REGIONAL SAFETY PLAN
Plan Purpose and Scope

• Comprehensive Safety Plan for Central Ohio with a focus on fatal and serious injury crashes

• Expands upon existing MORPC Safety programs

• Provides a framework for identifying, analyzing, and prioritizing safety improvements on local roads

• Inspired by the Strategic Highway Safety Plan, but drills down to locally maintained roadways

• Funded by ODOT to develop Safety Plan and create a template for other regions around the state

Fatal and Serious Crashes by Maintenance Authority* (2013-2017)

- City, 60%
- ODOT, 29%
- County, 11%

*For the MPO area

71% LOCAL
Planning Process

1. Engage & Establish Leadership
   • Regional safety stakeholders

2. Data Compilation and Analysis
   • Analyze crash data & determine emphasis areas

3. Priority Safety Location Identification
   • Identify emphasis locations

4. Regional Safety Action Plan and Safety Strategy Development
   • Identify and prioritize strategies

5. Implementation and Evaluation
   • Implementation Committee

FHWA, Local Road Safety Plans
Trends in Regional Safety

BETWEEN 2013 – 2017 IN CENTRAL OHIO:

- **196,792 crashes** were reported — an overall increase of 21.2%
- **498,131 people** were involved — an overall increase of 19.9%
- **528 people** were killed — an overall increase of 27.8%
- **4,323 people** were seriously injured — an overall decrease of 4.2%
Regional Safety Priorities / Emphasis Areas

Serious Crash Types
- Fixed Object
- Rear End
- Angle
- Left Turn
- Head On

Vulnerable Roadway Users
- Pedestrians
- Bicyclists
- Motorcyclists

Driving Safety Concerns
- Impaired Driving (Alcohol/Drug)
- Restraint/Seat Belt
- Speed
- Age
- Distracted Driving

Emerging Technologies
- Autonomous/Connected Vehicle
- Electric Vehicles
- Electric Scooters
Vulnerable Roadway Users

Percentage of Units Involved in Crashes by Unit Type

- 91.3% Pedestrians
- 3.9% Truck
- 2.0% Unknown
- 0.8% Pedestrian
- 0.4% Bicyclist
- 0.6% Motorcycle
- 1.0% Bus/Van
- 0.1% Other

Fatal & Serious Injury Rate by Unit Type

- Unknown: 0.03%
- Bus/Van: 0.04%
- Truck: 0.3%
- Passenger Vehicle: 0.8%
- Other modes: 1.4%
- Bicyclist: 9.5%
- Motorcycle: 19.1%
- Pedestrian: 23.3%

Pedestrians
Bicyclists
Motorcyclists
Pedestrian-Involved Crashes

BETWEEN 2013 – 2017 IN CENTRAL OHIO:

- 2,767 crashes were reported, an overall increase of 18.5%
- 487 people were seriously injured, an overall increase of 25.3%
- 102 people were killed, an overall increase of 71.4%

Fatal and Serious Injuries in Pedestrian-Involved Crashes
Implementation & Evaluation

- Action Plan
- Annual Reporting
- Technical Assistance
PEDESTRIAN SAFETY IMPROVEMENTS
Systemic Safety Improvements

• System-wide implementation of safety improvements based on high-risk roadway features
  • Solves an unmet need in transportation safety
  • Uses a risk-based approach to prevent crashes
  • Results in a comprehensive road safety program
  • Advances a cost-effective means to address safety concerns
Regional SSI Pilot Project

- Identify priority crash types and related risk factors

<table>
<thead>
<tr>
<th>CRASH TYPE</th>
<th>TOTAL CRASHES</th>
<th>CRASH SEVERITY</th>
<th>FSI RATE</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Fatal</td>
<td>Serious Injury</td>
</tr>
<tr>
<td>Rear End</td>
<td>59,015</td>
<td>30</td>
<td>586</td>
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<tr>
<td>Angle</td>
<td>28,603</td>
<td>53</td>
<td>645</td>
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<tr>
<td>Sideswipe - Passing</td>
<td>22,275</td>
<td>12</td>
<td>255</td>
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<tr>
<td>Fixed Object</td>
<td>21,560</td>
<td>130</td>
<td>821</td>
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<tr>
<td>Parked Vehicle</td>
<td>15,627</td>
<td>14</td>
<td>114</td>
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<tr>
<td>Left Turn</td>
<td>9,482</td>
<td>24</td>
<td>326</td>
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<tr>
<td>Backing</td>
<td>5,885</td>
<td>2</td>
<td>14</td>
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<tr>
<td>Animal</td>
<td>4,767</td>
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<td>23</td>
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<tr>
<td>Sideswipe - Meeting</td>
<td>3,544</td>
<td>35</td>
<td>136</td>
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<tr>
<td>Pedestrian</td>
<td>2,519</td>
<td>86</td>
<td>382</td>
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<tr>
<td>Other Non-Collision</td>
<td>2,492</td>
<td>5</td>
<td>61</td>
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<tr>
<td>Pedalcycles</td>
<td>1,373</td>
<td>11</td>
<td>133</td>
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<tr>
<td>Head On</td>
<td>1,303</td>
<td>28</td>
<td>128</td>
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<tr>
<td>Other Object</td>
<td>1,150</td>
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<tr>
<td>Overturning</td>
<td>882</td>
<td>14</td>
<td>100</td>
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<td>Unknown</td>
<td>354</td>
<td>8</td>
<td>17</td>
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<tr>
<td>Train</td>
<td>18</td>
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<tr>
<td>Other Non-Vehicle</td>
<td>5</td>
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</tbody>
</table>
Regional SSI Pilot Project

