

# Fayette County Board Meeting

June 2, 2015

*all about*  
**ROUNDABOUTS**



# Questioning Roundabouts

- 1. What is a modern roundabout?**
- 2. Trends across the US and in Georgia**
- 3. Safety and operational aspects – how to drive one**
- 4. Ability to handle tractor trailers - show roundabout videos demonstrating truck use and other operational characteristics**
- 5. Why roundabouts instead of signals - don't they cost more**
- 6. Subject Intersections**
  - Land impacts (Project Specific)**
  - Will they cause a back-up on the main roads**

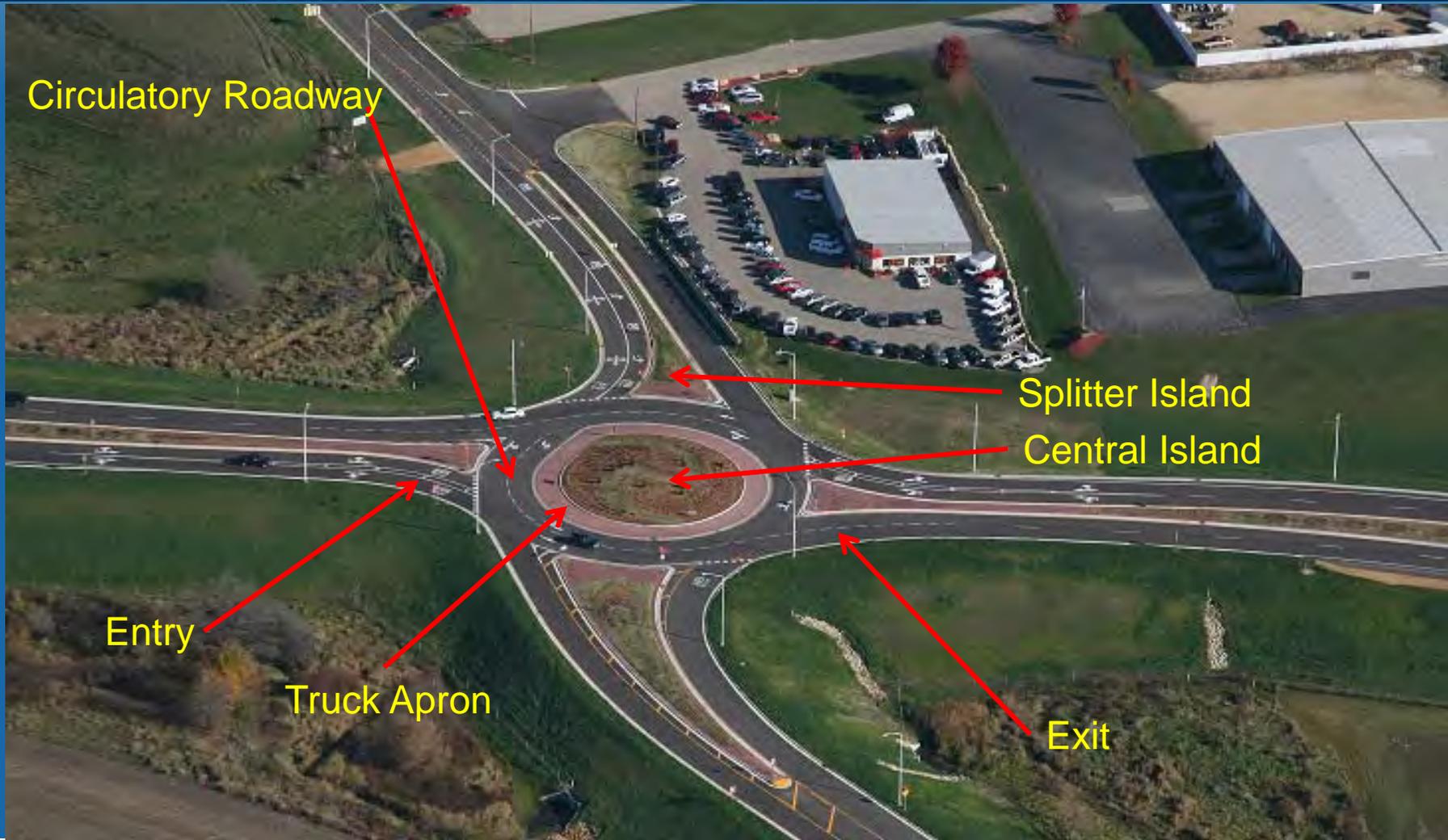


# What is a Modern Roundabout?

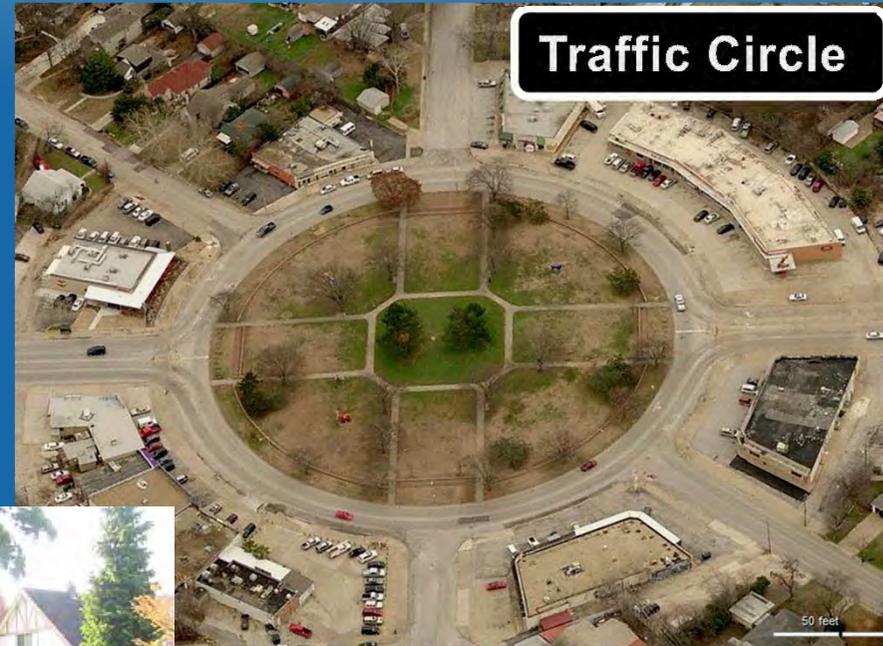
- A compact circular intersection in which traffic flows counter-clockwise around a center island
- Entering traffic yields
- Approaches are channelized to deflect traffic into a slow entry path speed



# Physical Features



# What a Modern Roundabout is not...



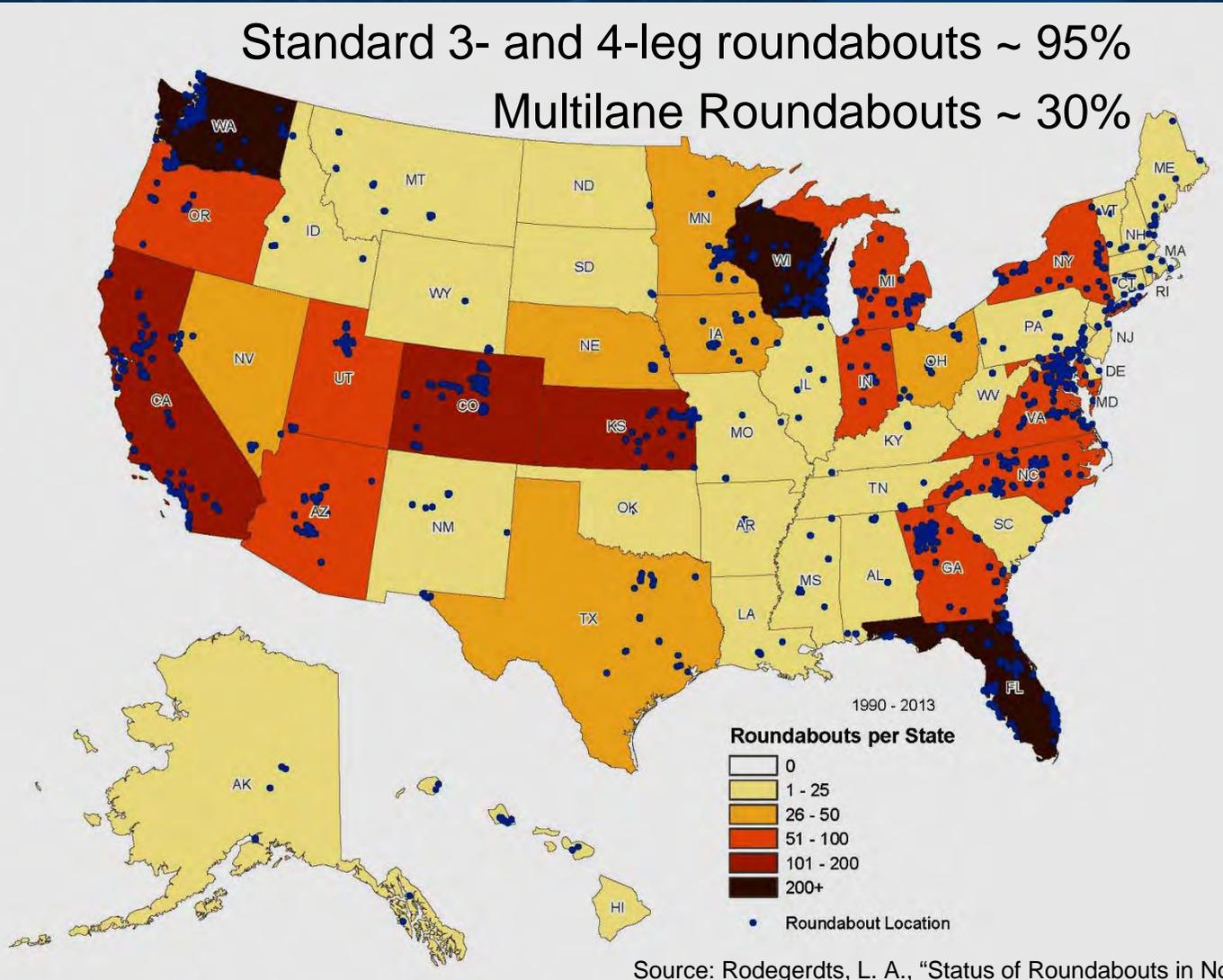
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# U.S. sites by state: 1990- 2013

