UDOT
Keeping Utah Moving

ATSPM Update
2-27-2023

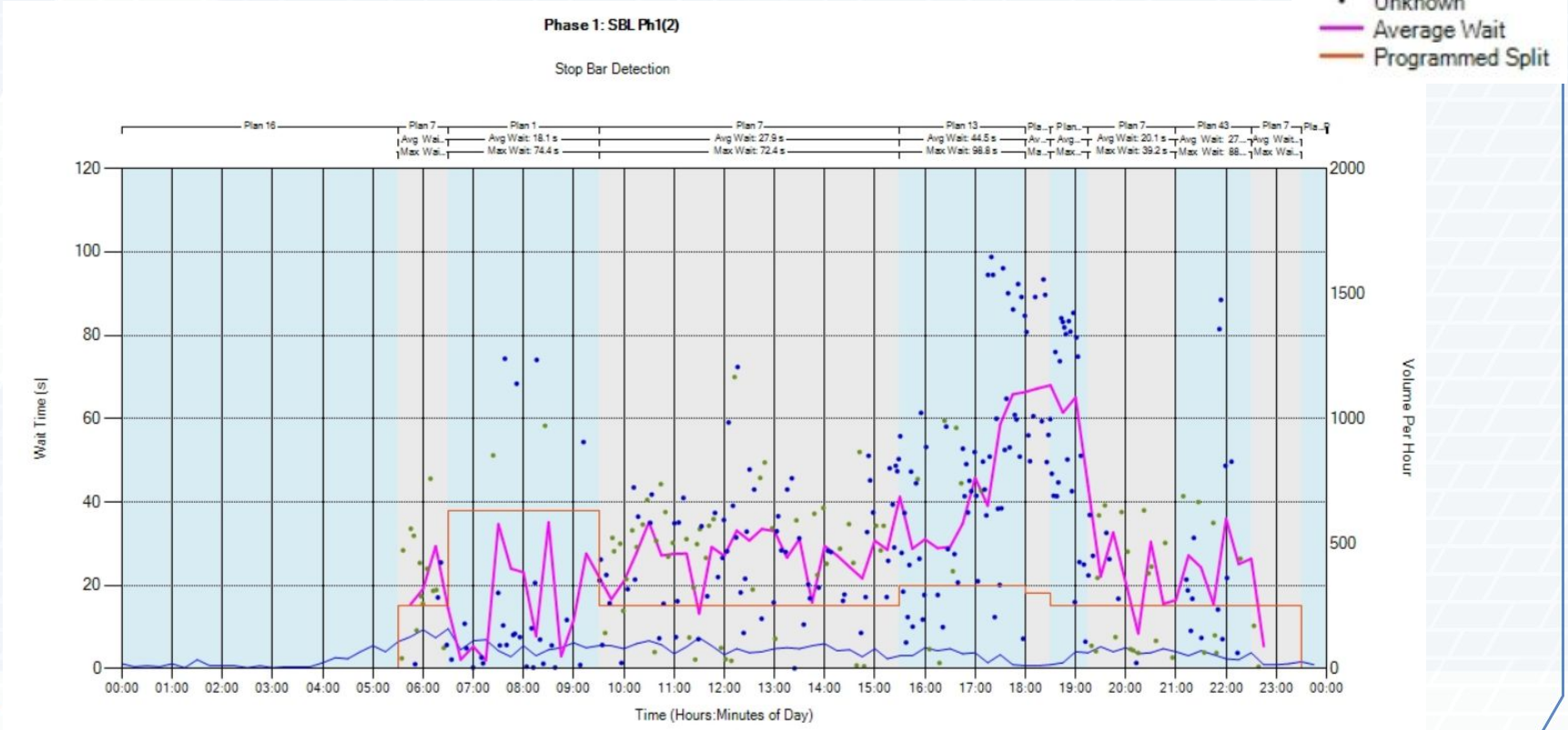
UDOT
Mark Taylor

Version 4.3.0

