



Part 1:

Accessibility at Roundabouts

Part 2:

Accessibility during Construction

Dean Perkins, Architect, ADA Coordinator

Part 1: Accessibility at Roundabouts

How to get pedestrians through roundabouts,
“Safely and Accessibly”

Roundabouts

- Benefits
 - Move vehicle traffic efficiently
 - Reduce number of crashes
 - Reduce severity of crashes
 - Accommodate multiple modes of traffic
- A consideration...
 - Pedestrians, especially those with vision impairments



Roundabouts



A roundabout is a type of intersection control

Clearwater, FL



A roundabout is not:
A New England style Rotary, with large size & high speeds

Augusta, ME



A roundabout is not:
A Washington, DC style Traffic Circle, with signal controls

Washington, DC



A roundabout is not:
A traffic-calming Mini Circle

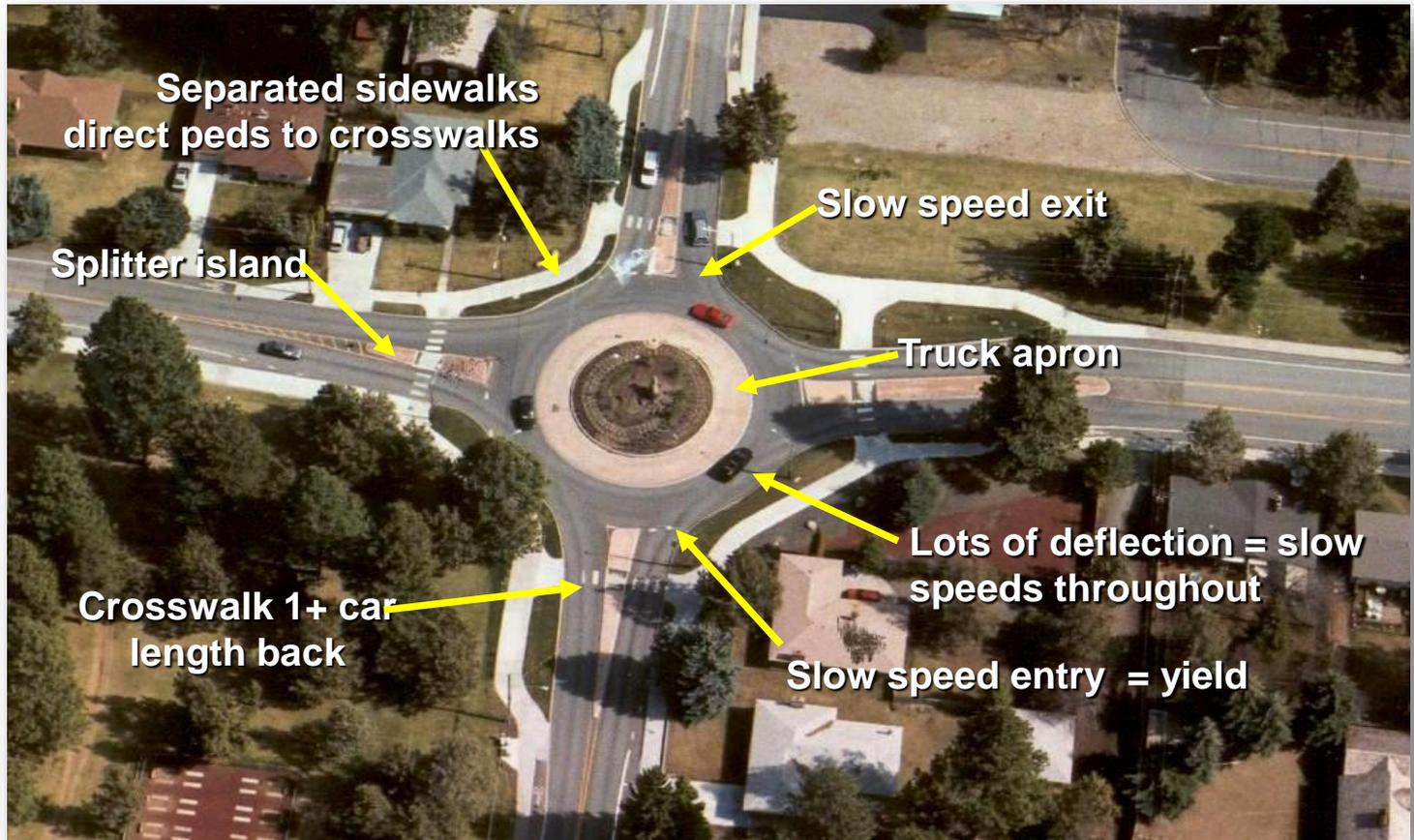
Anytown, USA



A roundabout is not:
Paris

Paris, France

Essential Roundabout Features



Bend, OR

Roundabouts – Safer for all users:

