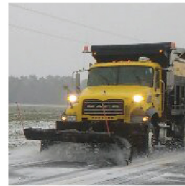


# NORTH CAROLINA

Department of Transportation



# Highway Safety Improvement Program Adjustments

Brian Mayhew — State Traffic Safety Engineer

January 2021

2019 North Carolina  
Strategic Highway  
Safety Plan



December 2019

# SHSP Goal

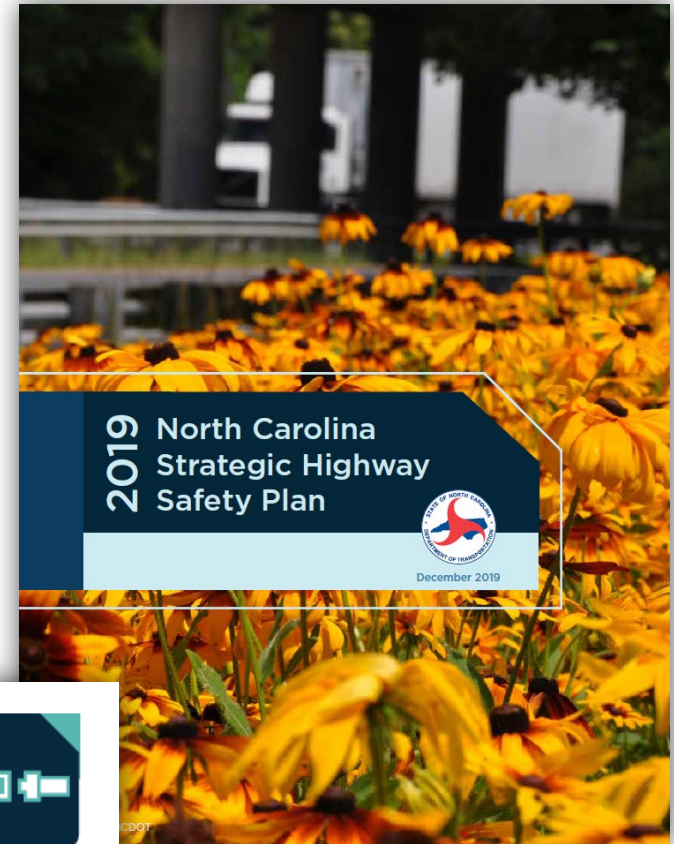
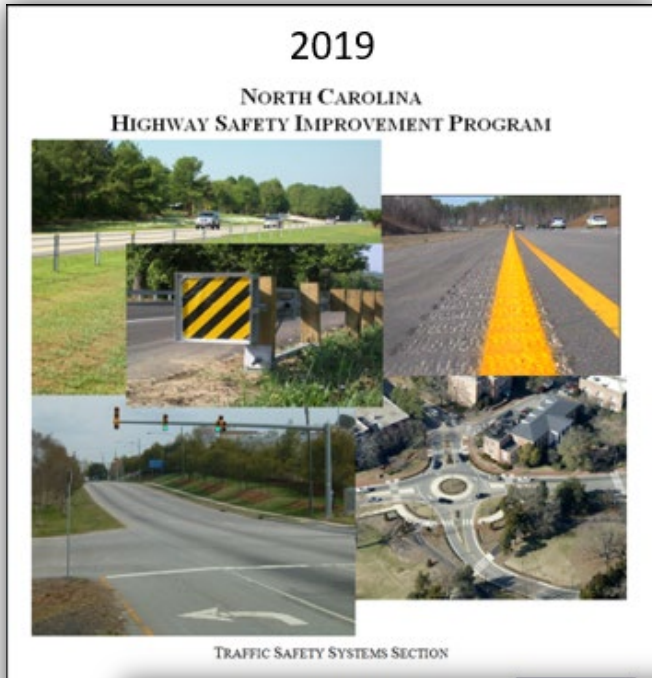
- Reduce all fatalities and serious injuries by half by 2035, moving towards zero by 2050.



# FHWA Performance Summary of NC CY 2018 Targets – April 2020

Performance Measures	5-year Rolling Averages			Met Target?	Better than Baseline?	Met or Made Significant Progress?
	2014-2018	2014-2018	2012-2016			
	TARGET	OUTCOME	BASELINE			
Number of Fatalities	1,207.3	1,392.4	1,340.4	No	No	No
Rate of Fatalities	1.114	1.206	1.226	No	✓ Yes	
Number of Serious Injuries	2,161.2	3,537.6	2,396.0	No	No	
Rate of Serious Injuries	1.988	3.028	2.184	No	No	
Number of Non-Motorized Fatalities & Serious Injuries	438.8	473.6	422.6	No	No	

