Permanent Freight Data Collection Infrastructure and Archive System

TransPORT
April 10, 2013

Chris Monsere
Associate Professor
Portland State University
Civil and Environmental Engineering
Objective

• Develop system for permanent truck counts for the region’s ITS monitoring system
  – Integrate with PORTAL
  – 20-second intervals, 24 hours per day, 365 days per year
  – Explore arterial applications
Revised Work Plan

• Task 0. Form project technical advisory committee (TAC)
• Task 1. Review state of the practice
• Task 2. Identify test locations for sensor validation and deployment
• Task 3. Develop truck-count sensors
• Task 4. Calibrate to ground truth observations, deploy sensors at arterial locations and evaluate single-loop length-based classification accuracy
• Task 5. Integrate test truck-count sensors with the ITS network and ODOT ATMS
• Task 6. Identify remaining locations for deployment
• Task 7. Purchase and coordinate installation of truck-count sensors
• Task 8. Modify PORTAL and prepare visualization enhancements
• Task 9. Prepare documentation and manual
ITS

4

20 ft in urban
43 ft in urban

Medium Class

OSU TCU Devices

Rear Panel - Power jack, Ethernet port, serial data port, rocker switch and fuse holder

Front Panel - Power LED, VGA port and USB ports
Validation I-205 Stafford NB

I-205 NB Stafford

SE 82\textsuperscript{nd} Ave / Fremont
### Validation – I-205 Stafford NB

**Length errors by sensitivity level**

<table>
<thead>
<tr>
<th>Sensitivity Level</th>
<th>Number of Vehicles in Video</th>
<th>Number of Vehicles Analyzed</th>
<th>Avg. Length Difference (ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>517</td>
<td>93</td>
<td>-0.69</td>
</tr>
<tr>
<td>4</td>
<td>513</td>
<td>30</td>
<td>-0.74</td>
</tr>
<tr>
<td>5</td>
<td>484</td>
<td>91</td>
<td>5.22</td>
</tr>
</tbody>
</table>

**Speed errors by sensitivity level**

<table>
<thead>
<tr>
<th>Sensitivity Level</th>
<th>Number of Vehicles in Video</th>
<th>Number of Vehicles Analyzed</th>
<th>Avg. Speed Error (mph)</th>
</tr>
</thead>
<tbody>
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<td>517</td>
<td>93</td>
<td>-0.038</td>
</tr>
<tr>
<td>4</td>
<td>513</td>
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<td>-1.164</td>
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<tr>
<td>5</td>
<td>484</td>
<td>91</td>
<td>-2.41</td>
</tr>
</tbody>
</table>
Validation I-205 Stafford NB

Length error(ft) - Sensitivity Level 3

- Frequency
- Bin

Speed error(mph) – Sensitivity Level 3

- Frequency
- Bin
Binned comparison - Sensitivity 3

Less than 20: Video = 75, TCU = 75
From 20 to 35: Video = 7, TCU = 8
From 36 to 60: Video = 5, TCU = 4
From 61 to 150: Video = 6, TCU = 6

Video
TCU
### Validation SE 82\textsuperscript{nd}

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<tr>
<th>Number of Vehicles in Video</th>
<th>Number of Vehicles Analyzed</th>
<th>Avg. Length Difference (ft.)</th>
<th>Avg. Speed Error (mph)</th>
</tr>
</thead>
<tbody>
<tr>
<td>885</td>
<td>37</td>
<td>2.94</td>
<td>3.28</td>
</tr>
</tbody>
</table>

#### Comparison of length Classification between video and TCU data-Location 2

- **Less than 20 ft.**
  - Video: 31
  - TCU: 30

- **From 20 to 35 ft.**
  - Video: 3
  - TCU: 4

- **From 36 to 60 ft.**
  - Video: 3
  - TCU: 3
Next Steps

• Select and install additional arterial locations if can identify willing jurisdictions
• Finish validation of the arterial lengths
• Prepare visualizations of using existing data
• Develop/confirm factors to remove non-freight vehicles from medium classification
• Validate new ODOT ramp meter length bins
• Integrate with PORTAL
Questions?

Chris Monsere
monsere@pdx.edu 503-725-9746 @Cmonsere
Associate Professor
Portland State University
Civil and Environmental Engineering