

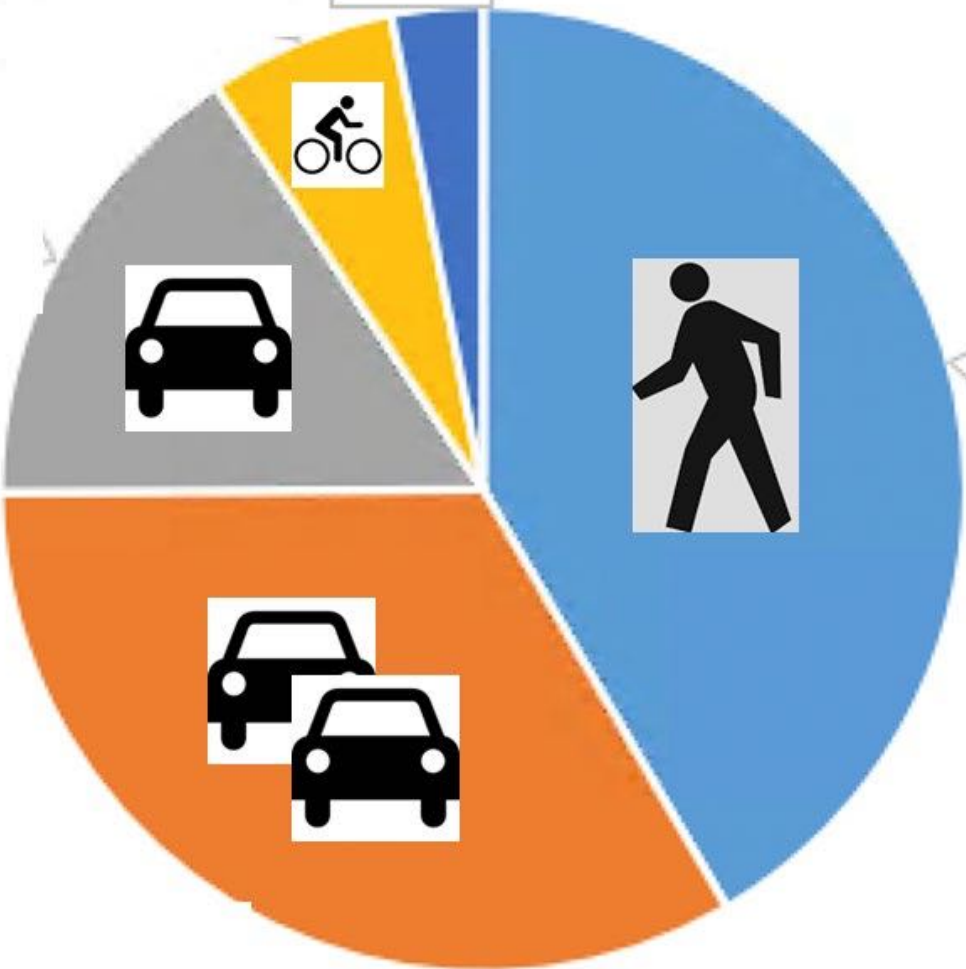
A group of people in business suits are standing on paddleboards in a flooded highway. The scene is set at sunset, with the sun low on the horizon, casting a warm, golden glow over the water and the silhouettes of the people. The water reflects the light, creating a shimmering effect. In the background, a line of cars is visible on the highway, their headlights and taillights glowing. The overall atmosphere is surreal and contemplative.

