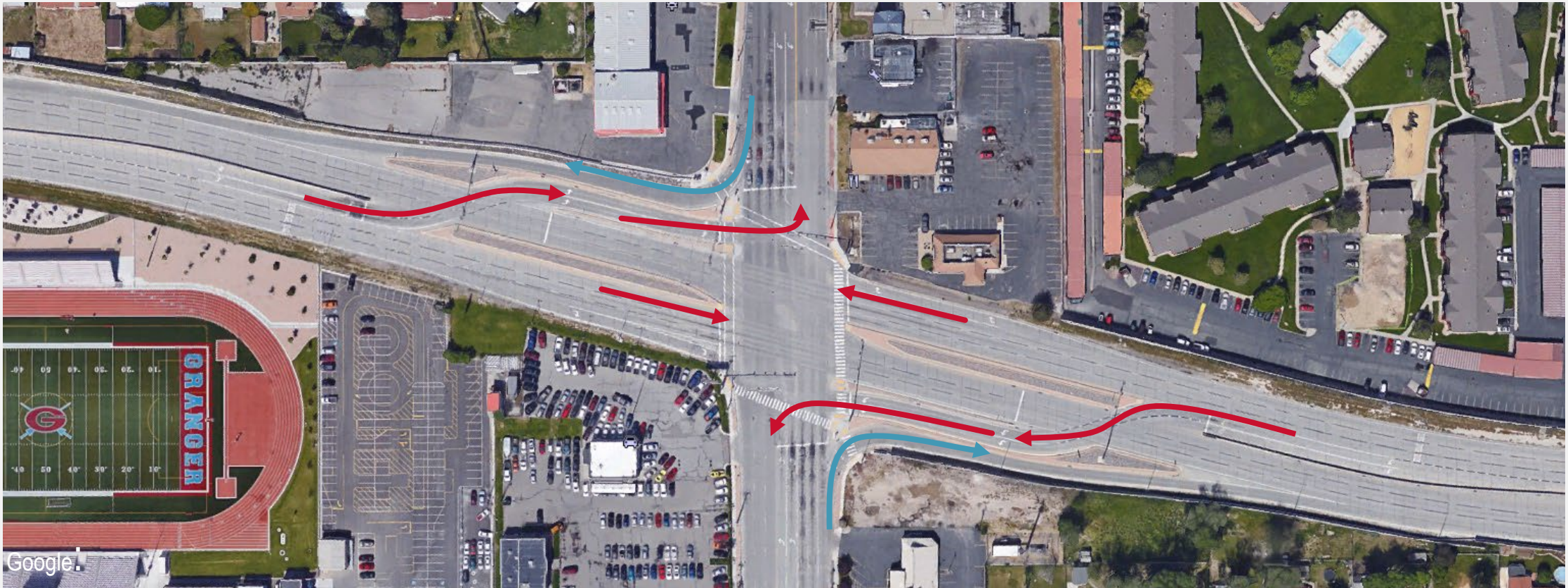
Design Principles:

- Minimize exposure to conflicts
- Reduce speeds at conflict points
- Communicate right-of-way priority
- Provide adequate sight distance