Slow speed:

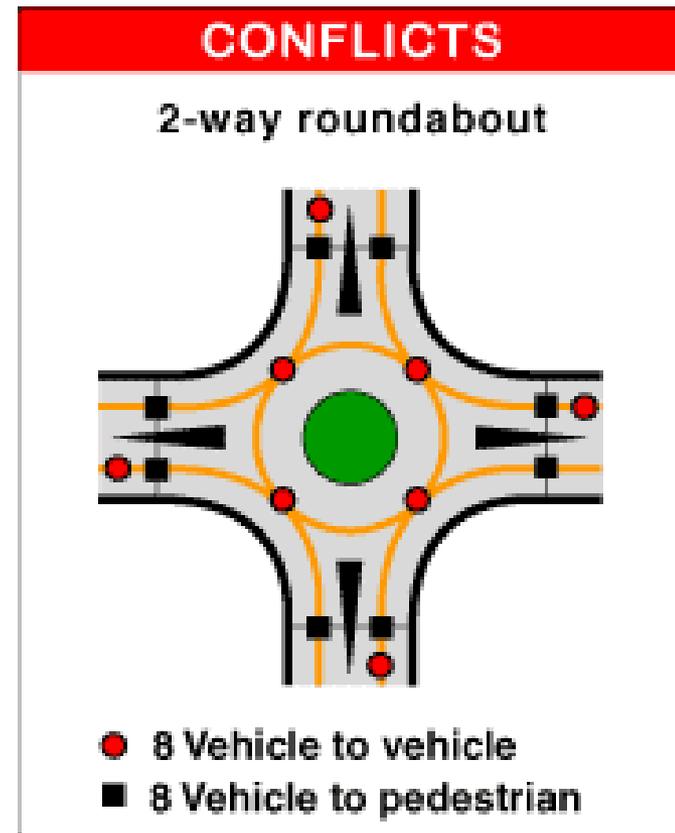
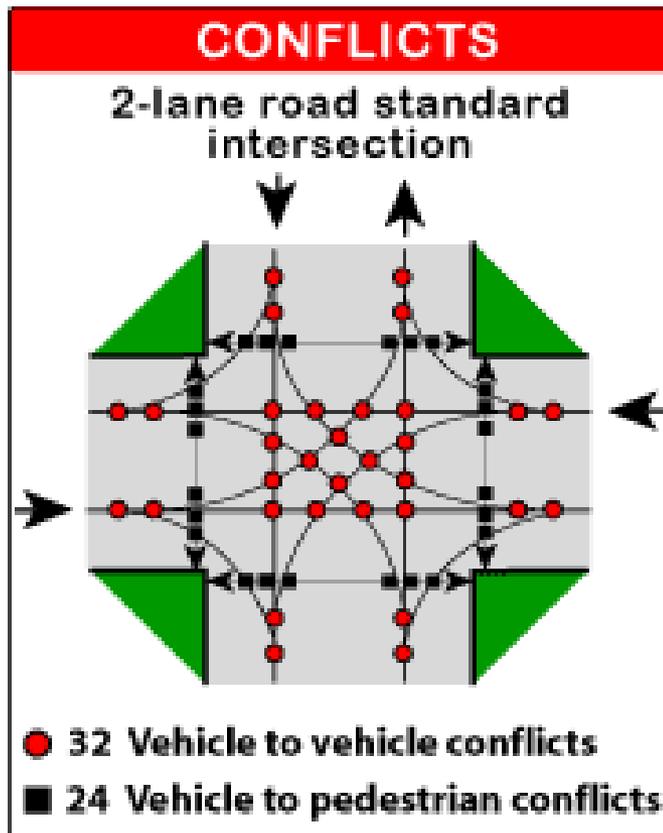
- Deflection, truck apron, splitter islands, “reverse super”
- Reduced conflicts
- No left turns
- Yield on entry

Fewer Crashes:

- About 54% overall
- 27% fewer pedestrian crashes
- Up to 76% fewer fatalities and serious injuries



Roundabouts – Fewer Conflict Points



Roundabouts

- FDOT “Tip Card”

Navigating a Modern Roundabout



Remember to yield at all entrances. Traffic in the circle has the right-of-way.