City of San Diego Safe Systems

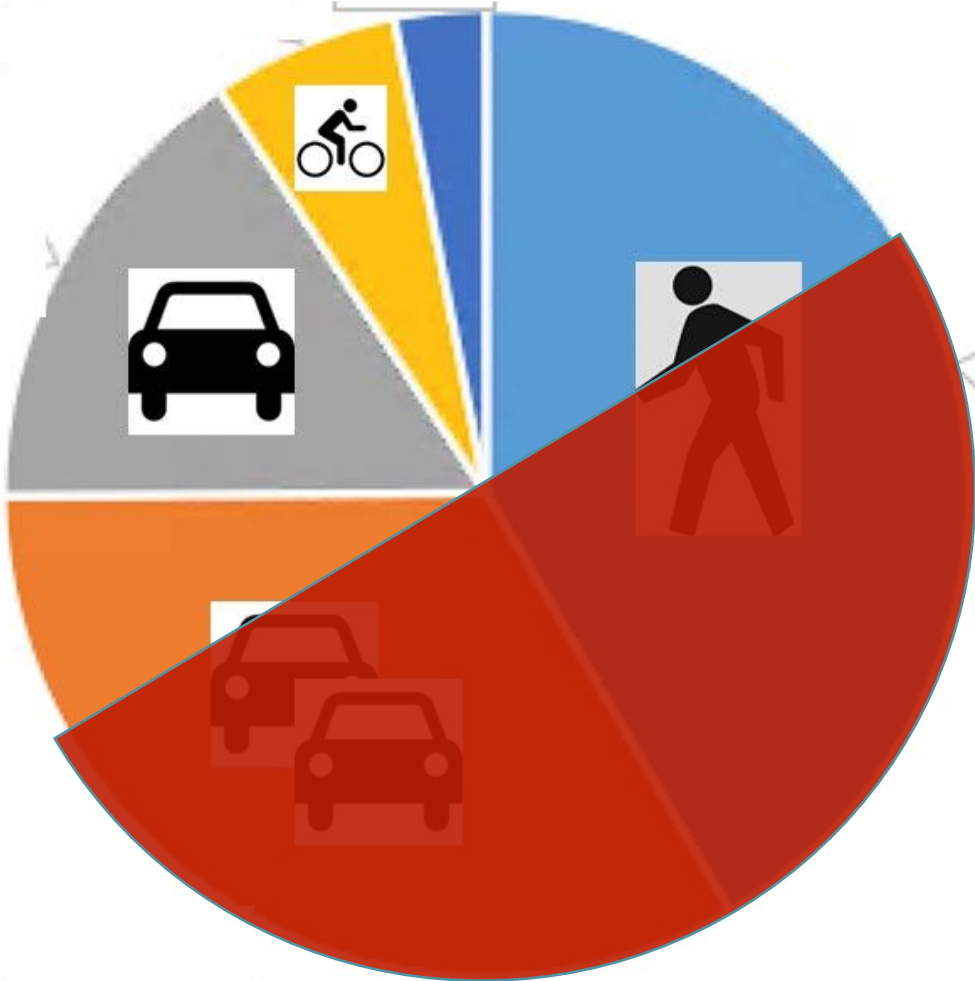
Phil Rust – Traffic Engineer
619.533.3714

Where to start Vision Zero?

Pedestrians, Vehicles



Urban Intersections (4x2 signals)