# NC HSIP vs. NC SHSP



<b>11</b> Emphasis Areas	 Alertness	 Emerging Issues and Data	 Intersections	 Lane Departure	 Occupant Protection
 Older Drivers	 Motorcyclists	 Pedestrians, Bicyclists, and Personal Mobility	 Speed	 Substance Impaired Driving	 Younger Drivers

**SHSP Goal:**

**Reduce Fatalities in Half by 2035**

**Toward Zero by 2050**

# HSIP Program Focus

Fatality and Serious Injury share by SHSP emphasis areas

Roadway Departure

**55%**

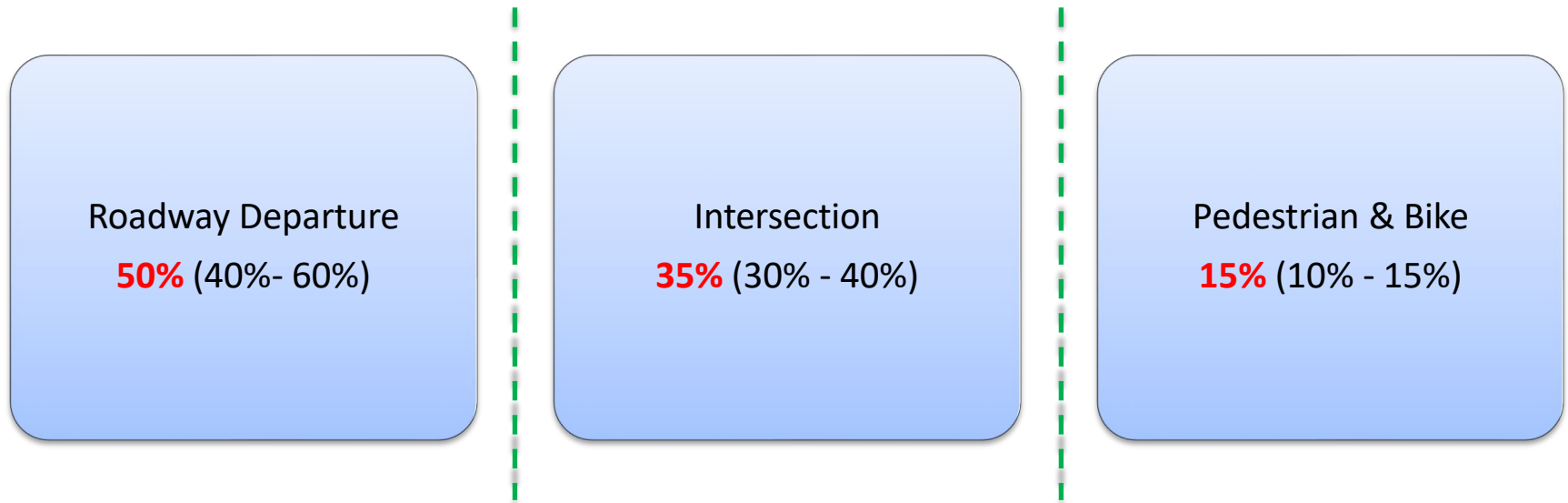
Intersection

**31%**

Pedestrian & Bike

**18%**

# HSIP Program Focus



- Emphasis area goals are soft targets with flexibility
- Projects will be considered within context of Emphasis areas
  - Road Departure, Intersection, and Pedestrian & Bike
  - Projects are Responsive or Systemic
  - Projects favor low cost, high need, high rate of return, and ease of implementation

# HSIP Program Focus

## HSIP Program Adjustments Reflect Funding Model

### Roadway Departure

- Systemic Projects will Increase
- Responsive Projects will focus on lower cost improvements