Bike Lane Ends Here
Bicyclists have two options:
1. Merge with traffic and circulate as a vehicle
2. Mount the sidewalk and use crosswalks

1. Slow to 10-15 mph on approach to a roundabout.
2. In multi-lane roundabouts, follow signs and markings to determine the travel that will serve your destination.
3. Yield right-of-way to bicyclists merging into the entry lane before the bike lane ends.
4. Yield right-of-way to pedestrians crossing the entry lane.
5. Yield right-of-way to motorists already in the circular roadway when it is safe to do so.
6. Turn right onto the circular roadway when it is safe to do so.
7. When you approach your destination street, use your right-turn signal and exit the roundabout.
8. Yield right-of-way to pedestrians crossing the exit lane.

Roundabout User Tips

Motorists

- Determine which way you want to go in advance of the roundabout.
- Keep right at the splitter island and slow to 10-15 mph.
- Watch for bicyclists and allow them to merge into the entry lane.
- Watch for pedestrians crossing the entry roadway and yield right-of-way.
- Yield right-of-way to vehicles within the circular roadway.
- Turn right onto the circular roadway when it is safe to do so.
- When you approach your street, use your right-turn signal and exit the roundabout.
- Watch for pedestrians crossing the exit roadway and yield right-of-way.

Pedestrians

- Stay on the sidewalks and use crosswalks at designated crossings.
- Do not enter the central island.
- Watch for motorists and bicyclists.
- Cross on the splitter island and stop behind traffic signals.

Bicyclists

- If riding with traffic on the entry lane or use the ramp to the roundabout.
- If riding with traffic, signal your intended path.
- If using the sidewalk, yield right-of-way to pedestrians and walk your bicycle at crosswalks.

All roundabouts have these features:

- Yield-at-entry**
 - Traffic entering the circle yields to traffic already in the circle.
- Traffic deflection**
 - Pavement markings and raised islands direct traffic into a one-way counter-clockwise flow.
- Geometric curvature**
 - The radius of the circular road and the angles of entry can be designed to slow the speed of vehicles.

Benefits of a Roundabout

Saves lives

- Up to a 90% reduction in fatalities
- 70% reduction in injury crashes
- 30-40% reduction in pedestrian crashes
- 70% fewer conflict points than four-way intersections

Slower vehicle speeds (generally under 25 mph)

- Motorists have more time to judge and react to other cars or pedestrians
- Advantageous to older and novice motorists
- Reduces the severity of crashes
- Keeps pedestrians safer

Efficient traffic flow

- 30-50% increase in traffic capacity

Reduction in pollution and fuel use

- Improved traffic flow for intersections that handle a high number of left turns
- Reduces need for storage lanes

Potential money saved

- No signal equipment to install and repair
- Savings estimated at an average of \$5,000 per year in electricity and maintenance costs
- Service life of a roundabout is 25 years
- In the 10-year service life of signal equipment

Community benefits

- Traffic calming
- Aesthetic landscaping

Source: Federal Highway Administration

What is a Roundabout?

A roundabout is a circular intersection without traffic control signals.



ALERT TODAY! LIVE TOMORROW!

Roundabouts
A Guide To Modern Roundabouts

Why Modern Roundabouts?

In Florida, over 42% of all traffic collisions and serious injuries occur at conventional (non-signal controlled) intersections. Roundabouts have been proven to reduce the number of fatal and severe injury crashes by 62% over a signal-controlled intersection, and 79% over a signalized intersection.

Conventional intersections have 32 vehicle and 18 pedestrian conflict points, while roundabouts have only 6 no crossing movements in a counter-clockwise left turn and right-angle crashes are eliminated.

