Outline

• Project Overview
• Research Findings
• Signage
• Challenges
• Guidance Document
• Lessons Learned
PROJECT OVERVIEW
Michigan Road Network

- 7 Regions
- MDOT Responsible for Trunkline Routes
  - Direct vs. Contract
- Counties/Municipalities Responsible for their Respective Routes
- Predominately Rural Areas
  - Detroit and Surrounding Suburbs
  - Grand Rapids
  - Lansing
Project Overview

• Research Project
  – 1 year

• Guidance Document
  – Recommendations for a consistent approach to developing emergency reroutes and signage on those routes
Assumptions

Manual Intended

• Serve as a reference that summarizes best practices from other states
• Provide information stakeholders should consider when developing emergency reroutes
• Be a guide on how to evaluate the effectiveness of reroutes
• Present recommendations on signage for the developed routes
• Be updated periodically as technology changes, lessons learned are revealed, or other supporting information is identified as beneficial to include

Manual Not Intended

• Describe how to handle incident management
• Provide or document specific emergency rerouting plans
• Specify when and how to implement emergency rerouting plans
• Require specific signage for all reroutes implemented
• Remain a static unchanging document
**Project Process**

1. **Best Practices**
   - Literature Review
     - Initial scan of existing public information
     - Expert recommendations
   - Survey States
     - Review of literature
     - Expert recommendations
     - Questions
   - Interview States
     - Review of survey information
     - Targeted Questions and Answer

2. **Stakeholder Involvement**
   - Workshop
     - Stakeholder review
     - Operational scenarios
     - Understanding gaps
     - Determining needs
   - Conference Call
     - Stakeholder review
     - Understanding gaps
     - Figuring out what works
     - Determining needs

3. **Manual**
   - Stakeholder identification
   - Roadway considerations
   - Regional considerations
   - Communication
   - Evaluation methods
   - Signage
RESEARCH FINDINGS
Methodology

- Literature Review
  - 7 states
  - 4 Federal reports
- Survey
  - 9 states
- Interview
  - 5 states
Best Practices

• Areas of Commonalities
• Areas of Divergence
• Challenges
• Process Recommendations
Stakeholder Feedback

- Half Day Workshops
  - 3 locations
- Break-Out Groups
  - 2 hypothetical locations for emergency rerouting vs. incident management
- Conference Call
Existing Elements

• Existing Reroutes
  – Varies among regions
• Existing Signage
  – Less frequent and not the same
  – MMUTCD
SIGNAGE
Guidance

• Urban/Suburban/Rural
• Placement
• Density

Recommended Sign Design

Non-Recommended Sign Design
Installation Note:
Signs should be field located based on local conditions, presence of existing signs, and engineering judgment.

Based on distance to first intersection, install within 300 feet max prior to A Street for route confirmation.

Install within 300 feet max prior to left turn on US-50.

Install within 200 feet max after left turn from SR-100.

Install within 200 feet max after major cross-street for route confirmation.

Install within 200 feet max after left turn from US-51.

Install within 300 feet max prior to left turn on US-51.

Optional: Install supplemental sign at intersection (on shoulder or mast arm).

(Not to Scale)
CHALLENGES
Considerations

• Challenging Interagency Relationships
• Regional Stakeholder Relationships
• Local Decisions
• Resources
• Commercial Freight
  – Oversize/Overweight
  – Permits
GUIDANCE DOCUMENT
Guidance Tools

• Tools to Help Guide Stakeholders:
  – Evaluation Methods
  – Letter of Agreement Draft (or Memorandum Of Understanding)
  – Case Study
    • Examples
    • Response Plan
  – Checklists
Guidance Tools

• Checklists Include:
  – Stakeholder Identification
  – Roles and Responsibilities
  – Road Network Considerations
  – Intersection Analysis
  – Regional Considerations (Urban/Rural)
  – Communication
  – Evaluation
  – Signage
Road Name:  

Date:  

**Timeframe:** During the development of emergency rerouting plans.  

**Involvement:** State and local transportation agencies.  

**Process:** Choices for rerouting traffic will depend on the length of the detour, available roadways for the detour and their characteristics, and connections to intersecting roadways along the detour. All potential characteristic should be considered when deciding on potential alternates. It is important for the estimated volume of detoured traffic to be evaluated against the capacity of the identified reroute. It is understood that the roadway likely will be over capacity, but this analysis will assist in planning effective traffic control measures in response to the projected traffic conditions. References for this include: local maps, ADT, weight restriction maps, and/or height restriction maps.  

**Checklist:** Review the characteristics of the potential alternate routes and determine if they may impact the plans.  

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Alternate Emergency Route 1</th>
<th>Alternate Emergency Route 2</th>
<th>Alternate Emergency Route 3</th>
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</thead>
<tbody>
<tr>
<td>Identify segment of each alternative route (road name, and end points)</td>
<td>Segment 1</td>
<td>Segment 2</td>
<td>Segment 3</td>
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<td>*Note: see intersection checklist for specific analysis of intersections.</td>
<td>Segment 4</td>
<td>Segment 5</td>
<td>Segment 6</td>
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<td>Length of roadway (mainline and alternative route)</td>
<td>Mainline:</td>
<td>Mainline:</td>
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<td>Alternate:</td>
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<td>Volume thresholds by time of day</td>
<td>Mainline: AM/PM</td>
<td>Diversion: AM/PM</td>
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<tr>
<td>Capacity of roadway</td>
<td>Mainline:</td>
<td>Diversion:</td>
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<tr>
<td>Background V/C levels of diversion roadway(s) by time of day</td>
<td>Mainline: AM/PM</td>
<td>Diversion: AM/PM</td>
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<td>Queue length adequacy</td>
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<td>Roadway geometry</td>
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<td>Lane geometry</td>
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<td>Horizontal curvature</td>
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<td>Vertical curvature</td>
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LESSONS LEARNED
Lessons Learned

I. Stakeholders had a hard time distinguishing between alternate route process and incident management
II. Several areas unaware of the types of pre-planned routing strategy in place
III. A regional contact list can help impact the coordination
IV. Stakeholders wanted an interactive format for the document
QUESTIONS

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