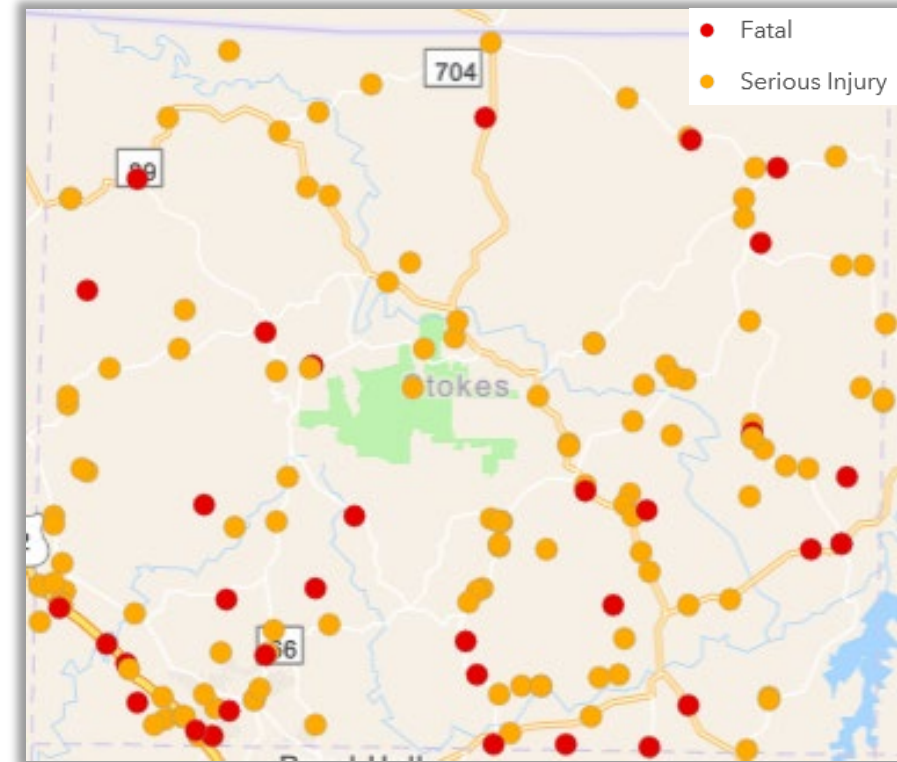
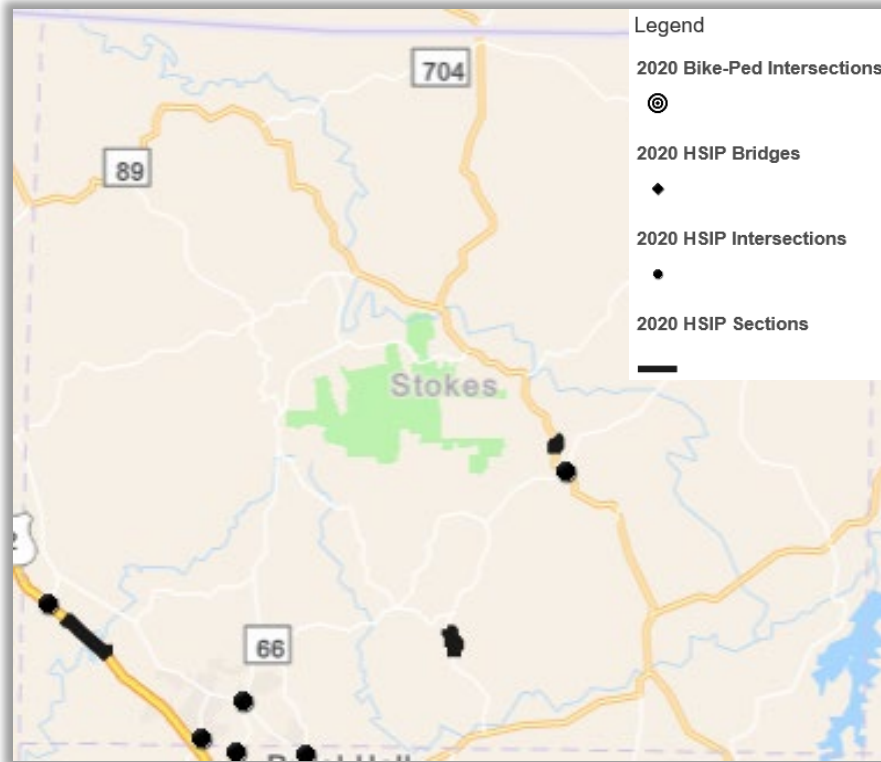
### Intersection

- Additional Focus on Rural Intersections, including All-Way Stop implementation
- Continue Responsive focus
- Develop additional cost-effective countermeasures

### Pedestrian & Bike

- Increase focus on corridors
- Increase Focus on Overrepresented Urban / Suburban Area

# HSIP – Responsive versus Systemic



## Responsive – 2020 HSIP Sites

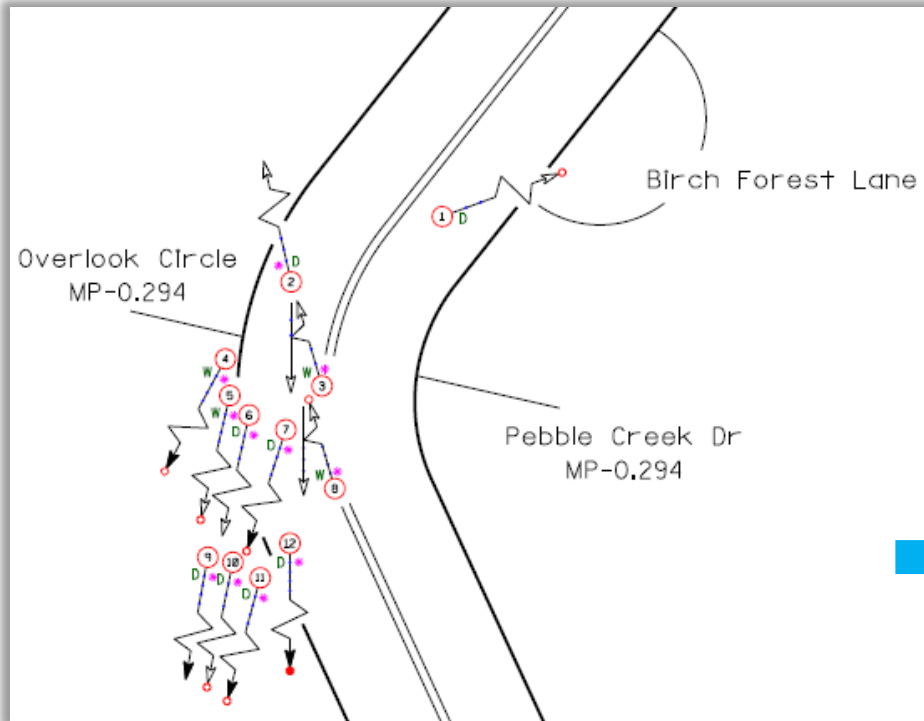
- 3 Sections
- 4 Intersections
- 0 Ped/Bike or Bridge