Standard 3- and 4-leg roundabouts ~ 95%

Multilane Roundabouts ~ 30%



Source: Rodegerdts, L. A., "Status of Roundabouts in North America", TRB 4<sup>th</sup> International Conference on Roundabouts, Seattle, WA, April 2014.

# Roundabouts in Georgia



## 2009 - Chief Engineer Policy:

- Mandates consideration as alternate
- Allows multi-lane roundabouts

## 2010 - GDOT Design Policy

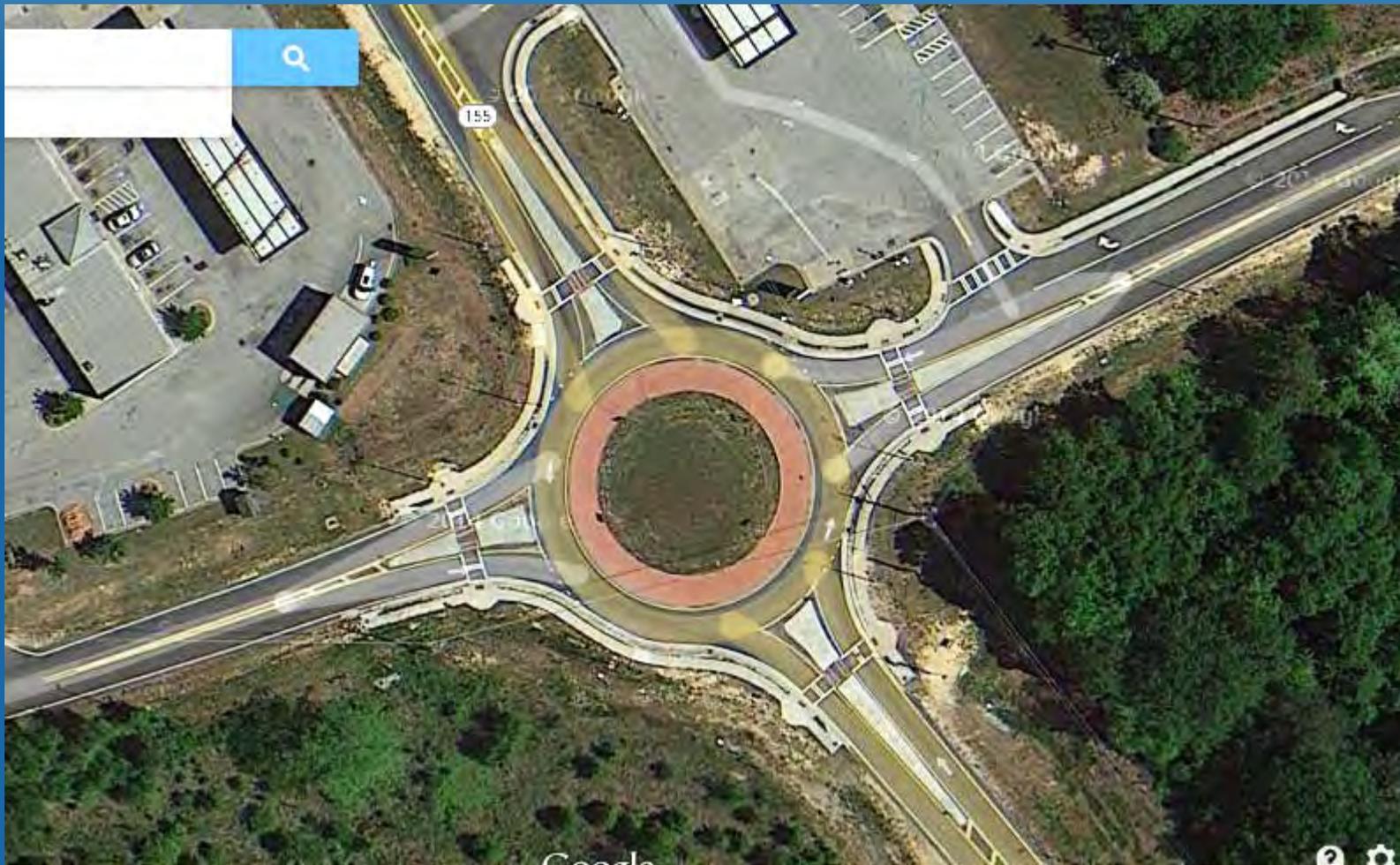
## 2012 SHSP tactical plan specific to intersection countermeasures:

