

LakeCounty



# **Automated Traffic Signal Performance Measures (ATSPM) Request for Proposals**

Public Works, Planning & Transportation Committee  
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# What is ATSPM?

- **Automated Traffic Signal Performance Measures (ATSPM)**
  - Adds data logging capability to traffic signal infrastructure
  - Incorporates data analysis
- **ATSPM benefits\* include:**
  - ***Increased Safety*** - by reducing traffic congestion
  - ***Target Maintenance*** - by providing actionable information
  - ***Improved Operations*** - active performance monitoring lets agencies address problems before they become complaints

# LCDOT's involvement in ATSPM

- Regarded a national expert by FHWA
- Hosted Chicago Regional ATSPM Workshop
- Steering member of the ATSPM Task Committee (*Led by FHWA*)
- 2019 Winner of ITE International Transportation Achievement Award – Operations

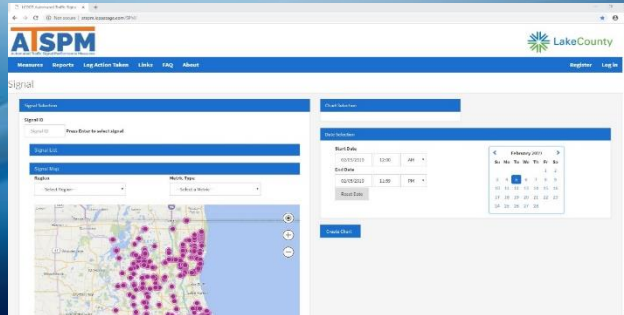


# Implementing ATSPM at LCDOT

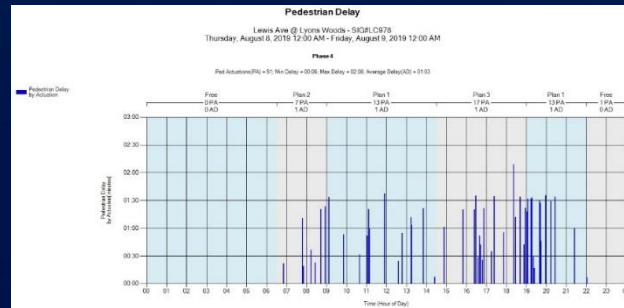
Established the following goals for an ATSPM product:

- Expandable to regional approach (with CMAP)
- Provide easy-to-interpret information
- Assist in project selection
- Conduct SCAT (Signal Coordination & Timing) studies in-house without adding staff
- Integrate with Lake County data platforms
- Use results to develop signal timing process

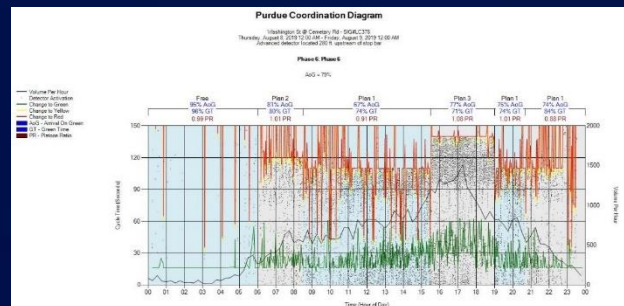
# Implementing ATSPM at LCDOT



- Initially tried utilizing open-sourced software
- Open source upgrade an inadequate solution:



What we wanted	What we found
1. Update to Version 4.2.1	1. Errors in Version 4.2.1
2. Implement Mark1 code (GDOT)	2. OSADP versus GitHUB
3. Add Watchdog feature	3. Costs associated with GDOT Mark1
4. Work towards extra features	4. Lack of Support
	5. Hard to keep up with code updates



- Program results difficult to interpret
- Source code errors
- Lack of outside support