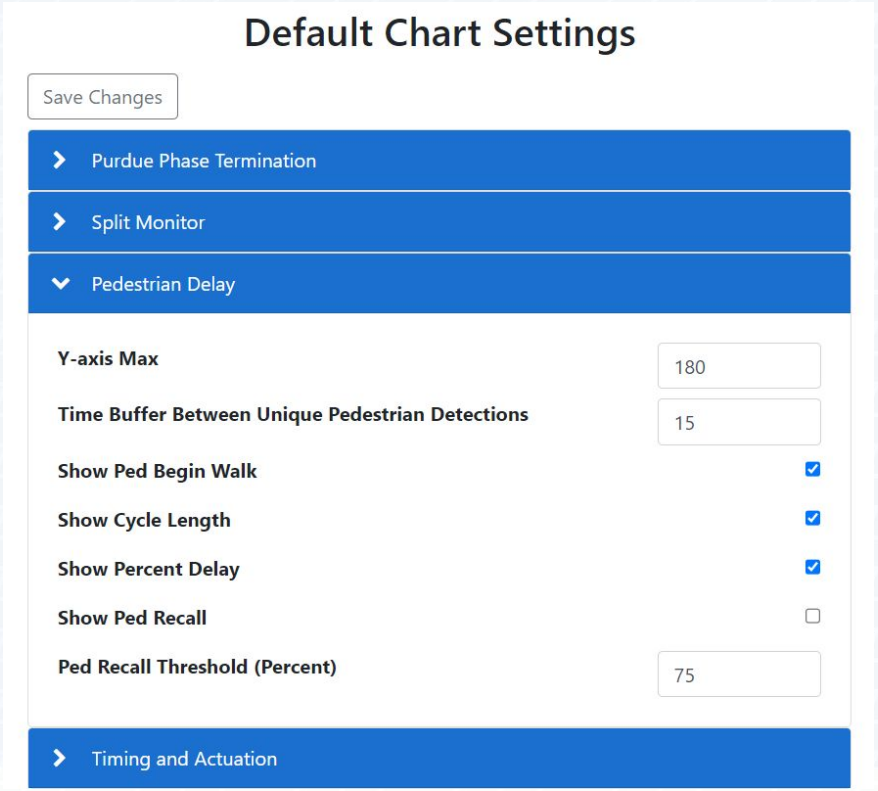
It’s been available on GitHub For several months and includes new features:

- 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

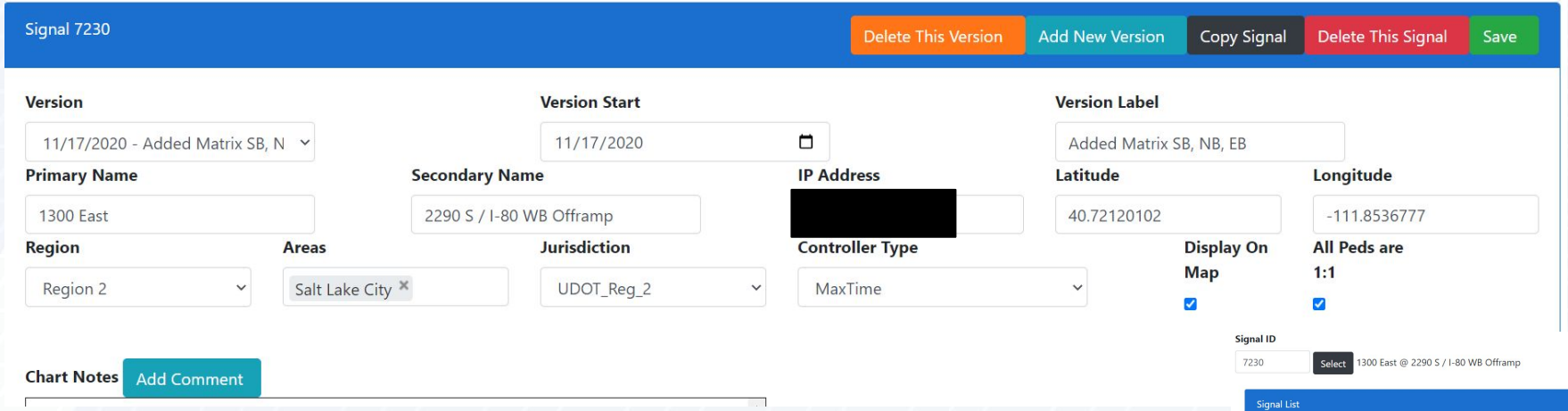
New GDOT Wait Time Metric

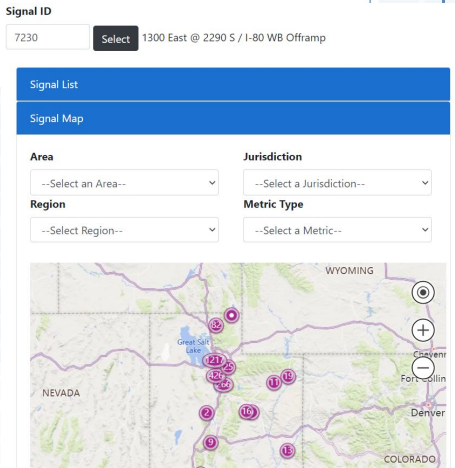


Default Chart Settings

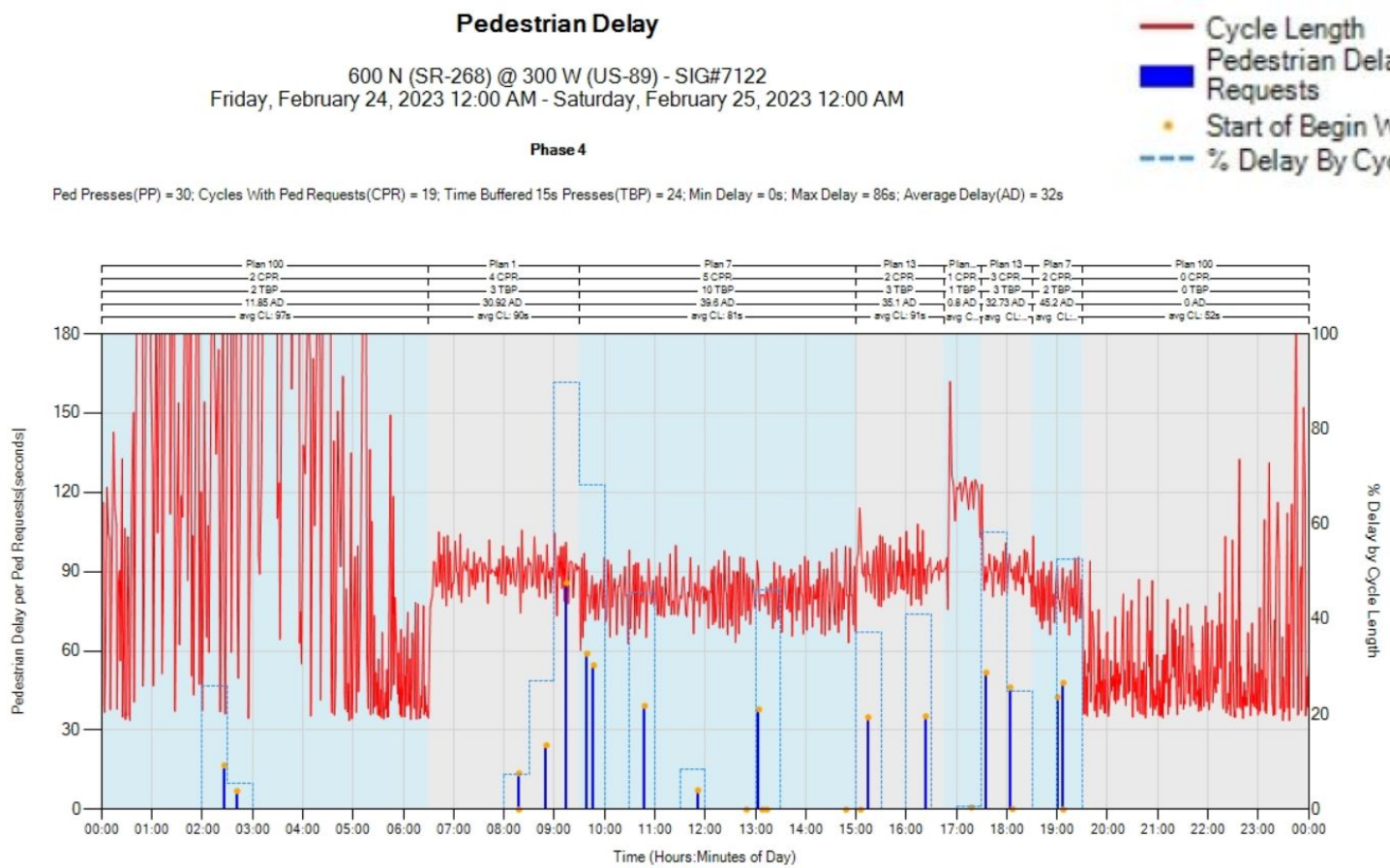


New “Areas” & “Jurisdiction”





Enhanced “Pedestrian Delay”



Left Turn Gap Analysis Report

Signal Selection

Signal ID

7125 Select 300 West @ North Temple

Signal List

Signal Map

Area

--Select an Area--

Jurisdiction

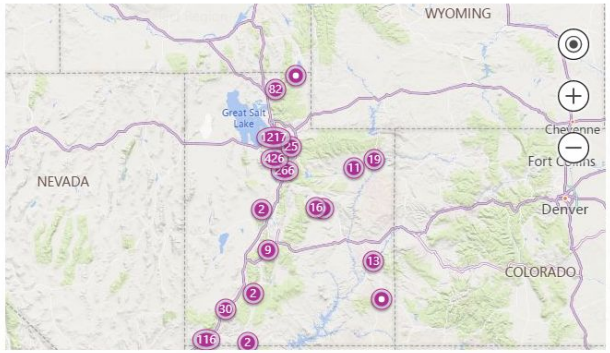
--Select a Jurisdiction--

Region

--Select Region--

Metric Type

--Select a Metric--



Left Turn Gap Options

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

Signal Data Check

30 % Cycles with Ped Calls

50 % Cycles with Gap Outs

60 Left-turn Volume (vph)

Run Checks

Report Information

- [x] Final Gap Analysis Report

70 LT Vehicles/% Acceptable Gaps

- [ ] Split Fail Analysis
- [ ] Pedestrian Call Analysis
- [ ] Conflicting Volumes Analysis

Date Selection

StartDate

02/27/2023

EndDate

02/27/2023

Reset Date

« February 2023 »

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28				

Days to Include

- [ ] Sunday
- [x] Monday
- [x] Tuesday
- [x] Wednesday
- [x] Thursday
- [x] Friday
- [ ] Saturday

Time Options

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

Run Report

UDOT Keeping Utah Moving

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 buy 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