## Systemic – 2015-2019

- Fatal and A-Injury are **RANDOM**
- 34 Fatal Injury Crashes
- 122 A-Injury Crashes

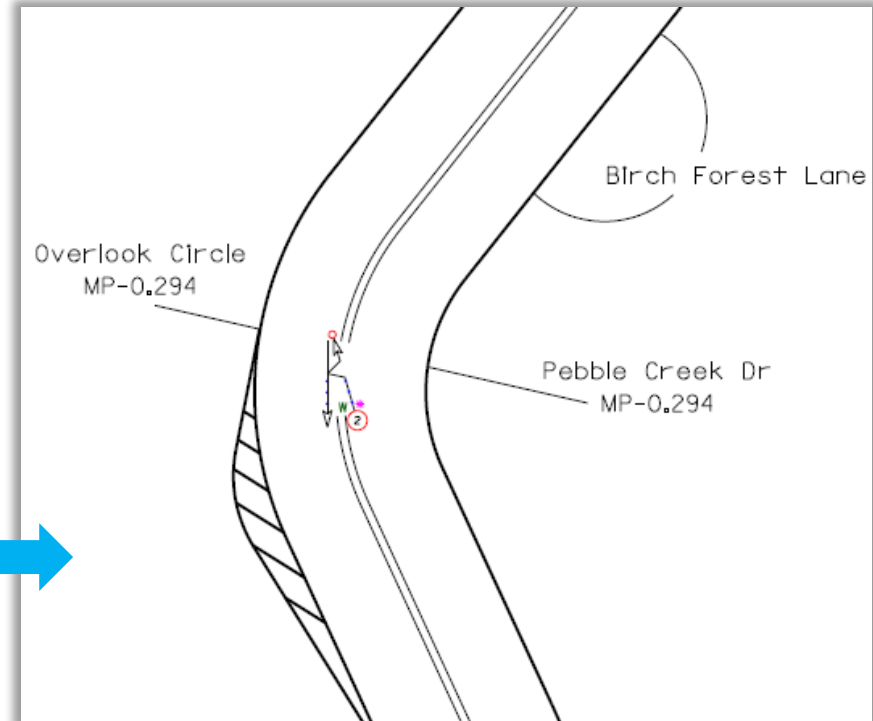


# HSIP – Responsive Example



## Lane Departure Pattern Identified

- 10 Ran Off Road
- 2 Sideswipe Opposite Direction
- 1 Fatal Ran Off Road



## Countermeasures Implemented

- Shoulder Rumble Strips
- Centerline Rumble Strips
- Widen Shoulder
- 1 Sideswipe Opposite Direction 9

