

NATIONAL PERSPECTIVE AND OVERVIEW

Michigan Mini-
Roundabout
Symposium

WELCOME TO THE 2ND NRW!!!



NATIONAL ROUNABOUTS WEEK

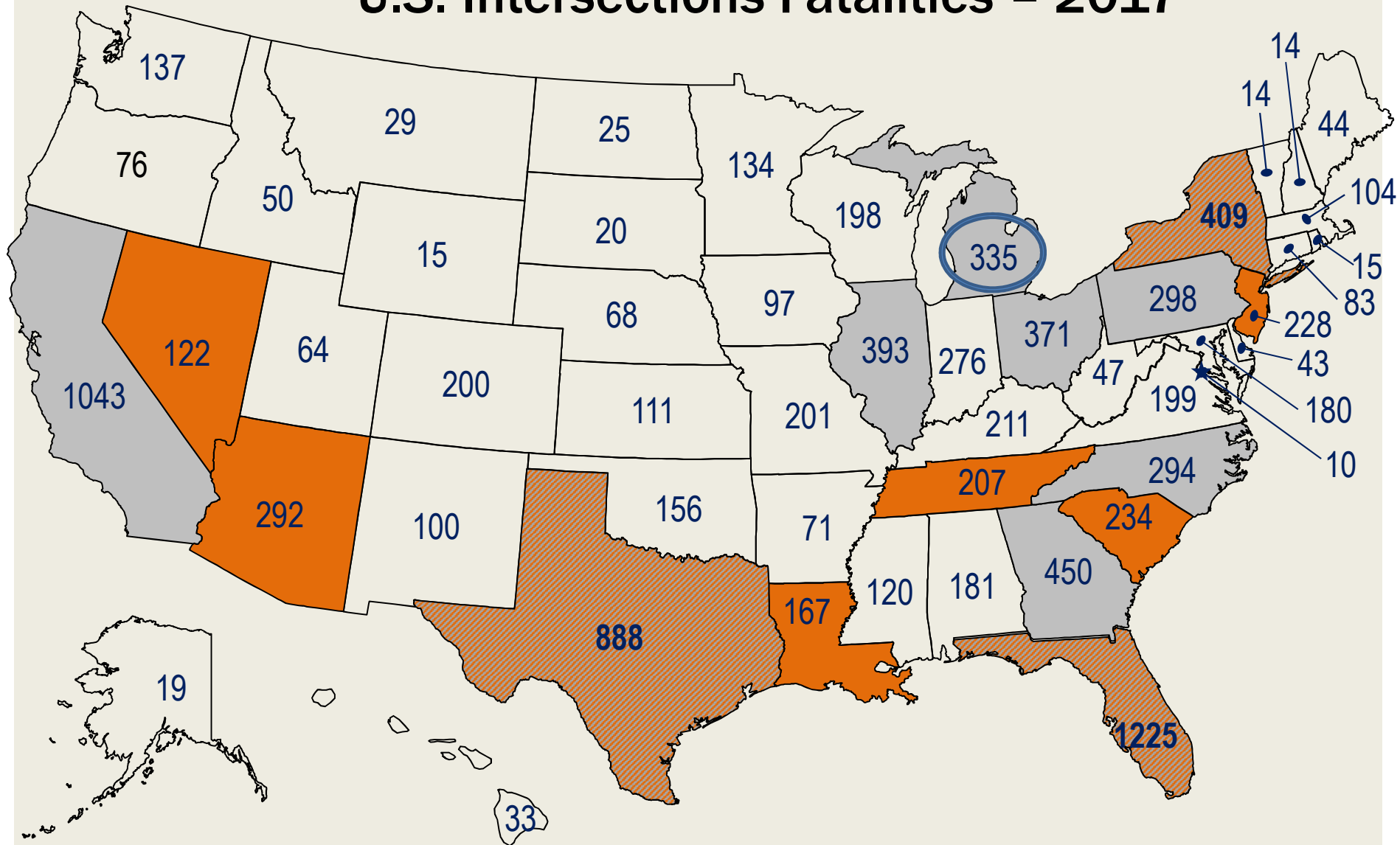
September 16-20, 2019



Participate in NRW by posting your roundabout items to social media using the hashtag

#RoundaboutsWeek

U.S. Intersections Fatalities - 2017



Note: Focus States are those where ratio of Actual/Expected intersection fatalities exceed 1.0 relative to Rural/Urban adjusted Centerline Miles, Vehicle Miles Traveled and Population (rev 2014)

Top 10 Intersection Fatalities

FHWA Intersection Focus States

Top 10 and Int Focus State

Data source: FARS (2017)

In Search of Safer and Better Designs...