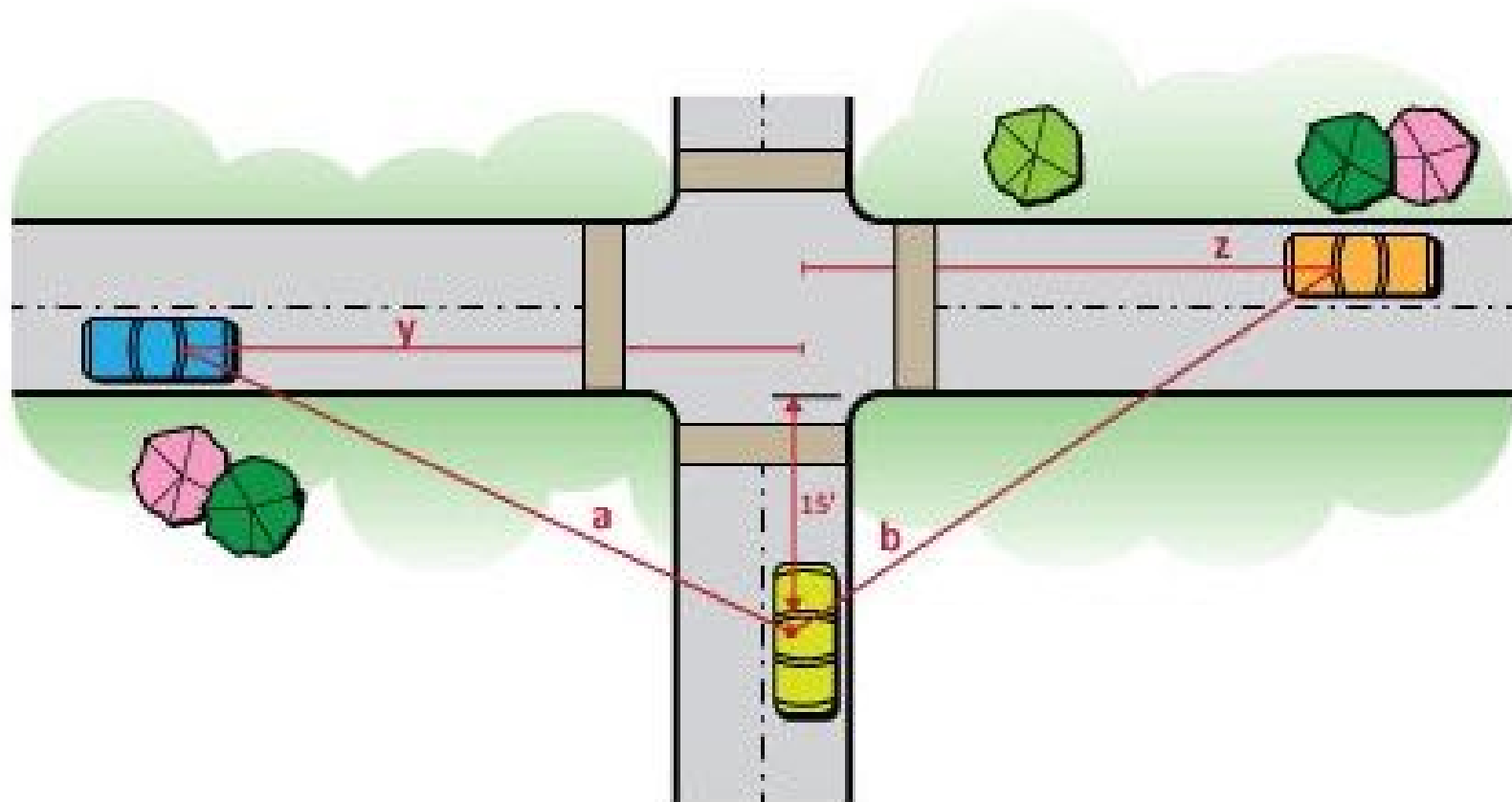
3 Bold Claims:

1. Traffic signals can't be a safe system.

People Make Mistakes. Spot it. Compensate.