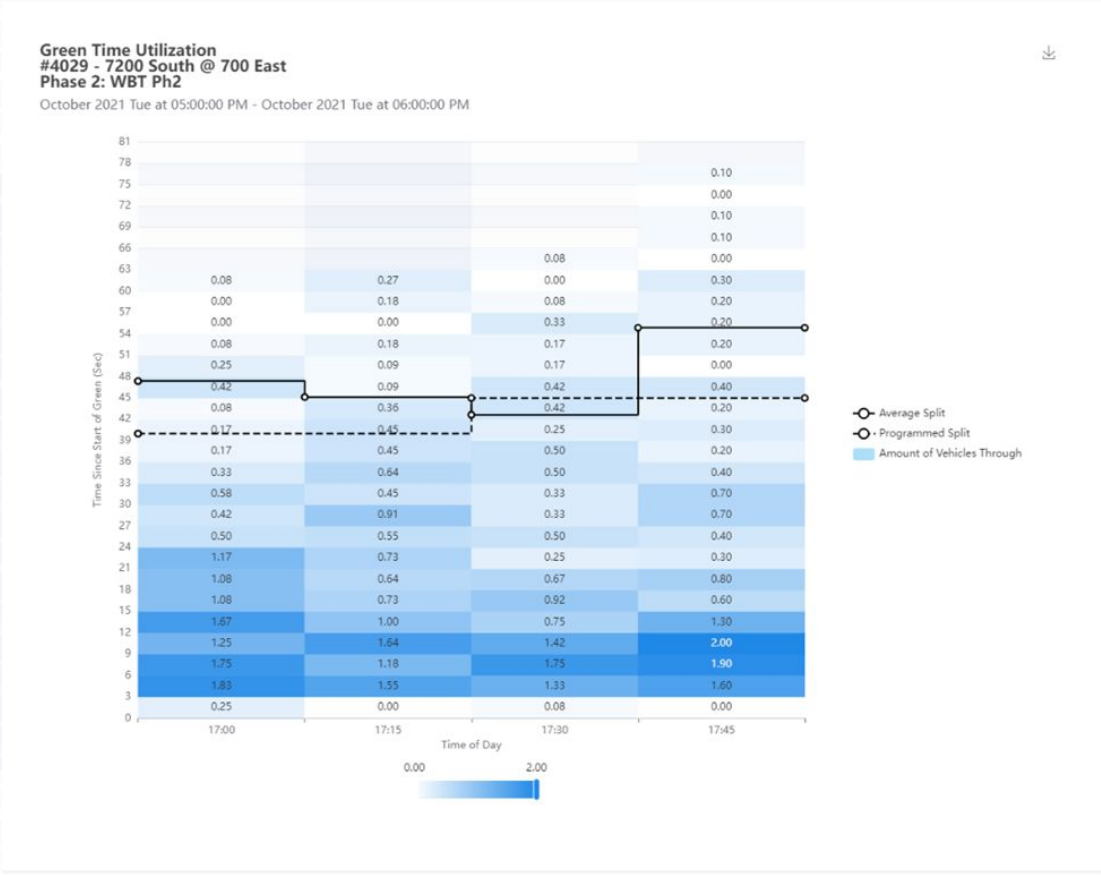
Notes: Importer/translator, log files, etc.

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



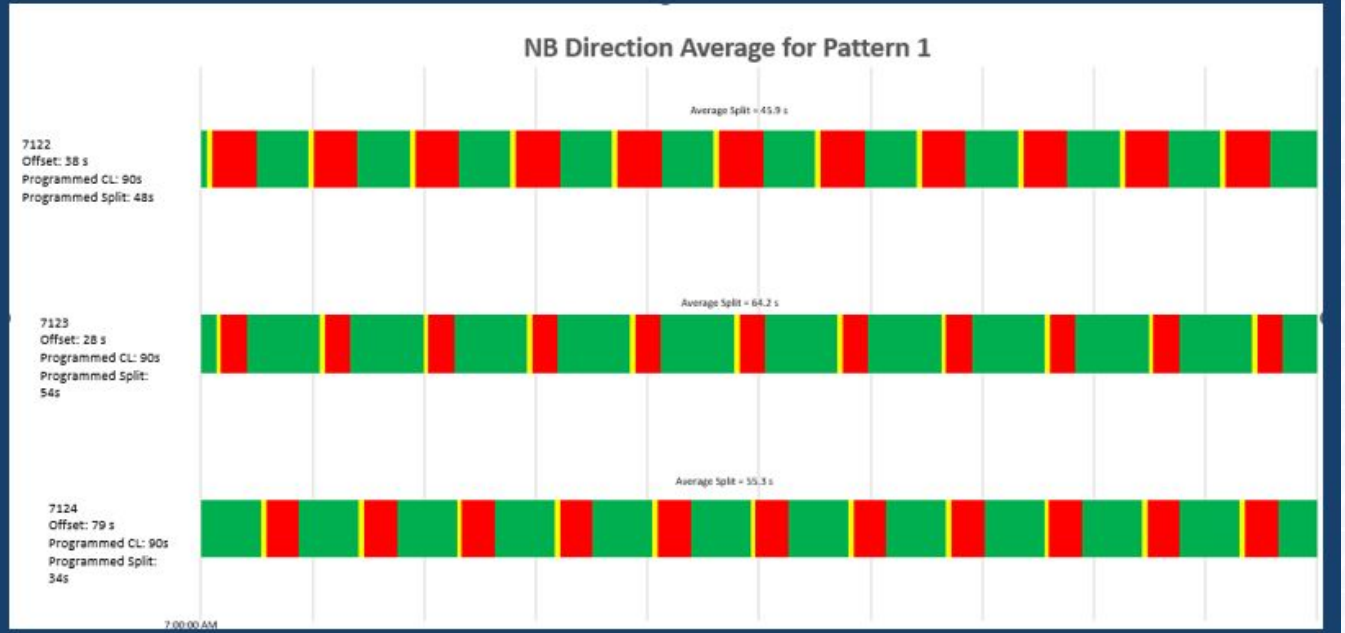
Version 5.0 - Time Space Diagram - In Review

