2024.04.22 MDG Responses

The Aurora Highlands North Area, Area C
Traffic Impact Study

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Introduction

The Aurora Highlands is a 2,550-acre development located between Denver International Airport (DEN) and Interstate 70 (I-70). The Aurora Highlands North (TAH North) phase includes the majority of the planning areas between 42nd Avenue and 28th Avenue. TAH North has been split into three sub-areas; Area A, Area B and Area C.

The purpose of this study is to assess the effects the development of the TAH North, Area C will have on the surrounding transportation system.

The report is organized as follows:

- ***Introduction –*** Describes the purpose and intent of this study.
- ***Area Conditions –*** Describes the study area land uses as well as the existing and future roadway network.
- ***Proposed Development –*** Describes the proposed development and the location.
- ***Projected Traffic –*** Identifies the expected number of daily and peak hour trips that will be generated by the Aurora Highlands, North Area, Area C development. The expected external trip distribution is also shown.
- ***Traffic Analysis –*** Will analyze horizon year (2040) conditions with and without the project.
- ***Findings and Conclusions –*** Identifies any deficiencies in the study area roadway network with or without the project and mitigation measures that will alleviate any identified deficiencies.
- ***Recommendations –*** Provides a summary of the study findings.

Figure 1. Vicinity Map

Proposed Development

The Aurora Highlands Area C consists of 736 single family detached dwelling units. Figure 2 illustrates The Aurora Highlands North site plan for Area C.

Figure 2. The Aurora Highlands North Area Site Plan

Area Conditions

This section describes the existing conditions and the planned level of improvements adjacent to the Aurora Highlands North Area, Area C development.

Study Area Land Use

The Aurora Highlands, North Area C will be constructed on vacant land and is bound on the west by E-470, on the south by the future The Aurora Highlands Parkway, on the east by the future Powhaton Road and the north by 48th Avenue. This area of Aurora is mostly vacant land but is growing rapidly and includes other developments such as other areas of The Aurora Highlands, Windler, and ATEC.

Site Accessibility

The existing roadway system is largely non-existent in this area of Aurora. However, the future roadway network consists of the following transportation facilities:

E-470 is a north-south four-lane tollway that runs along The Aurora Highlands' west side. A grade-separated interchange is provided at 56th Avenue. An interchange is planned at 48th Avenue and the bridge over E-470 at 48th Avenue is in place (the roadway connecting to it is not yet built, nor are the ramps).

26th Avenue is a minor two-lane roadway facility along the south side of The Aurora Highlands spanning E-470 (no interchange) and extending to Picadilly Road to the west and Watkins Road to the east. The Northeast Area Transportation Study (NEATS) recommends this road as a four-lane minor arterial in the 2040 plan.

Powhaton Road is a two-lane road that will ultimately define the east side of the residential development within The Aurora Highlands. Currently, this road extends south from 26th Avenue as a two-lane facility, crossing the Union Pacific (UP) Railroad at-grade, spanning I-70, and extending south to Jewell Avenue. This road is anticipated to be a 6-lane major arterial per NEATS recommendations and will be renamed Aerotropolis Parkway.

48th Avenue will be constructed on the north side of The Aurora Highlands prior to issuance of any Certificate of Occupancy for lots within TAH North. 48th Avenue will ultimately be a 6-lane major arterial and have a grade-separated interchange with E-470. The south half of this arterial will be built in conjunction with The Aurora Highlands by ARTA (Aerotropolis Regional Transportation Authority). The north half of 48th Avenue will be constructed by the Windler development to the north. The timing of individual developments is unclear, so it is difficult to determine when 48th Avenue will need to be constructed beyond each half-road section. It is assumed that if only the north or south half of 48th Avenue is constructed first, that it would serve temporarily as a 3-lane collector road with one lane in each direction and a center turn lane. In this scenario, the daily threshold for the half roadway section would be 12,000 vehicles-per-day. Daily traffic from Area C alone would not require more than the south half three-lane collector road section on its own.

The Aurora Highlands Parkway currently exists as an east-west four-lane to six-lane facility between Main Street and 38th Parkway. It has a large median east of Denali Boulevard containing a creek and recreational trail. The Aurora Highlands Parkway will ultimately be a four-lane minor arterial.

38th Parkway currently exists as a three-lane (striped median/center turn lane) roadway between The Aurora Highlands Parkway and Reserve Loop (western connection). It will ultimately connect to Powhaton Road as a three-lane collector road.

No existing conditions analysis will be completed for this study as the land is mostly vacant at this time and has no traffic other than construction traffic. No new traffic counts were conducted for this study. This study builds on the traffic volumes presented *The Aurora Highlands Traffic Impact Study*, dated August 2019 which looked at the entirety of The Aurora Highlands development. The studies of surrounding developments are as follows:

- The Northeast Area Transportation Study Refresh (NEATS), 2018
- The Aurora Highlands Transportation Impact Study; August 2019

- ATEC Traffic Impact Analysis; November 2019
- Powhaton Alignment Study; October 2022
- The Aurora Highlands CSP#1, TIS; July 2019
- The Aurora Highlands North Area, Area B TIS, July 2023

Projected Development Traffic

This section documents how much traffic The Aurora Highlands, North Area, Area C development is expected to generate and how the external site trips will be distributed on the adjacent roadway network.

Trip Generation

The vehicle trips associated with The Aurora Highlands, North Area, Area C were calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition.* This methodology consists of choosing an independent variable for the land use for a particular time of day. The independent variable correlates to the variation in trip ends and is related to the land use. The value of the independent variable is either multiplied by a weighted average or used in a regression equation to calculate the trips generated by the land use. The *ITE Trip Generation Manual* provides guidance on when to use the weighted average versus the regression equation. In most cases, the regression equations are recommended when there are adequate study data points.

Table 1 shows the trips that are expected to be generated by The Aurora Highlands, North Area, Area C at buildout.

Table 1. TAH North Area C Trip Generation

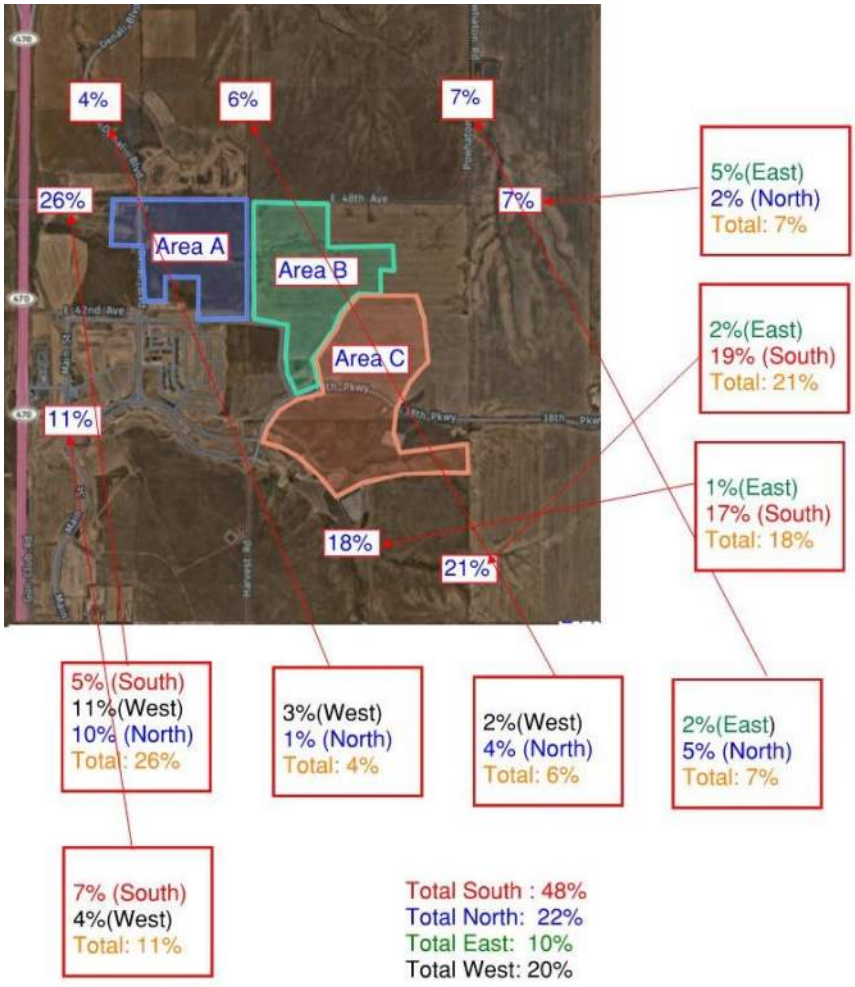
The Aurora Highlands - Area C												
Parcel	ITE Code and Land Use	Size	Units	Weekday			AM Peak Hour			PM Peak Hour		
				Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting
PA-40.1	210 - Single-Family Detached Housing	278	DU	2,584	1,292	1,292	189	49	140	260	164	96
PA-40.2	210 - Single-Family Detached Housing	74	DU	764	382	382	57	15	42	75	47	28
PA-46.1	210 - Single-Family Detached Housing	172	DU	1,662	831	831	122	32	90	165	104	61
PA-46.2	210 - Single-Family Detached Housing	212	DU	2,014	1,007	1,007	147	38	109	202	127	75
	Total	***736***	***DU***	***7,024***	***3,512***	***3,512***	***515***	***134***	***381***	***702***	***442***	***260***

No trip reduction is accounted for because there is only one land-use.

Trip Distribution

Figure 3 illustrates the expected external distribution of travel for the site-generated trips. This distribution was determined by reviewing the general distribution of trips on the roadway network in 2019 -*The Aurora Highlands Traffic Impact Study (Derived from NEATS 2018)*.