# Implementing ATSPM at LCDOT

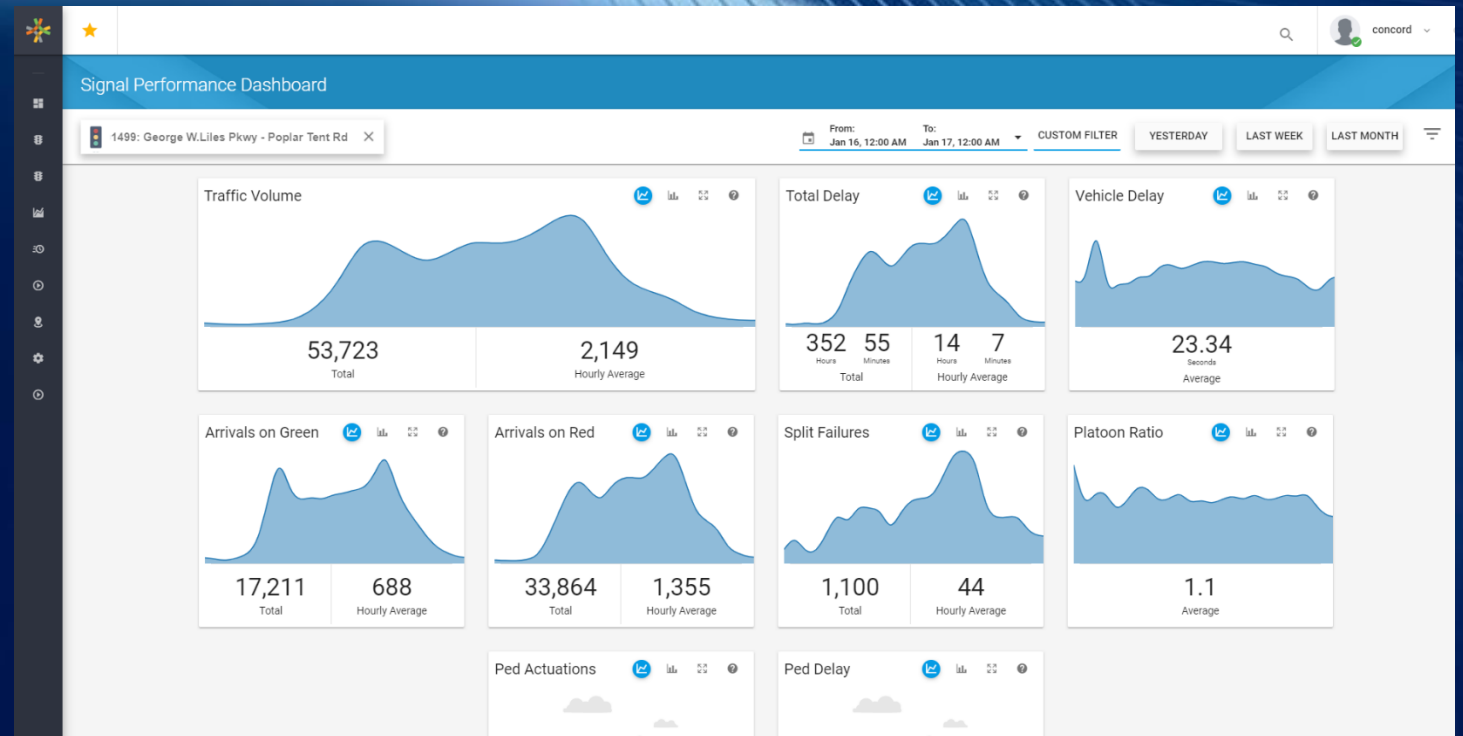
- June 2019: Issued a Request for Proposal (RFP)
- Sent to 27 Vendors
- Evaluated 7 Proposals
- Interviewed 3 Vendors
- Selected Traffop Corporation, Scottsdale, AZ



Traffop software:

