

UPPER GREAT PLAINS TRANSPORTATION INSTITUTE Advanced traffic analysis center

TECHNICAL MEMORANDUM

TO:	Daniel Farnsworth, FM Metro COG
FROM:	Kshitij Sharma, UGPTI/ATAC
Subject:	Automated Traffic Signal Performance Measures
Date:	September 29, 2021

This memorandum provides a brief summary of the Automated Traffic Signal Performance Measures (ATSPM) project.

ATSPM SOFTWARE

Advanced Traffic Analysis Center, working with Fargo Moorhead Metro Council of Governments and North Dakota Department of Transportation has installed the open source ATSPM software for signalized intersections within the limits of City of Fargo. The current installation version is 4.2.3 and can be accessed at: <u>http://dotsc.ugpti.ndsu.nodak.edu/ATSPM/</u>

INTERSECTIONS

As per the scope of the related FM Metro COG project, the corridors within the City of Fargo limits included in this software installation are:

- 1. Main Ave (US 10) 15 intersections
- 2. 45th Street 15 intersections

Other locations on the ATSPM website include some NDDOT Fargo District's intersections along interstate 94 & 29 ramp termini and some test City of Fargo intersections along 19th Ave N. Also, the intersection of Main Ave @ 18th St under Fargo's jurisdiction does not have a fiber connection. It will be available on ATSPM website for analysis after it has been brought online.

METRICS

The following metrics/charts can be created using the ATSPM website:

- 1. Purdue Phase Termination
- 2. Split Monitor
- 3. Pedestrian Delay
- 4. Preemption Details
- 5. Timing and Actuation
- 6. Purdue Split Failure
- 7. Turning Movement Counts
- 8. Approach Volume

9. Left Turn Gap Analysis

More details on these metrics are available in Georgia Department of Transportation Automated Traffic Signal Performance Measures Reporting Details document which can be found on the ATSPM website under "ATSPM Manuals" dropdown.

SOFTWARE UPDATES

Upgraded version 5.0 is expected to be released in Fall 2021. It is expected to add to the metrics/charts list. Upgrade to 5.0 will likely be undertaken in the first quarter of 2022.

NEXT STEPS/RECOMMENDATIONS

Active use of ATSPMs is vital to enable transportation agencies to serve the citizens in a proactive manner instead of being in a reactive mode. Daily monitoring of the state of the system and use of the ATSPM software's in-built Watchdog functionality is strongly recommended. It is also recommended that a cross-jurisdiction case-study be performed along a selected corridor to prove the value of ATSPMs.