- Achieve a balance between systematic, individual & comprehensive treatments

The DOT's safety strategies include roundabouts....

...over 100 in various stages of implementation

# SR 155 and Fairview Road



# Colvin Drive at North Unity Grove Road



# Grady Avenue, Fayetteville Central Island Landscaping

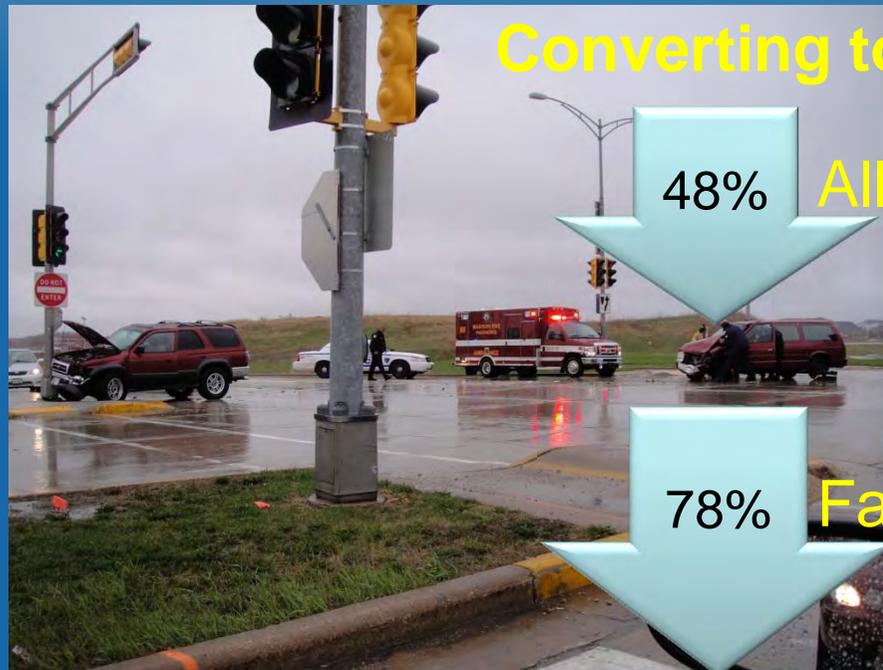


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# Preventable Collisions



- Severe Angle and turning movement collisions are avoidable

# Roundabouts vs. Traffic Signals on High Speed Roadways

Signals:   
 Roundabouts: 

FREQUENCY RATING	SEVERITY RATING			
	LOW	MEDIUM	HIGH	EXTREME
FREQUENT	D 	E	F 	F
OCCASIONAL	C	D	E	F
INFREQUENT	B	C	D	E
RARE	A	B	C	D

**Collision Risk Ratings:**

- A: Lowest Risk Level;
- B: Low Risk Level;
- C: Moderate – Low Risk;
- D: Moderate – Higher Risk Level;
- E: High Risk Level; Level
- F: Highest Risk Level