# Visualizes signal performance data

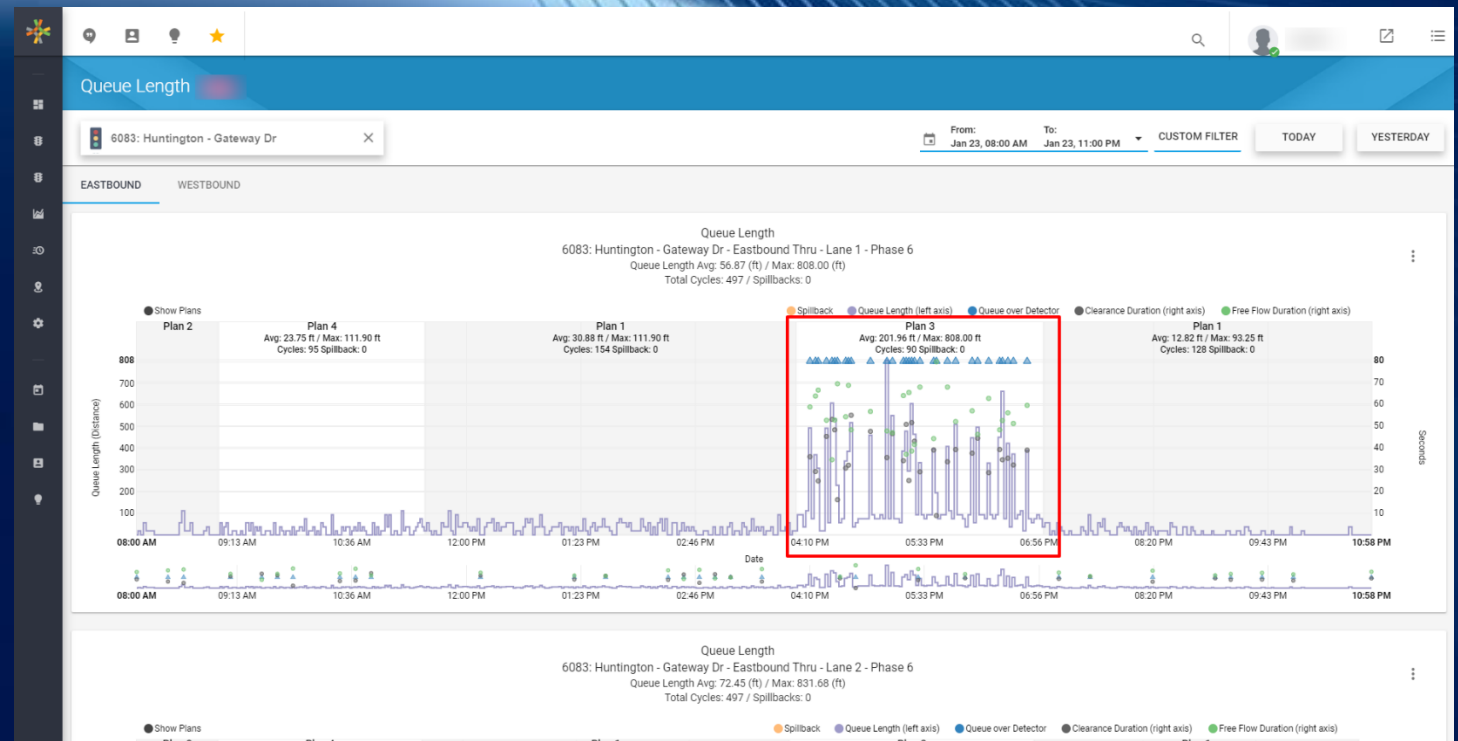
- Traffic Volume
- Total Delay
- Vehicle Delay
- Arrivals on Green
- Arrivals on Red
- Split Failures
- Platoon Ratio
- Pedestrian Actuations
- Pedestrian Delay



Traffop software:

# Identifies high queue lengths

- Number of vehicles stopped in a line behind the stopline at a traffic signal





Traffop software:

# Recommends ways to remedy delays

- Targeted insights to improve traffic signal timing

The screenshot displays the Traffop software interface, specifically the 'System Insights' section. The interface is divided into several panels, each representing a different traffic signal timing metric. A pop-up window titled 'Offset Recommendations' is overlaid on the 'Offset' panel, providing detailed information and actionable steps for a specific location.

**System Insights**

**OVERVIEW** **DETECTOR INSIGHTS** **TIMING INSIGHTS** **OTHER INSIGHTS**

**Cycle Length**  
No Cycle Length insights Found  
No insights has been found today.  
0%  
INVESTIGATE SHARE  
ACKNOWLEDGE

**Offset**  
1 Offset insight Found  
1 offset insight have been found today.  
0%  
INVESTIGATE SHARE  
ACKNOWLEDGE

**Split Adjustments**  
No Split Adjustments needed  
No Split Adjustments needed  
0%  
INVESTIGATE SHARE  
ACKNOWLEDGE

**Time of Day Adjustment**  
No Time of Day Adjustments needed  
No Time of Day Adjustments needed  
0%  
INVESTIGATE SHARE  
ACKNOWLEDGE