Look opposite ways at the same time

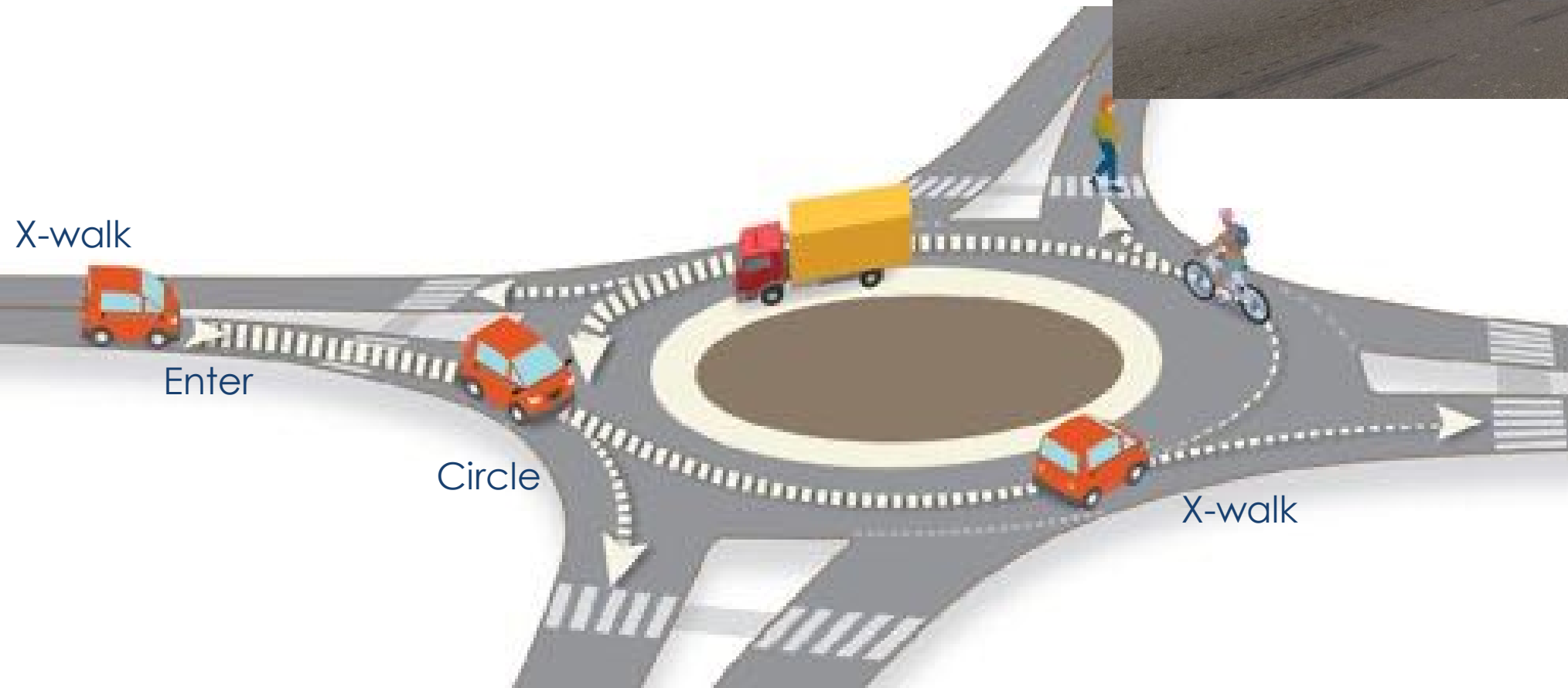
Pedestrians: one is always behind



Redundancy.

Direct and in front.

One decision at a time.



Test: Can I compensate for their mistake?

x fail

✓ pass



Photo credit Patrick McGrady

Test: Low energy?

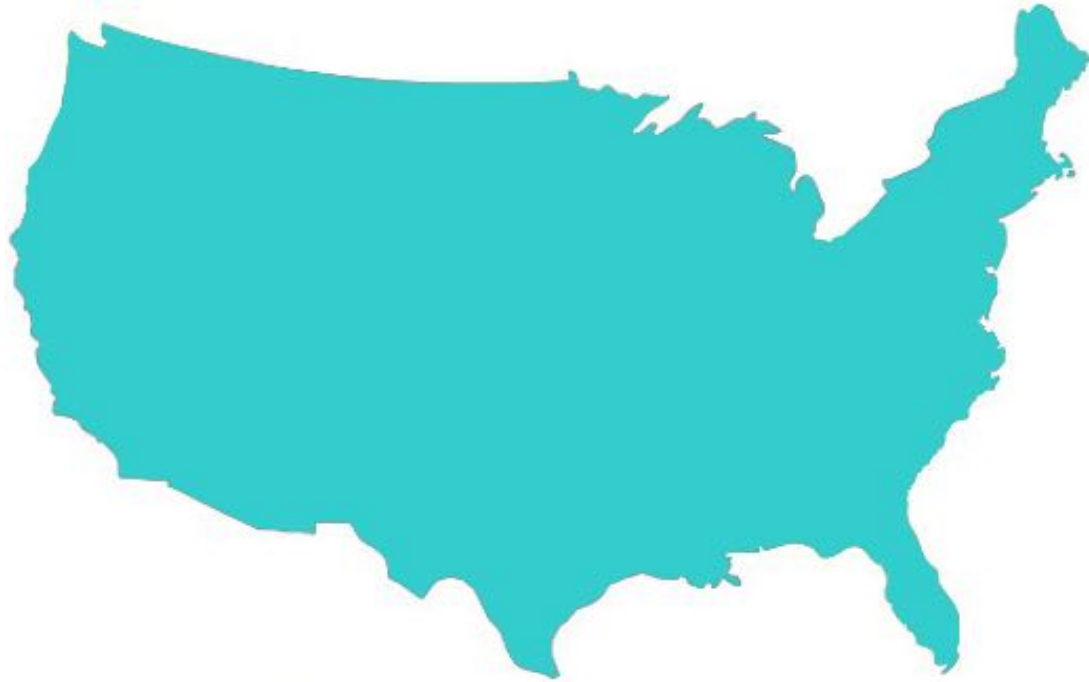
x fail (high speed, right angle)

