Critical Rural Freight Corridors Designation: Implications of Truck Percentage Calculation

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Outline

- National Freight Network
- Critical Rural Freight Corridors (CRFCs)
  - Criteria
  - Policy Alternatives
- Comparative assessment
- Observations
National Freight Network

- MAP-21
- National Freight Network
  - Primary Freight Network (PFN)
  - Rest of the interstate system
  - Critical Rural Freight Corridors (CRFC)
- Assist states in strategically directing resources to improve system performance
CRFC

- Three designation criteria
  - Rural principal arterial with at least 25% annual average daily truck traffic (AADTT) using passenger car equivalent (PCEs) units
  - Provides access to energy exploration, development, installation, or production areas
  - Connects the PFN or interstate to a facility handling >50,000 TEUs or 500,000 tons of bulk commodities
Individual Segments Over 25% Truck

Legend
- Draft PFN & Interstates
- 25% Truck Traffic
- Urban Roadways

Source: HMPS, 2011
Approaches

- Three approaches
  - Segment
  - Mileage
  - Corridor

- Assumptions
  - State DOT perspective
  - 2.5 PCE value
Segment Approach

- Segment
  - Calculate segment truck percent
  - Count segments with at least 25% trucks
  - Minimum 50% of segments must at least 25% truck

Number of segments with at least 25% trucks / Total number of roadway segments
Mileage Approach

- **Mileage**
  - Calculate segment truck percent
  - Add segment length of all segments with at least 25% trucks
  - Minimum 50% of miles must at least 25% truck

Number of miles with at least 25% trucks / Total number of roadway miles
Corridor Approach

- Corridor
  - Calculate weighted average of AADTT
  - Calculate weighted average of AADT
  - Minimum 25% truck

\[
\frac{\text{Weighted Average of AADTT}}{\text{Weighted Average of AADT}} = \text{Corridor Percent Truck}
\]
Comparative Assessment

- **Categories**
  - Robustness
    - Errors
    - Assumptions
  - Network Connectivity
    - Freight intermodal connectors
    - Interstate connections
  - Mileage Distribution
    - Mileage outside the interstate system
## Approach Comparisons

### Table 1: Mileage Distribution

<table>
<thead>
<tr>
<th></th>
<th>Segment Approach</th>
<th>Mileage Approach</th>
<th>Corridor Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interstates Miles (% of total)</td>
<td>25,287 (55.0%)</td>
<td>25,490 (51.6%)</td>
<td>23,951 (56.1%)</td>
</tr>
<tr>
<td>Principal Arterial-Other Freeways and Expressways Miles (% of total)</td>
<td>1,919 (4.2%)</td>
<td>1,928 (3.9%)</td>
<td>1,423 (3.3%)</td>
</tr>
<tr>
<td>Principal Arterial-Other Miles (% of total)</td>
<td>18,791 (40.9%)</td>
<td>21,938 (44.4%)</td>
<td>17,295 (40.5%)</td>
</tr>
<tr>
<td>Total Miles</td>
<td>45,996</td>
<td>49,357</td>
<td>42,670</td>
</tr>
</tbody>
</table>

### Table 2: Robustness and Network Connectivity

<table>
<thead>
<tr>
<th></th>
<th>Segment Approach</th>
<th>Mileage Approach</th>
<th>Corridor Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robustness</td>
<td>Fair</td>
<td>Excellent</td>
<td>Good</td>
</tr>
<tr>
<td>Unique Interstate Intersections</td>
<td>42</td>
<td>43</td>
<td>40</td>
</tr>
<tr>
<td>Total Interstate Intersections</td>
<td>124</td>
<td>146</td>
<td>123</td>
</tr>
<tr>
<td>Intermodal Connectors Within 15 Miles</td>
<td>202</td>
<td>206</td>
<td>190</td>
</tr>
</tbody>
</table>
Conclusions

- Mileage approach for now
  - Corridor has distinct methodological advantages

- Rule making matters
  - Involvement!!!
  - Substantive comments

- Data Data Data Data
  - HPMS improvements
  - HPMS roadway classification
  - AADTT vs truck miles

- State perspective limits regional flows
  - Casualty of state designation
Critical Rural Freight Corridors

- 25% Truck Traffic
  - Multiple calculation methods
    - Segment
    - Corridor average
    - Weighted average

- Different Methods = Different Networks
  - Multimodal connections
  - Number of miles
  - Corridor connectivity
Implementation Matters

- Limited Guidance from Congress
  - Implementation drives program outcomes
- US DOT Fills Gaps in Legislation
  - Solicits comments from stakeholder
- Early Involvement
  - State and regional stakeholders
  - Data validation