

UTDOT

 *Keeping Utah Moving*

ATSPM Update

2-27-2023

UDOT
Mark Taylor

Version 4.3.0

It's been available on GitHub For several months and includes new features:

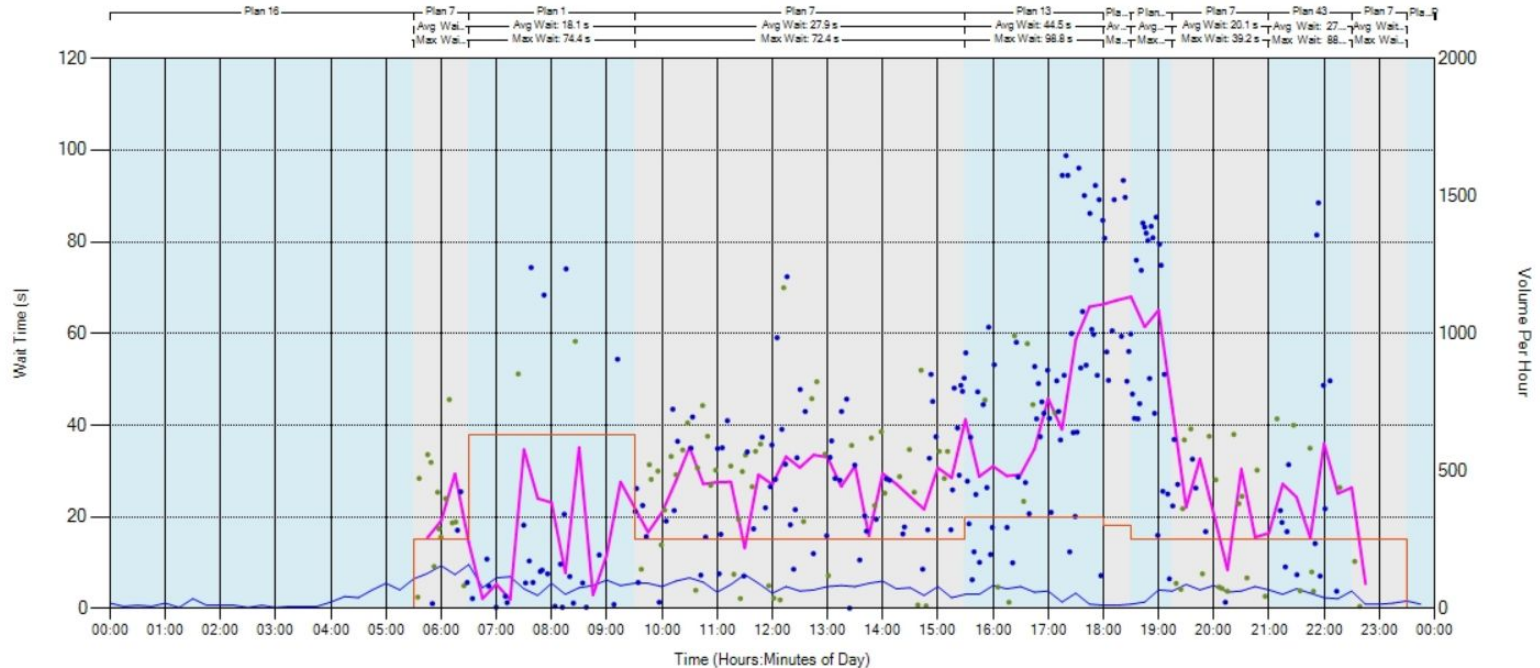
- New Wait Time Measure - GDOT - Calculates the average wait time for vehicles by approach and movement.
- Left Turn Gap Report - Left turn phasing analysis based on existing gaps, volumes, and critical gap - Report is password protected.
- Options and Thresholds - New admin page with the ability to modify default options and thresholds for all measures.
- Jurisdiction & Area filtering for each signal
- Enhanced the “Pedestrian Delay” metric.
- Enhanced the “Timing and Actuation” metric.
- 4.3.0 upgrade is needed for easier migration to V 5.0 when it's available

