Bureau of Traffic Operations

Transportation Systems Management and Operation

Traffic Infrastructure Process (TSMO – TIP)

Stakeholder Summit – September 27, 2016

MINUTES

Meeting objectives:
- to continue integration of the TSM&O Traffic Infrastructure Process with priority (direct influence) stakeholders
- to obtain additional feedback of the process and planning tools
- to review new TSM&O technologies being used or coming soon
- to define which projects must go through the TSMO-TIP process, both retroactively and in the future
- to discuss documentation requirements of the TSMO-TIP
- to discuss proposed 2017 deployments with list of projects that must go through the TSMO-TIP process

Agenda summary (refer to detailed agenda separately):
    I. Introductions (10 min)
    II. TSM&O Traffic Infrastructure Process Overview (35 min)
    III. TSM&O Technology Annual Review (90 min, 15 min break in the middle)
    IV. Next Steps (5 min)

Attendees:
This summit had over 35 in-person attendees, and the event was also broadcast via GoToMeeting for additional remote attendees. Those in person included the following:
    Ahmet Demirbilek, Bill McNary, Craig Schanning, David Karnes, Don Schell, Jeff Madson, Joanna Bush, Liz Schneider, Mark Lloyd, Paul Keltner, Randy Hoyt, Rebecca Szymkowski, Travis Feltes, Jeff Hess, Kelly Laabs, Ron Johnson, Randy Asman, Chad Hines, Stacey Rusch, Art Baumann, Chris Hager, Don Berghammer, Elizabeth Lloyd-Weis, Joyce Murphy, Andy Winga, Karen Olson, Kyle Hemp, Chris Ohm, James Hughes, Yang Tao, Jonathan Riehl, Max Sauban, Peter Rafferty, Mike Haas, Mike Ruelle, Natalie Smusz-Mengelkoch

All the materials, tools, and resources discussed today are available via the TSMO-TIP project page:
http://www.topslab.wisc.edu/tsmo/tip/

INTRODUCTIONS (9:04-9:13)

Dave Karnes provided a welcome and offered introductory remarks, followed by individual introductions. Mark L then gave an overview of the agenda for today, explained the objectives and expected outcomes for today, as well as introductory remarks about the policies and procedures.

TSMO-TIP OVERVIEW (9:13-10:02)

Peter briefly covered the history and development of ITS and TSM&O planning that brought us to today. This included the previous plan, the PPM that migrated us to the TSMO-TIP. Mark then discussed in more

detail the achievements in the last year since the first Summit, including the needs tool, the policy revisions, and the regional roll-out meetings.

The objectives and expectations were covered in more detail (refer to slides 12 and 13). A key point is the transition from a *plan* to a *process*, as well as the transition from a plan with stipulations to a process with guidance and ideas.

Jon then came up to present the process overall, both from an annual cycle perspective and by stepping through the steps involved. The flowchart and explanatory detail has been provided throughout the last year, so this discussion is more of a recap and review. Refer to the flowchart steps A-G on slide 15. The March 2015 webinar
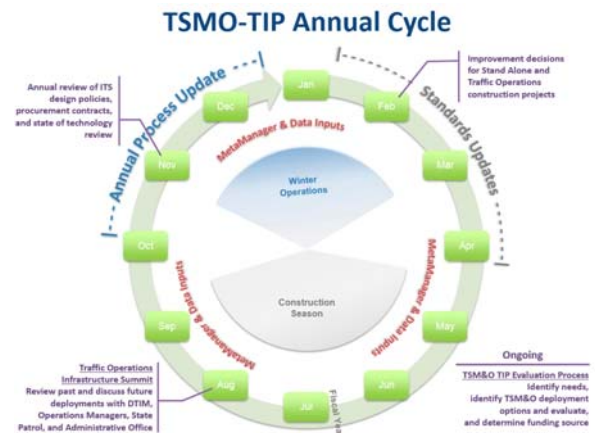
The online needs analysis tool (interactive map) is available anytime at http://www.topslab.wisc.edu/tsmo/tip/needs/. It includes many enhancements and new features that have been developed over the last year in response to all the feedback from stakeholders, particularly from the regional roll-out meetings. Examples include greater flexibility, implementation of different MetaManager versions, additional ITS inventory layers, etc. A beta version of the six-year construction improvement plan layer was presented for feedback and consideration of further integration.

A question was posed about how this tool meshes with safety analysis and assessment, i.e., should regional safety engineers, DTIM staff, etc. be using this tool. This question was followed by good discussion and input from multiple attendees. This TIP is not required for HSIP, nor is it intended to supplant anything in the safety analysis and prioritization. But, if ITS is under consideration, use of this tool is encouraged, if only for awareness.

Natalie then provided information about the benefits tool (refer to slides 21-28). This component was thoroughly covered during the March 2016 webinar and regional roll-out meetings, so what is presented today is intended to be a review and highlight of key points. The remarks covered how the benefits tool works, what are the parameters at play, the (limited) inputs needed, and the project summary and full analysis packages. In particular, refer to the required documentation slide that includes an overview chart.

The FY17 Standalone projects were then presented, divided by regions (see slide 32+). There are between zero and three projects per region needing TSMO-TIP documentation. Documentation for FY17 projects should be completed by February 2018. FY18 project documentation also be should be completed prior to the March 2018 standalone evaluation.

Questions about the gray area between signals and ITS, supporting communications and ITS, ITS deployed for other purposes but used for operations, etc. This is a tricky distinction in many cases, e.g., for purposes of economic benefits analysis, and it largely depends on the situation, i.e., there's no specific answer.