Innovative Intersection Solutions

Essential ingredients:

- Improve the way *people* move across intersections
- Eliminate, relocate or modify conflict points
- Strategically optimize traffic control



“cho·re·og·ra·phy”



Every Day Counts 2

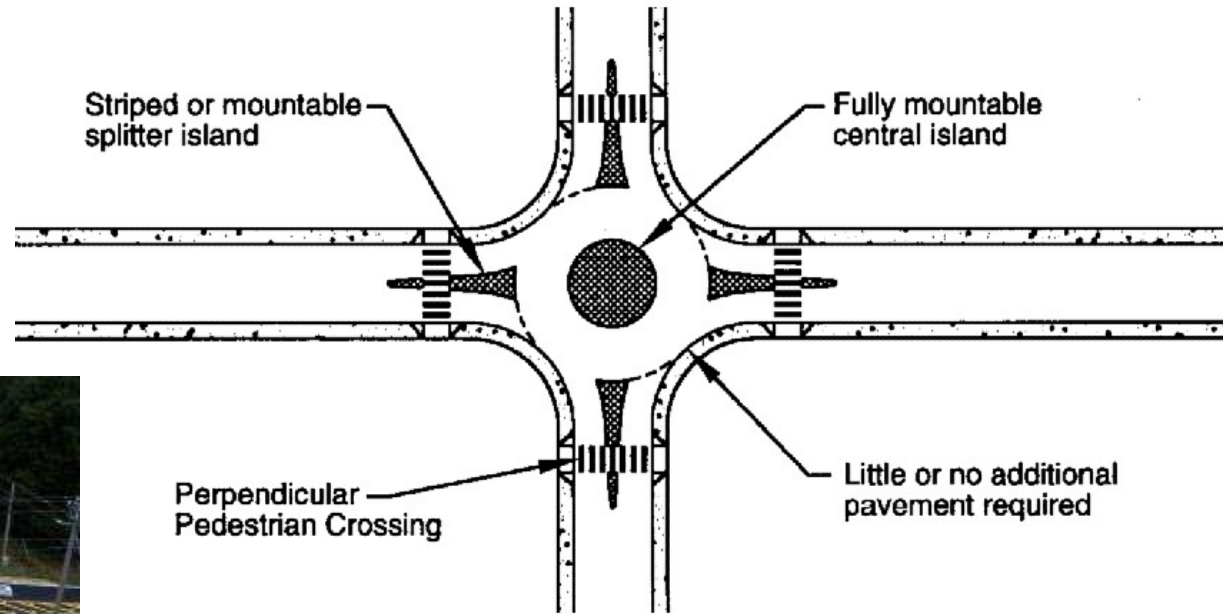
Intersection & Interchange Geometrics



These solutions reduce severe crashes while enhancing efficiency



EDC-2 Emphasized Minis



Doubling Down on What Works



Innovative Intersections as FHWA Proven Safety Countermeasures

- Roundabouts (added in 2008)



It's All About ROUNDABOUTS

**National Roundabouts Week—
September 16–20, 2019**

Each year, FHWA celebrates National Roundabouts Week by highlighting the road work in September. Modern roundabouts reduce severe crashes by approximately 88 percent compared to additional lanes and stop-controlled intersections.

Agencies can implement roundabouts in both urban and rural areas and under a wide range of traffic conditions. Today, there are more than 7,000 modern roundabouts in the United States.

FHWA encourages transportation agencies to consider roundabouts during new construction and reconstruction projects, as well as for existing intersections that have been identified as needing safety or operational improvements. There's money saved! It's a win-win-win!

Get Involved:

- ▶▶▶ **Share Facts:** Use the Roundabouts Week website or other readily available content for more information, tips, and facts.
- ▶▶▶ **Ask the SafeSigner:** Get your road signs with Roundabouts Week!

