

Webinar: Everything You've Ever Wanted to Know About

Automated Traffic Signal Performance Metrics

December 2022

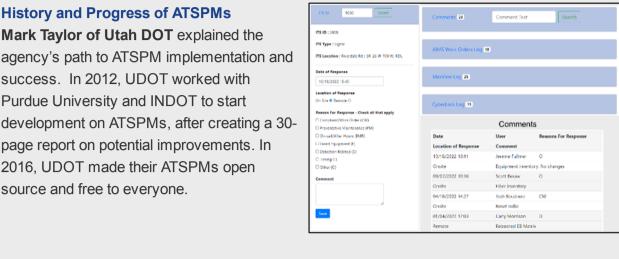
Thanks to those who participated in the Coalition's webinar - Everything You've Ever Wanted to Know About ATSPMs: Harnessing the Power of Automated Signal Performance Metrics for Your Agency held on November 9, 2022.

Please click on the links below for more information about the event or visit the TSMO section of the Coalition website, under the TSMO Webinars tab (https://tetcoalition.org/projects/tsmo- events-webinars/).

- Presentation with Audio
- Slides Only
- Question & Answer Summary

History and Progress of ATSPMs Mark Taylor of Utah DOT explained the

success. In 2012, UDOT worked with Purdue University and INDOT to start development on ATSPMs, after creating a 30page report on potential improvements. In 2016, UDOT made their ATSPMs open source and free to everyone.



UDOT developed several innovations for their ATSPMs system. One innovation was the ability to transition from analog to electric records for traffic signals and maintenance (above). Electric locks were implemented which allowed the traffic team to effectively manage cabinet access and to help enforce compliance with an electronic logbook. Overall, Mark presented that innovation and increased transparency are necessary for meeting

transportation needs and helping find the right balance between safety, efficiency, and cost.

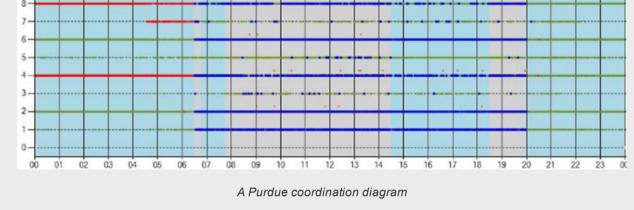
ATSPMs for Everyone Joanna Bush of Mead and Hunt explained how Wisconsin DOT's implementation of ATSPMs

reshaped the agency's signal priorities and communication. Starting in 2014, WisDOT began the process of deploying ATSPMs for their agency. The ATSPMs implementation allowed three changes to WisDOT's processes: Allowing electricians to view signal problems before traveling to the site using Purdue

- coordination diagrams (below). Retiming non-system signals to be added to priorities
- Monitoring the success of the adaptive signal program
- WisDOT's next steps regarding ATSPMs include creating a public-facing platform and including

local agencies in the platform. Joanna encouraged participants to take advantage of shared knowledge within the industry to

help with ATSPM implementation.



Kelly McVeigh of New Jersey DOT presented how New Jersey DOT uses ATSPMs and adaptive signals as tools to optimize signal timings closer to real-time. A research team

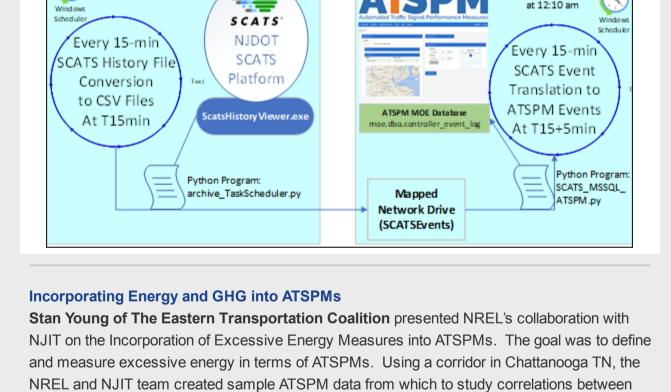
at 12:05 am

Adaptive to ATSPMs – A User's Guide

developed a way for the adaptive program to communicate data to the ATSPM platform using event codes (shown below). This system updates every 15 minutes. Understanding how to better update the traffic signal controller or detection to better manage signal operations is a benefit of the system. Using the Bottleneck ranking tool in RITIS, NJDOT can cross-reference the improvement of the signal timings, confirming the accuracy of the ATSPM/adaptive signal system.

Kelly also stressed the importance of communicating data with charts to fit your audience

(managers vs. traffic engineers vs. the public). His presentation included Purdue Coordination charts, flowcharts, and a color-coordinated legend regarding traffic signal costs. NJDOT ATSPM Server NJDOT SCATS Server Restart Every Day Restart Every Day



energy consumption and delay at intersections. The preliminary study concluded a strong correlation (R2 = 76%) between traffic delay increase (by seconds), and the increase of energy

used by vehicles at an intersection, as seen in the chart below. The research team's next steps include fine-tuning the corridor identification algorithm and further exploring the relationship between traffic (mobility) and energy (fuel consumption) metrics.

coupled_%

Excess Energy, GGE/veh/intersection 0.003 30 0.0025 25 20 0.002 15 0.0015 10 0.001 0.0005 10 15 Delay, s/veh/intersection

Upcoming Coalition Events – stay tuned for more information!

Follow the Coalition on YouTube and subscribe to be informed!

 NHTS Next Gen Webinar - January 26, 2023 - 10:30am-12:00pm, ET RITIS User Group Web Meeting – February 2, 2023 - 1:00pm-2:30pm, ET

Recordings from many of the Coalition's webinars are available here-take a look!

TDM Analytics Platform Vendor Forum(s) - February 2023 - TBD

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