Predictive Analytics — Using Data to Target Resources and Improve Traffic Safety

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Presentation Outline

- Objectives
- Near Term Strategies
- MACH / Community Maps Improvements
- Future Considerations
Predictive Analytics Objectives

- High level decision support tools (locations, time of day, day of week, etc.)
- Scalable: statewide vs. municipality
- Provide visualization capabilities
- Provide reporting capabilities
- Make use of current data
- Reproducible results
- Validate outcomes
100% Electronic Reporting
- Police reported crash data is available for processing within 24 hours of transmission

TraCS TLT Crash Locations
- 92% of crashes report with geo-coordinates

New DT4000 Crash Report
- Opportunities for improved analysis (e.g., secondary crashes, driver conditions)
New Opportunities, Cont.

Crash Reports with Latitude/Longitude Coordinates

<table>
<thead>
<tr>
<th>Crash Year</th>
<th>Percent Geo-Coded</th>
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<tbody>
<tr>
<td>2008</td>
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<tr>
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<tr>
<td>2016</td>
<td>80</td>
</tr>
<tr>
<td>2017</td>
<td>100</td>
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</table>
Near Term Strategies

- Law Enforcement (In Field)
- MACH
- Crash Database
- Community Maps
- TraCS
Near Term Strategies, Cont.

Proposed data flow architecture for near term (blue) and long term (gradient) Wisconsin predictive analytics capabilities.
WisTransPortal Crash Data

Initial System Deployed in 2006
WisTransPortal Crash Data, Cont.

Crash Reports (2008) and Statewide GIS Crash Map (2012)
Community Maps Improvements

Nightly Updates from DT4000 Crash Data
Community Maps, Cont.

Analysis Filters: Heat Map of Weekend 3rd Shift Crashes (Madison)
Community Maps, Cont.

Eau Claire County alcohol crashes: weekends

Eau Claire county alcohol crashes: weekdays
Future Considerations

- **Short Term**
  - Building connections in the system
  - Flag by causation not injury severity
  - Elimination of some types
  - Layer data elements
  - Prototype

- **Long Term**
  - Build analytics
  - Reporting tools
  - Evaluation tools
Future Considerations, Cont.

- Measuring Effectiveness
  - Staff Hours
  - Issued Warnings / Citations
    - Contact Summary (TraCS)
  - Before / After Crashes
    - Balloon Effect?
  - Statistical Significance
  - Validity of the Model