New GDOT Wait Time Metric

- Volume Per Hour
- Gap Out
- Max Out
- Force Off
- Unknown
- Average Wait
- Programmed Split

Phase 1: SBL Ph1(2)

Stop Bar Detection



Default Chart Settings

Default Chart Settings

Save Changes

> Purdue Phase Termination

> Split Monitor

▼ Pedestrian Delay

Y-axis Max

180

Time Buffer Between Unique Pedestrian Detections

15

Show Ped Begin Walk



Show Cycle Length



Show Percent Delay



Show Ped Recall



Ped Recall Threshold (Percent)

75

> Timing and Actuation

New “Areas” & “Jurisdiction”

Signal 7230 Delete This Version Add New Version Copy Signal Delete This Signal Save

Version 11/17/2020 - Added Matrix SB, N	Version Start 11/17/2020	Version Label Added Matrix SB, NB, EB
Primary Name 1300 East	Secondary Name 2290 S / I-80 WB Offramp	IP Address [REDACTED]
Region Region 2	Areas Salt Lake City	Jurisdiction UDOT_Reg_2
	Controller Type MaxTime	Latitude 40.72120102
		Longitude -111.8536777
		Display On Map <input checked="" type="checkbox"/>
		All Peds are 1:1 <input checked="" type="checkbox"/>

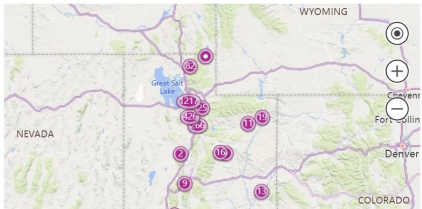
Chart Notes Add Comment

Signal ID
7230 Select 1300 East @ 2290 S / I-80 WB Offramp

Signal List

Signal Map

Area --Select an Area--	Jurisdiction --Select a Jurisdiction--
Region --Select Region--	Metric Type --Select a Metric--



Enhanced “Pedestrian Delay”