Figure 3. Trip Distribution



The overall distribution based on the previous study is 48% of the trips will travel to/from the south; 20% of the trips will travel to/from the west; 22% of the trips will travel to/from the north and 10% of the trips will travel to/from the east. Recently, a new connection from Powhaton Road (Aerotropolis Parkway) to Jackson Gap Way was proposed that would ultimately affect the traffic on 48th Avenue, Powhaton Road, and Harvest Road. After a careful review of this new alignment and its impact on the adjacent road we concluded that it would have a minimal impact on our site trips due to the distance between the new alignment and the project. However, to address this small impact we adjusted the trip distribution on Denali Boulevard, Harvest Road and Powhaton Road in a way that 2 percent of the trips that were supposed to be made through Denali Boulevard and Harvest Road are now shifted to this new alignment. The overall distribution remained unchanged and when those overall distributions are distributed among the available lanes traveling in each direction, the distributions shown in Figure 3 is the result. This new improvement would mainly alleviate the background traffic on 48th Avenue since it will provide an alternative for long distance travelers especially for trips to/from the DEN airport.

The project trips for both the AM and PM peak hours are shown in Figures 4 and 5 and daily project trips are shown in Figure 6.

Figure 4. The Aurora Highlands North, Area C Project Trips (AM Peak Hour)

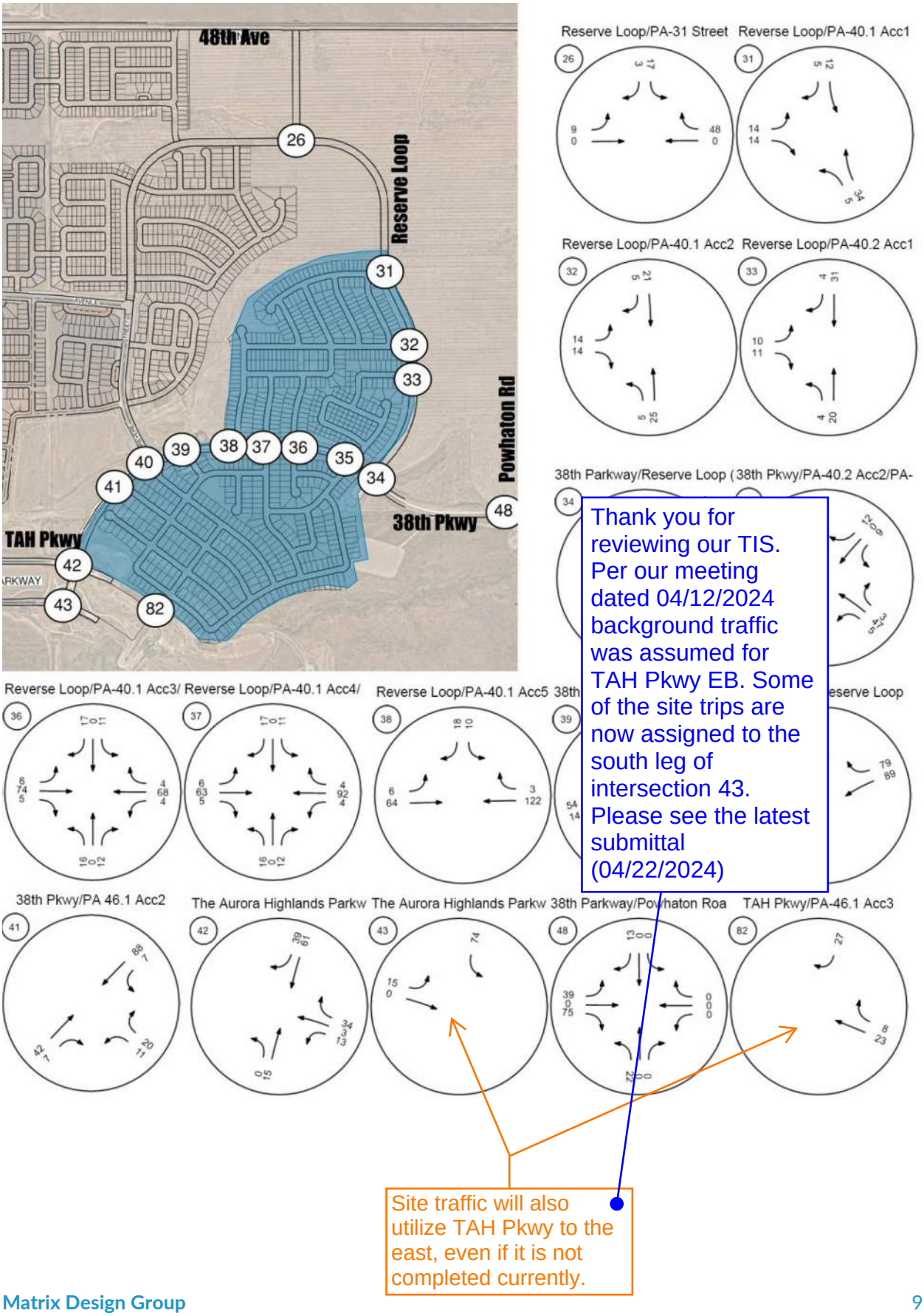


Figure 5. The Aurora Highlands North, Area C Project Trips (PM Peak Hour)

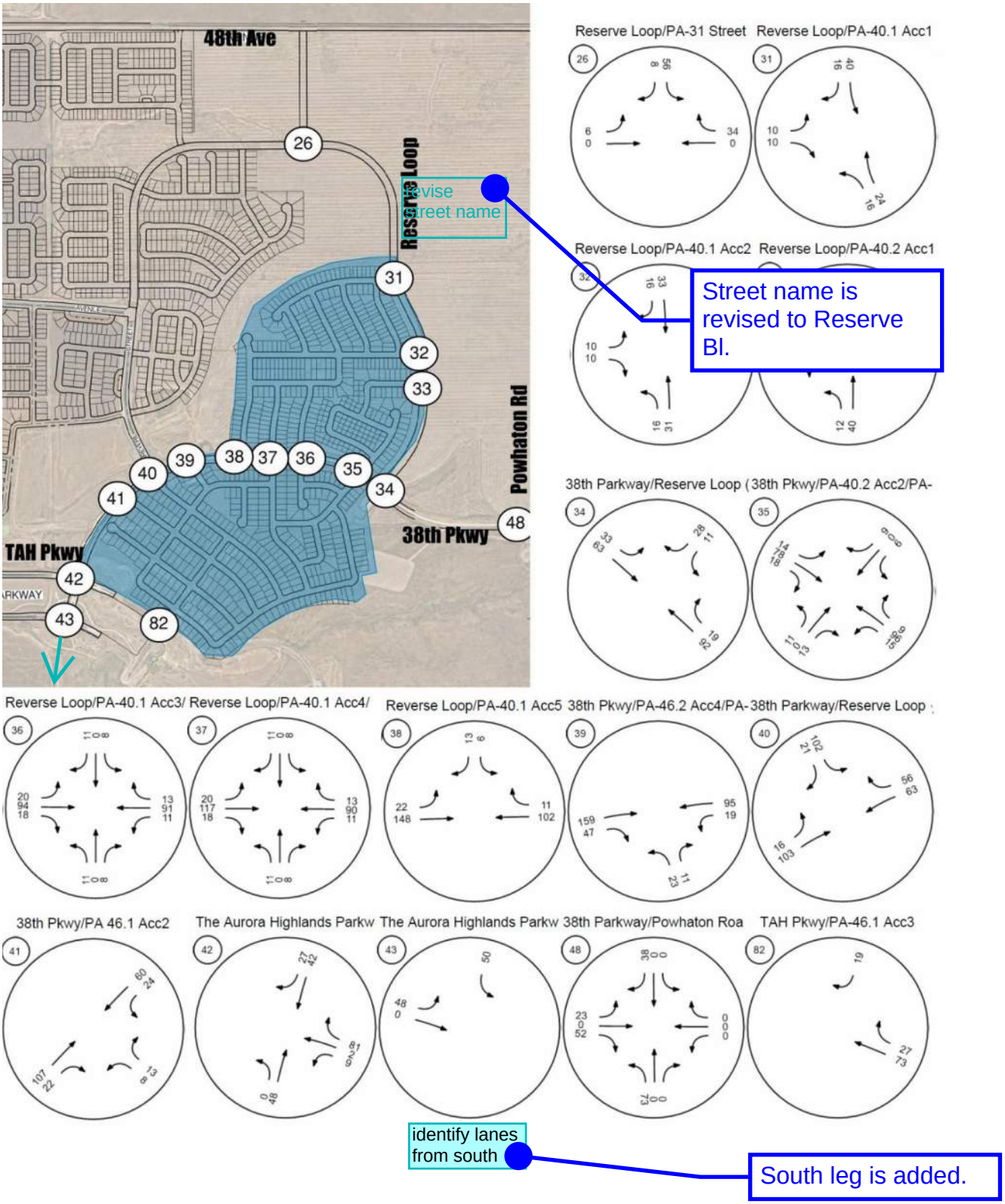
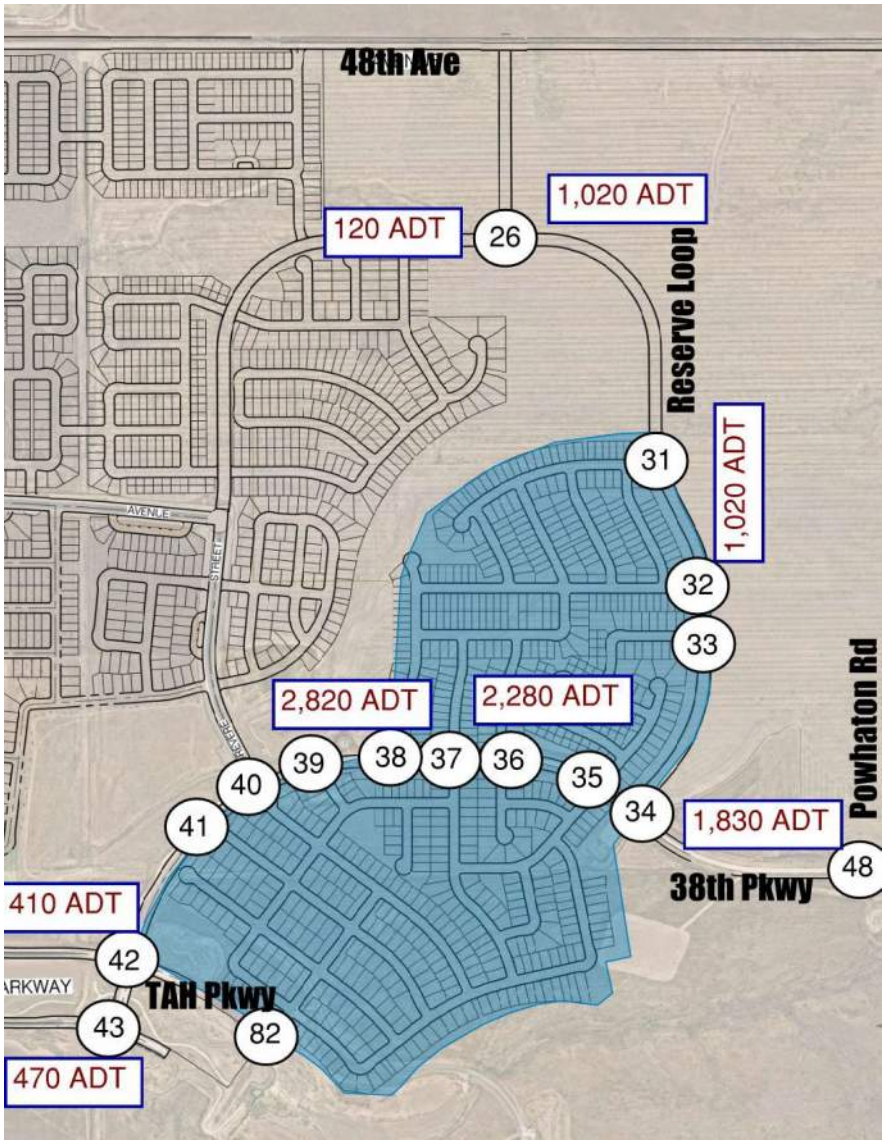