For safety tips and more information, please visit: www.AlertTodayFlorida.com

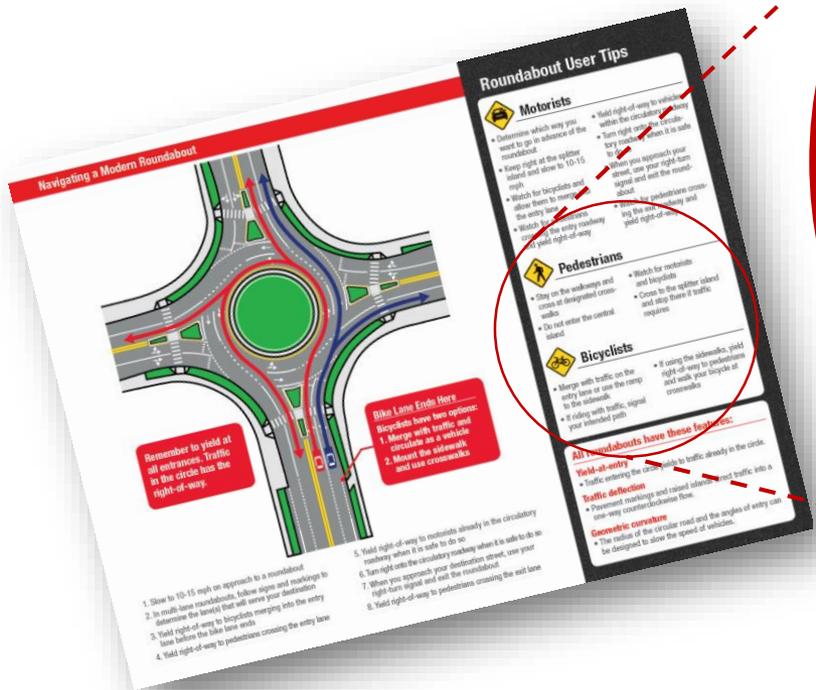
MOTORISTS • PEDESTRIANS • BICYCLISTS

Informational Guide for:
FDOT
Presented by FDOT
iCura



Roundabouts

- FDOT “Tip Card”



Pedestrians

- Stay on the walkways and cross at designated crosswalks
- Do not enter the central island
- Watch for motorists and bicyclists
- Cross to the splitter island and stop there if traffic requires



Bicyclists

- Merge with traffic on the entry lane or use the ramp to the sidewalk
- If riding with traffic, signal your intended path
- If using the sidewalks, yield right-of-way to pedestrians and walk your bicycle at crosswalks

Roundabouts – Pedestrian Experience

- Cars only coming from one direction at a time
- Fewer lanes to cross
- Splitter island provides refuge
- Cars traveling at slower speeds
- Generally easier to determine gaps

However . . .

Roundabouts

- Some considerations for . . .
 - Pedestrians with vision impairments
 - Where to cross: How do I find the crossing?
 - Which way to cross: What are the alignment cues?
 - When to cross: How do I distinguish 'gaps' in traffic?

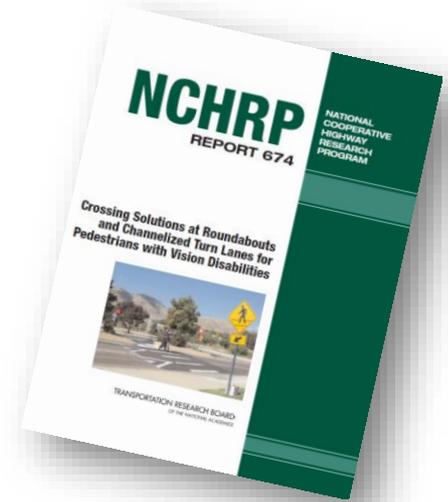
Roundabout Considerations

- Pedestrians with vision impairments
 - Where to cross
 - How to find crossings
 - “Clues” on sidewalks at crossings?
 - Align with crossing
 - Which direction to cross
 - Identifiable crossing features
 - Detectable warnings, return curbs, etc.
 - When to cross
 - How to distinguish ‘gaps’ in traffic
 - Moving traffic masks sound cues



