UDOT Signal Performance Metrics: New and Upcoming Metrics

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Split Monitor

Foothill Drive Sunnyside SIG#7219 Phase 5
Tuesday, September 01, 2015 12:00 AM - Tuesday, September 01, 2015 11:59 PM

Purdue Split Failure

Purdue Split Failure

SIG#7219 – Foothill & Sunnyside

Phase 5

11:00 a.m. to 1:00 p.m.

EVENT CODES

- 1 – Green Start
- 8 – Yellow Start
- 9 – Red Start
- 10 – Phase Termination
- 4-6 – Termination Type
- 81 – Detector Off
- 82 – Detector On

Split Fail Rate: 16% (9/57 cycles)
Max Consecutive Failures: 3

Purdue Split Failure – 24-hr format

Purdue Split Failure – 24-hr format

Purdue Split Failure – 24-hr format

Purdue Split Failure – 24-hr format

Purdue Split Failure – 24-hr format

Detection for Purdue Split Failure

New Metrics

Metric Type

☐ Approach Delay	☒ Purdue Phase Termination
☐ Approach Volume	☐ Speed
☐ Arrivals On Red	☐ Split Monitor
☐ Purdue Coordination Diagram	☐ Turning Movement Counts
☐ Purdue Split Failure	☐ Yellow and Red Actuations
☐ Pedestrian Delay	☐ Preemption Details
☐ Transitions	☐ Transit Signal Priority Details

Pedestrian Delay

EVENT CODES

45 – Ped Call on

21 – Ped Walk on

EVENT CODES
45 – Ped Call on
21 – Ped Walk on

Pedestrian Delay

Pedestrian Delay
500 South Guardsman Way (1580 E.) Signal 7216
Tuesday, September 01, 2015 12:00 AM - Wednesday, September 02, 2015 12:00 AM
Phase 2

167-Ped Acutations(PA) 00:00-Min Delay 01:20-Max Delay 00:30-Average Delay(AD)

Phase 2
Coordinated phase

Phase 4
Side street

Transition

EVENT CODES

150, Param 1 – In Step

150, Param 2 – Transition Add

150, Param 3 – Transition Subtract

150, Param 4 – Transition Dwell

State St & Orem Center St - SIG#6311 12/9/2015 0:00 to 12/9/2015 23:59

Transition

EVENT CODES

- 150, Param 1 – In Step
- 150, Param 2 – Transition Add
- 150, Param 3 – Transition Subtract
- 150, Param 4 – Transition Dwell

State St & Orem Center St - SIG#6311 12/9/2015 0:00 to 12/9/2015 23:59

EVENT CODES

102 – Preempt Call On

105 – Preempt Entry Started

Preemption Requests & Services

Preempt Request Chart for Geneva Road 400 South Signal 6312
Wednesday, December 09, 2015 12:00 AM - Wednesday, December 09, 2015 11:59 PM

Preempt Service Chart for Geneva Road 400 South Signal 6312
Wednesday, December 09, 2015 12:00 AM - Wednesday, December 09, 2015 11:59 PM

102 – Preempt Call On
103 – Gate Down
104 – Preempt Call Off
105 – Preempt Entry Started
106 – Begin Track Clearance
111 – Begin Exit Interval
150, Param 1 – In Step

The chart displays the time components for 20 scenarios. The 'End Dwell' (green) is the primary component for most scenarios, with 'In Step' (orange) appearing in the later scenarios. 'Call End' (black) is present in the first 10 scenarios. 'Gate Down' (blue dot) is present in the last 10 scenarios. 'Track Clear' (green) is present in the last 10 scenarios. 'Call Max Out' (red X) is not present in any of the scenarios shown.

Scenario	In Step	End Dwell	Time to Service	Entry Delay	Call End	Call Max Out	Track Clear	Gate Down
00:36:25.6	00:00	01:25	00:00	00:00	00:05	00:00	00:00	00:00
02:16:18.5	00:00	02:55	00:00	00:00	00:05	00:00	00:00	00:00
04:16:41.2	00:00	01:45	00:00	00:00	00:05	00:00	00:00	00:00
04:58:33.5	00:00	01:30	00:00	00:00	00:05	00:00	00:00	00:00
05:03:44.5	00:00	02:10	00:00	00:00	00:05	00:00	00:00	00:00
05:28:33.0	00:00	01:15	00:00	00:00	00:05	00:00	00:00	00:00
05:59:35.9	00:00	01:25	00:00	00:00	00:05	00:00	00:00	00:00
06:03:09.7	00:00	01:25	00:00	00:00	00:05	00:00	00:00	00:00
06:08:23.5	00:00	02:00	00:00	00:00	00:05	00:00	00:00	00:05
06:29:21.3	00:00	01:35	00:00	00:00	00:05	00:00	00:00	00:00
06:33:18.0	00:00	01:25	00:00	00:00	00:05	00:00	00:00	00:00
06:59:34.9	00:00	01:35	00:00	00:00	00:05	00:00	00:00	00:00
07:03:07.0	02:15	01:25	00:00	00:00	00:05	00:00	00:00	00:00
07:12:59.9	01:25	02:05	00:00	00:00	00:05	00:00	00:00	00:05
07:28:58.6	01:45	01:45	00:00	00:00	00:05	00:00	00:00	00:05
07:33:27.9	02:15	01:25	00:00	00:00	00:05	00:00	00:00	00:05
07:58:46.9	00:00	01:15	00:00	00:00	00:05	00:00	00:00	00:05
08:03:18.9	02:05	01:25	00:00	00:00	00:05	00:00	00:00	00:10
08:28:27.4	00:00	01:10	00:00	00:00	00:05	00:00	00:00	00:05
08:35:04.8	01:45	01:35	00:00	00:00	00:05	00:00	00:00	00:10

