WisDOT Case Examples Using SPMs

January 27, 2016
Agency Factoids – WisDOT

122 Signals
99% w/ communication
2 engineers
4 electricians

94 Signals
16% w/ communication
2 engineers
4 electricians

115 Signals
29% w/ communication
2 engineers
4 electricians

160 Signals
79% w/ communication
4 engineers
6 electricians

453 Signals
23% w/ communication
9 engineers
8 electricians

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*

* TACTICS™
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
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

- Free
- 46.3 - 85 Percentile Split
- 35.2 Avg. Split
- 38.5% MaxOuts
- 59.8% GapOuts
- 1.6% Skips

STH 38 (Howell Ave.) College Ave. (CTH ZZ) SIG#401090 Phase 4
Wednesday, January 20, 2016 6:00 AM - Wednesday, January 20, 2016 9:00 AM

Phase Duration (Seconds)

Time (Hour of Day)
In the Meantime...

Identify Issues with Adaptive System
Questions?

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