Figure 6. The Aurora Highlands North, Area C Daily Site Trips



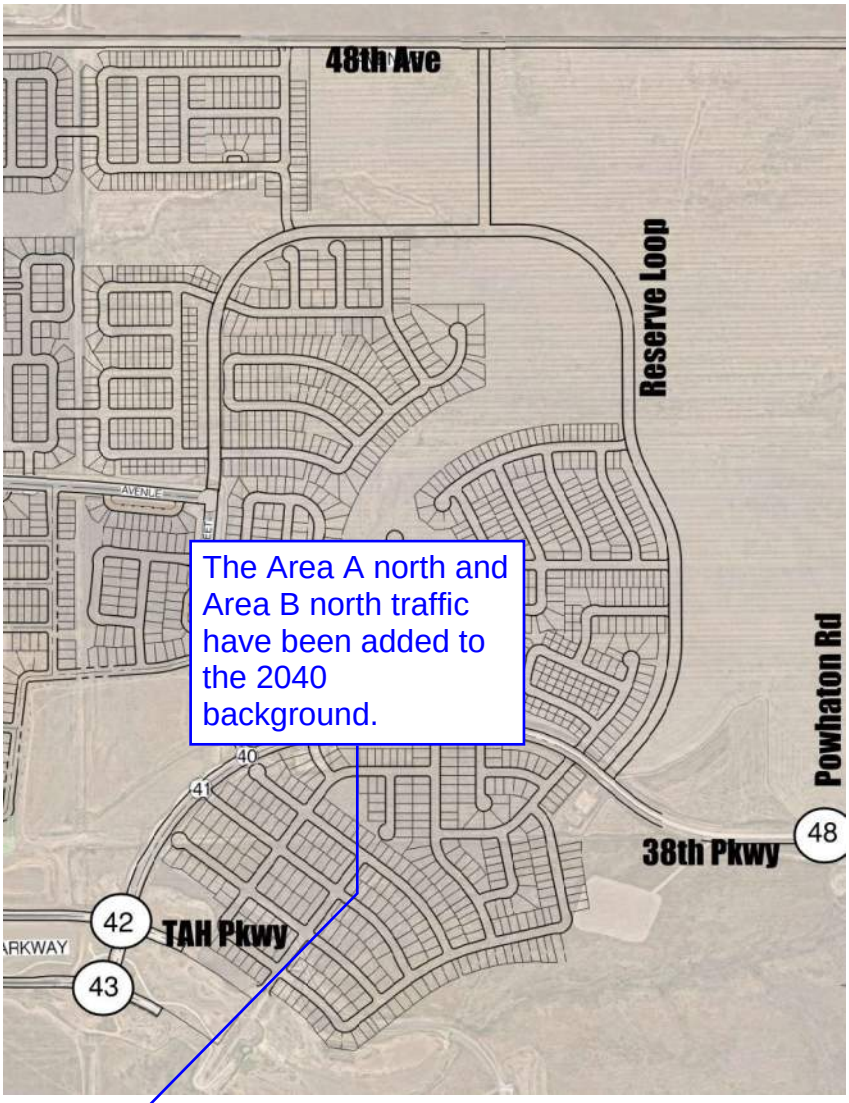
Traffic Analysis

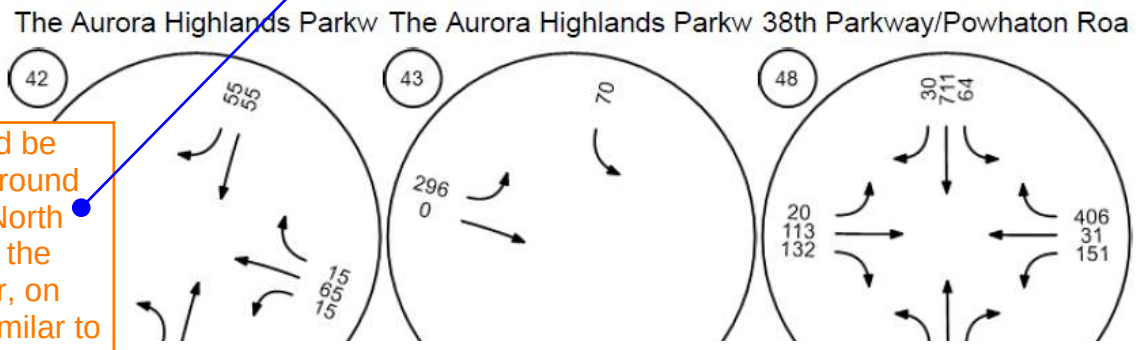
Traffic conditions both with and without the project have been analyzed for horizon year (2040) conditions.

Horizon (2040) Background Conditions

The horizon year traffic volumes without the Aurora Highlands project are shown in Figures 7 and 8 and daily traffic volumes are shown in Figure 9.

Figure 7. Horizon (2040) Background Traffic Volumes (AM Peak Hour)





There should be some background traffic from North A/North B in the Horizon year, on 48th also, similar to Figure 7 in the North B TIS.

(2040) Year No Project Conditions

The horizon year traffic volumes without the Aurora Highlands project are shown in Figure 7 and Figure 8 and daily traffic volumes are shown in Figure 9. The background volumes along 48th Avenue and Powhaton Avenue were taken from a combination of the Windler Master Plan TIS and the ATEC TIS. These volumes were later adjusted based on the new planned connection between Powhaton road and Jackson Gap Way. Roadway and intersection configurations are taken from *the Aurora Highlands TIS, Windler Master Plan TIS, ATEC TIS, and The Aurora Highlands Filing 4, 5, and PA 18 and 19.* For more information see Appendix C – Horizon Without Project Analyses.

Figure 8. Horizon (2040) Background Traffic Volumes (PM Peak Hour)