**Collision Severity Ratings:**

- Probable Fatality = Extreme;
- Moderate to Incapacitating Injury = High;
- Minor to Moderate Injury = Medium;
- Property Damage Only = Low



# Safety Overview

ANGLE CRASHES  
CAUSE *MORE THAN*  
**1/3**  
OF TRAFFIC  
DEATHS/YEAR



# Roundabout Traffic Operations

- Vehicles slow due to geometry
- Traffic Yields before entering
- Vehicles travel counter-clockwise
- Roundabouts have less delay than traffic signals
- Reduced stops, reduced noise, improved air quality

**Efficient during peak and off-peak**



# Why do most drivers prefer traffic signals?

- Historical comfort level – familiar surroundings
- We don't like change
- Roundabouts require change in the way we drive intersections
- Roundabouts require driver adaptation
- It's a stretch to see that the change is worth it because of the safety benefits

# User Specific Training



## What is a roundabout?

- ▶ A roundabout is a one-way circular intersection engineered to maximize safety and reduce traffic congestion.
- ▶ The "yield at entry" rule reduces delay by eliminating unnecessary stopping. Drivers yield to traffic in the roundabout and enter only when there is a safe gap in traffic.
- ▶ Pavement markings and signs direct traffic into a one-way, counter-clockwise flow.
- ▶ Raised islands and painted crosswalks at roundabouts provide safer and more visible routes for pedestrians. Short crossing distances and slow moving traffic increase pedestrian safety.
- ▶ Pedestrians cross the street using the designated crosswalks. Raised islands are provided in the middle of each crossing so pedestrians only cross one direction of traffic at a time.
- ▶ Bicyclists using the roundabout can either exit the roadway at the bike ramps and use the sidewalk, or take the lane and enter the roundabout as a vehicle.

Driving in circles can be a good thing, if it means you get where you want to **quickly and safely.**

That's why the City of Fort Worth has begun incorporating roundabouts into our road network.

## Contact us

Questions, comments or concerns?

Please contact us in whichever way is most convenient.



Tel: 817-392-7738



TTY: 817-884-2313



[www.fortworthroundabouts.com](http://www.fortworthroundabouts.com)

[www.fortworthtexas.gov/tpw](http://www.fortworthtexas.gov/tpw)



Transportation and Public Works Department  
1000 Throckmorton St.  
Fort Worth, TX 76102

## Please drive safely

Roundabouts are replacing traffic signals all across America. However, since roundabouts are fairly new to our area, please expect a short adjustment period as drivers get used to them.

## Using a Roundabout PEDESTRIANS & BICYCLISTS



Brought to you by



Transportation and Public Works Department



Take nothing for granted in who you need to reach...

### How to Drive Through a Roundabout

## SCHOOL BUS



**KEY**

- School Bus
- Yielding
- Circulating

**YIELD**  
The "Golden Rule" of roundabouts.

When you enter the roundabout, you must yield to circulating traffic, pedestrians and bicyclists.

Drivers in the circle have the right of way. A motorist approaching a roundabout should wait for a safe gap in traffic before entering.

Enter only when there is a safe gap in traffic.

Drivers must yield to pedestrians and bicyclists using the crosswalks.

Yield to all traffic coming from the left.

Circulating traffic has the right of way. Continue to your exit and do not stop within the roundabout.

The driver in the inside lane of the roundabout can either exit or continue circulating. Entering vehicles must yield to all traffic coming from the left.

**FORT WORTH.**

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[www.forthworthtexas.gov/tpw](http://www.forthworthtexas.gov/tpw)



# Select Lane – Stay In-Lane

**How to Drive Through a Roundabout**

## CHOOSE YOUR LANE BEFORE ENTERING A ROUNDABOUT

Drivers in the outside (right) lane are not allowed to turn left, they must exit the roundabout. Drivers in the left lane may exit or turn left.

As with any other intersection, the proper lane must be chosen before entering a roundabout.

In advance of the roundabout, signs and pavement markings will always indicate which lanes may be used for the direction you want to go.

Keep left to turn left through the roundabout and keep right to turn right.

**Never change lanes within a roundabout.**

In this type of crash, the driver of the RED car is at fault for failing to obey the lane use signs and choosing the incorrect lane.

Drivers wishing to turn left **must** be in the left (inside) lane before entering the roundabout.

Multiple signs and pavement markings on every approach remind drivers of the need to choose the proper lane. Failure to use the proper lane can result in a ticket or a crash.

U.S. Department of Transportation  
Federal Highway Administration

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Federal Highway Administration

## Driving a Roundabout Turn by Turn

► Observe all standard road rules, including yielding for pedestrians in crosswalks.