# Lane Departure Crash Strategies

## Most Bang for Our Buck:

Proven Reductions in Lane Departure Crashes

Lower Cost Solutions

Can be Implemented Relatively Quickly at Multiple Locations

Markings



Chevrons



Rumble Strips



# Putting the Focus on Rural Intersection Safety

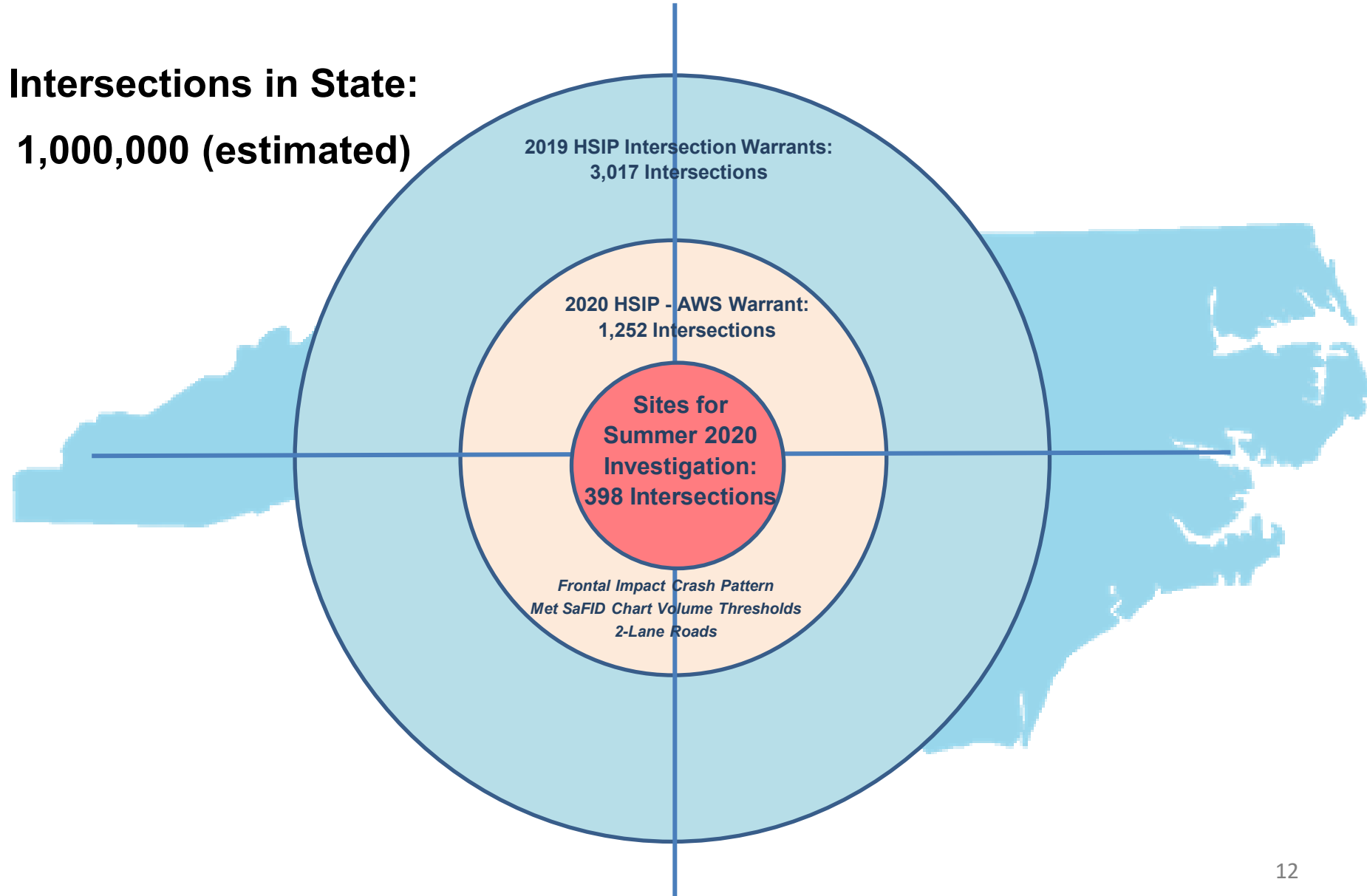


In 2019, Rural Frontal Impact Crashes led to:

- Over 15,000 Crashes (22% of Statewide Frontal Impact Crashes)
- Over 300 Fatalities (67% of Statewide Frontal Impact Fatalities)
- Over 1,100 Serious Injuries (67% of Statewide Frontal Impact Serious Injuries)

