SHRP 2 Round 5: Integrating Freight Considerations into Highway Capacity Planning Process

06/23/2017
(Presentation at TNMUG)

Mishra S., and Golias M.
Department of Civil Engineering and Intermodal Freight Transportation Institute
University of Memphis
What is SHRP2

- Second Strategic Highway Research Program (SHRP2)
  - Created in 2006 to find strategic solutions in four focus areas:
    - Safety
    - Reliability
    - Renewal
    - Capacity
What is the Progress of SHRP2

- **$122 million** funding assistance
- **63** SHRP2 solutions
- **350** projects implemented

- **52** Recipients (DOT)
- **29** Recipients (MPO/LOCAL)
- **10** Recipients (UNIVERSITY)
- **7** Recipients (FEDERAL/TRIBAL)

**350** SHRP2 projects nationwide
Team Members

- Tennessee DOT
- Jackson MPO
- University of Memphis

- Project manager: Aayush Thakur, TDOT
Project Overview

• Focus Area: Capacity
• January 2016-June 2017
• Framework to obtain performance measures to enhance highway capacity planning
  - Truck Parking
  - Recurring and non-recurring freight corridor reliability
  - Freight and land use integration (ongoing)
• Community visioning
  - Engage stakeholders (e.g. public, planning agencies)
Truck Parking

- Capacity
- Utilization
- Violation
- Amenities

Capacity of Rest Areas

<table>
<thead>
<tr>
<th>PRIVATE</th>
<th>PUBLIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;= 15</td>
<td>&lt;= 7</td>
</tr>
<tr>
<td>16 - 50</td>
<td>8 - 12</td>
</tr>
<tr>
<td>51 - 106</td>
<td>13 - 19</td>
</tr>
<tr>
<td>107 - 150</td>
<td>20 - 30</td>
</tr>
<tr>
<td>&gt; 150</td>
<td>&gt; 30</td>
</tr>
</tbody>
</table>

N

Miles

0 20 40 80 120 160
Freight Reliability

The dataset displays travel time (in hours) vs. trip length (in miles) for different types of congestion: Free Flow, Recurring Congestion, and Non-Recurring Congestion. The graph includes a map of Shelby County, with key landmarks such as the PAP Network and Census Tracts.
Freight and Land Use (Ongoing)

Transportation and Warehousing

Accommodation and Food Services

Generate possible demand for trucks by commodity using GPS data
Community Visioning

• A survey to understand how freight is analyzed at planning and operational level
• Please complete the survey and return before the last session of TNMUG
  - No personal information is requested
  - Only views and opinions
  - The responses will be kept completely confidential
Students/Post-docs involved

- Undergraduate students (2)
  - Ronald Edward Coupland
  - Lambert Marks

- Graduate Students (8)
  - Maxim Dulebenets
  - Mania Flaskou
  - Nikolas Delligiannis
  - Khademul Haque
  - Afrid Sarkar
  - Karlis Pujats
  - Santosh Bhattarai
  - Samuel Jordan

- Post-docs (1)
  - Bryan Higgs
Thank you