A Method For Measuring Accuracy of Real-time Construction Information Dissemination To Travelers Using Traffic Cameras

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Introduction

• Real-time System Management Information Program (RTSMIP)
• 23 CFR 511 Regulation
• Two steps implementation of RTSMIP required
  ➢ Interstate operational
  ➢ Routes of Significance in MSAs operational
23 CFR 511 Regulation

• Include Requirements
  ➢ Timeliness – disseminate real-time information
    ❖ 10 mins for metropolitan areas
    ❖ 20 mins for outside metropolitan areas
  ➢ Accuracy
  ➢ Availability

• Accuracy threshold minimum 85%
• Available threshold 90%
IDOT’s Measuring Method

- Method requires an annual review
  - Travel time
  - Construction information
  - Incident information
  - Weather information
- Randomly select 25%
- Lane openings categories
  - No closure
  - Partial or full closure
Objectives

• To present a method to review the accuracy of real-time traveler information about lane- or road-closing construction projects in metropolitan areas that must comply with 23 CFR 511

• Presents a case study to demonstrate how the propose method could apply to metropolitan areas throughout the US
DOTs’ Information Dissemination

- VDOT- Though mall on large screens
- DCDOT- Dynamic Message Signs, traffic camera
- NJDOT- Trumpet, CCTV, Social Media
- IDOT- Getting around IL & Travel Midwest Website
- FDOT- 511 information system
DOTs’ Information Dissemination

- CALTRANS - ITS Tool & 511 Information System
- WSDOT - Website & Social Media
- NMDOT - CCTV, DMS & PDMS
- NDDOT - CCTV, DMS & PDMS
- NDOT - Changeable message signs
- NCDOT - PDMS, CCTV & Sensors
Proposed Method for Evaluation

Select a random sample of ongoing lane-closing construction projects

Can traffic camera view the construction lane closure status?

Yes

Review traffic camera images to identify current construction lane closures

No

Contact resident Engineer or conduct a site visit

Compare accuracy
- Full or partial closure
- Road segment
- Start and end times

Calculate % accuracy

≥ 85%
In Compliance

< 85%
Not in Compliance
Reported information & Accuracy

• Reported to the public
  ➢ Full or partial closure
  ➢ Road segment of closure
  ➢ Start time of closure
  ➢ End time of closure

Accuracy of Information $T$

\[
T = \frac{\sum \text{Instances of accurate construction information } X}{\sum \text{Construction projects audited for information } X} \times 100
\]
Construction Projects

- Review the available construction Projects (50)
  - Find the possible to view with cameras (31)
    - Find the projects with no camera nearby (19)
      - Could review by calling RE or visiting site (not reviewed herein)
    - Find the number of accurate projects (23)
    - Find the number of inaccurate projects (4)
  - Find the number of projects that are unable to view (4)
# Summary of Construction Projects

<table>
<thead>
<tr>
<th>City</th>
<th>Of those, number of projects viewable through cameras along interstates in urban areas</th>
<th>Number of accurate projects</th>
<th>Number of inaccurate projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>5</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Dallas</td>
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<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Houston</td>
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<td>0</td>
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<tr>
<td>Milwaukee</td>
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<td>4</td>
<td>0</td>
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<tr>
<td>Salt Lake City</td>
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<td>1</td>
<td>1</td>
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<tr>
<td>Bridgeport</td>
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<td>0</td>
<td>0</td>
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<tr>
<td>Albuquerque</td>
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<td>3</td>
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<tr>
<td>Omaha</td>
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<td>3</td>
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<td>Sarasota</td>
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<tr>
<td>Albany</td>
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<td>0</td>
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<tr>
<td>Baton Rouge</td>
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<tr>
<td>Akron</td>
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<td>2</td>
<td>0</td>
</tr>
<tr>
<td>New Haven</td>
<td>2</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Toledo</td>
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<td>2</td>
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<tr>
<td>Provo</td>
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<td>Greenville</td>
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<td>1</td>
<td>0</td>
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<tr>
<td>Scranton</td>
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<td>1</td>
<td>0</td>
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<tr>
<td>Columbus</td>
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<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>50</strong></td>
<td><strong>23</strong></td>
<td><strong>4</strong></td>
</tr>
</tbody>
</table>
RESULTS

- 38% Number of projects able to view
- 62% No camera close enough
RESULTS

- 85%: Number of accurate projects
- 15%: Number of inaccurate projects
CONCLUSION & RECOMMENDATIONS

• Traffic camera assessed- 62% projects
• Manual observations- rural areas
• Real-time streaming traffic cameras information
• Traffic camera maintance
• Statewide traffic management center
• Setup more Traffic camera
Thank You
QUESTIONS