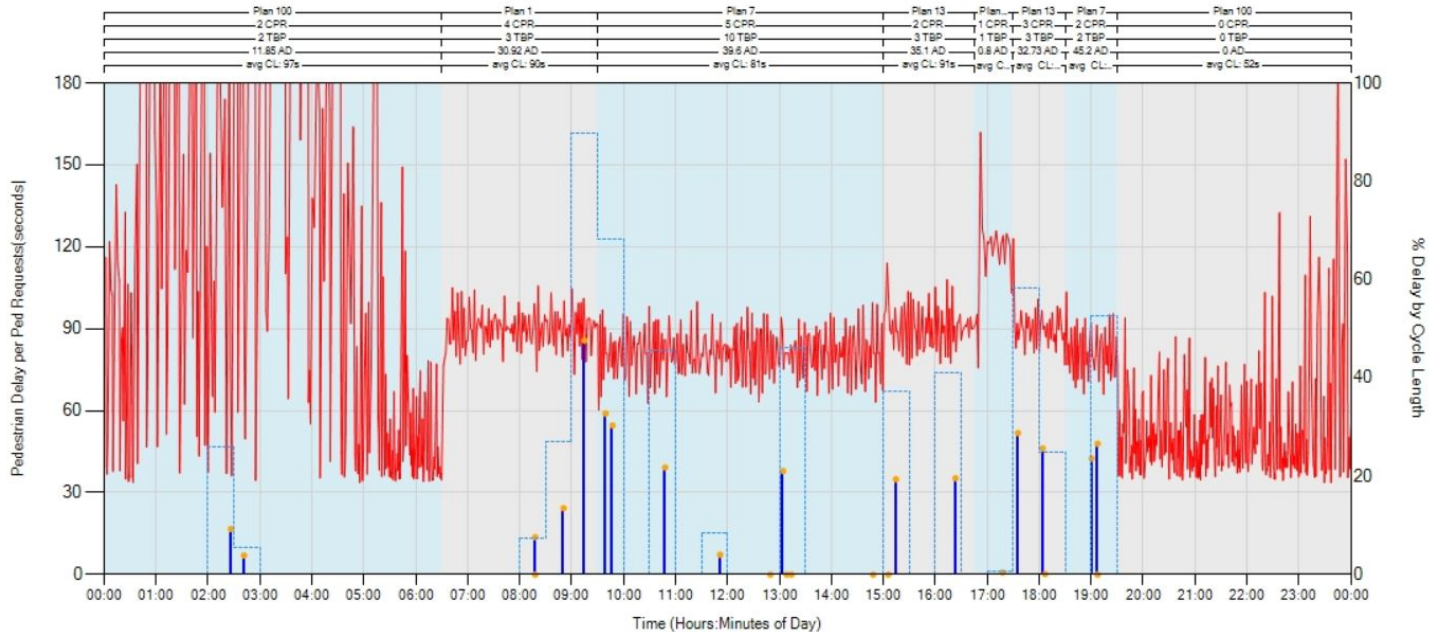
Pedestrian Delay

600 N (SR-268) @ 300 W (US-89) - SIG#7122
 Friday, February 24, 2023 12:00 AM - Saturday, February 25, 2023 12:00 AM

Phase 4

Ped Presses(PP) = 30; Cycles With Ped Requests(CPR) = 19; Time Buffered 15s Presses(TBP) = 24; Min Delay = 0s; Max Delay = 86s; Average Delay(AD) = 32s

- Cycle Length
- █ Pedestrian Delay per Ped Requests
- Start of Begin Walk
- - - % Delay By Cycle Length



Left Turn Gap Analysis Report

Signal Selection

Signal ID

Signal List

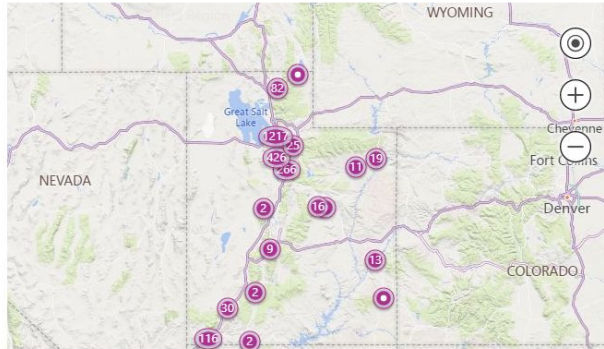
Signal Map

Area

Jurisdiction

Region

Metric Type



Left Turn Gap Options

All Left Turns

 All Left Turns NBL Ph5(6) EBL Ph7(8) SBL Ph1(2) WBL Ph3(4)

Signal Data Check

 % Cycles with Ped Calls % Cycles with Gap Outs Left-turn Volume (vph)

Report Information

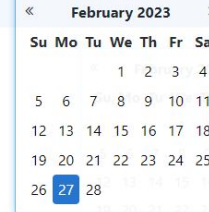
Final Gap Analysis Report

 Final Gap Analysis Report LT Vehicles/% Acceptable Split Fail Analysis Pedestrian Call Analysis Conflicting Volumes Analysis

Date Selection

StartDate

EndDate



Days to Include

 Sunday Monday Tuesday Wednesday Thursday Friday Saturday

Time Options

 Custom Peak Hour (AM & PM) Peak Periods (6AM-9AM & 3PM-6PM) 24-Hour Period (hourly reports 12:00AM - 11:59PM)

Version 4.3.1

It's currently on GitHub (been there for a few weeks)