✓ **pass**



Photo credit Patrick McGrady

What is the traffic signal's track record?



10,000+ roundabouts

Many 20+ years old

90%-100% elimination of fatal crashes

ZERO fatal crashes in crosswalks

<https://usa.streetsblog.org/2022/09/21/study-some-roundabout-designs-slash-crash-injuries-up-to-85> KSU listserv

3 Bold Claims:

1. Traffic signals can't be a safe system.

2. Roundabouts are free.

Want a free roundabout? Stop buying signals!

\$0

\$500,000

\$1,000,000

\$1,500,000

\$2,000,000

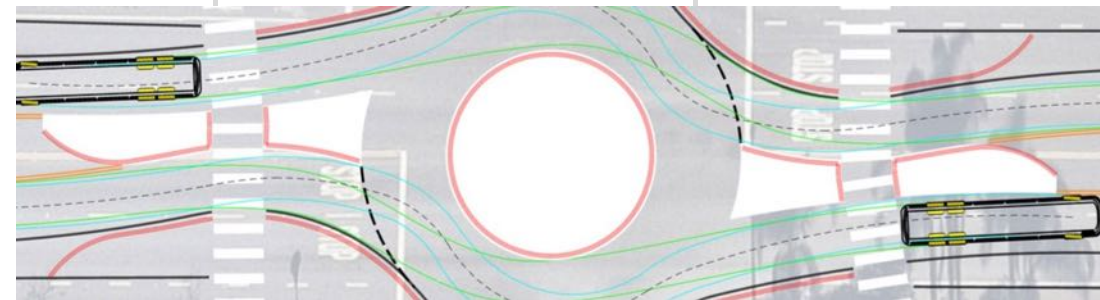
Years



Weeks



Days



■ Materials ■ Labor ■ Ramps



7CYE032

STOP

STOP

ALL WAY

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION
CALIFORNIA HIGHWAY PATROL

3 Bold Claims:

1. Traffic signals can't be a safe system.

2. Roundabouts are free.

3. Roundabouts **can** fit.

Today's traffic (removable)

- Replaced 3 signals on 4-lane streets so far (traditional)
- All-way stop – removed 2 bypass lanes (1st modular)
- All-way stop – removing 2 through lanes (2nd modular)

- With same lanes: roundabouts handle more traffic than signals
- Initial screening: signals on 4 lane streets where a one-lane roundabout works (low cost / high benefit)

- Calibrated capacity <https://rosap.ntl.bts.gov/view/dot/27665>

Page vii (pdf page 10)