► To safely and efficiently drive a roundabout:

- Slow down.
- Read advance signing and choose correct lane.
- Yield to traffic in all lanes on your left before entering.
- Stay in your lane to your exit.

May 2013

## Always obey the signs and markings

As you get closer to the roundabout entrance, it is very important to observe the signs and arrows to determine which lane to use before entering a roundabout. Signs above the road and white arrows on the road will show the correct lane to use.

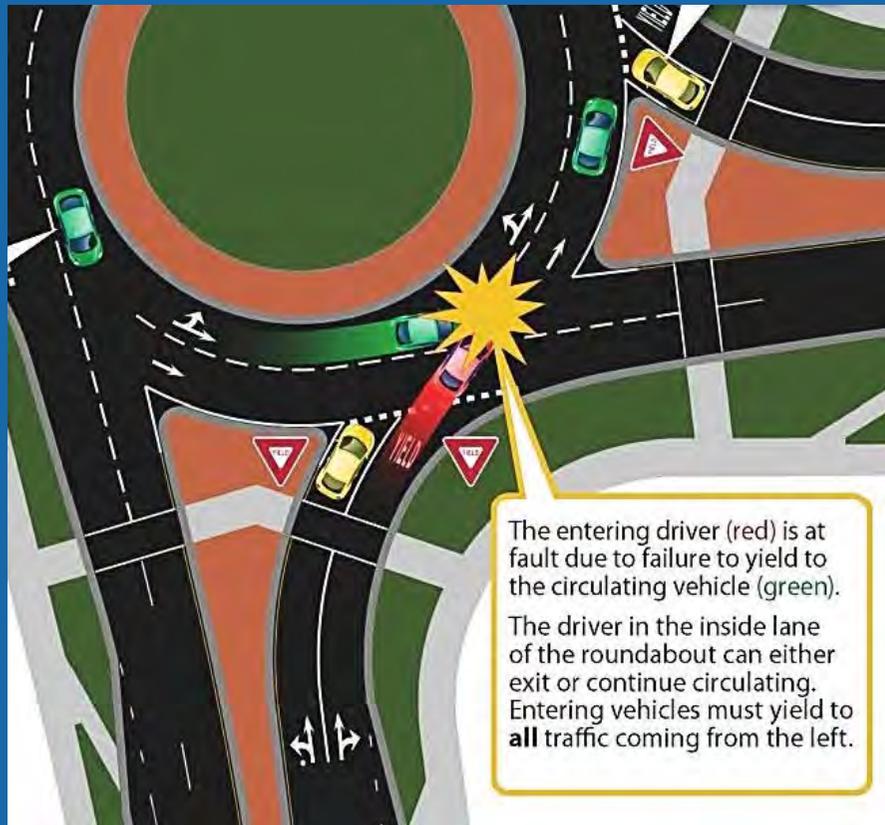
Roundabout ahead, slow down.

Guide signs near the entry to a roundabout show lane designations.

Yield to all traffic in the roundabout.

Roundabout traffic travels one-way.

# Failure to Yield to Both Lanes



## How to Drive Through a Roundabout

### ALWAYS YIELD TO ALL CIRCULATING TRAFFIC

**KEY**

- Stopped/At Fault
- Yielding
- Circulating

**YIELD**  
The "Golden Rule" of roundabouts.

Drivers entering a roundabout must yield to circulating traffic, pedestrians and bicyclists.

Drivers in the circle have the right of way. A motorist approaching a roundabout should wait for a safe gap in traffic before entering.

Drivers enter only when there is a safe gap in traffic.

Circulating traffic has the right of way. Continue to your exit and do not stop within the roundabout.

Drivers must yield to pedestrians and bicyclists using the crosswalks.

Drivers must yield to all traffic coming from the left.

The entering driver (red) is at fault due to failure to yield to the circulating vehicle (green). The driver in the inside lane of the roundabout can either exit or continue circulating. Entering vehicles must yield to **all** traffic coming from the left.

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Federal Highway Administration

# Reach out to the Goods Movement Industry



## How to Drive Through a Roundabout

# LARGE TRUCKS

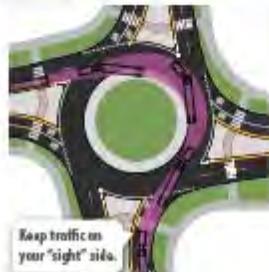
(WITH SEMI-TRAILERS)

As drivers approach a roundabout, it is imperative for them to read the signs. The signs will tell you what lane you need to be in to properly navigate the roundabout to exit at the desired location. Below is a step through of how to make left turns, right turns and through movements.