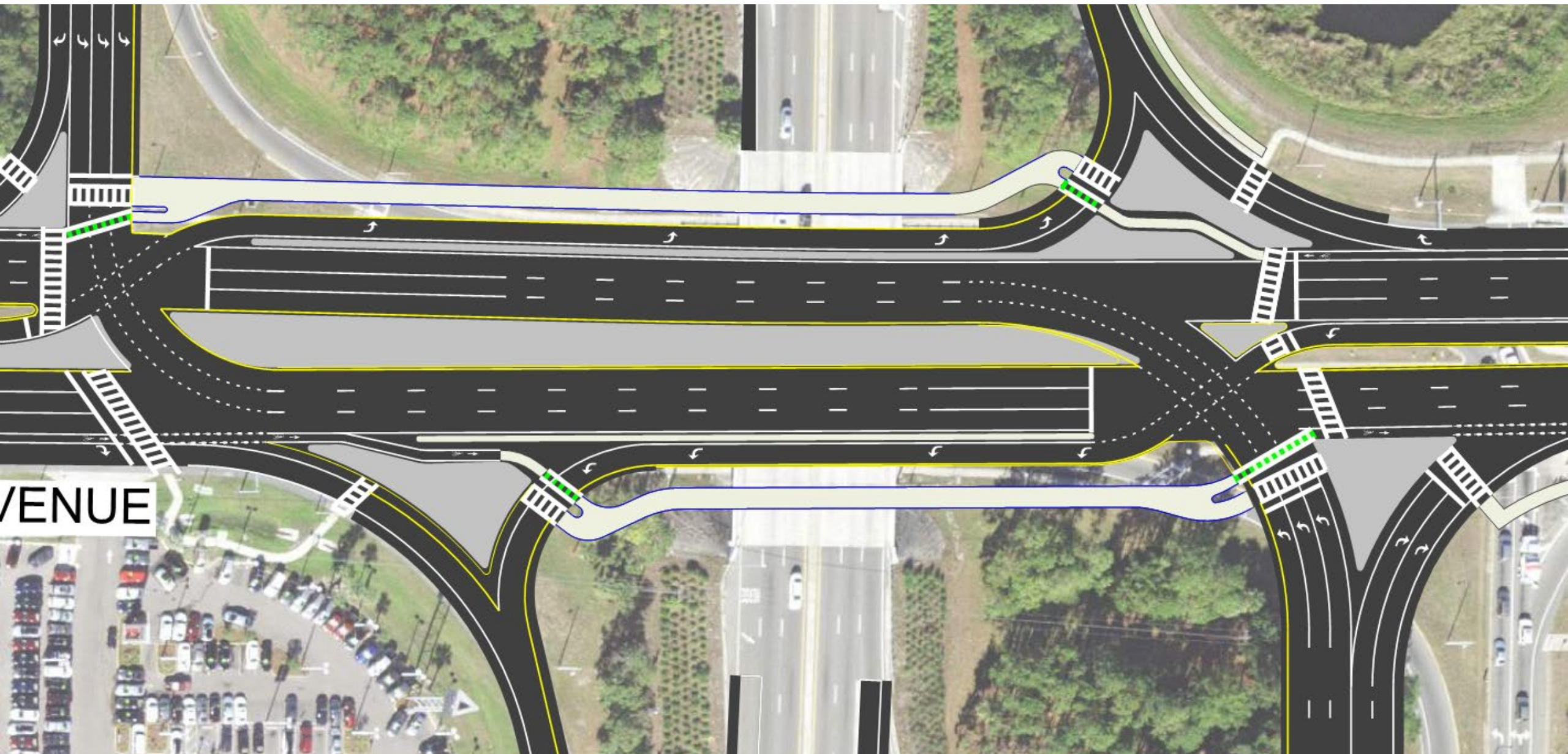


Left Turn Displacement – CFI

- Distinguishing feature of a continuous flow intersection (CFI)
- Note displaced left conflicts with right turn
- Significant access impacts is quadrants with displaced lefts



CASE STUDY: Dale Mabry Blvd/Hillsborough Avenue



Bicycle Treatments at DDIs

- Separated multiuse path
- Separated bike lane
- Shared cross walk
- On street bike lanes

