Wisconsin Department of Transportation

Wisconsin State Patrol

Wisconsin Traffic Operations and Safety (TOPS) Laboratory
History of Redesign

• Accurate winter road conditions - critical traveler information
• In Wisconsin, dispatch centers have been reporting for decades
• Existing system
  • Manual
  • Unstable
  • High cost of maintenance
  • No exposure to outside parties
Redesigned System Launched 12/13

- Improved User Roles and Security
- Access to Historical Conditions
- Integrated Authentication
- Intuitive User Interface
- Dynamic map integrated with real-time weather
- Flexible framework for system updates
- Data feeds for dissemination
- Access to Historical Conditions
Ability to filter view by various attributes

Many segments can be updated at once by selecting checkboxes and applying a condition.

Rows are color coded by POST.

Conditions are colored using a standard scheme matched on map.

Apply a condition to ALL segments with one click.

Reset any changes made before they are applied.

Individual segment conditions can be changed via dropdown.

Apply a condition to ALL segments with one click.
Map colors reflect colors in table

Conditions shown on map driven by database

Real-time radar and warnings

Control layer visibility by post...

... or condition

Mouse-over pop-ups return info

Single-button control of selections
Ability to filter view by various attributes

Control time period of display

Export results to CSV for further analysis

Ability to see who entered the condition

Timestamps show duration of observation
Control time period of display

Control layer visibility by post...

... or condition

Mouse-over pop-ups return info
Wisconsin 511 Travel Information

511 vendor consumes an XML feed from the WRS database to generate table and graphics.
Regional mashup of WRS condition feeds around the upper Midwest (UW SSEC)

Integration with other systems

Incorporation of WRS into Multi-State Operations

WRS Inclusion in other data products (UW TOPS Lab)

North/West Passage Operations and Travel Information Integration Sharing (OTTIS) Project
Multistate Corridor Operations and Management (MCOM) Program

Building on nearly 10 years of collaboration to share and integrate data among the states, North/West Passage introduces the Operations and Travel Information Integration Sharing (OTTIS) project. The project will research, develop, and test a technology solution with a sustainable business model that will:

• Provide commercial and private vehicle drivers with a single, integrated source of information to promote safety and mobility for the entire corridor
• Provide transportation agencies with information and tools to plan and coordinate operations and incident response activities
• Use simulation technologies to investigate how traveler information can modify driver behavior and enhance safety along rural multistate corridors
• Investigate Application Programming Interface (API) technologies to leverage and share information to create future platforms for Connected Vehicle applications and sustainable business models

FHA/WU in 2013 selected OTTIS for funding through the Multistate Corridor Operations and Management (MCOM) Program. The purpose of the MCOM program is to promote regional cooperation, planning, and shared project implementation for research programs and projects that improve multimodal transportation system management and operations. OTTIS received $543,910 as one of six awards for the MCOM program. The federal funding will be combined with state matching funds of $180,000 for FY2015.

Research during the two-year OTTIS project will be carried out by the Wisconsin Transportation Research Institute (WTRI), which offers considerable experience developing multistate corridor plans and traveler information systems. The research will leverage previous North/West Passage projects to implement a corridor wide traveler information system that will improve safety, travel time, and systems development, human factors, sustainable business models and marketing.
Centrally controlled login

Control panel for viewing user account information

Link to interface for modifying permission levels

Updates are tied to user accounts
2013/14 Usage Summary

- New system live on December 11, 2013
- ~ 68 thousand updates through April 2014

<table>
<thead>
<tr>
<th>Condition</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Winter Driving</td>
<td>43,838</td>
</tr>
<tr>
<td>Slippery Stretches</td>
<td>13,039</td>
</tr>
<tr>
<td>Snow Covered</td>
<td>10,272</td>
</tr>
<tr>
<td>Ice Covered</td>
<td>619</td>
</tr>
<tr>
<td>Travel Not Advised</td>
<td>75</td>
</tr>
</tbody>
</table>

Condition Updates per Segment

![Condition Updates per Segment Chart]
Next Phase / Enhancements

• On-the-fly segment editing
• Integration with RWIS
• Integration with MDSS
Thanks!

**Chip Hankley**  
Traveler Information Systems Developer  
University of Wisconsin, Madison  
hankley@wisc.edu  
608-890-2441

**Fan Ding**  
Graduate Research Assistant  
University of Wisconsin, Madison  
fding5@wisc.edu