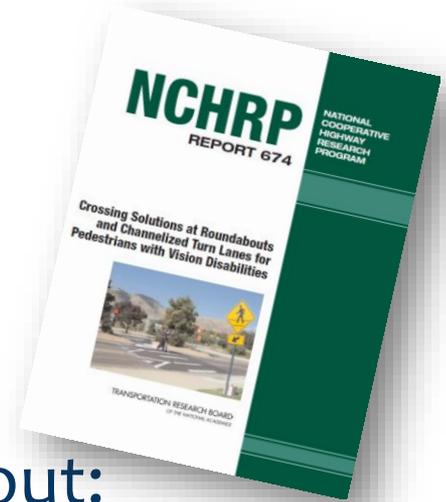
Single-lane Roundabouts

- Single lane roundabouts are less problematic
- Accessibility is linked to:
 - Low vehicle speeds at crossings
 - Willingness of most drivers to yield to pedestrians
 - Properly installed detectable warnings
 - Orientation and Mobility training customized for roundabouts: geometry, traffic patterns, etc.



Multi-lane Roundabouts

- Multi-lane roundabouts are challenging and not accessible without:
 - Additional crossing treatments
 - Drastic increase in drivers yielding to pedestrians
- Generally higher traffic speeds and volumes
- Higher speeds → reduced yielding to pedestrians
- Risk of multiple-threat situations



Roundabout Video

- Pedestrians who are blind trying to cross . . .



<https://www.youtube.com/watch?v=GP8uwHxUu6c>

Roundabouts

- PROWAG recommendations...
 - Single-lane: no special pedestrian treatments
 - Multi-lane: include pedestrian-activated controls
 - Pedestrian Hybrid Beacon (HAWK)
 - Rectangular Rapid Flashing Beacon (RRFB)
 - Traffic signal



Traffic Signal:
Green until
activated



HAWK:
Dark until activated

RRFB:
Dark until activated

Possible Mitigation For 2-lane Roundabout Ped signal at selected leg(s)



Pedestrian-activated Crossing Signals
(Lights are green until button is pushed)

Clearwater Beach, FL

Roundabouts

- **Benefits**

- Move vehicle traffic efficiently
- Reduce number of crashes
- Reduce severity of crashes
- Accommodate multiple modes of traffic

- **Considerations**

- Accommodate pedestrians with vision impairments
 - Need to consider '*safe and accessible*' crossing treatments



ADA & Roundabouts



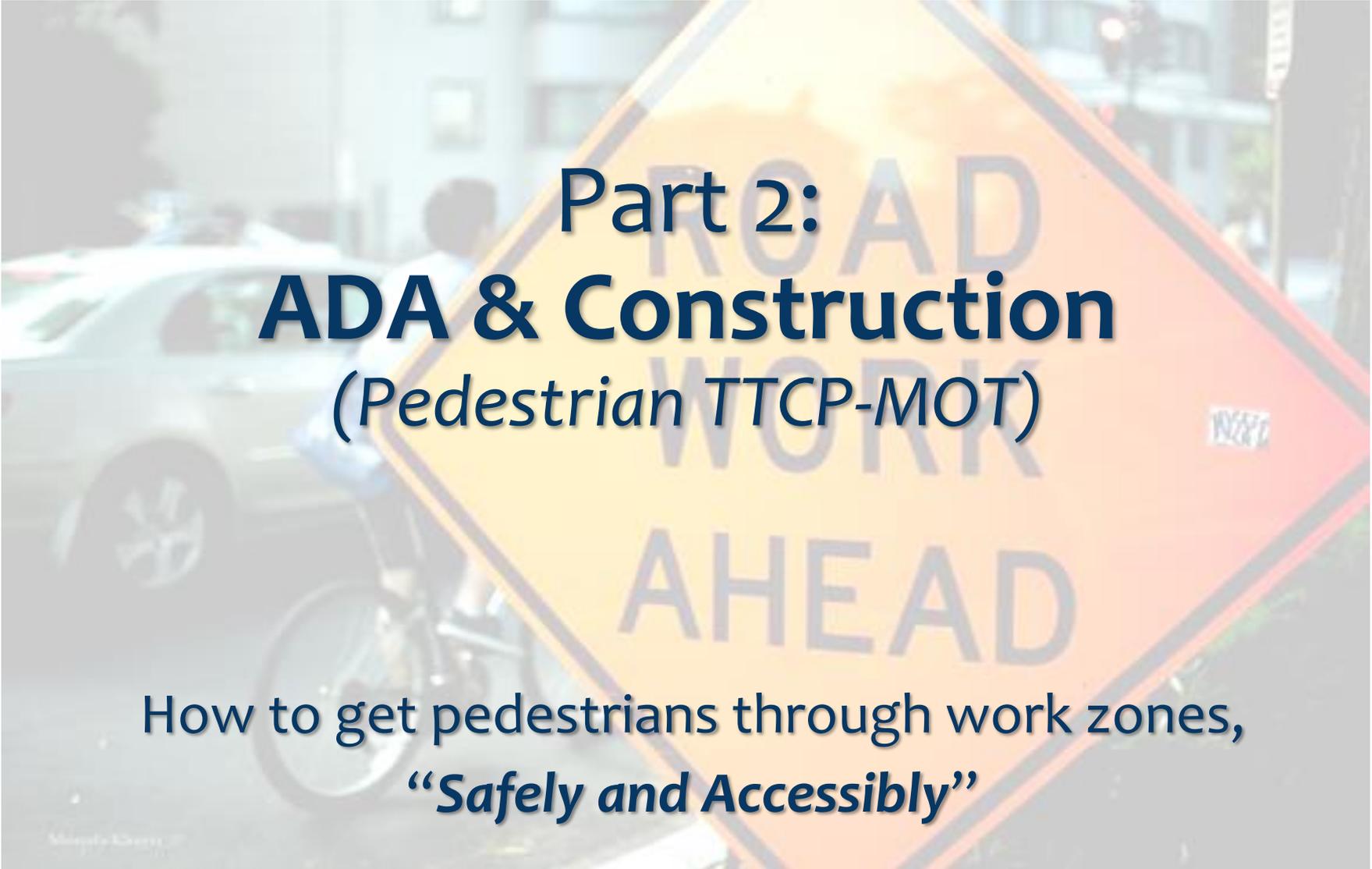
Questions?