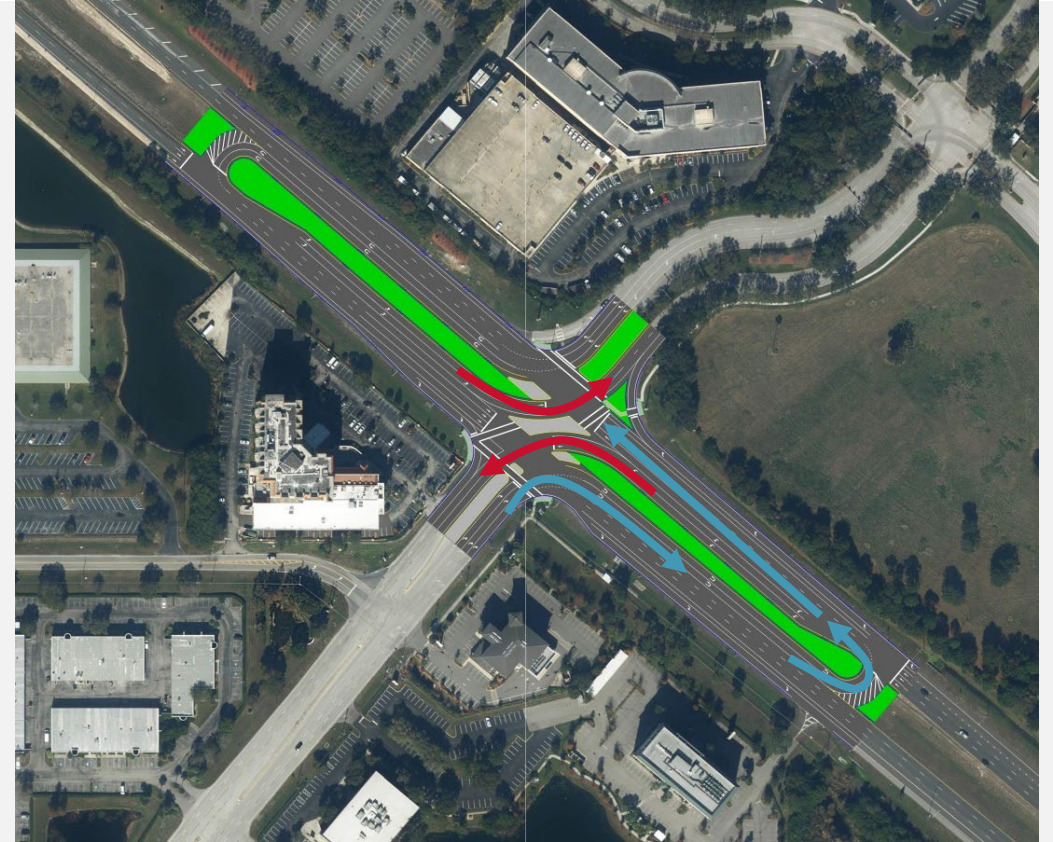
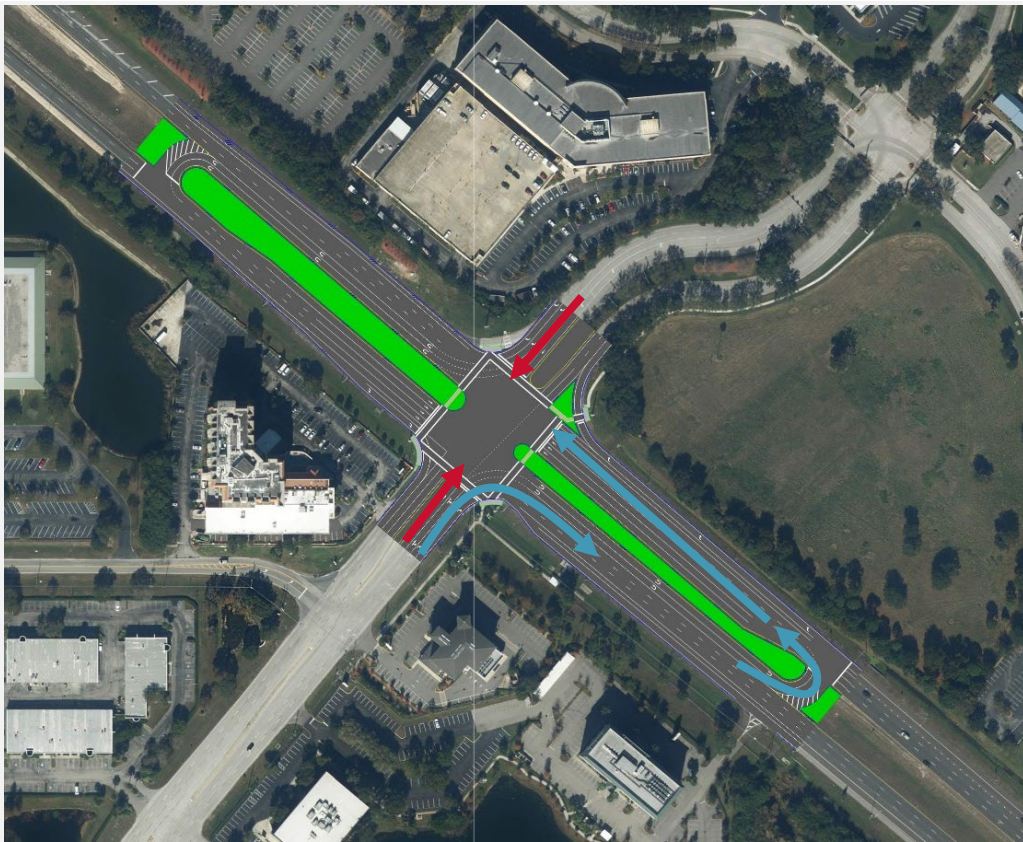