- Crash analysis and network screening
- Coordination with local jurisdictions
Regional SSI Pilot Project

- Coordination with ODOT & City staff
- FHWA Proven Countermeasures
- Maintenance preferences
Regional SSI Pilot Project

- Prioritize projects for implementation
Regional Pilot Project (2012-2015)

Funding, Implementation, and Evaluation

Funding Allocation and Project Implementation

- $1 million in HSIP funds
- Contract & installation managed by ODOT District office (2017)

Pre-Implementation Crash Trends

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<tr>
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<tbody>
<tr>
<td>Phase 2 Locations</td>
<td>All</td>
<td>992</td>
<td>1,043</td>
<td>955</td>
<td>964</td>
<td>859</td>
<td>880</td>
<td>858</td>
<td>837</td>
<td>853</td>
<td>1,022</td>
<td>965</td>
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<tr>
<td>MORPC MPO Area</td>
<td>All</td>
<td>532</td>
<td>439</td>
<td>500</td>
<td>469</td>
<td>535</td>
<td>461</td>
<td>475</td>
<td>473</td>
<td>565</td>
<td>575</td>
<td>513</td>
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</tbody>
</table>

Example:
- Assume 10 participating jurisdictions
- Floor allocation: $50,000
- Need Allocation: $400,000 * 0.10 (Jurisdiction X’s proportion)
- Total Allocation: $90,000
Regional Trail Access Safety Project

Calculating a Risk Index

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Description</th>
<th>Weight</th>
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<tbody>
<tr>
<td><strong>Exposure</strong></td>
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<td></td>
</tr>
<tr>
<td>Product of Non-Motorized and Vehicular Volumes</td>
<td>Higher product = higher level of exposure</td>
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<tr>
<td>Non-Motorized Demand Index</td>
<td>Higher value = higher level of exposure</td>
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<tr>
<td><strong>Additional Risk Indicators</strong></td>
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</tr>
<tr>
<td>Intersection Signalization</td>
<td>Signalization = decreased risk</td>
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</tr>
<tr>
<td>Crosswalk Type</td>
<td>Greater visibility by crosswalk type = decreased risk</td>
<td>1.5</td>
</tr>
<tr>
<td>Crossing Length</td>
<td>Higher length = higher risk</td>
<td>1</td>
</tr>
<tr>
<td>Presence of Pedestrian Signal</td>
<td>Pedestrian signal = decreased risk</td>
<td>1</td>
</tr>
<tr>
<td>Warning Signage</td>
<td>Greater intensity of warning signage = decreased risk</td>
<td>1.5</td>
</tr>
<tr>
<td>Presence of Refuge Island</td>
<td>Refuge island = decreased risk</td>
<td>2</td>
</tr>
<tr>
<td>Number of Lanes Crossed</td>
<td>Greater number of lanes = increased risk</td>
<td>1</td>
</tr>
<tr>
<td>Posted Speed</td>
<td>Higher speed = higher risk</td>
<td>2</td>
</tr>
<tr>
<td>Presence of Bike Lane</td>
<td>Bike lane = decreased risk</td>
<td>1</td>
</tr>
<tr>
<td>Presence of Street Parking</td>
<td>Street parking = increased risk</td>
<td>1</td>
</tr>
<tr>
<td>Presence of Sidewalk</td>
<td>Sidewalk = decreased risk</td>
<td>1</td>
</tr>
<tr>
<td>Presence of Transit Route</td>
<td>Transit route = increased risk</td>
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<tr>
<td><strong>Observed Crashes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash Severity (EPDO)</td>
<td>Higher crash severity = higher risk</td>
<td>1</td>
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</tbody>
</table>