As truck drivers navigate a roundabout, their trailer will sometimes track into other lanes or they may have to use all available space, especially on smaller roundabouts.

Drivers must be aware of other vehicles at all times.

The Truck Apron is a concrete area designed specifically for large trucks to use.



### Making a LEFT TURN

1. As you approach the roundabout, set up to choose the lane that allows you to keep traffic on your "sight" side.
2. Check for surrounding traffic.
3. When clear, enter the circle, keeping in mind the trailer may off-track.
4. When in the roundabout, continually check in all mirrors until you have cleared the roundabout. When navigating the roundabout, the trailer may off-track onto the truck apron.



### Making a RIGHT TURN

1. Just like any right turn, trucks may need more space than just their lane. In some instances it may be all available space.
2. Check for surrounding traffic.
3. As you enter the roundabout, proceed with caution and be prepared to give right-of-way if needed.



### Making a THROUGH MOVEMENT

1. Trucks should enter the roundabout in the correct lane for their destination, trying to keep traffic to their left when possible.
2. Check for surrounding traffic.
3. Continually check in all mirrors until you have cleared the roundabout. When navigating the roundabout, the trailer may off-track onto the truck apron.

**FORT WORTH.**

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# How-to Drive a Multilane Roundabout



Navigating a Multi-lane Roundabout

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# Roundabout Videos



Madison, WI – *Future Urban*



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# Benefits of Roundabouts

- Safest type of at-grade intersection (20 years of proof)
- Higher capacity than traffic signals for the same turn proportions... up to 4000 VPH
- Larger bus and truck turning radius in circle
- Traffic looks left and moves right, at low speed
- Simple for pedestrians to use – short crossing look one way only
- Aesthetic .. can look superb .. Civic Feature
- No signal maintenance costs