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



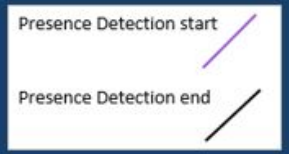
Version 5.0 - Time Space Diagram - In Review

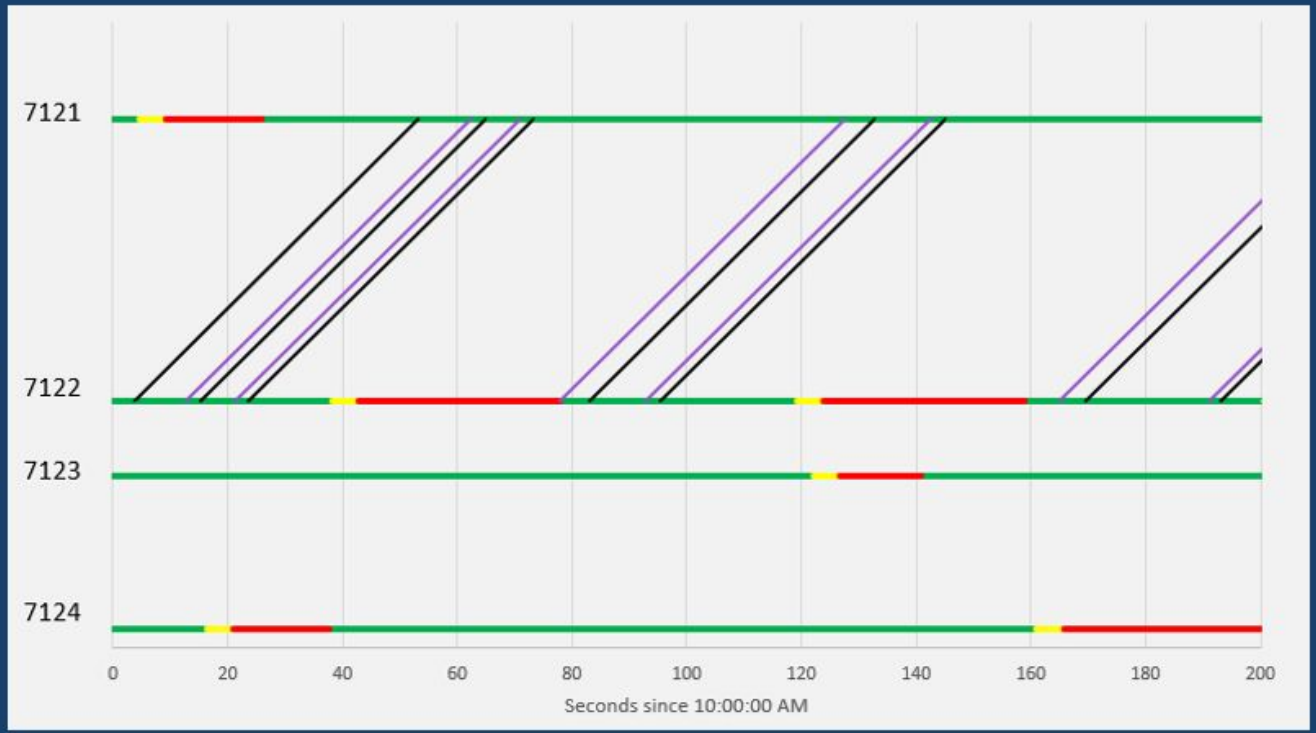
- Proposed Signal Timing
  - Changes in Cycle Length
  - Changes in Splits
  - Changes in Offset

- Count Detections

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

UDOT
Keeping Utah Moving