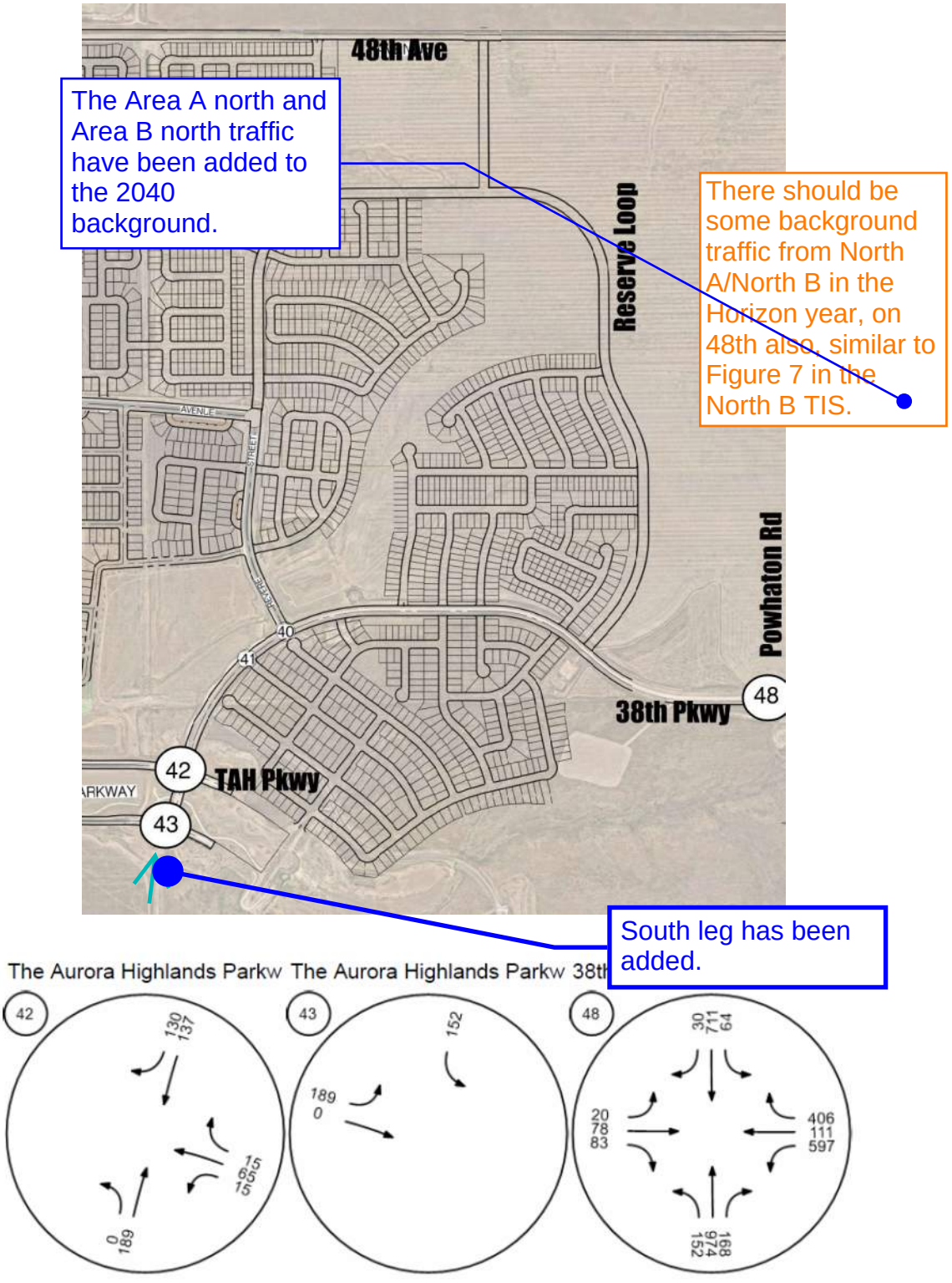
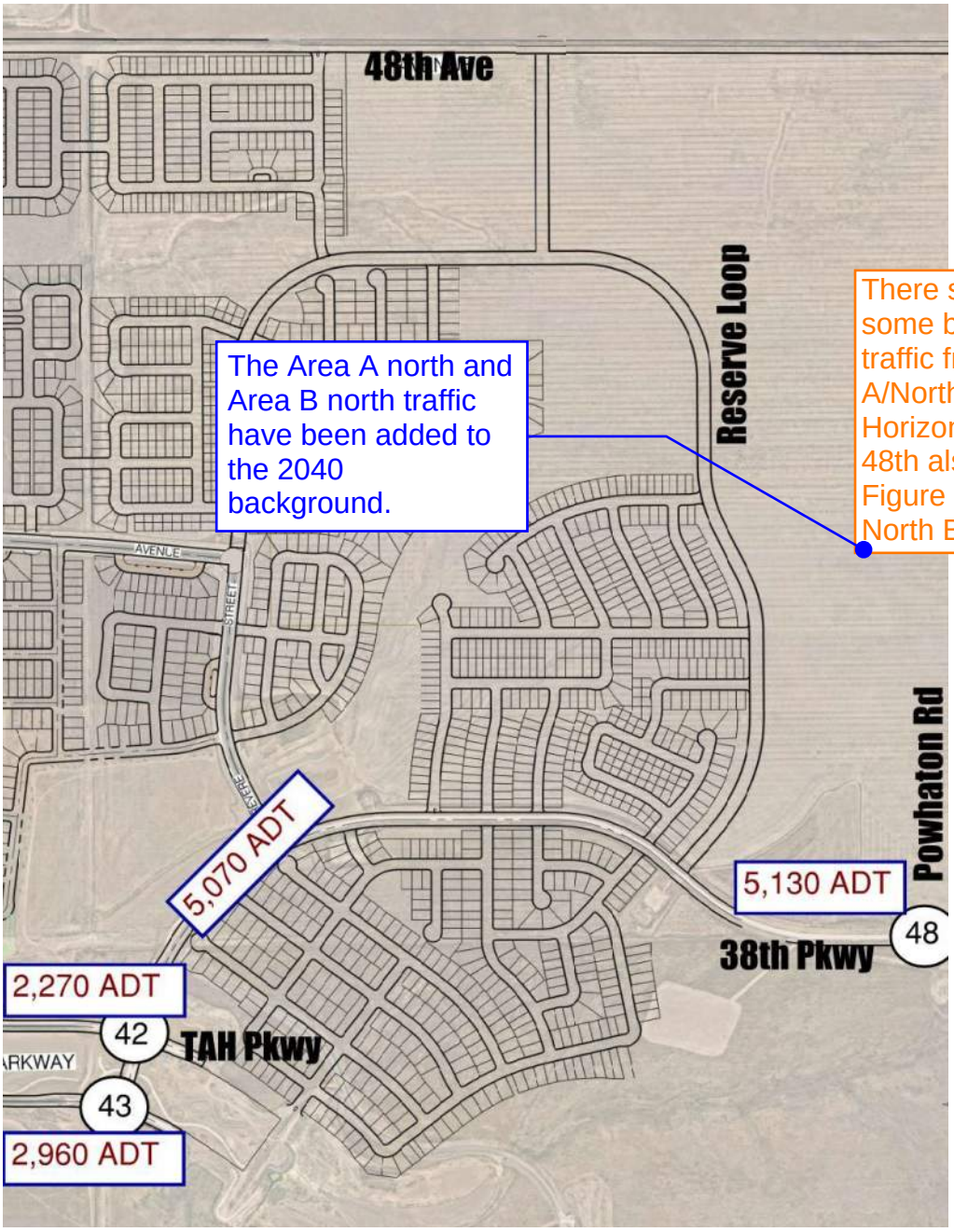
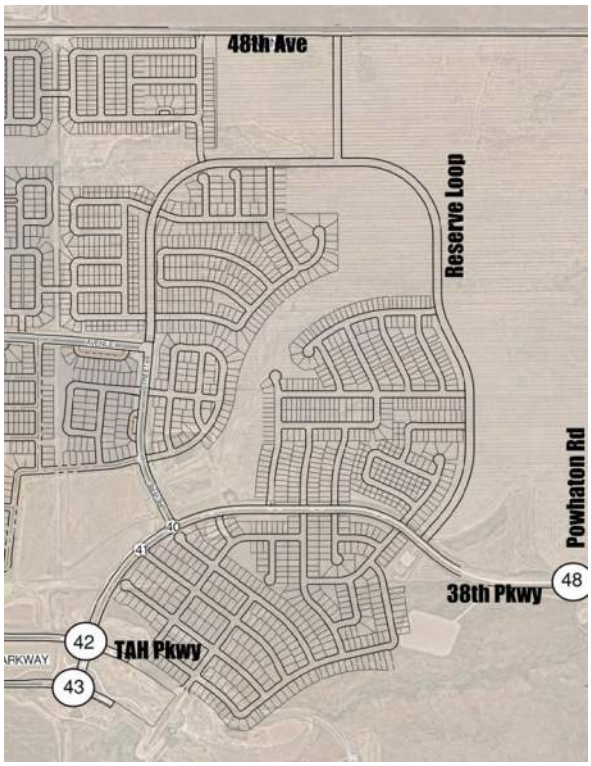


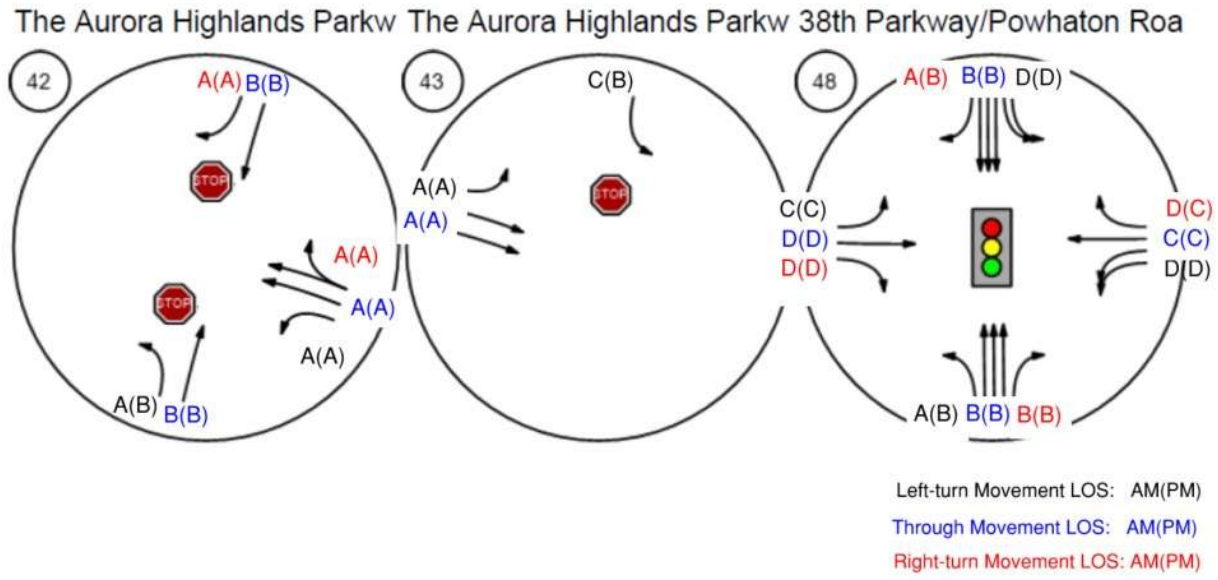
Figure 9. Horizon (2040) Background Daily Traffic



The assumed intersection configurations are shown in Figure 10. The operations of the study area intersections in horizon background (no project) scenario are shown in Tables 2 and 3.

Figure 10. Horizon (2040) Background Intersection Configurations





Intersection configurations were taken from the ATEC TIS and NEATS (2018) roadway recommendations

Table 2. Horizon (2040) Background Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
42	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	NB Thru	0.418	13.0	B
43	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	SB Left	0.188	16.0	C
48	38th Parkway/Powhaton Road	Signalized	HCM 7th Edition	SB Left	0.421	19.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Table 3. Horizon (2040) Background Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
42	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	NB Thru	0.266	11.4	B
43	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	SB Left	0.290	13.9	B
48	38th Parkway/Powhaton Road	Signalized	HCM 7th Edition	WB Left	0.512	27.6	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

All study area intersections are projected to operate at an acceptable LOS in the horizon year without the project traffic as shown in Tables 2 and 3. Additionally, all the approaches operate at an acceptable LOS. As shown in Figure 9, all movements also operate at an acceptable level of service. Table 4 shows the turn lane recommendations in the 2040 background scenario.