$$\text{Single-lane: } c = 1440 \cdot \exp(-0.0010 \cdot v_c)$$

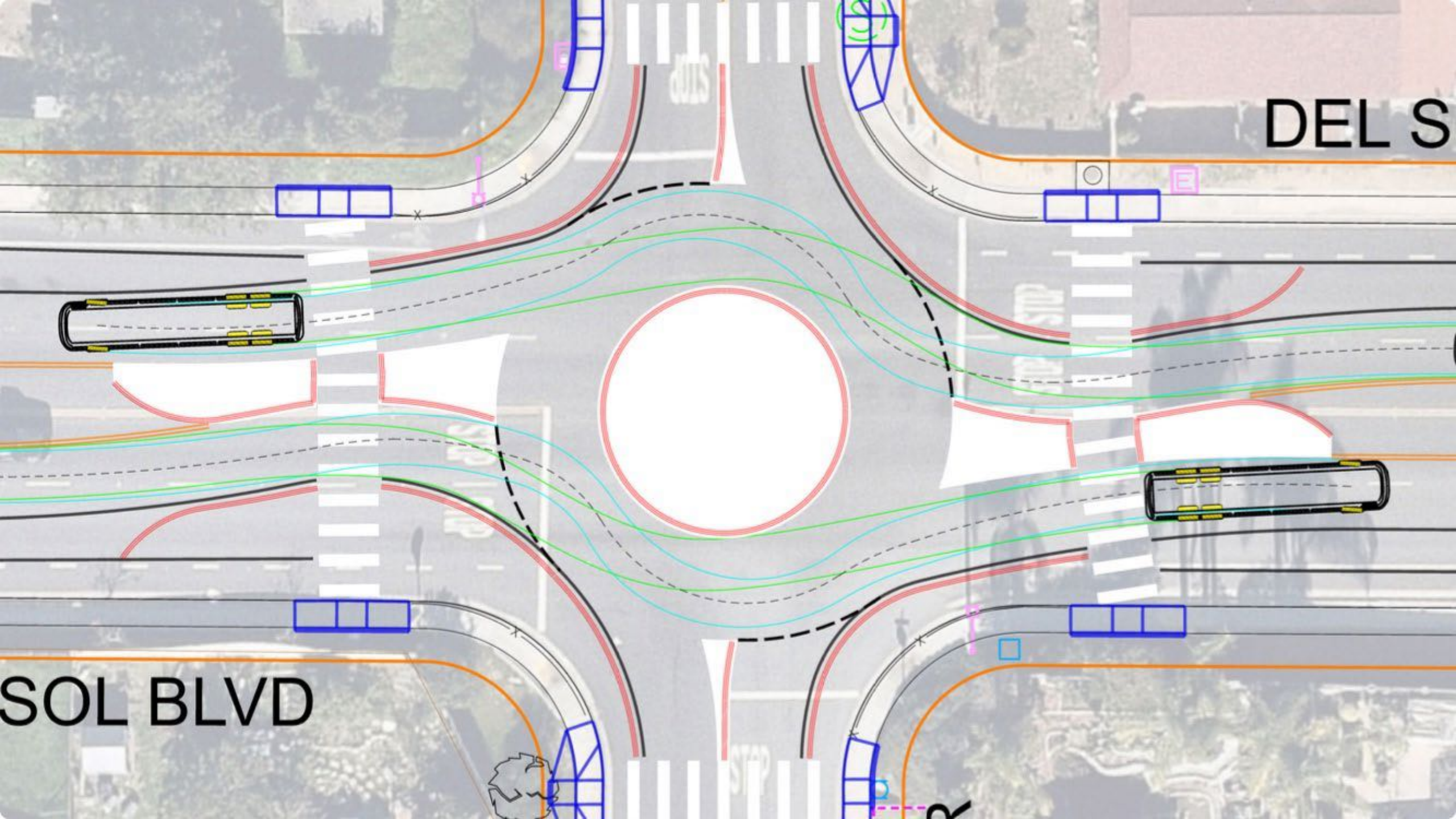


Credit: FHWA
Small Business
Program.




Today's trucks (mountable)

- If there are bike lanes, we leave room for right-only bike lanes
- Higher speed approaches get longer, wider splitter islands
- If it is on a bus route, we design it to keep busses off the islands
- All large trucks that can go through today can use it





- San Francisco
- North Carolina
- Nebraska
- Maryland
- Georgia
- Florida
- Virginia
- Canada

A group of people in business suits are on paddleboards in a flooded highway at sunset. The scene is surreal, with the sun low on the horizon, casting a golden glow over the water and the silhouettes of the people. In the background, a line of cars is stuck in traffic, their headlights and taillights visible. The overall mood is one of unexpected calm amidst a chaotic situation.

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