- A bug in the FTPfromasc3 project has been fixed.
- The ConvertDBForHistoricalConfigurations executable has been added to the executables folder. This will make the update to 4.3/4.3.1 much smoother by helping update the database to match the updated in 4.3/4.3.1
- The Chart Usage Report should work again.
- The Arrivals on Red bins have been updated to match the changes recommended in <https://github.com/udotdevelopment/ATSPM/issues/181>.
- Multiple bugs in the Wait Time Measure have been fixed.
- The Split Fail Measure no longer tries to condense the timespan shown, as per our discussion.
- The bug has been fixed that caused the TMC chart.
- Additional validation has been added to the signal edit page to prevent users from adding a degree symbol to the coordinates, which breaks the map until removed.
- Additional updates to the aggregation tables and projects.
- All ATSPM manuals have been updated (3 GDOT manuals & Methods/Assumptions).

Version 5.0

Targeted Goal for Completion: Late Summer/Early Fall

- Backend
 - Migrate to .NET 6.0
 - Migrate to Entity Framework Core 6.0
 - Improved API
- New Measures
 - Green Time Utilization
 - Time-Space Diagram
- Additional Features
 - Raw Data Export (in addition to ability to download raw 1/10th second data)
 - Download 15-minute aggregated forms
 - Download raw speed records (if you are using the Wavetronix Advance radar)
 - Improved data compression

Version 5.0 - Backend & Data Structure

UDOT - Department of Technology Services

- Migrate to .NET 6.0
- Migrate to Entity Framework Core 6.0
- Improved API

Notes: Importer/translator, log files, etc.

Version 5.0 - Converting Backend & Data Charts

Avenue Consultants

- Migrate to .NET 6.0
- Migrate to Entity Framework Core 6.0
- Improved API

Notes: Importer/translator, log files, etc.

