Oregon’s Work Zone Traffic Analysis Program
Data Collection to Delay Analysis

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Outline

- Background
- Analysis Evolution
- Capabilities
Background

- OTIA III Bridge Locations
Mobility Corridors

- Statewide Mobility Corridors Defined
Mobility Management and Delay Thresholds

- I-5 South Corridor (Eugene to CA State Line)
Mobility Management and Delay Thresholds

- Segment 4-C (US 199 to CA State Line)
Mobility Management and Delay Thresholds

- **Length:** 55 miles
- **Delay Threshold:** 7 minutes
Mobility Management and Delay Thresholds

- **Length**: 55 miles
- **Delay Threshold**: 7 minutes
Mobility Management and Delay Thresholds

- Corridors broken into segments
- Delay thresholds assigned to segments
- Delay thresholds to be enforced 24/7/365
- Individual delays must be aggregated
Analysis Needs

- Delay estimates required for all projects
- Estimated delays on each segment must be compared to thresholds
WZTA Tool

- Requires only an internet connection and browser
- Web-based version replaces spreadsheet package
- Updates/fixes on server side
- Up-to-date data
- Analysis results stored on server
- 5-15 minutes per analysis
What do we need to analyze for?

- Design Hour Volume?
- Peak vs. off-peak?
- 24/7

- Does not account for month-to-month variations.
- Peak and off-peak hours start and end at different times in different places.
### I-5 Fairgrounds Interchange - Roseburg
#### Southbound - Weekday

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<tr>
<th>Year of Analysis</th>
<th>Lane</th>
<th>Lane Type</th>
<th>Direction</th>
<th>Peak Period</th>
<th>24 Hour Count</th>
<th>24 Hour Volume</th>
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<td>South</td>
<td>8 PM - 10 PM</td>
<td>500,000</td>
<td>1,250,000</td>
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</tbody>
</table>

**Legend**
- Not Available
- Periods above PCE Limit

**Analysis Prepared By:** Jeremy Jackson
Closure Chart Uses

- Used primarily in the planning and design phases
- Planning: May influence final design
- Design: Project specifications
- Construction: Short notice issues
- Maintenance: Emergency short-term work
Output – Graphical Delay

Example graphical output
Output – Graphical Delay

Example graphical output
Aggregate delay over user-defined segments
How Does It Work?

- Gather data
- Adjust data
  - Heavy vehicles
  - Seasonal variations
  - Weekday/weekend
  - Growth rates
- Identify free flow threshold
- Compare

Freeway Traffic Analysis

Free Flow Threshold –

The maximum sustainable volume that yields average travel speeds at or near free flow conditions.
Where Does the Data Come From?

- ODOT Manual Count Database
- Integrated Transportation Information System (ITIS)
  - ODOT Highway Inventory
  - Average Daily Traffic
  - Growth rates
  - Truck percentages
- ODOT Traffic Database
  - Daily Trends/ATR Data
  - Manual Count/24-hour count data
- GIS
  - Geographical information
GIS - The Benefits of Context

- Free flow thresholds
- Traffic Characteristics
- Roadway characteristics
GIS - The Benefits of Context

Horizontal Curvature

Truck Percentage

Vertical Geometry
Web Interface

Login required

Work Zone Traffic Analysis
Traffic Data Sheet

Location:
- ODOT Hwy #: 001
- Milepoint: 123.00
- ODOT Region: 3
- Area Type: UGB
- Area Name: Roseburg
- Area(shoulder): No
- Roadway Type: Freeway
- Terrain Type: Level
- Existing Posted Speed Limit (mph): 65
- # of Existing Lanes: (Total) 2

Traffic Data:
- Year of Analysis: 2008
- Linear Growth Rate: 2.69%
- Existing ADT Year: 2006
- Existing ADT: 43900
- Analysis ADT: 46262
- Existing DHV: 4170
- Analysis DHV: 4396
- % Trucks: 16.52%
- Free Flow Threshold (PCF/hr): 1500
- Nearby ATR: 10-005

Clear Data

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Project Location

Click on map or use manual entry
Capabilities

- Tool shows all available information at location
Available Data

Access to Traffic Planning Sheet (TPS)
Calculation Overrides

Anything in blue can be overridden

[Image of a traffic analysis software interface with data fields and a map view]
Override Example

Truck percentage
ATR Data
Manual Count Data

Using a manual count from ODOT database
Summary

- Delay estimates and work windows can be generated quickly
- Ability to predict delays/travel times for work zones, segments, and corridors
- During planning: Closure chart and delay estimates influence staging strategies
- During design: Closure information used in project specifications
Summary

- High potential for modification for other uses
- Scheduling and staging for major construction projects
- Agency interest in modified version for database access
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