Case Study: University Boulevard



Left Turn Diversion – MUTs and RCUTs

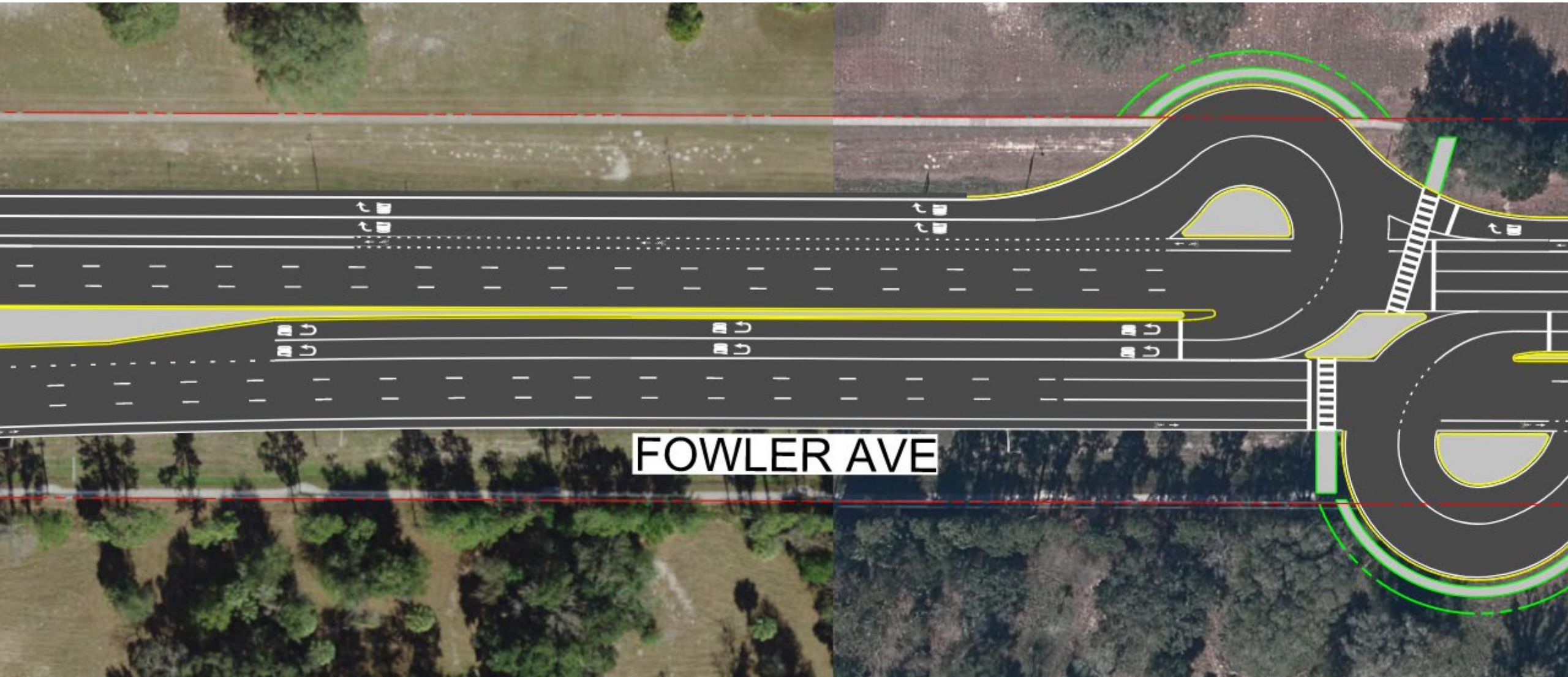
- Removal of left turns from main intersection
- Replace with some combination of through, right turns, and u turns
- RCUTs also divert through movements