U.S. Department of Transportation
Federal Highway Administration

U.S. Department of Transportation
Federal Highway Administration

ROUNDABOUTS & First Responders

Saving Lives Together

U.S. Department of Transportation
Federal Highway Administration

ROUNDABOUTS with Pedestrians & Bicycles

A Safe Choice for Everyone

U.S. Department of Transportation
Federal Highway Administration

Safety

**NATIONAL
ROUNDABOUTS
WEEK** September 17-21, 2016



Innovative Intersection Benefits

SAFETY

- Fewer, less severe conflict points
- Significant crash reductions
- Speed management potential

MOBILITY

- Shorter trip duration
- Better trip reliability
- Reduced congestion
- Opportunities for walking and biking

VALUE

- Less right-of-way
- Quicker construction
- Decreased costs
- Balanced solutions

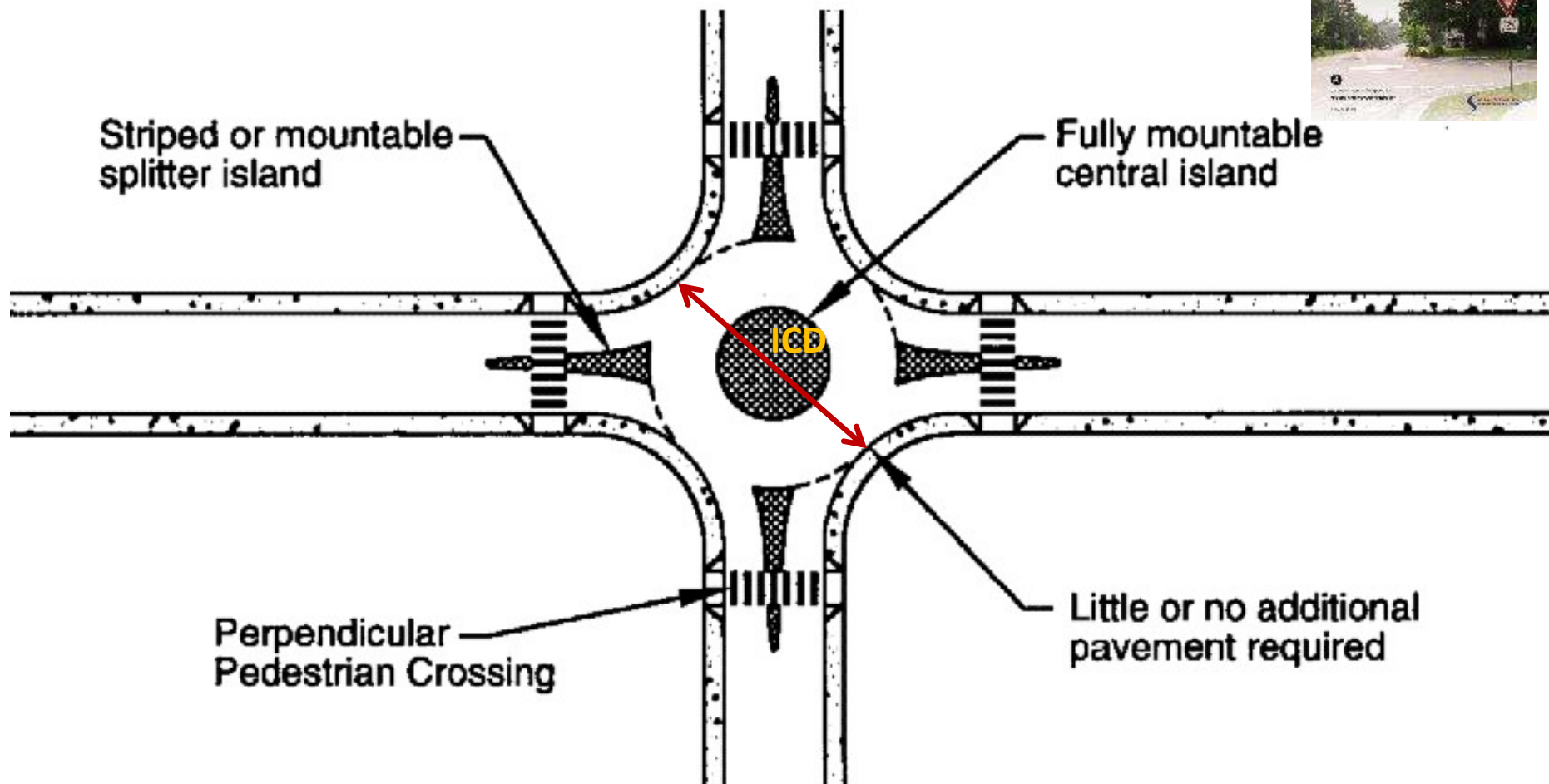
For greater benefits, emphasize Corridor or Network level approaches!