**Offset Recommendations**  
Huntington - Gateway Dr

**Why do we bring this up?**  
We detected heavy queuing on Eastbound approach during Plan 3 and a high percentage of vehicles are arriving on red.  
VIEW OUR CALCULATION

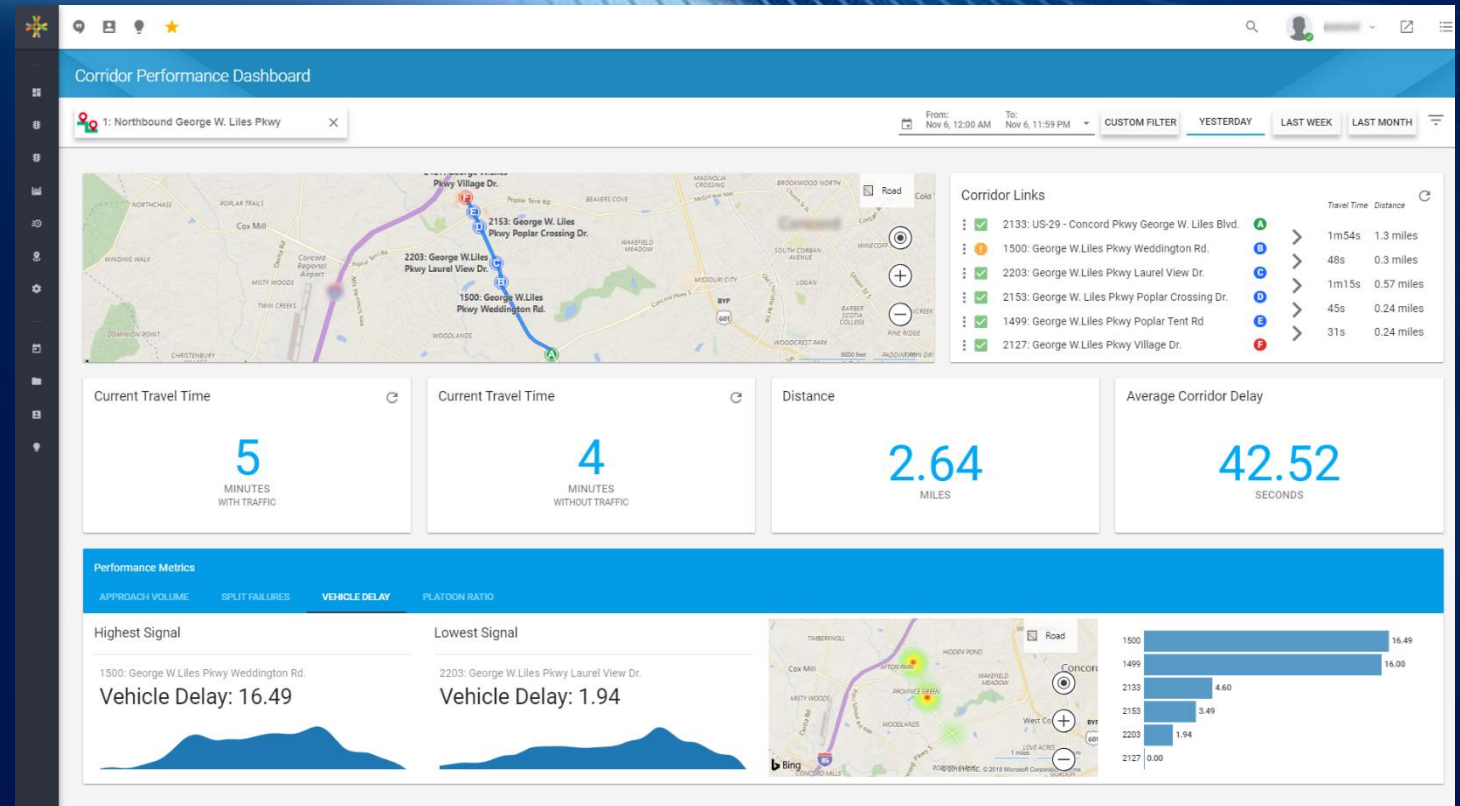
**What can you do?**  
Modify Plan 3's offset for better platoon progression.  
VIEW QUEUE LENGTH VIEW ARRIVALS ON RED

