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™

CENTRACS®

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

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

In the Meantime...

Identify Issues with Adaptive System

Questions?

Joanna Bush, PE

Statewide Traffic Signal Systems Engineer

joanna.bush@dot.wi.gov

(608) 261-5845