Advantages of Mini Roundabouts

- More than twice the capacity of AWSC with comparable safety performance
- Preserves a low-speed environment
- Fit into existing intersection ROW
- Low cost



What is a Mini Roundabout?



A single lane modern roundabout with inscribed circular diameter (ICD) between 50-90 feet. Distinct features are *traversable* geometric elements (central island, splitter islands) to accommodate large vehicles.

Mini Roundabout Attributes

Typical Dimension Ranges

- Central island :
 - Dia. = 20 ft – 50 ft
 - Ht. \leq 5 in
- Lane widths:
 - Entering/Exiting = 13 ft to 15 ft
 - Circulating = 14.5 ft to 16 ft
- Crosswalk width: 10 ft
- Splitter island width at Crosswalk: 6 ft (min.) or 10 ft (shared use)
- Height of raised features: 2-3 in



Channelizing Features



- Positive guidance to all intersection users
- Enforce compliance of vehicles using designated circulating route
- Discourages small vehicles to mount/ride
- Traversable by trucks and other large vehicles
- Must be maintainable

Practical and Functional





What Mini-Roundabout Can Achieve

All-Way-Stop-Control intersections

- Eliminate congestion

Two-Way-Stop-Control intersections

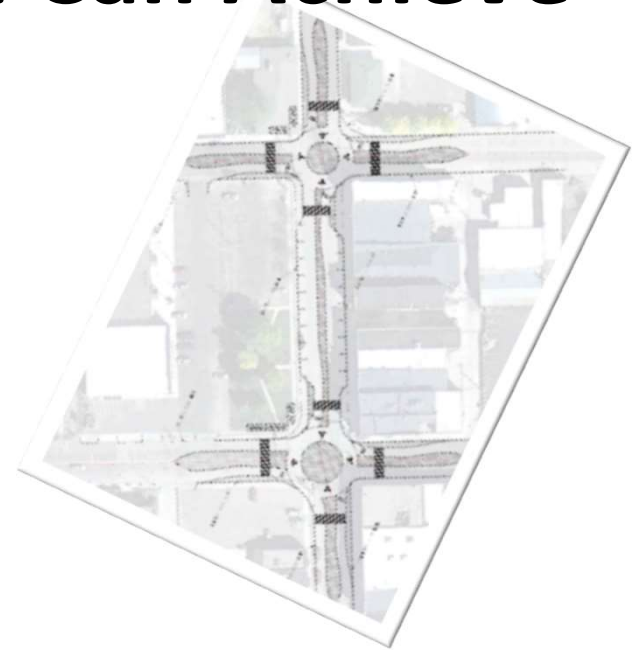
- Reduce vehicle speed on major road; more safe gaps to minor road drivers.

Traffic Signal intersections

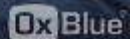
- Provide same/higher capacity, but no delay during off-peak hours

For Pedestrians under all prior types of traffic control

- Reduce exposed crossing distance by up to 70%



Credit: MnDOT



Innovative Modular Application



Long Term Vision for Advancing Innovative, Safer Intersections

Agencies include innovative intersection solutions in their evaluation processes or policies in a manner that ensures they are considered and evaluated alongside other improvement alternatives, and implemented when appropriate.

*aka Intersection Control Evaluation (ICE)
Policies/Procedures*

The ICE Framework

Typically a 2-Stage Screening Process

- Stage 1 – project scoping exercise, high-level performance-based assessment, considers all possibilities, quickly filters down to a short list
- Stage 2 – preliminary engineering, more rigorous assessment of the performance criteria for short listed options