Table 4. Horizon (2040) Background Turn Lane Evaluations

ID	Intersection	Movement	# of Lanes	Access Category	Speed Limit (mph)	Turning Volume (veh/hr)	Lane Width (ft)	Deceleration Lane (ft)	Storage Lane (ft)	Taper Lane (ft)	COA Min Decel + Storage (ft)	SHAC (ft)	Required (ft)
42	TAH Pkwy/38th Pkwy (W)	SBR	1	NR-C	35	130	12		130	120	**150**	250	**270**
		WBL*	1	NR-B	45	15	12	435				435	**435**
43	TAH Pkwy/38th Pkwy (E)	EBL	1	NR-B	45	296	12	435			**200**	440	**435**
48	38th Pkwy/Powhaton Rd	NBL*	1	NR-A	45	152	12	435	152		**200**	585	**585**
		NBR*	1	NR-A	45	614	12	435				435	**435**
		SBL*	2	NR-A	45	64	12	435	50		**200**	485	**485**
		SBR*	1	NR-A	45	30	12	435				435	**435**
		EBR	1	NR-C	35	132	12		132	120		250	**250**
		WBL	2	NR-C	35	597	12		299	120	**150**	420	**420**
		WBR	1	NR-C	35	406	12		406	120		525	**525**

** Taper length is within the deceleration lane SHAC:State Highway Access Code COA:City of Aurora*

Horizon (2040) With Project Conditions

When the project traffic is added to the 2040 background traffic, the resulting AM peak hour, PM peak hour and daily traffic volumes are as shown in Figures 11, 12 and 13.

Figure 11. Horizon (2040) With Project Traffic Volumes (AM Peak Hour)

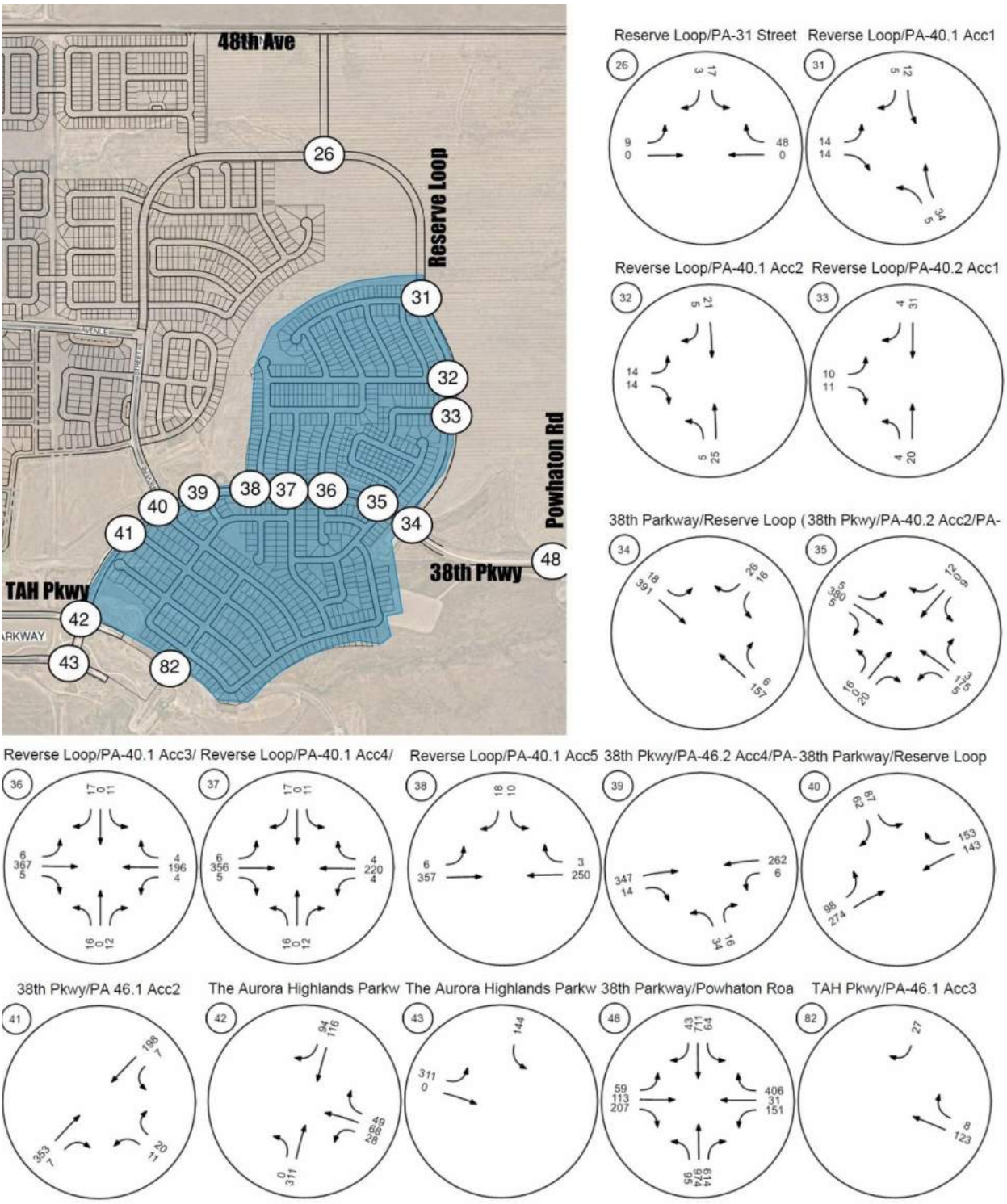


Figure 12. Horizon (2040) With Project Traffic Volumes (PM Peak Hour)

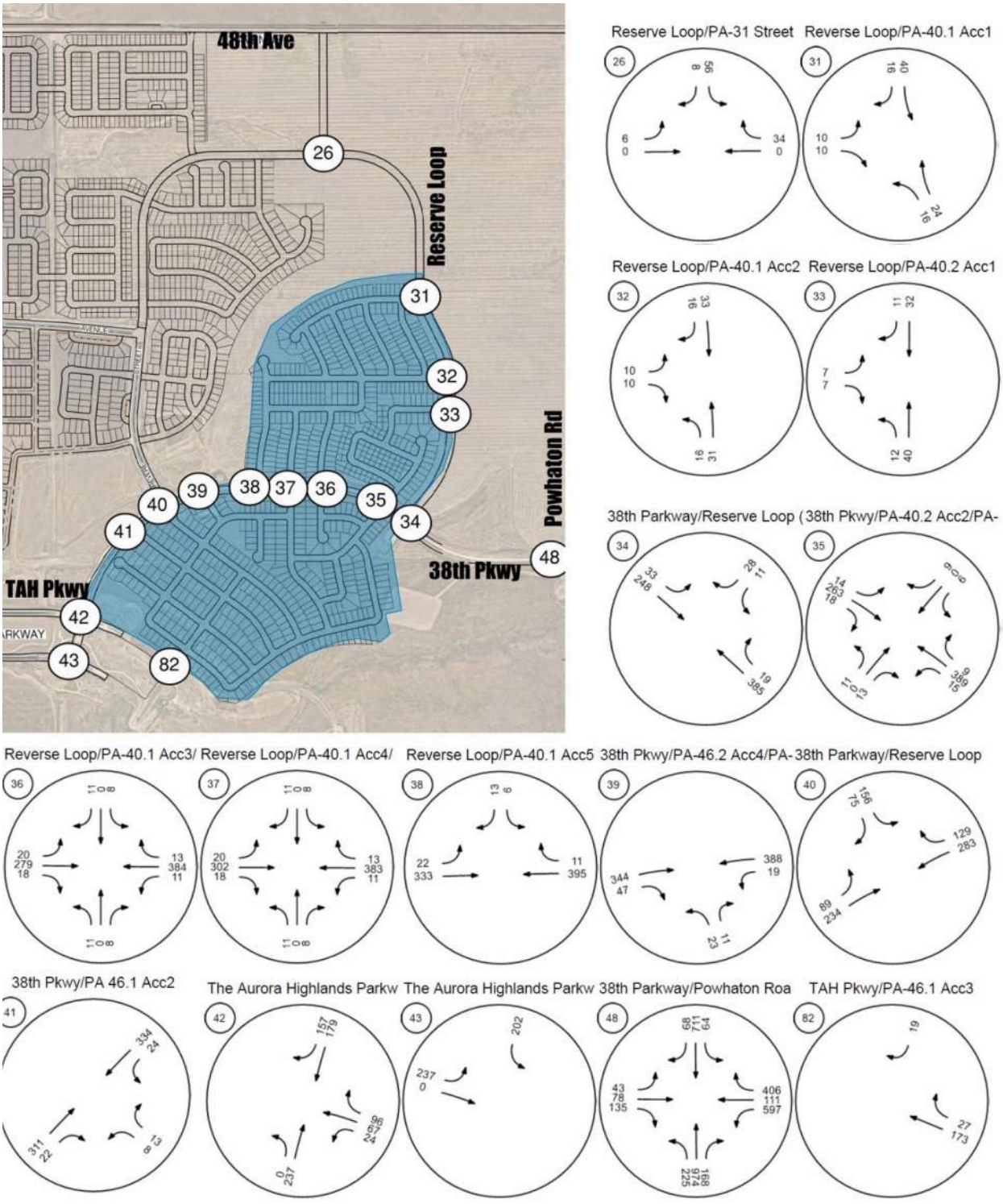
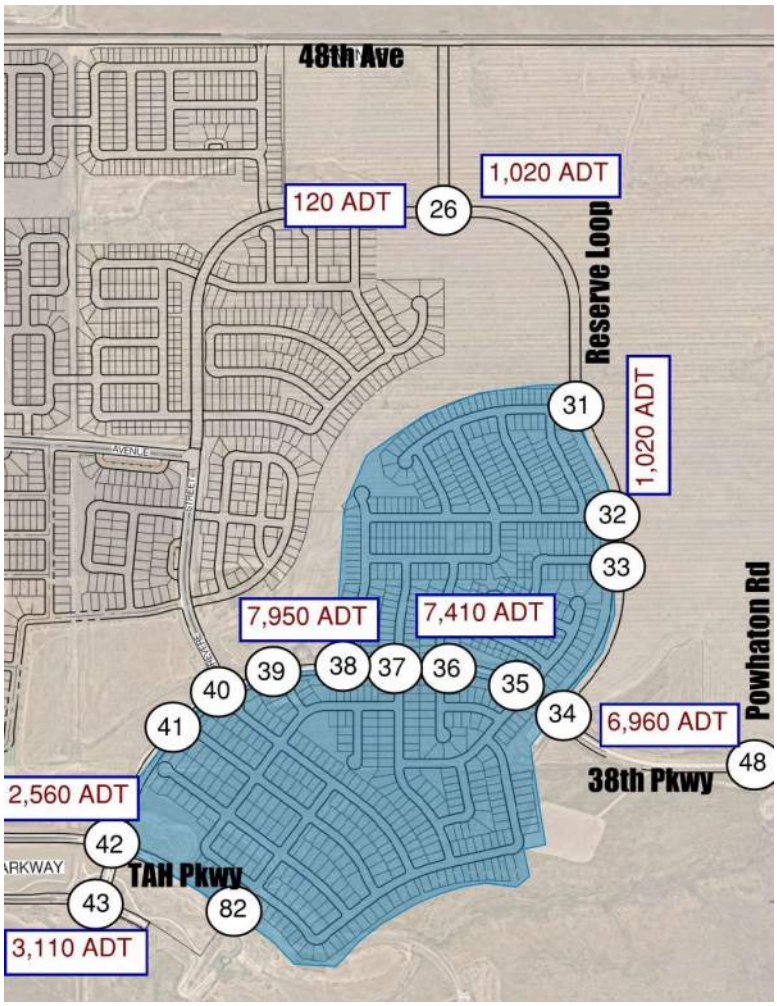