# Putting the Focus on Rural Intersection Safety

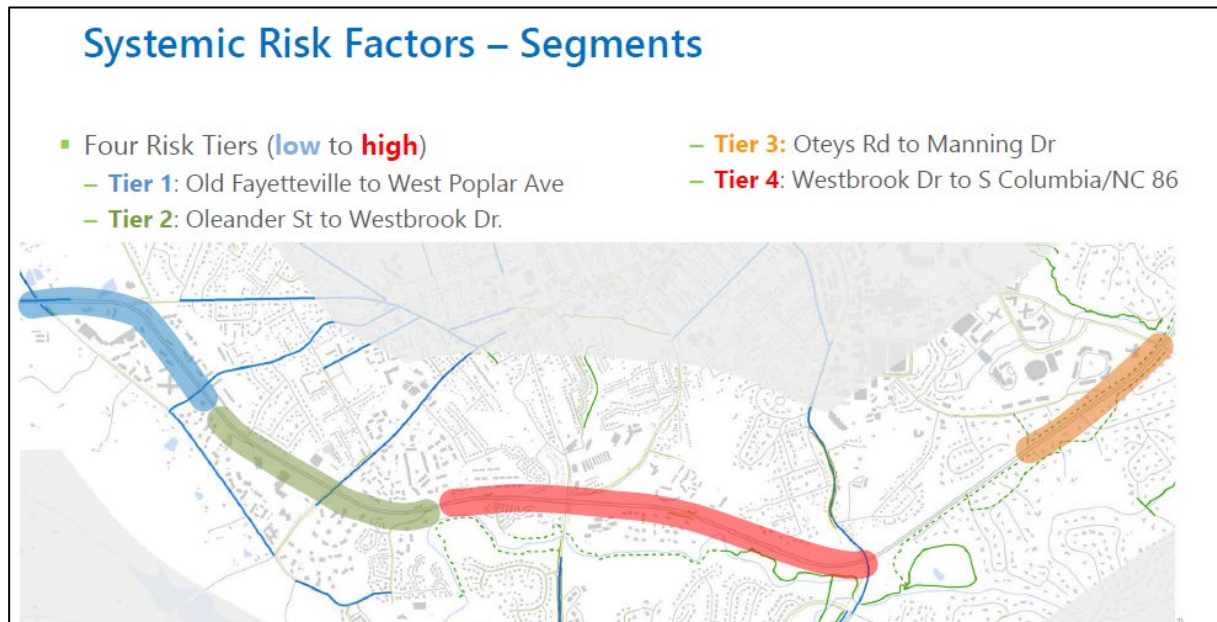
**Intersections in State:  
1,000,000 (estimated)**



# Pedestrian Safety Corridor Risk Assessment Systemic Approach

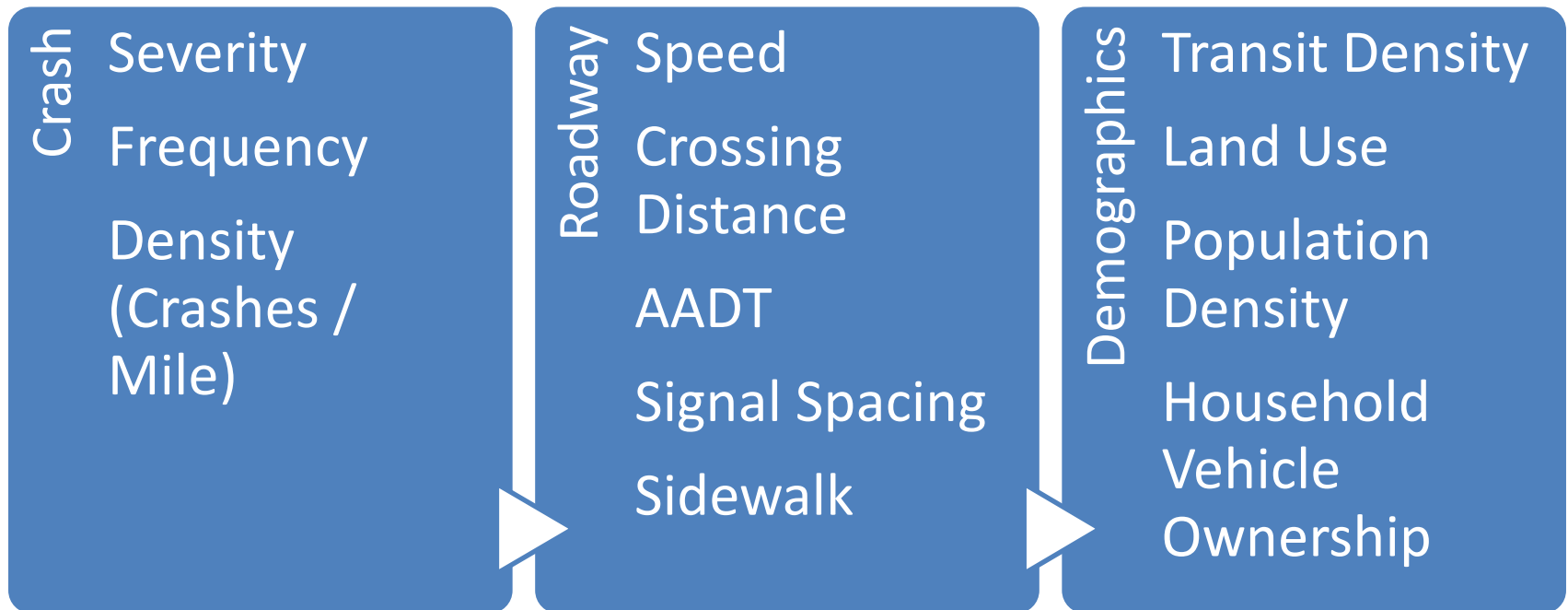
Pedestrian Exposure (volume)  
Vulnerable Population  
(elderly, children, disabled)