Goal: Consistent...Objective...Safer

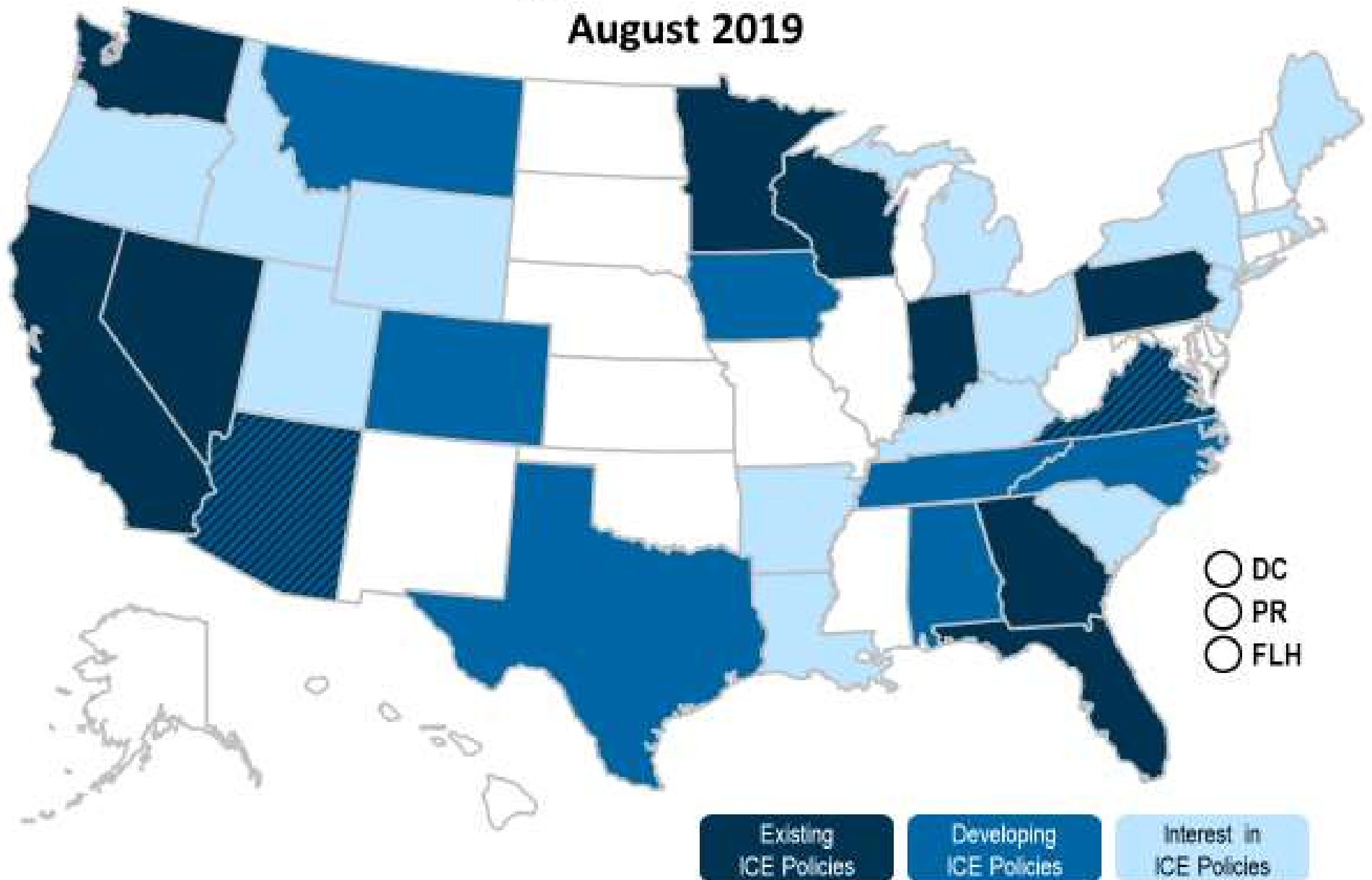
Why is ICE needed?

- Sustain progress achieved with innovative intersections
- Ensure routine, objective and consistent consideration
- Result in frequent implementation
- Complements performance-oriented program framework and value-based project delivery



State Progress on ICE Policies

August 2019



ICE Lead State Policies & Tools

California (2013)

Nevada (2018)

Florida (2018)

Pennsylvania (2018)

Georgia (2017)

Virginia (2018)

Indiana (2014)

Washington (2015)

Minnesota (2007*)

Wisconsin (2008*)

** Indicates updated since original policy adopted*



National Resources[^]



- **SPICE & CAP-X**

http://www.cmfclearinghouse.org/resources_selection.cfm

- **LCCET (via NCHRP 03-110)**

<http://www.trb.org/Main/Blurbs/173928.aspx>

***[^]View the recorded webinar via the FHWA Web Conferencing Portal:
<https://collaboration.fhwa.dot.gov/dot/fhwa/WC/default.aspx>***

Toward the Safe System Approach

“A Safe System requires understanding and managing the complex and dynamic interaction between operating speeds, vehicles, road infrastructure and road user behavior, in a holistic and integrated way, so that the sum of the individual parts of the system combine for a greater overall effect and if one part fails the other parts will still prevent serious harm from occurring.”