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Part 2: **ADA & Construction** (Pedestrian TTCP-MOT)

How to get pedestrians through work zones,
“Safely and Accessibly”

Temporary Traffic Control Plans (TTCs) - MUTCD 6D & 6F

- Must include pedestrian accommodations
 - Advance warning of sidewalk closures
 - “Accessible” pedestrian detours/diversions
 - Protection devices
 - Way-finding/Channelizing devices

Temporary Pedestrian Access Routes (TPARs) - PROWAG R205 & R303

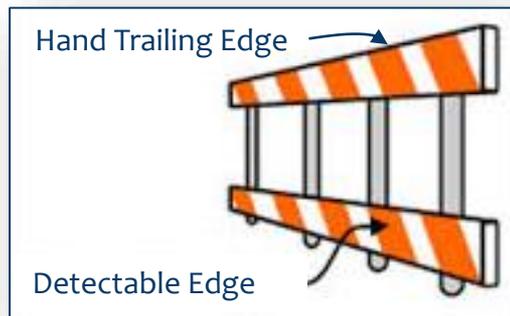
- Temporary Pedestrian Access Routes are required when an existing pedestrian access route is blocked by construction, alteration, maintenance, or other temporary condition.



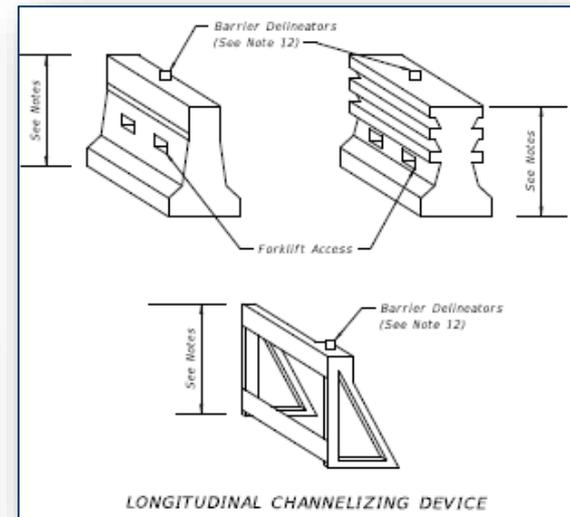
Temporary Pedestrian Access Routes (TPARs)