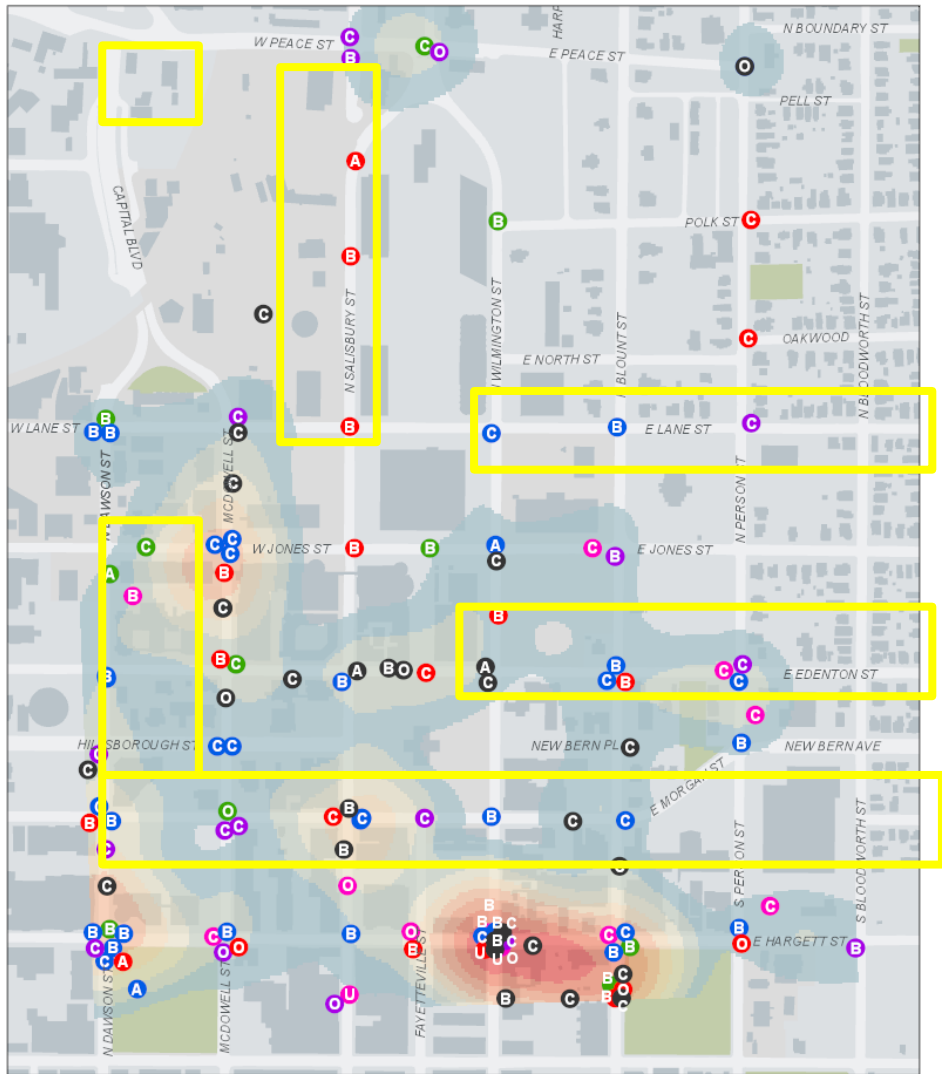
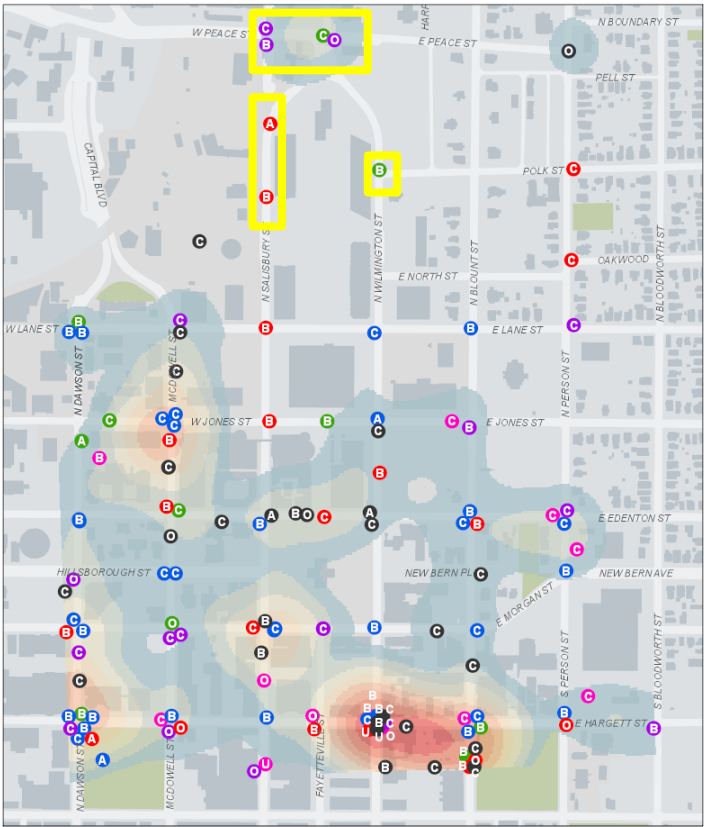
Crossing Distance  
Motor Vehicle Volume  
Vehicle Speeds