CASE STUDY: OR99W Fischer Road to Beef Bend Road

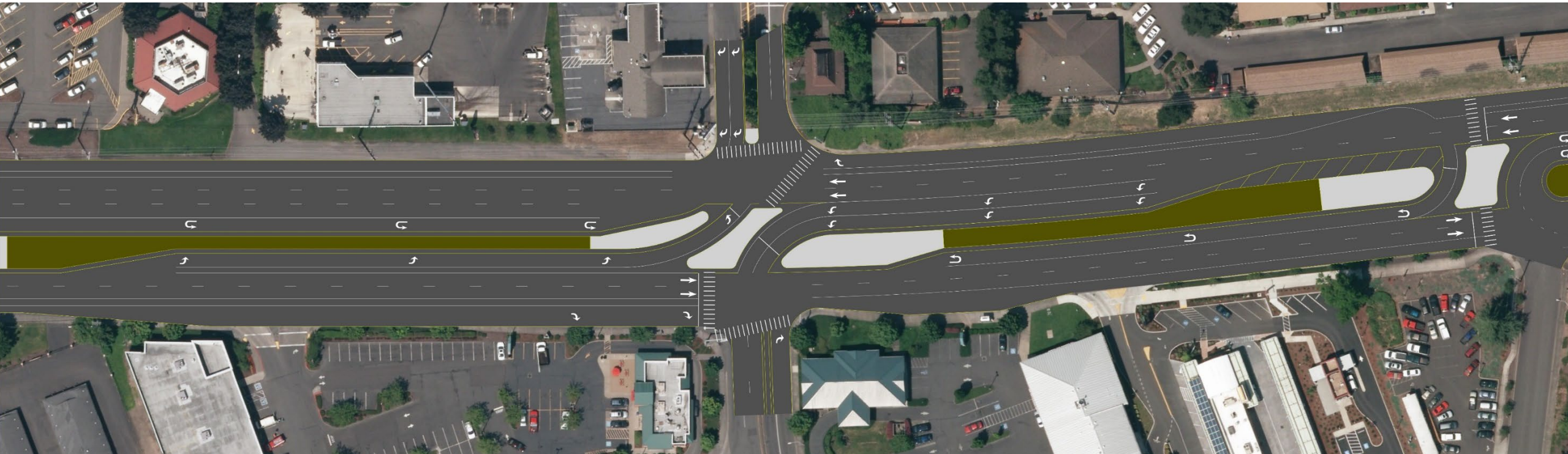


Case Study: Leroy Fowler

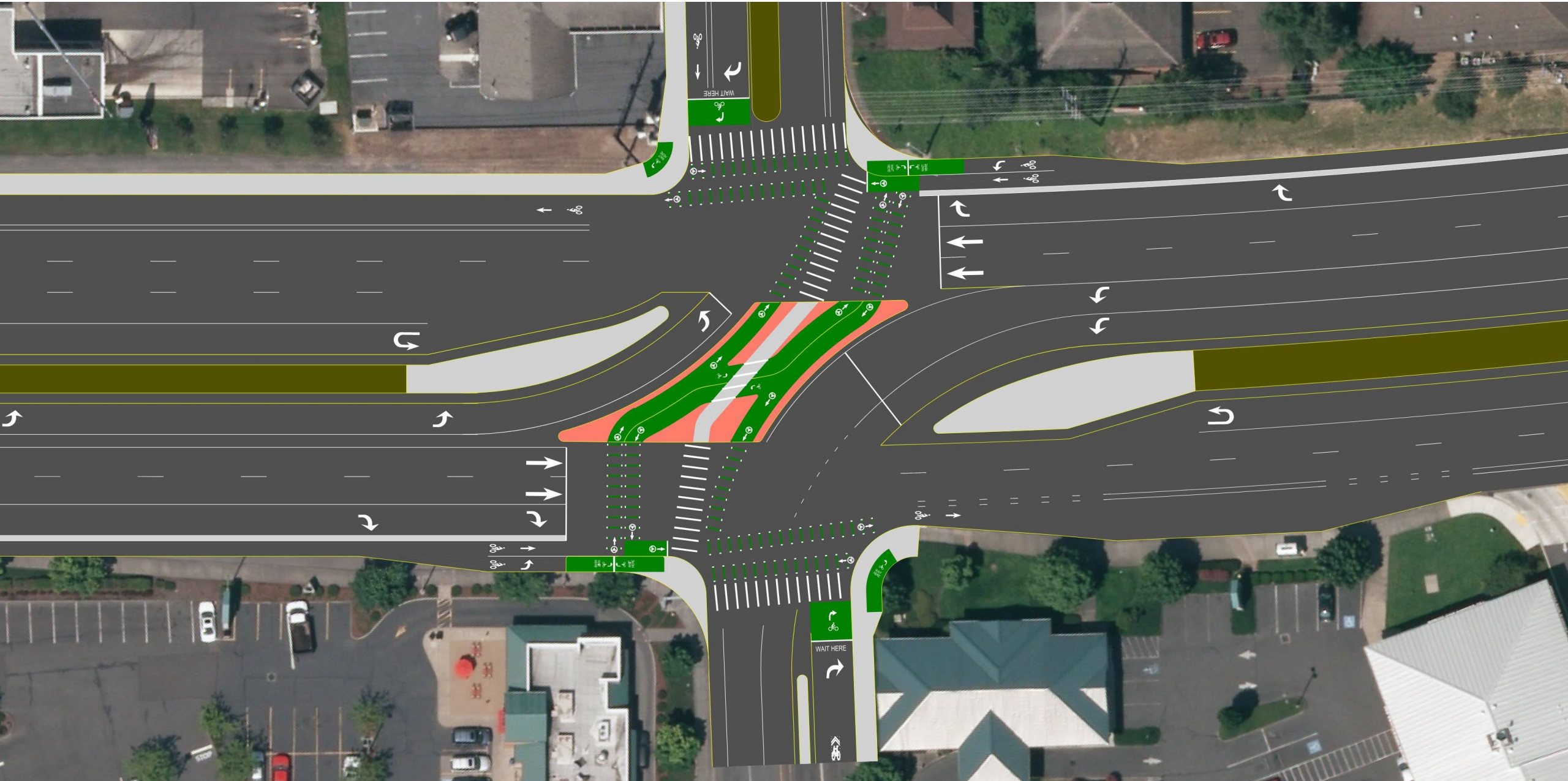


RCUTs and Bikes State of the Practice