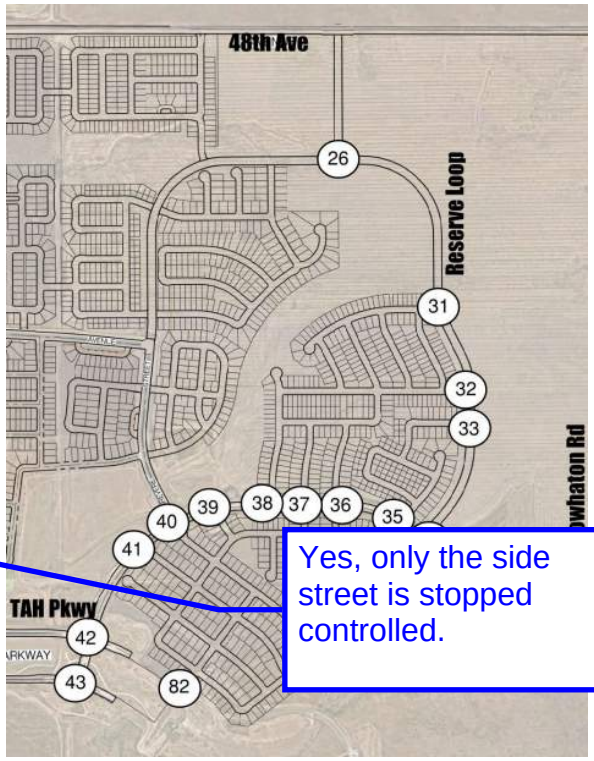
Figure 13. Horizon (2040) With Project Total Daily Traffic Volumes

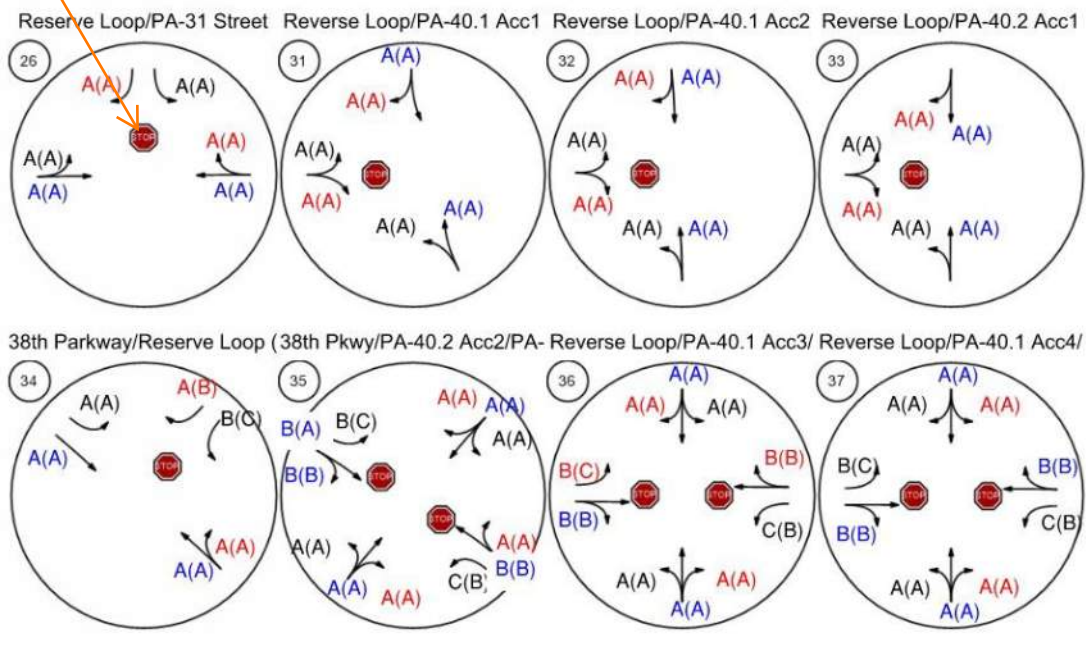


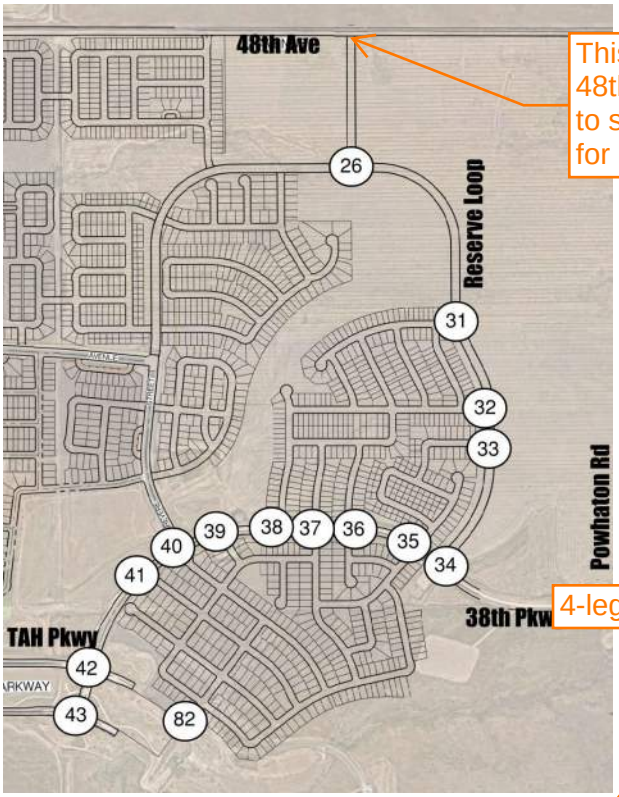
Assumed intersection configurations for the study area intersections are shown in Figure 14.

Analysis of the intersections and roadways for buildout conditions with the volumes and configurations shown above results in the operations shown in Tables 5 and 6. Signal Warrant analysis was performed for the studied intersections and no intersection was required to install a traffic signal. For more information see Appendix C and Appendix D.

Figure 14. Horizon (2040) With Project Intersection Configurations





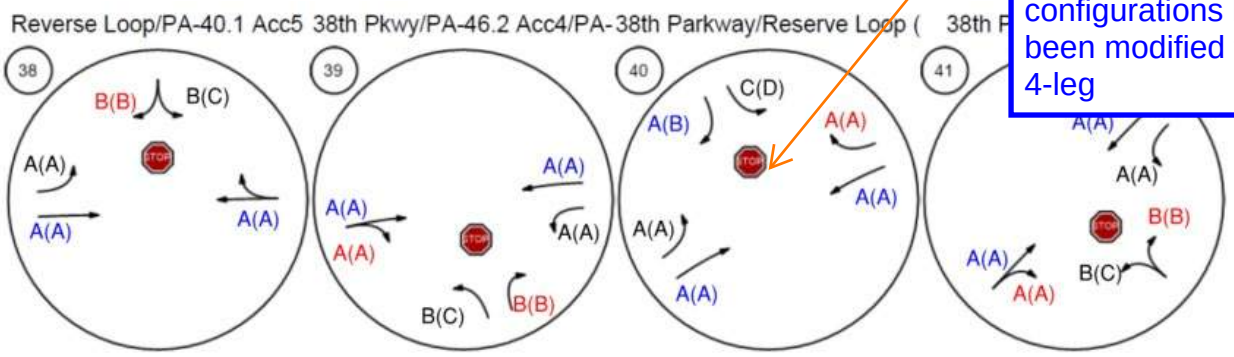


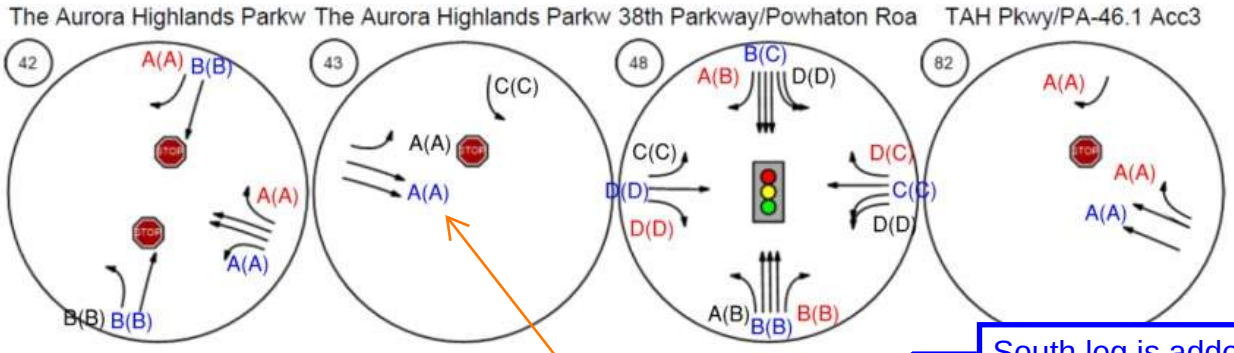
This intersection with 48th is also necessary to supplement the study for North B.