Version 5.0 - Front End - Charting

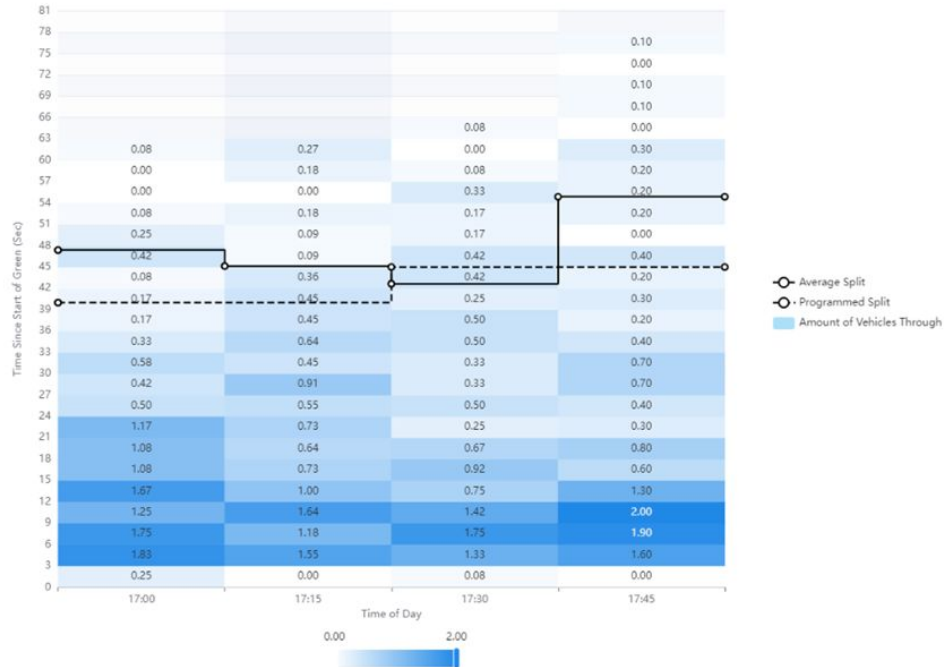
Avenue Consultants

- Migrate to .NET 6.0
- Migrate to Entity Framework Core 6.0
- Improved API

Version 5.0 - Green Time Utilization Metric - In Review

Green Time Utilization #4029 - 7200 South @ 700 East Phase 2: WBT Ph2

October 2021 Tue at 05:00:00 PM - October 2021 Tue at 06:00:00 PM



Version 5.0 - Time Space Diagram - In Review

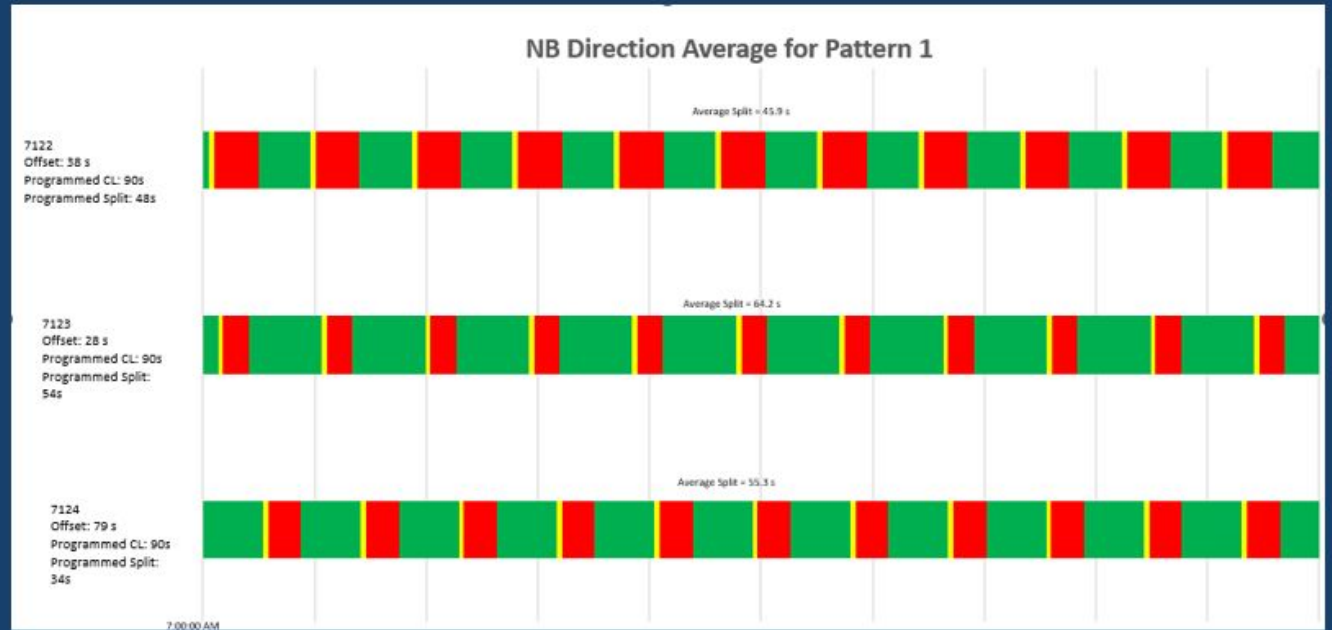
TIME SPACE DIAGRAM – UNDER DEVELOPMENT

- New measure in v 5.0
- Visualization of historic and existing vehicle platoon trajectories through a series of signalized intersections
- Major Components-
 - Phase Event Information
 - Detector Information



Version 5.0 - Time Space Diagram - In Review

- Historic Average Day
 - Direct from Raw Data
 - Averaged for patterns
 - Outliers filtered out