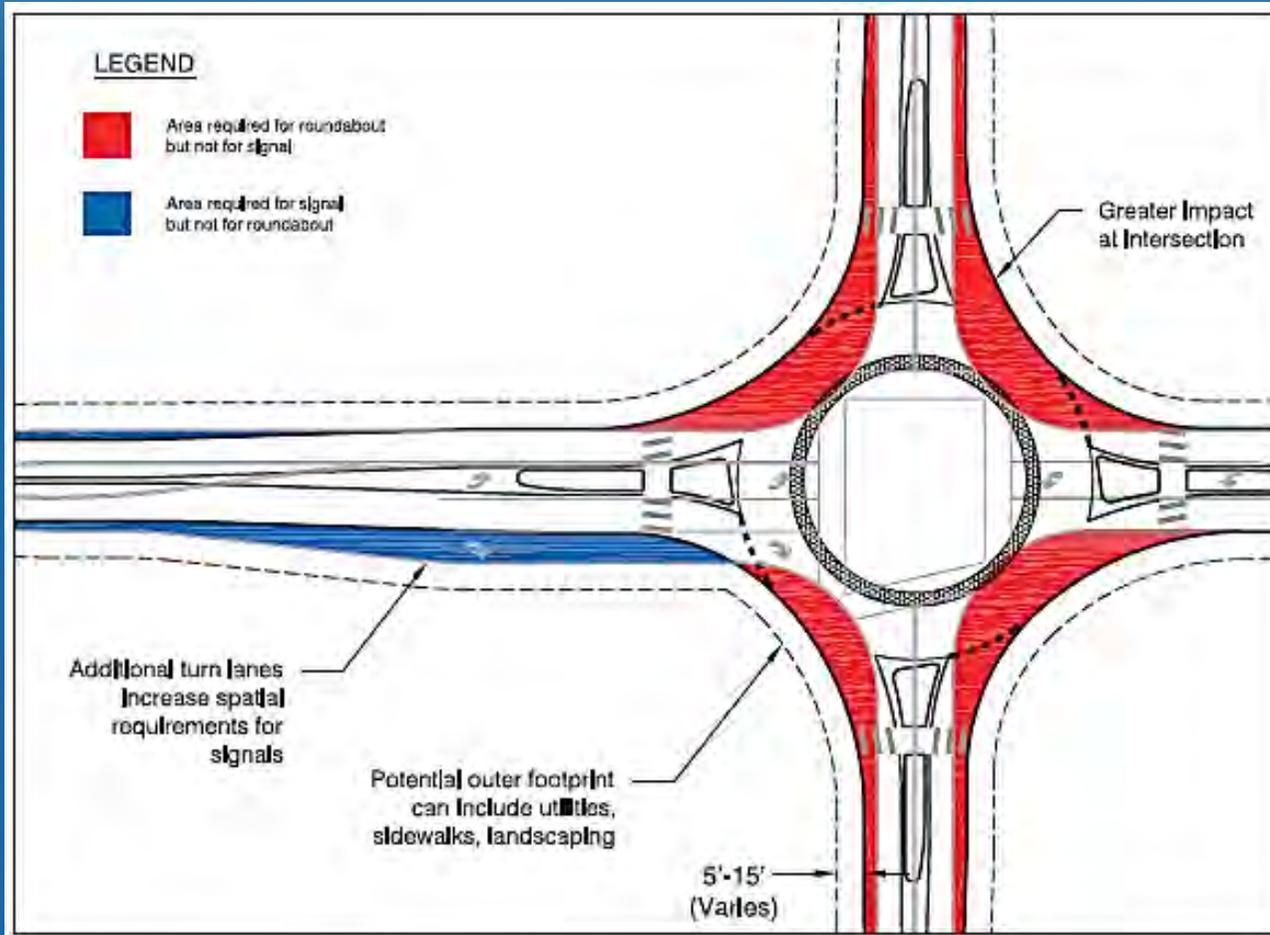
# Complement Community Values

- Quieter
- Safer
- Less Delay
- Aesthetics
- Lighted
- Slow



Example 2-lane roundabout next to a rural high school

# Cost Factors



- There is an expectation of higher cost
- But, the traffic signal needs long approach alignment improvements and turn bay length

# Questioning Roundabouts

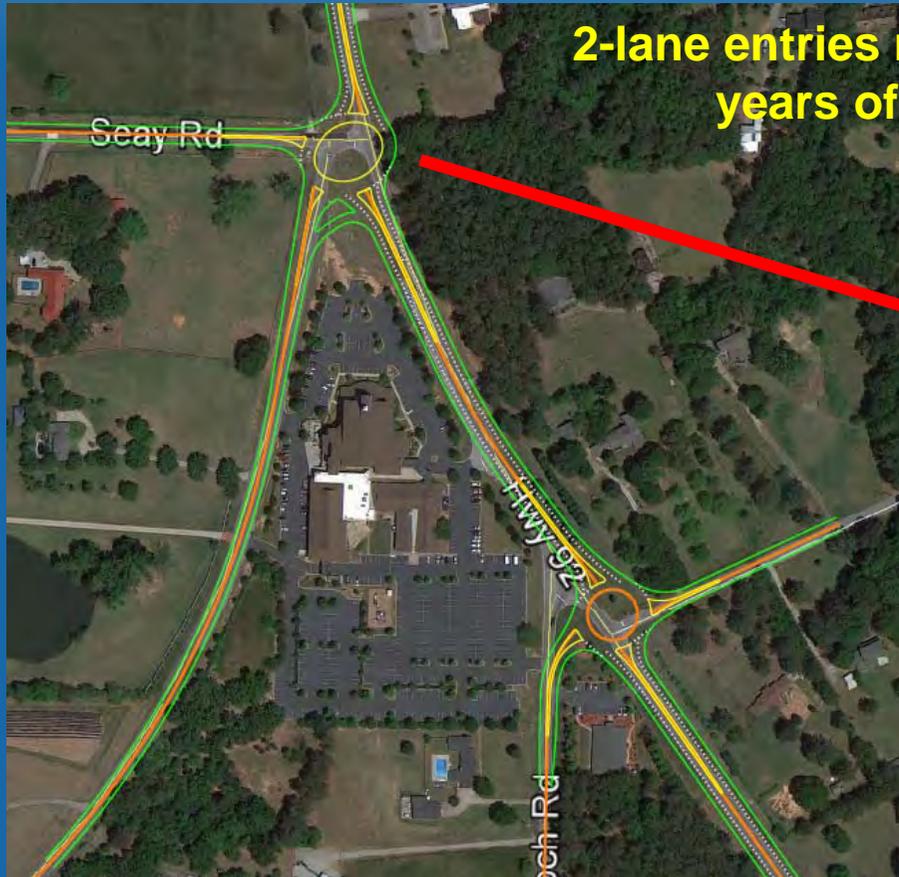
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# SR 92 at Antioch Rd



# SR 92 at Seay Rd



**2-lane entries req'd. within 10 years of opening**



# Compare Operations



# Fayette County Board Meeting

## Questions?

June 2, 2015