Preemption Details (Rail)

EVENT CODES

- 102 – Preempt Call On
- 103 – Gate Down
- 104 – Preempt Call Off
- 105 – Preempt Entry Started
- 106 – Begin Track Clearance
- 111 – Begin Exit Interval
- 150, Param 1 – In Step

Preemptor #1 Event Details Geneva Pkwy & 400 S - SIG#6312

Number of Preempt Requests 63

Preempt 1 63

Number of Preempt Services 63

Preempt 1 63

Number of Preempt Max Outs 0

Preempt 1 0

Dwell Time

Preempt 1	Minimum	1:13
	Maximum	7:03
	Average	1:50
	Total	1:56:06

Request Duration

Preempt	Minimum	1:12
	Maximum	7:03
	Average	1:42
	Total	1:47:17

EVENT CODES

102 – Preempt Call On

105 – Preempt Entry Started

Preemption Requests & Services

Preempt Request Chart for State Street Center Street Signal 6311
Saturday, December 05, 2015 12:00 AM - Sunday, December 06, 2015 12:00 AM

Preempt Service Chart for State Street Center Street Signal 6311
Saturday, December 05, 2015 12:00 AM - Sunday, December 06, 2015 12:00 AM

Preemption Details (EMV)

EVENT CODES

102 – Preempt Call On
104 – Preempt Call Off
105 – Preempt Entry Started
107 – Begin Dwell
110 – Preempt Max Out
111 – Begin Exit Interval

Preemptor #3 Event Details

Geneva Pkwy & 400 S - SIG#6312
12/9/2015 0:00 to 12/9/2015 23:59

Preemptor #4 Event Details

Geneva Pkwy & 400 S - SIG#6312
12/9/2015 0:00 to 12/9/2015 23:59

Preemptor #5 Details

Geneva Pkwy & 400 S
12/9/2015 0:00 to 23:59

■ In Step
 ■ End Dwell
 ■ Time to Service
 ■ Entry Delay
 ■ Call End
 ✗ Call Max Out
 ■ Track Clear
 ● Gate Down

Transit Signal Priority Requests & Services

Priority Request
3500 S & 3450 W - SIG#7284
12/9/2015 0:00 to 12/9/2015 23:59

EVENT CODES
 112 – TSP Check In
 113 – Early Green
 114 – Extend Green

× Early Green × Green Extend

Transit Signal Priority – Request Duration

EVENT CODES

112 – TSP Check In

115 – TSP Check Out

Transit Signal Priority Request Duration
3500 S & 3450 W - SIG#7284
12/9/2015 0:00 to 12/9/2015 23:59

Transit Signal Priority – Request Duration

EVENT CODES

112 – TSP Check In

115 – TSP Check Out

Transit Signal Priority Request Duration

Transit Signal Priority – Request Duration

EVENT CODES

112 – TSP Check In

115 – TSP Check Out

Case Study: Impact of Fully Actuated Coordination on Arrivals on Green

US-89 & 200 N – SIG#5382
11/11/2015

US-89 & 200 N – SIG#5382
1/13/2016

US-89 400 N Layton / 200 N Kaysville Signal 5382 Phase: 2 Northbound
Wednesday, November 11, 2015 12:00 AM - Wednesday, November 11, 2015 11:59 PM

US-89 400 N Layton / 200 N Kaysville Signal 5382 Phase: 2 Northbound
Wednesday, January 13, 2016 12:00 AM - Wednesday, January 13, 2016 11:59 PM

US-89 400 N Layton / 200 N Kaysville Signal 5382 Phase: 2 Northbound
Wednesday, November 11, 2015 12:00 AM - Wednesday, November 11, 2015 11:59 PM

US-89 400 N Layton / 200 N Kaysville Signal 5382 Phase: 2 Northbound
Wednesday, January 13, 2016 12:00 AM - Wednesday, January 13, 2016 11:59 PM

88% AoG

Free	Plan 1	Plan 7	Plan 13	Plan 7	Free
94% AoG	83% AoG	86% AoG	91% AoG	90% AoG	85% AoG
96% GT	85% GT	79% GT	81% GT	84% GT	90% GT
0.98 PR	0.98 PR	1.09 PR	1.12 PR	1.07 PR	0.94 PR