TSM&O TECHNOLOGY ANNUAL REVIEW (10:02-12:00, with 20 minute break mid way through)

Jon then took the podium to take the stakeholder group through this section on emerging technologies, nationwide trends, new applications, and retiring old technologies.

Traveler Information: changing landscape of data collection, data provision, information dissemination, routing, etc.; working or

collaborating with private sector, e.g., Waze; multimodal traveler information and route/mode choice support; Liz spoke about the RTSMIP (also refer to http://www.topslab.wisc.edu/its/1201/). This included good discussion about Waze Connected Citizen program, including efforts from other agencies and the City of Madison, though no movement yet on two-way communication.

Communications Systems / Connectivity: wired/fiber vs forthcoming 5G; reliability and security issues; locally in Wisconsin we have a robust fiber network (including better security than wireless); nonetheless eventually we'll need upgrades; the local, short-range connections are among the challenges; WisDOT continues to actively collaborate with others, e.g., CAN example in Plover and Wisconsin Rapids.

Adaptive Signal Control: Jon covered several benefits (see slide 44) and the variety of implementation options (slide 45); Joanna spoke about examples of adaptive control here in Wisconsin, e.g., in Janesville, at the Zoo Interchange area; much of this has been made possible incidental to large improvement projects; she is perhaps more skeptical about the benefits because so much depends on thoughtful implementation, careful selection of locations, and committed monitoring and management; the City of Madison has also done adaptive control as part of the Verona Road project and are moving along with implementing this on University Avenue.

Active Traffic Management: VSL, ramp metering, managed lanes, zippers; new trends including adaptive metering and a variety of dynamic solutions; Chris Hager spoke about their experiences with the Zoo Interchange ATM, with more to come.

[Break 10:37-10:57]

Detection Systems: refer to slides to 49-50, again a wide and expanding variety of detection options; Andy Winga spoke about some examples and experiences with detection systems in the Southwest Region; generally happy with what they've got, but not without trials and setbacks; have seen benefits of adding new technologies in addition to existing loops, especially if not optimally placed; desire to get data archived, e.g., for post hoc complaint investigation; they have 80 or so of these cameras installed.

Probe Data: rapidly burgeoning area, with reidentification but more so with GPS-based probe data; the free NPMRDS is key; Peter then gave a few examples of work going on locally, including the MAPSS mobility measures, freight delay and bottlenecks assessment, multistate performance, the 70 MPH evaluation, and the MAP-21 system performance rule; for more on this topic, tune into one of two webinars coming up in October.

Big Data: refer to slides 53-54; there is a lot to this topic; storing it, using it for analytics, fusing it (e.g., what RITIS does); for local examples we spoke about the next ATMS, CV, WisTransPortal, TSM&O Decision Support Systems (DSS), LiDAR data (collect it once, use it many times), and driving simulator data; security and privacy are concerns here as well. An important comment was for us to fully understand how third party traffic management/traveler information providers are using our data – this will help us inject our most important data/messaging appropriately and not get lost in the "data fog."

Connected Vehicles: an exploding area for agencies, data, technology; for communications, needing to get 5G, DSRC, etc. to all interoperate; lessons learned from other agencies, the CV pilots, etc.; V2I Deployment Coalition and the SPaT Challenge; CVRIA, OSADP, RDE; Yang Tao, from the City of Madison, spoke about initiatives here in Wisconsin, the Smart City Challenge initiatives, the effort to instrument the Park Street corridor, with Econolite; Yang also presented on this topic the following morning at the ITS Forum.

Automation: autonomous/driverless vs automated; many examples on the road; we are standardizing on SAE levels 0-5; new NHTSA policy – guidelines not regulations, with comment period; how to program values, morals, and law abidance into AVs; Yang again spoke about AV pilot efforts in Wisconsin, including work with UW, Epic, and microtransit service;

Wrapping up this section, Jon presented additional high-tech TSM&O solutions, emerging low-tech TSM&O solutions, and nationwide trends (refer to slides 65-67 for these examples).
New TSM&O Applications in Wisconsin (11:46)

Craig Schanning came up to the podium and discussed the forthcoming ATMS, under development with IBI Group (a Toronto based consultant/contractor who has also been integral to Wisconsin 511 since being selected in 2007). DSS is a key aspect of the new ATMS, which Craig illustrated with DMS utilization and screen shots from the ATMS sandbox. Certainly the GIS component is critical for DSS and notifications (work zones, incident responders). Craig also shared and explained screen shots of incident response "rules" implemented into the ATMS and coordinated with ITS assets.

Don Schell provided a summary of the forthcoming asset management system "VUEWorks" being implemented with BITS. They are starting with signing and pavement markings, getting that all in place, the cutting over from Cartegraph to VUEWorks by the end of the year. Traffic signals are next. ITS is more challenging and will be tackled later. And believe it or not, this is going to be integrated with PeopleSoft – ostensibly to bring in finance, economic, life cycle, and investment considerations.

Due to time, we mentioned but did not discuss additional applications.

Retiring Old Technologies (11:59) was discussed briefly, but again, this was presented and discussed at length in previous meetings, including the March 2015 webinar and the regional roll-out meetings.

NEXT STEPS (12:00-12:04)

Mark came back to the podium to wrap up. He provided a brief recap and mentioned the follow-up survey.

The ITS TAG met the afternoon following this summit, across the street in Engineering Hall room 2227.

The Wisconsin ITS Forum was held the following day, also at Union South.

TSMO-TIP CONTACTS AND LINKS

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Project information
http://wisconsindot.gov/Pages/about-wisdot/who-we-are/dtsd/bto/stoc/tsmo-tip.aspx
http://www.topslab.wisc.edu/tsmo/tip/