- PROWAG Section R205 specifies that temporary pedestrian access routes shall be:
 - Provided on the same side of the street as the disrupted route, *to the maximum extent feasible*
 - Where exposed to adjacent construction, traffic or other hazards, TPARs shall be protected with a *pedestrian barricade* or *channelization device*
 - Continuous, stable, non-flexible
 - Consist of features identified in the **MUTCD** Chapter 6F
 - **Plastic tape is not acceptable!!!**
 - **Rows of barrels and/or cones are not acceptable... unless they are connected by a continuous 'detectable' edge**

Longitudinal Channelizing Devices (LCDs)



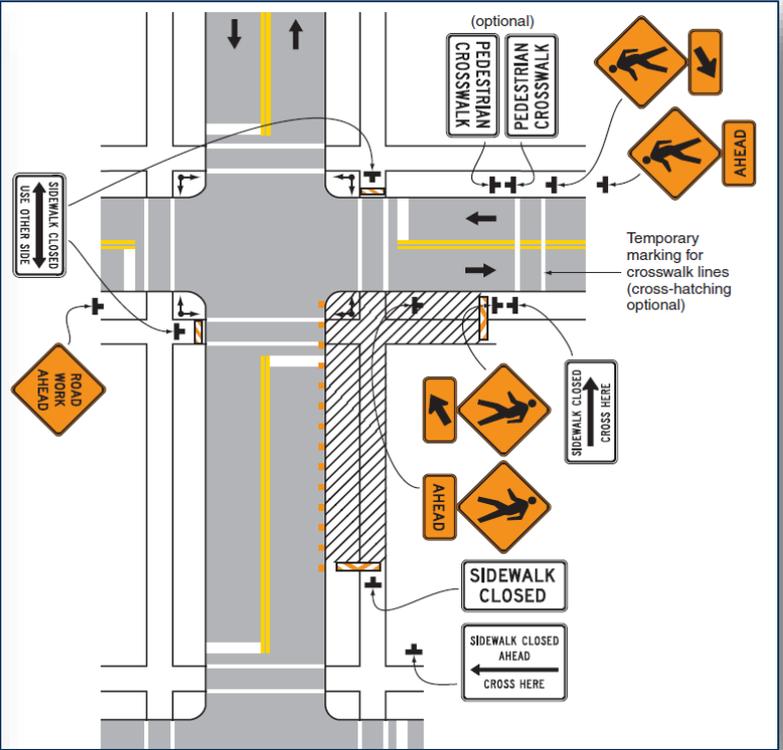
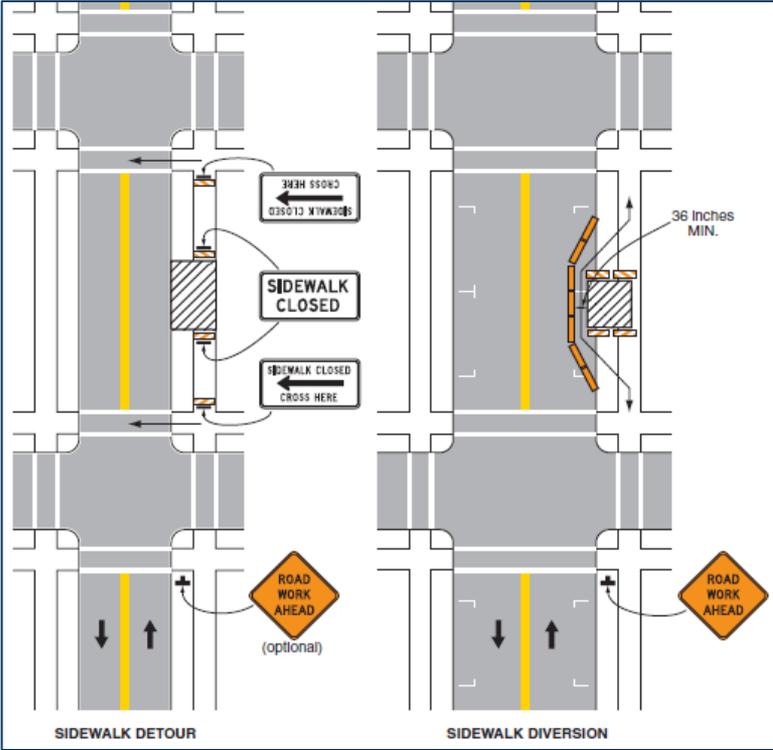
11. For pedestrian longitudinal channelizing devices, the device shall have a minimum of 8" continuous detectable edging above the walkway. A gap not exceeding a height of 2" is allowed to facilitate drainage. The top surface of the device shall be a minimum height of 32" and have smooth connection points between the devices to facilitate hand trailing. The bottom and the top surface of the device shall be in the same vertical plane. If pedestrian drop-off protection is required, the device shall have a footprint or offset of at least 2', otherwise the device must be 42" in height above the walkway and be anchored or ballasted to withstand a 200 lb lateral point load at the top of the device.