Noted. This intersection has been included in the new submittal.

4-legged intersection

The intersection configurations has been modified to 4-leg





South leg is added.

Left-turn Movement LOS: AM(PM)

Through Movement LOS: AM(PM)

Right-turn Movement LOS: AM(PM)

SB movements also needed here

Table 5. Horizon (2040) With Project Intersection Operations (AM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Reserve Loop/PA-31 Street	Two-way stop	HCM 7th Edition	SB Left	0.019	8.8	A
31	Reverse Loop/PA-40.1 Acc1	Two-way stop	HCM 7th Edition	EB Left	0.016	8.9	A
32	Reverse Loop/PA-40.1 Acc2	Two-way stop	HCM 7th Edition	EB Left	0.016	8.9	A
33	Reverse Loop/PA-40.2 Acc1	Two-way stop	HCM 7th Edition	EB Left	0.012	8.9	A
34	38th Parkway/Reserve Loop (E)	Two-way stop	HCM 7th Edition	SB Left	0.039	13.6	B
35	38th Pkwy/PA-40.2 Acc2/PA-46.2 Acc1/PA-46.1 Acc4	Two-way stop	HCM 7th Edition	WB Left	0.016	16.5	C
36	Reverse Loop/PA-40.1 Acc3/PA-46.2 Acc2	Two-way stop	HCM 7th Edition	WB Left	0.012	16.0	C
37	Reverse Loop/PA-40.1 Acc4/PA 46.2 Acc3	Two-way stop	HCM 7th Edition	WB Left	0.012	15.5	C
38	Reverse Loop/PA-40.1 Acc5	Two-way stop	HCM 7th Edition	SB Left	0.026	14.0	B
39	38th Pkwy/PA-46.2 Acc4/PA-46.1 Acc1	Two-way stop	HCM 7th Edition	NB Left	0.090	14.6	B
40	38th Parkway/Reserve Loop (W)	Two-way stop	HCM 7th Edition	SB Left	0.245	17.3	C
41	38th Pkwy/PA 46.1 Acc2	Two-way stop	HCM 7th Edition	NB Left	0.027	13.4	B
42	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	NB Thru	0.479	14.7	B
43	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	SB Left	0.407	20.6	C
48	38th Parkway/Powhaton Road	Signalized	HCM 7th Edition	SB Left	0.443	20.2	C
82	TAH Pkwy/PA-46.1 Acc3	Two-way stop	HCM 7th Edition	SB Right	0.030	8.8	A

Table 6. Horizon (2040) With Project Intersection Operations (PM Peak Hour)

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
26	Reserve Loop/PA-31 Street	Two-way stop	HCM 7th Edition	SB Left	0.062	8.9	A
31	Reverse Loop/PA-40.1 Acc1	Two-way stop	HCM 7th Edition	EB Left	0.013	9.2	A
32	Reverse Loop/PA-40.1 Acc2	Two-way stop	HCM 7th Edition	EB Left	0.013	9.2	A
33	Reverse Loop/PA-40.2 Acc1	Two-way stop	HCM 7th Edition	EB Left	0.009	9.2	A
34	38th Parkway/Reserve Loop (E)	Two-way stop	HCM 7th Edition	SB Left	0.034	15.4	C
35	38th Pkwy/PA-40.2 Acc2/PA-46.2 Acc1/PA-46.1 Acc4	Two-way stop	HCM 7th Edition	EB Left	0.045	16.4	C
36	Reverse Loop/PA-40.1 Acc3/PA-46.2 Acc2	Two-way stop	HCM 7th Edition	EB Left	0.067	16.7	C
37	Reverse Loop/PA-40.1 Acc4/PA 46.2 Acc3	Two-way stop	HCM 7th Edition	EB Left	0.066	16.6	C
38	Reverse Loop/PA-40.1 Acc5	Two-way stop	HCM 7th Edition	SB Left	0.021	16.4	C
39	38th Pkwy/PA-46.2 Acc4/PA-46.1 Acc1	Two-way stop	HCM 7th Edition	NB Left	0.078	17.3	C
40	38th Parkway/Reserve Loop (W)	Two-way stop	HCM 7th Edition	SB Left	0.495	25.4	D
41	38th Pkwy/PA 46.1 Acc2	Two-way stop	HCM 7th Edition	NB Left	0.025	15.2	C
42	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	NB Thru	0.385	13.7	B
43	The Aurora Highlands Parkway/38th Parkway	Two-way stop	HCM 7th Edition	SB Left	0.451	18.3	C
48	38th Parkway/Powhaton Road	Signalized	HCM 7th Edition	WB Left	0.513	28.1	C
82	TAH Pkwy/PA-46.1 Acc3	Two-way stop	HCM 7th Edition	SB Right	0.023	9.0	A

Table 7 shows the recommended auxiliary lane lengths for the corresponding movement in the horizon year with addition of the project.

For where queuing allows, min storage can be 50'. Decel taper lengths to follow SHAC Table 4-6 for transition taper ratio for the design speed of the road (i.e. 25 mph needs 7.5:1 rate). Update this table accordingly.

Table 7. Horizon (2040) With Project Turn Lane Evaluations

ID	Intersection	Movement	# of Lanes	Access Category	Speed Limit (mph)	Turning Volume (veh/hr)	Lane Width (ft)	Deceleration Lane (ft)	Storage Lane (ft)	Taper Lane (ft)	COA Min Decel + Storage	SHAC (ft)	Required (ft)	Improvement (ft)
26	Reserve Loop/PA-31 Street	SBL	1	NR-C	35	56	12		50	120	150	170	**270**	**270**
34	38th Pkwy/Reserve Loop	EBL	1	NR-C	35	33	12		50	120	150	170	**270**	**270**
39	38th Pkwy/Pa-46.3 Access	NBL	1	NR-C	30	34	12		50	96	150	145	**245**	**245**
40	38th Pkw/Reserve Loop (W)	SBL	1	NR-C	35	156	12		156	120	150	275	**275**	**275**
		EBL	1	NR-C	35	98	12		100	120	150	220	**270**	**270**
		WBR	1	NR-C	35	153	12		153	120		275	**275**	**275**
42	TAH Pkwy/38th Pkwy (W)	SBR	1	NR-C	35	157	12		157	120		275	**275**	**5**
		WBL*	1	NR-B	45	28	12	435			200	435	**435**	-
		WBR*	1	NR-B	45	96	12	435				435	**435**	**435**
43	TAH Pkwy/38th Pkwy (E)	EBL	1	NR-B	45	311	12	435			200	455	**435**	-
48	38th Pkwy/Powhaton Rd	NBL*	1	NR-A	45	225	12	435	225		200	660	**660**	**75**
		NBR*	1	NR-A	45	614	12	435				435	**435**	-
		SBL*	2	NR-A	45	68	12	435	50		200	485	**485**	-
		SBR*	1	NR-A	45	64	12	435				435	**435**	-
		EBR	1	NR-C	35	207	12		206	120		325	**325**	**75**
		WBL	2	NR-C	35	597	12		299	120	150	420	**420**	-
		WBR	1	NR-C	35	406	12		406	120		525	**525**	-
		EBL	1	NR-C	35	59	12		50	120	150	170	**270**	**270**
82	TAH Pkwy/PA-46.1	WBR*	1	NR-B	45	27	12	435				435	**435**	**435**

** Taper length is within the deceleration lane SHAC:State Highway Access Code COA:City of Aurora*

Turn lanes have been evaluated exclusively based on SHAC in the latest submittal. Per our latest meeting, collector to local roadways' storage was assumed to be 50-ft unless the queue was higher.

Conclusions and Recommendations

The development of the Aurora Highlands, North Area, Area C has been studied for traffic impacts to the assumed roadway network. The roadway network assumptions were developed from a combination of *NEATS Final Report, 2018, The Aurora Highlands Traffic Impact Study; August 2019, Powhaton Road Alignment Study, October 2022, and ATEC Traffic Impact Analysis; November 2019.* These studies were used to assume the 2040 roadway network, intersection configurations and 2040 background traffic volumes in the study area. The new project trips for The Aurora Highlands, North Area, Area C were generated using the *ITE Trip Generation Manual, 11th Edition*, distributed to the roadway network following the trip distribution assumptions from the other area studies and assigned to the roadway network. Following intersection improvements are required in the horizon year with and without the project.

Horizon (2040) No Project

TAH Parkway/38th Pkwy (W) (#42)

- A 270-ft southbound right-turn. Included a 150-ft COA recommended deceleration and storage and a 120-ft taper lane.
- A 435-ft westbound left-turn deceleration lane. A 162-ft taper lane is included within the deceleration lane.