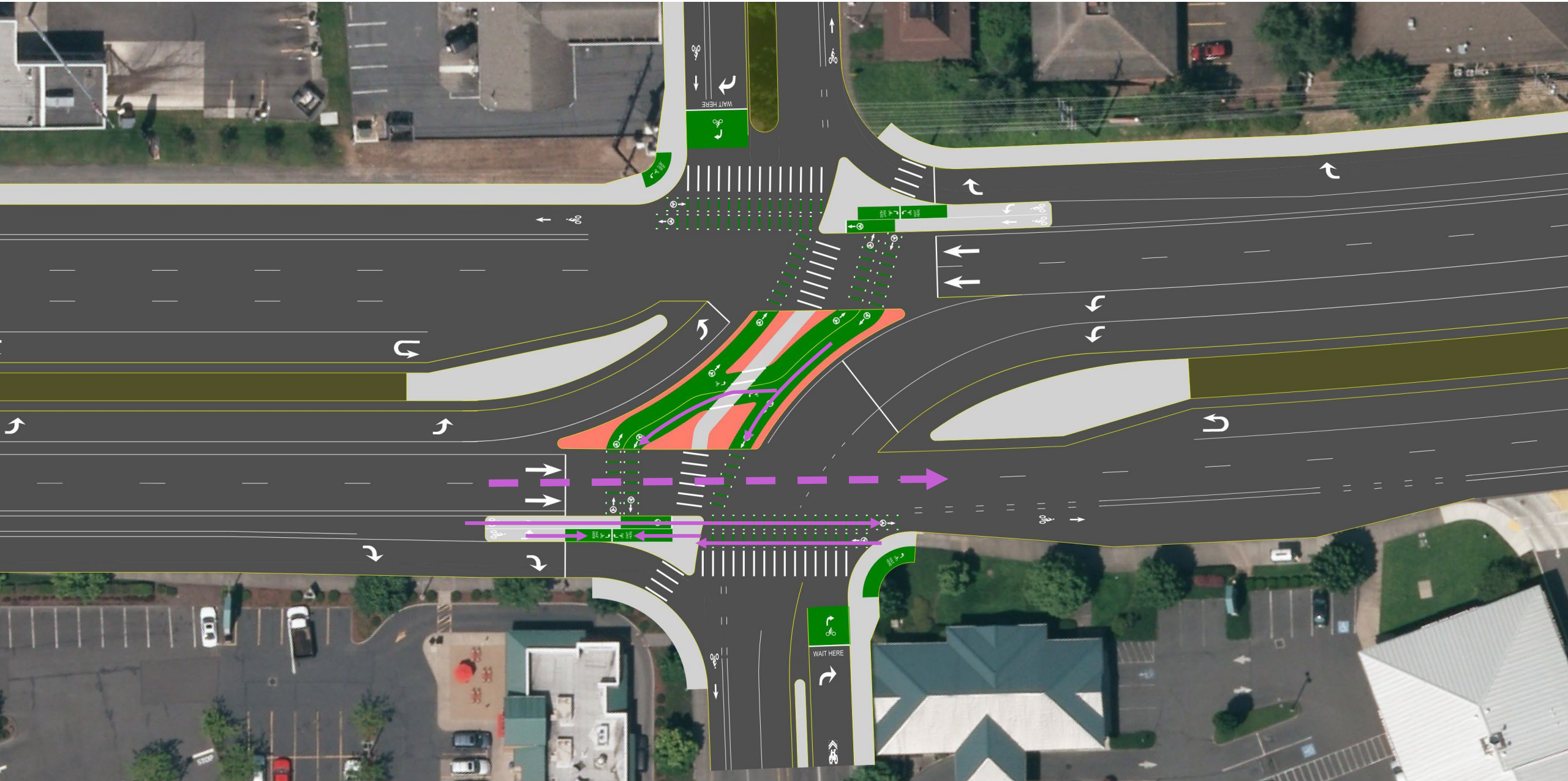
- Major Street through bikes use bike lanes
- Major Street turns and Minor Street throughs and lefts use pedestrian crosswalks