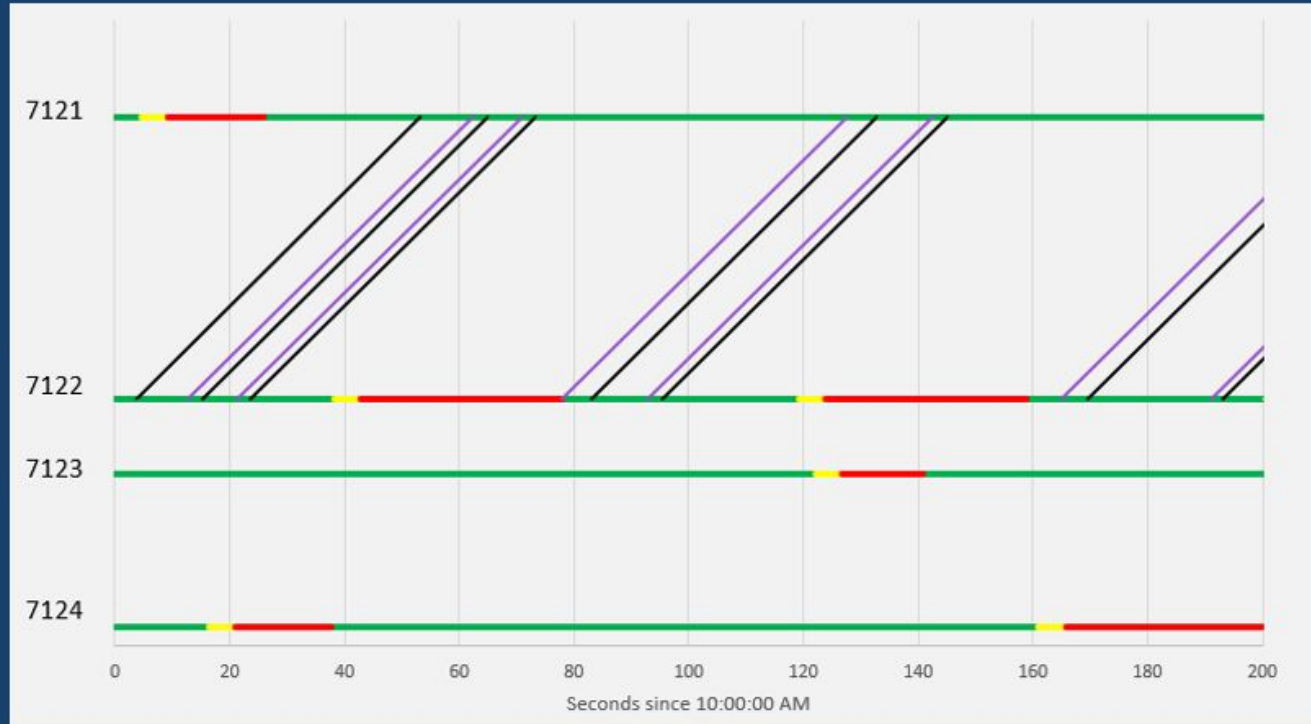
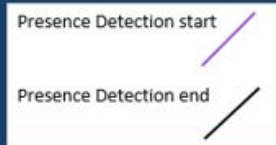
Version 5.0 - Time Space Diagram - In Review

- Proposed Signal Timing
 - Changes in Cycle Length
 - Changes in Splits
 - Changes in Offset



Version 5.0 - Time Space Diagram - In Review

• Presence Detections



Version 5.0 - Benefits

- Smoother, more modular if different backend databases needed.
- Web Based in cloud if desired - more interchangeable with other solutions
- Better error handling
- Much easier updating to newer versions.
- Faster algorithms
- Deployment will be faster with less downtime between versions.
- More stable and robust
- Charts will be more interactive - JAVA - E-Charts
 - Zooming in on time
 - Click on stuff and get additional information
 - Hover over chart and get numbers, etc
 - Turn things on and off easier

Next After Version 5.0

- Get the GDOT SIGOPS dashboard
 - Bridge data & configuration of ATSPM and SIGOPS

The logo for the Utah Department of Transportation (UDOT) features the letters "UTDOT" in a bold, blue, italicized sans-serif font. The letters are slanted to the right, giving a sense of motion. The "U" and "T" are connected, as are the "D" and "O".

UTDOT

Three parallel orange slanted bars, matching the slant of the logo above, positioned to the left of the tagline.

Keeping Utah Moving