FDOT Design Standards
Index 600

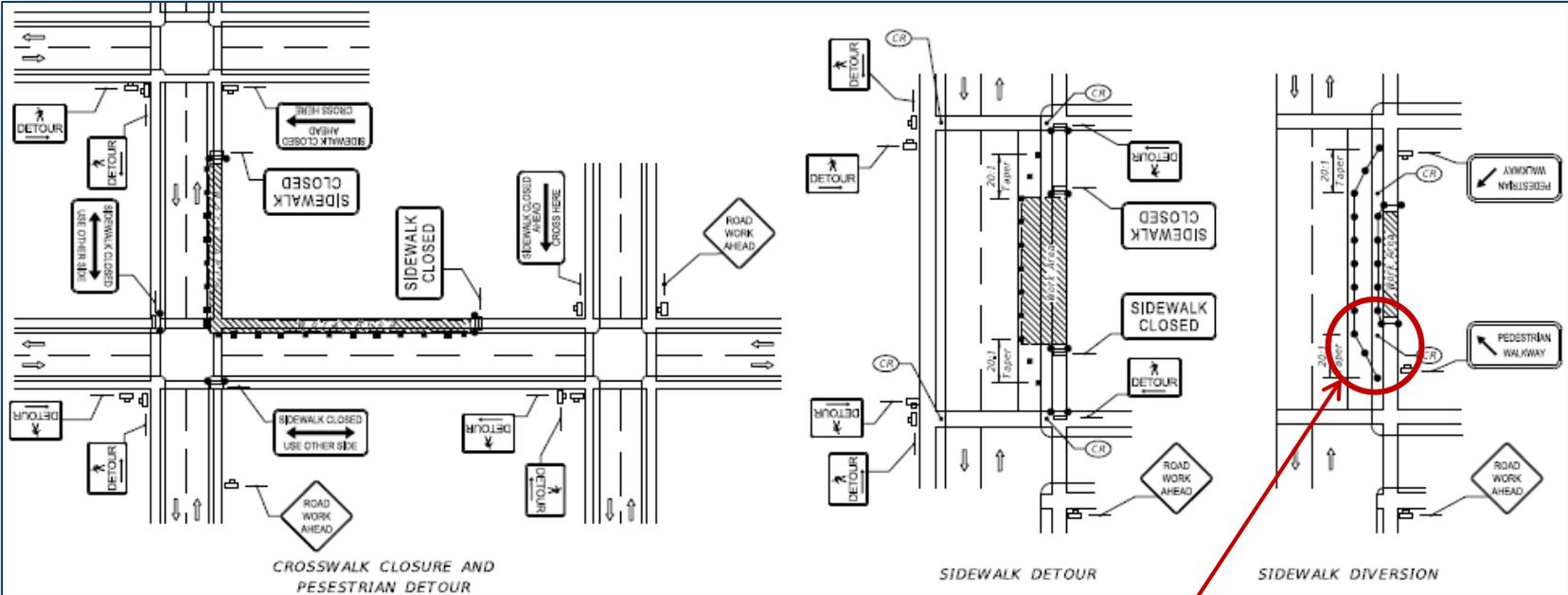
TPARs

MUTCD: 6H-28 & 6H-29



TPARs

FDOT: Index 660



If a raised curb, don't forget curb ramps!

Examples of LCDs



Vertical Plane



More . . .



Construction Work Zones

- Unfortunately, too many bad examples...



ADA & Construction



Questions?

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Very good! Measure before you build (Identity withheld)

Thank You!

Merci! ***Todah Rabbah***

Hvala!

Arigato!

Dhanya Vaad!

Xie Xie!

Gracias!

Shokran!

Danke!

LIVE LONG AND PROSPER!