# HSIP Pedestrian Safety Corridors

## Corridor Risk Scoring





**Pedestrian Crashes**  
2007-2018

- Crash Type**
- Backing
  - Dash/Dart-out
  - Left-Turn
  - Right-Turn
  - Not Turning
  - Other
- Crash Severity**
- K - Fatal Injury
  - A - Serious Injury
  - B - Evident Injury
  - C - Possible Injury
  - O - Property Damage



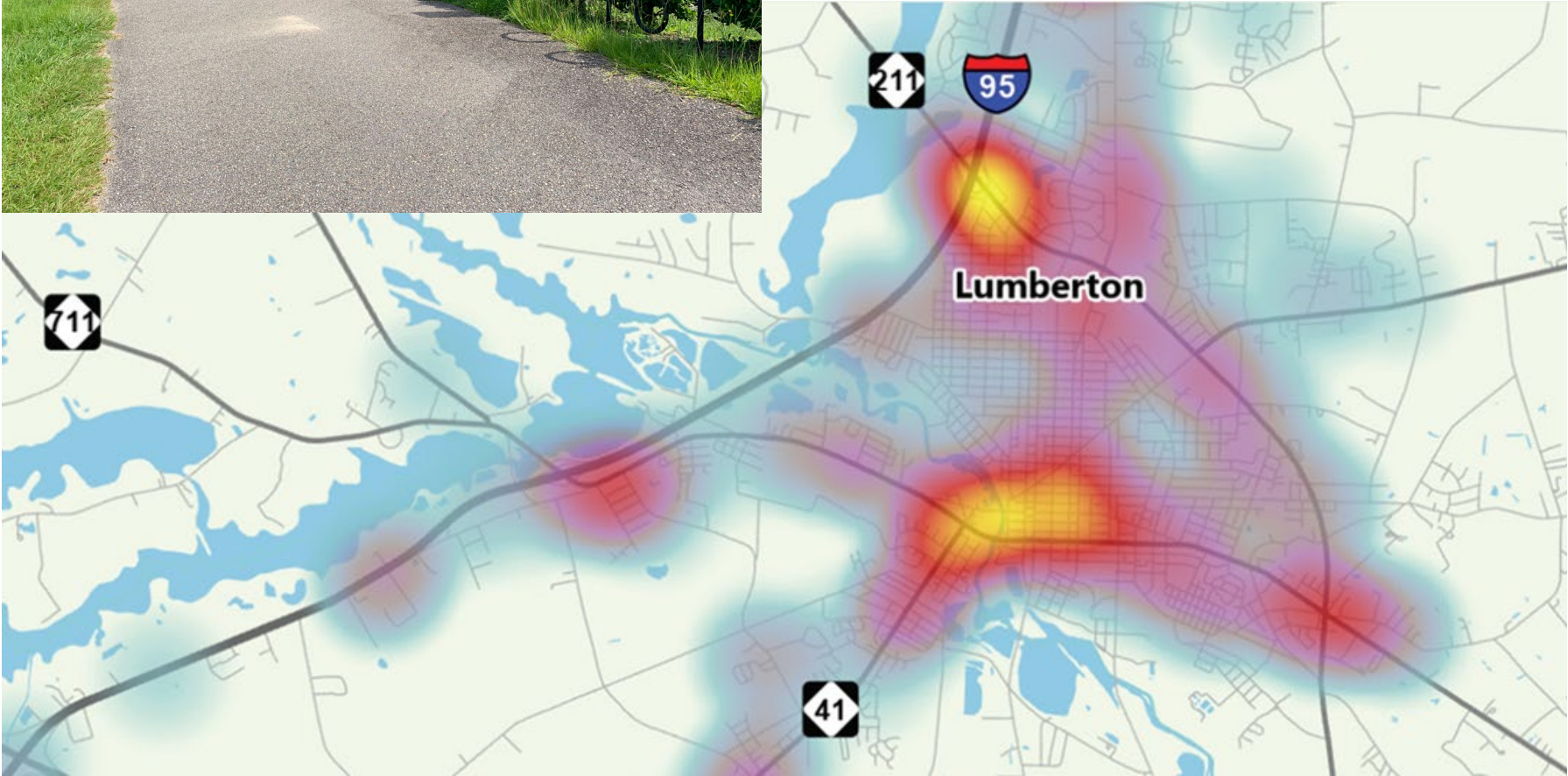
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Lumber River Trail, Lumberton





# Questions?