Transportation Safety Considerations in Planning Process

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Reducing fatalities and serious injuries by supporting comprehensive, system-wide, multimodal, and proactive process that...

Integrates safety into surface transportation decision-making
The Safety 4E Approach

Engineering

Education

Emergency Response

Enforcement

Transportation Safety
Integrating Safety

- Multidisciplinary
- Multimodal
- System-wide
- Collaborative
- Proactive
Performance-Based Transportation Planning Process

PLANNING
- Strategic Direction
  - Where do we want to go?
  - Goals and Objectives
  - Performance Measures
  - Analysis
    - How are we going to get there?
    - Identify Trends and Targets
    - Identify Strategies and Analyze Alternatives
    - Develop Investment Priorities

DATA
- Investment Plan
- Resource Allocation
- Program of Projects

PUBLIC INVOLVEMENT

Programming
- What will it take?

Implementation and Evaluation
- Monitoring
- Evaluation
- Reporting
Engage community and safety stakeholders in initial planning process

Identify safety as a major measurable organizational goal

Identify existing safety issues in the system & set targets to correct them
Integrating Safety into Planning Process

- Collect and analyze safety data
- Use data to find sites for safety treatments

Use safety policies from other planning documents as a guide for LRTP/MTP

Include safety-related scoring in LRTP/MTP to establish safety as a factor in project selection
Integrating Safety into Planning Process

- Design standalone safety projects
- Integrate safety elements into other TIP projects
Integrating Safety into Planning Process

- Periodically evaluate progress toward safety performance measures
- Evaluate successes in safety initiatives
- Constantly revise strategies to meet safety goals and objectives
Safety Planning at Federal Level

- Guide progress of performance-based planning through education and training
- Proactively *promote, monitor, educate* and *communicate* ways for State DOTs and planning organizations to integrate safety in planning
Safety Planning at State Level

• Performance-based planning requires greater coordination across agencies and between functional areas (i.e., safety, congestion, etc.)
• Use crash and GIS data to identify safety concerns and assist improving safety strategies
• Work with enforcement at corridor-level
• Integrate safety goals, objectives, and strategies in transportation planning process
Safety Planning at MPO Level

- Help educate local elected officials and public.
- Demonstrate the economic impact of improving transportation safety
- Identify low-cost safety improvements (start small)
- Work with private/public entities for funding
- Pursue the 4E approach to improve safety
Safety Planning at RPO Level

- Participate with MPOs; integrate rural safety concerns into the planning process
- Align with State Plans to capture state funding for safety
- Educate local elected officials and public
- Demonstrate economic impact of safety improvements
- Leverage local funds
- Identify low-cost safety improvements
- Improve availability and accuracy of safety data
Safety Planning for Elected & Appointed Officials

- Laws passed by legislatures impact safety significantly (i.e., helmet laws)
- Judicial decisions in traffic safety cases
- Encourage local planners to prioritize for safety
- Set-aside funding to advance safety projects
- Promote the importance of safety
Safety Implementation

• Work closely together to identify safety integration opportunities

• Leverage planning process to impact safety

• Engage transportation planners & committees

• Build consistency between long range plans and safety plans

• Use data and analysis to benchmark and measure safety issues
Safety Resources

- Traffic Engineering Accident Analysis System (TEAAS)
  - Intersection Analysis
  - Section Analysis
  - City / County Reports
### Safety Resources

**Miscellaneous Statistics**

- Severity Index: 7.24
- BPDO Crash Index: 173.80
- Estimated Property Damage Total: $127,600.00

### Accident Type Summary

<table>
<thead>
<tr>
<th>Accident Type</th>
<th>Number of Crashes</th>
<th>Percent of Total</th>
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<tbody>
<tr>
<td>Angle</td>
<td>10</td>
<td>41.67</td>
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<tr>
<td>Head On</td>
<td>1</td>
<td>4.17</td>
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<tr>
<td>Left Turn, Different Roadways</td>
<td>2</td>
<td>8.33</td>
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<tr>
<td>Left Turn, Same Roadway</td>
<td>5</td>
<td>20.83</td>
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<tr>
<td>Pedalcyclist</td>
<td>1</td>
<td>4.17</td>
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<tr>
<td>Ran Off Road - Left</td>
<td>1</td>
<td>4.17</td>
</tr>
<tr>
<td>Ran Off Road - Right</td>
<td>1</td>
<td>4.17</td>
</tr>
<tr>
<td>Rear End, Slow or Stop</td>
<td>3</td>
<td>12.50</td>
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### Injury Summary

<table>
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<tr>
<th>Injury Type</th>
<th>Number of Injuries</th>
<th>Percent of Total</th>
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<tr>
<td>Fatal Injuries</td>
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<td>5.88</td>
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<tr>
<td>Class A Injuries</td>
<td>0</td>
<td>0.00</td>
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<td>Class B Injuries</td>
<td>6</td>
<td>35.29</td>
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<td>Class C Injuries</td>
<td>10</td>
<td>58.82</td>
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<td>Total Non-Fatal Injuries</td>
<td>16</td>
<td>94.12</td>
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<td>Total Injuries</td>
<td>17</td>
<td>100.00</td>
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Safety Resources