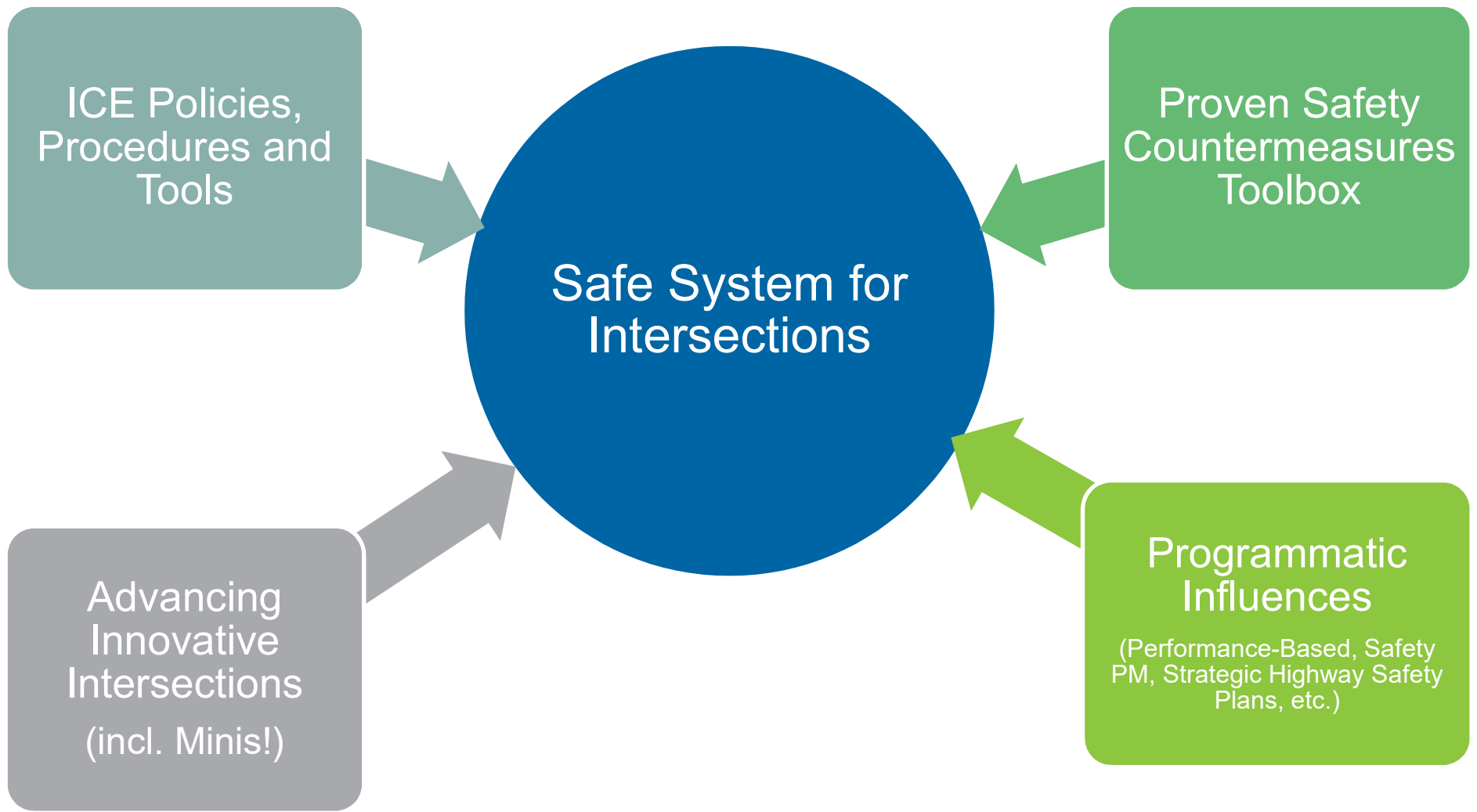
Zero Road Deaths and Serious Injuries: Leading a Paradigm Shift to a Safe System - October 2016

Excerpts from the Foreword



<http://www.oecd.org/publications/zero-road-deaths-and-serious-injuries-9789282108055-en.htm>

Converging on Success



Thank You!

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