DONE

Traffop software:

# Provides overview of corridor performance

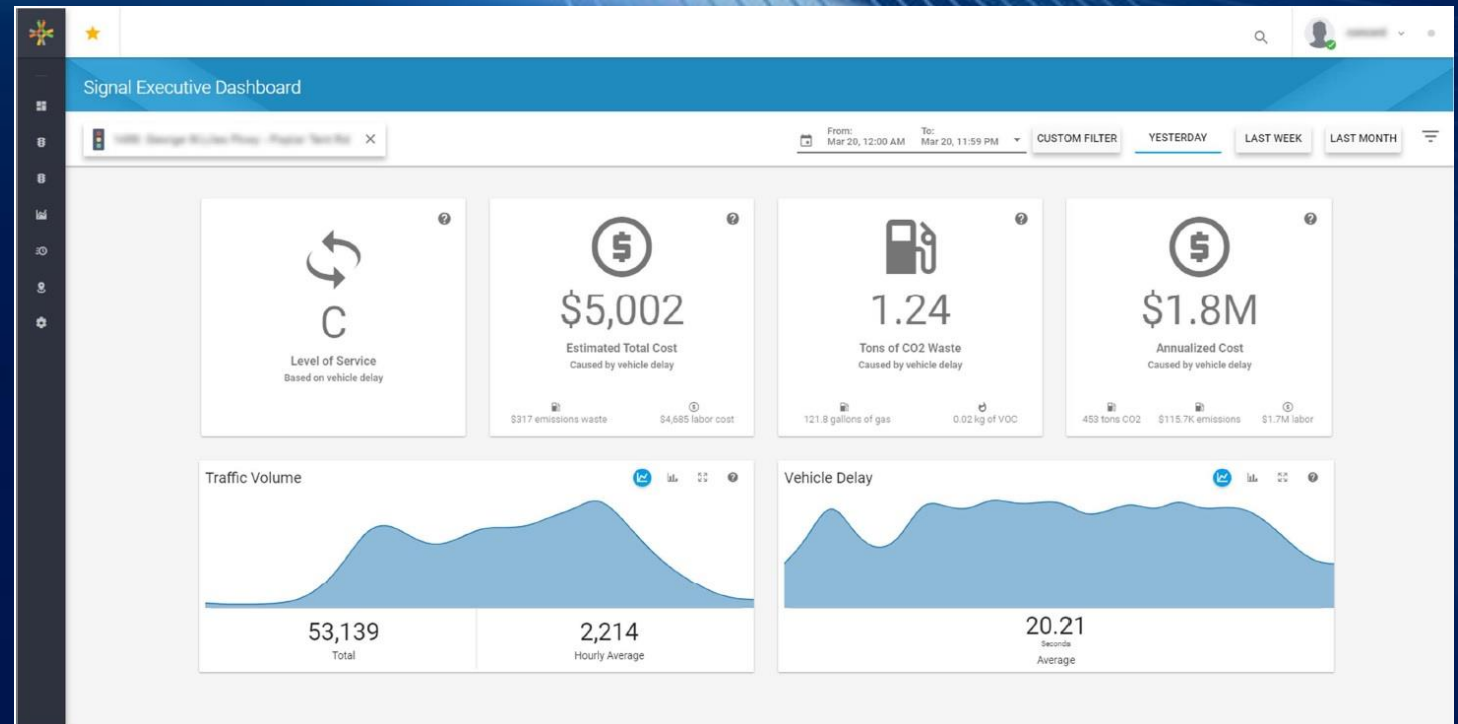
- Integration with Waze travel times
- Heat map to show traffic signals with increased delay



Traffop software:

# Provides data used in Signal Coordination & Timing Studies (SCAT)

- Level of Service (LOS)
- Vehicle delay metrics
  - Cost
  - Carbon emissions
  - Annualized cost



# Next Steps

- Implementation schedule
- Vendor training on ATSPMs and their solution
- Agency connections to PASSAGE
- Collaboration with CMAP
- Collaboration with other regional government agencies



Chicago Metropolitan  
Agency for Planning



Illinois Department  
of Transportation



*And more...*

# Questions?

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