### Alcohol, Ambulance and Vision in Wake County for the period 1/1/2013 through 12/31/2014

#### Alcohol Involvement

<table>
<thead>
<tr>
<th>Alcohol/Drugs Suspected</th>
<th>Number of Drivers</th>
<th>Percent</th>
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<tbody>
<tr>
<td>NO</td>
<td>117,616</td>
<td>92.9</td>
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<tr>
<td>YES - ALCOHOL, IMPAIRMENT SUSPECTED</td>
<td>2,098</td>
<td>1.7</td>
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<tr>
<td>YES - ALCOHOL, NO IMPAIRMENT DETECTED</td>
<td>246</td>
<td>0.2</td>
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<tr>
<td>YES - OTHER DRUGS, IMPAIRMENT SUSPECTED</td>
<td>226</td>
<td>0.2</td>
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<tr>
<td>YES - OTHER DRUGS, NO IMPAIRMENT DETECTED</td>
<td>41</td>
<td>0.0</td>
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<tr>
<td>YES - ALCOHOL AND OTHER DRUGS, IMPAIRMENT SUSPECTED</td>
<td>152</td>
<td>0.1</td>
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<tr>
<td>YES - ALCOHOL AND OTHER DRUGS, NO IMPAIRMENT DETECTED</td>
<td>19</td>
<td>0.0</td>
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<tr>
<td>UNKNOWN</td>
<td>5,193</td>
<td>4.0</td>
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Safety Resources

NC 2 (Midland Road) From Beaver Lane to 50 Feet East of NC 22 (Central Drive)
(04/01/2009 - 03/31/2014)

Legend
- Crash_Type
  - Animal
  - Frontal_Impact
  - Lane_Departure
  - Lane_Departure_Median_Tree
  - Lane_Departure_Shoulder_Tree
  - Pedalcyclist
  - Rear_End
  - Sideswipe
Safety Resources
### Safety Resources

**Highway Safety Improvement Program (HSIP)**

#### North Carolina Highway Safety Improvement Program

**Potentially Hazardous Intersection Locations in North Carolina - Statewide Rank of 400 or Higher**

2014 Cycle

<table>
<thead>
<tr>
<th>PH Number</th>
<th>Division</th>
<th>Region</th>
<th>Location</th>
<th>Overall Crashes</th>
<th>Severity Index</th>
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<tbody>
<tr>
<td>91100959</td>
<td>5</td>
<td>CAPITAL</td>
<td>WAKE (RALEIGH) SR 2026 (MP 0.85) AT SR 2684 (MP 0.75)</td>
<td>59</td>
<td>6.23</td>
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<tr>
<td>59101780</td>
<td>10</td>
<td>METROLINA</td>
<td>MECKLENBURG (CHARLOTTE) SR 3908 (MP 4.73) AT GROVE</td>
<td>69</td>
<td>8.05</td>
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<tr>
<td>78100087</td>
<td>7</td>
<td>TRIAD</td>
<td>ROCKINGHAM (EDEN) US 311 (MP 25.53) AT NC 14 (MP 12.51)</td>
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<td>5.95</td>
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<tr>
<td>82100039</td>
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<td>CAPITAL</td>
<td>SCOTLAND (RURAL) US 15 (MP 11.74) AT NC 144 (MP 5.83)</td>
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<td>91101548</td>
<td>5</td>
<td>CAPITAL</td>
<td>WAKE (RALEIGH) SR 2542 (MP 4.67) AT SR 2697 (MP 4.30)</td>
<td>46</td>
<td>5.9</td>
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<td>59101411</td>
<td>10</td>
<td>METROLINA</td>
<td>MECKLENBURG (CHARLOTTE) US 29 (MP 15.55) AT ARROWHEAD</td>
<td>34</td>
<td>9.81</td>
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<td>89100181</td>
<td>10</td>
<td>METROLINA</td>
<td>UNION (MONTROE) SR 2188 (MP 0.68) AT WINDSOR</td>
<td>28</td>
<td>10.4</td>
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<td>11100093</td>
<td>13</td>
<td>BLUE RIDGE</td>
<td>BURKE (MORGANTON) US 70 (MP 9.00) AT SR 1142 (MP 7.70)</td>
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Safety Resources
Case Studies

High Collision Sites
Greenville, NC

NC Department of Transportation
Transportation Planning Branch

June 30, 2015
Case Studies

• Document number and type of collisions occurring at high collision sites
• Provide potential preliminary safety countermeasures for identified collision types
• High collision sites were obtained from
  – Highway Safety Improvement Program (HSIP)
  – Traffic Engineering Accident Analysis System (TEAAS)
Case Studies

• Total number of Collisions in a five year period
  – Greenville: 2009-2013
  – Elizabeth City: 2010-2014

• No collision diagrams to identify the actual location and number of specific collision types

• Greenville, 68 sites
• Elizabeth City, 27 sites
Questions?

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