WisDOT Case Examples Using SPMs

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Approximately 950 signals statewide with communication to 400 of the signals.

\~ 50% fiber & 50% cellular
Agency Factoids – Systems

- Deployed UDOT Signal Performance Metrics
  - ~170 intersections collecting high resolution data*
Agency Factoids – Detection & PreEmption

• Stop Bar Detection (left turns and side street)
  – 6’ x 20’ typical
• Dilemma zone detection on the mainline and high speed side streets
  – Regional variances in layout/design
• Loop, Video and Microwave all used
  – Regional Preference
• Use Lane Group Detection
  – Considering shift to Lane by Lane for performance measures
• Loops typically numbered such that first digit indicates phase it is associated with
• Detection failures are identified by our travelling public
• EVP is installed upon request (approx. 30% currently)
• Railroad Preemption at approximately 24 state owned signals
WisDOT Experience

- Nov 2014 – IT project approved
- May 2015 - Test intersections were added
- July 2015 – Test intersections communicating with system and additional intersections (ASC3s with fiber) added
WisDOT Next Steps

- Add EPAC intersections on fiber to SPM system
- Create alarms/reports
- Figure out how to get data via cellular modems
- Work with our IT staff on storage space issues
- Make sense of adaptive system performance metrics
- Continue to add remote detection to the remaining signals
- Develop operations based performance measures
In the Meantime...

Identifying Detection Issues using Phase Termination Diagram

*Video Detection Incorrectly Mapped*
In the Meantime...

Identifying Issues using Phase Termination Diagram & Split Monitor
In the Meantime...

Identifying Issues using Purdue Coordination Diagram & Phase Termination Diagram
In the Meantime...

Identifying Short Splits with Split Monitor

[Graph showing phase duration versus time with key metrics like Free, 46.3-85 Percentile Split, 35.2 Avg. Split, 38.5 MaxOuts, 59.8 GapOuts, and 1.6% Skips]
In the Meantime...

Identify Issues with Adaptive System
Questions?

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