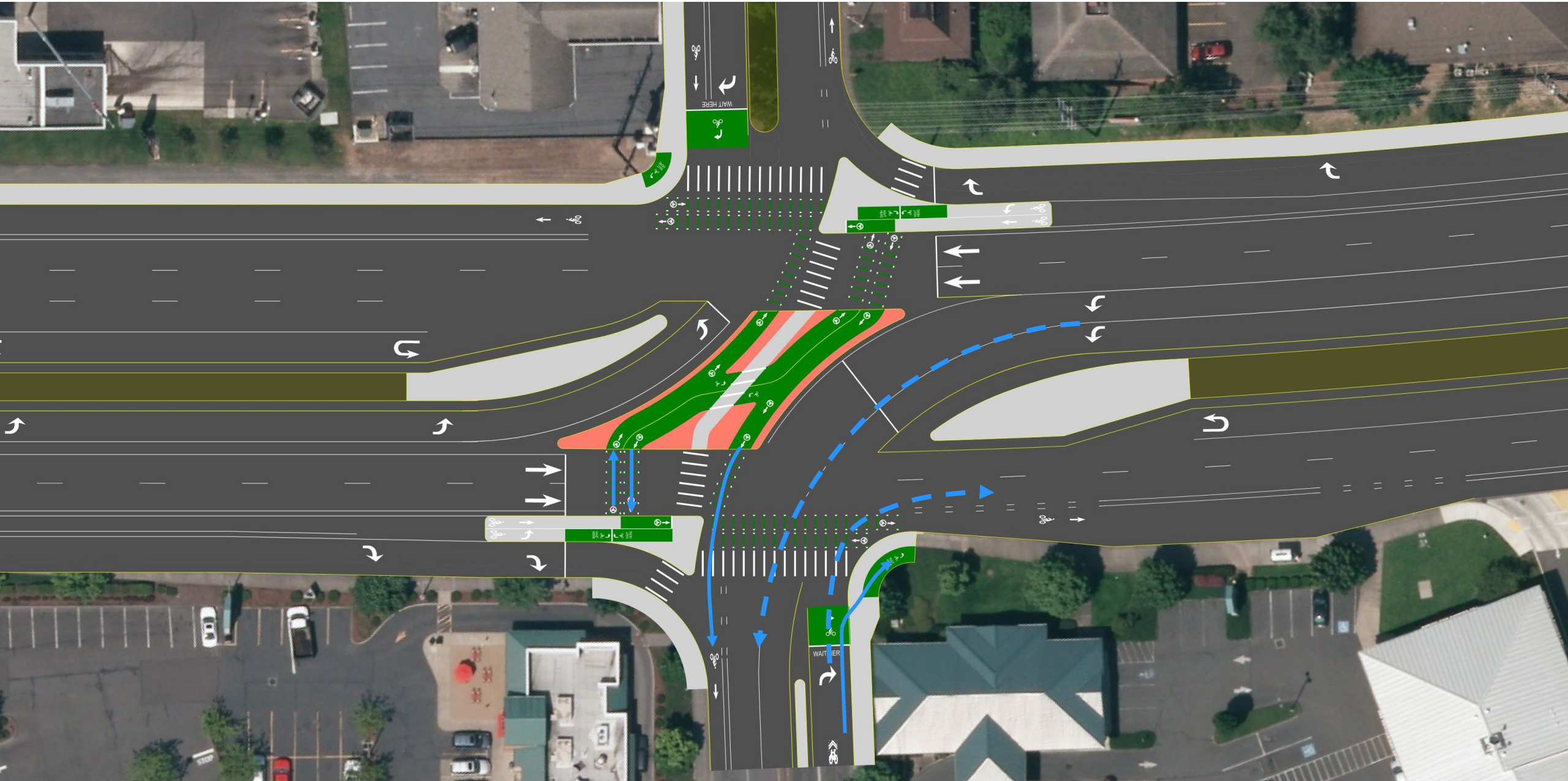
Protected RCUT with Separated Cycleway



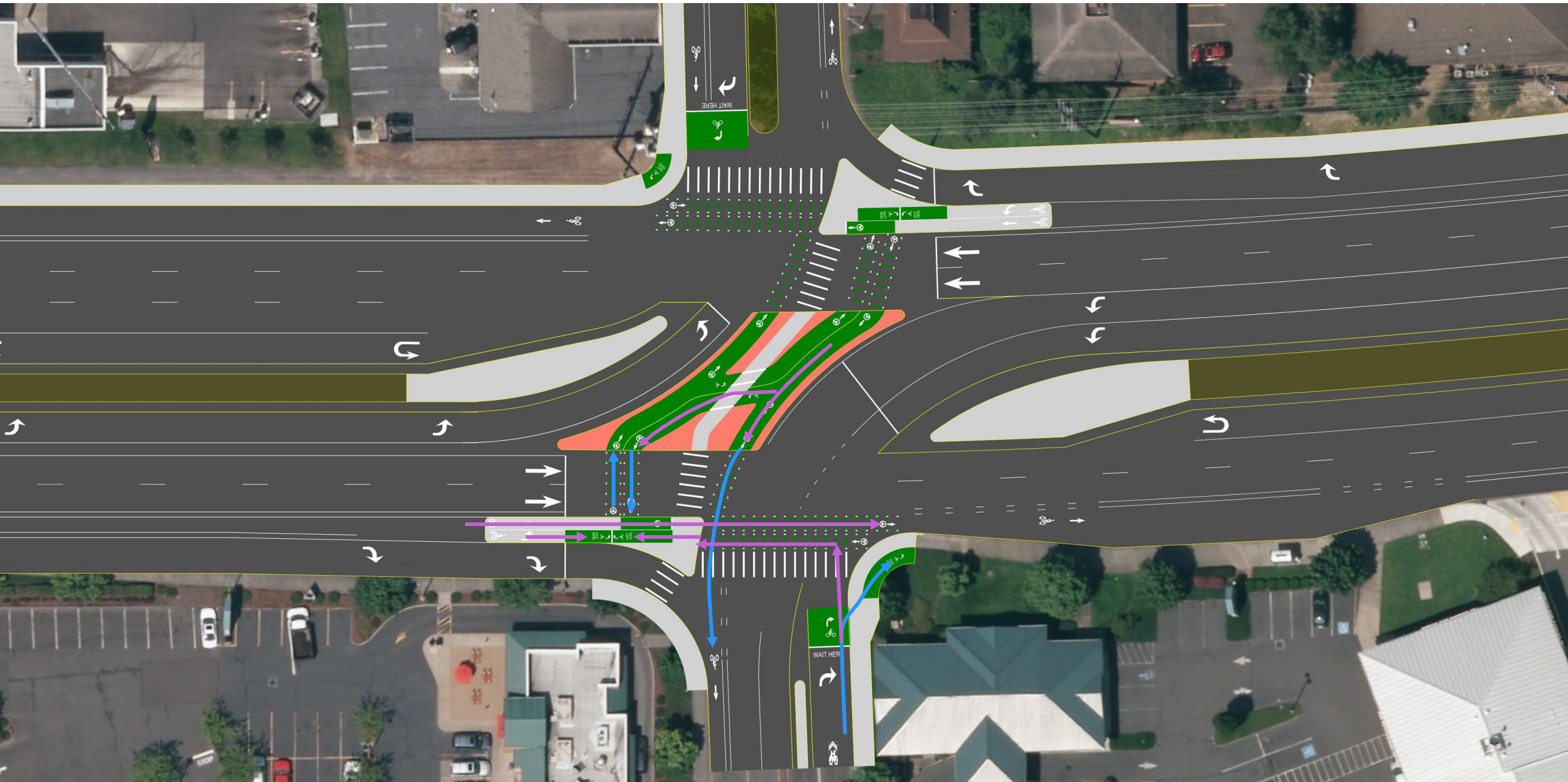
Protected RCUT with On-Road Bike Lane



Protected RCUT with On-Road Bike Lane



Protected RCUT with On-Road Bike Lane



Conclusion

- Innovative intersections are more and more common
- Multimodal treatments spread benefits to all modes