TAH Parkway/38th Pkwy (E) (#43)

- A 435-ft eastbound left-turn deceleration lane. A 162-ft taper lane is included within the deceleration lane.

38th Parkway/Powhaton Road (#48)

- A 585-ft northbound left-turn. Included a 435-ft deceleration lane and a 152-ft storage. A 162-ft taper lane is included within the deceleration lane.
- A 435-ft northbound right-turn deceleration lane. A 162-ft taper lane is included within the deceleration lane.
- Two 485-ft southbound left-turn. Included a 435-ft deceleration lane and a 50-ft storage. A 162-ft taper lane is included within the deceleration lane.
- A 435-ft southbound right-turn deceleration lane. A 162-ft taper lane is included within the deceleration lane.
- A 250-ft eastbound right-turn. Included a 132-ft storage and 120-ft approach taper.
- Two 420-ft westbound left-turn. Included a 299-ft storage and 120-ft bay taper.
- A 525-ft westbound right-turn. Included a 406-ft storage and a 120-ft approach taper.

Horizon (2040) With Project

Reserve Loop/PA-31 Street (#26)

- A 270-ft southbound left-turn. Included a 150-ft deceleration and storage and a 120-ft taper.

38th Parkway/Reserve Loop (#34)

- A 270-ft eastbound left-turn. Included a 150-ft deceleration and storage and a 120-ft taper.

38th Parkway/PA-46.3 Access (#39)

- A 245-ft eastbound left-turn. Included a 150-ft deceleration and storage and a 96-ft taper.

38th Parkway/Reserve Loop (W) (#40)

- A 275-ft southbound left-turn. Included a 155-ft storage and a 120-ft taper.
- A 270-ft eastbound left-turn. Included a 150-ft deceleration and storage and a 120-ft taper.
- A 270-ft westbound right-turn. Included a 149-ft storage and a 120-ft taper.

TAH Parkway/38th Pkwy (W) (#42)

- A 5-ft extension of southbound right-turn.
- A 435-ft westbound right-turn. A 162-ft taper lane is included within the deceleration lane.

38th Parkway/Powhaton Road (#48)

- A 75-ft extension of northbound left-turn.
- A 75-ft extension of eastbound right-turn.
- A 270-ft eastbound left-turn. Included a 150-ft deceleration and storage and a 120-ft taper.

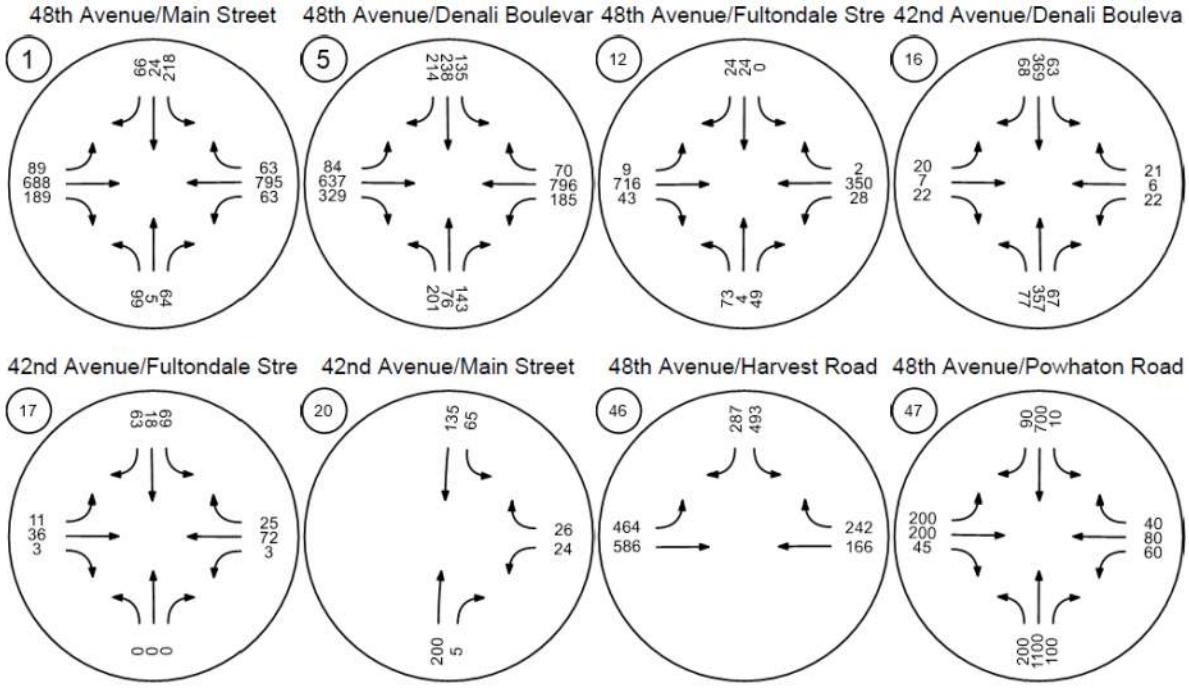
TAH Parkway/PA-46.1 Access (#82)

- A 435-ft westbound right-turn deceleration lane. A 162-ft taper lane is included within the deceleration lane.

All turn lane lengths were rounded to the nearest 5-ft.

Appendix A – Background Traffic Volumes

Figure 7. Horizon Year No Project Traffic Volumes (AM Peak Hour)



Horizon Year No Project Traffic Volumes (AM Peak Hour) Continued

38th Parkway/Powhaton Roa

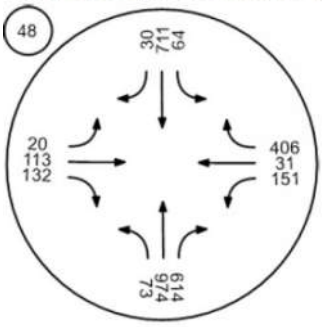
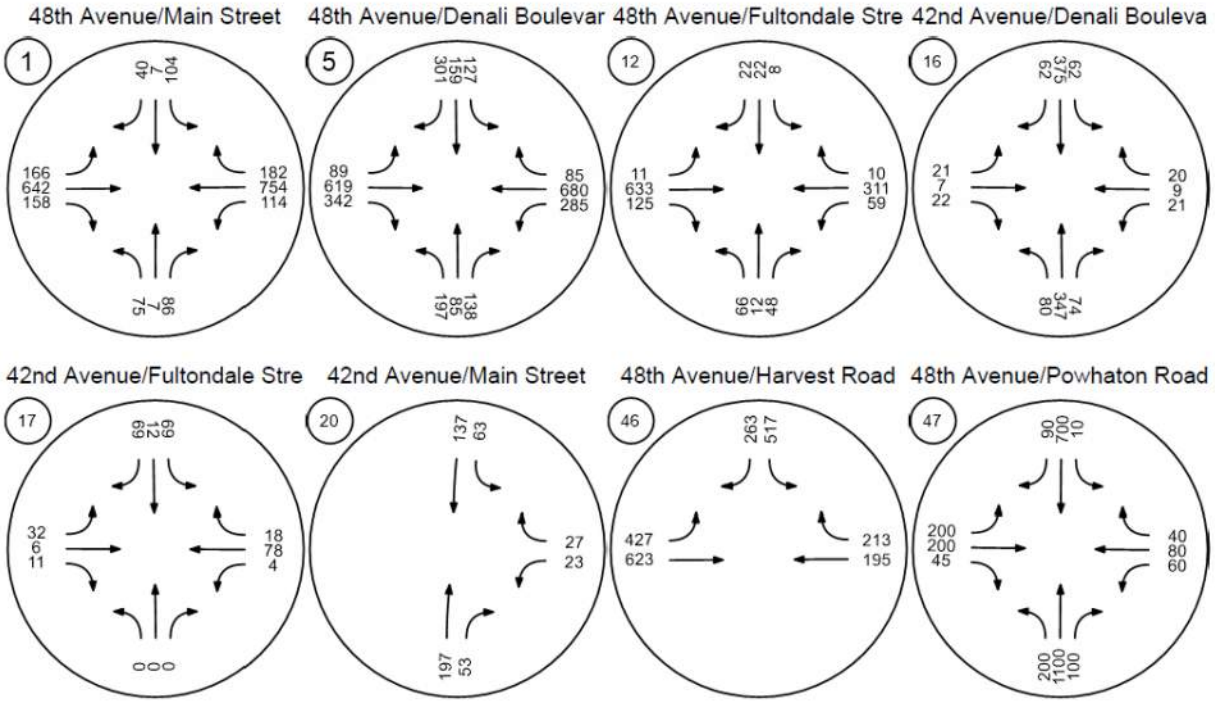
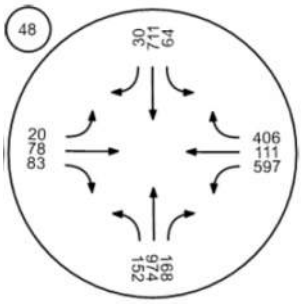


Figure 8. Horizon Year No Project Traffic Volumes (PM Peak Hour)



Horizon Year No Project Traffic Volumes (PM Peak Hour) Continued

38th Parkway/Powhaton Roa



Appendix B – ITE Trip Generation Calculations

PROJECT DETAILS

Project Name:	TAH - Area C	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Scott Barnhart	Clients Name:	
Date:	9/29/2022	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	3
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	No. of Years to Project Traffic	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	AM Peak Hour	4	1	0		134	381	515
Scenario - 2	PM Peak Hour	4	1	0		442	260	702
Scenario - 3	Weekday	4	1	0		3512	3512	7024

Scenario - 1

Scenario Name: AM Peak Hour
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	278	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	49	140	189
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.91Ln(X) + 0.12	26%	74%	
210(1) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	74	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	15	42	57
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.91Ln(X) + 0.12	26%	74%	
210(2) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	212	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	38	109	147
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.91Ln(X) + 0.12	26%	74%	
210(3) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	172	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	32	90	122
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.91Ln(X) + 0.12	26%	74%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	26	74
210(1) - Single-Family Detached Housing	100	100	1	1	26	74
210(2) - Single-Family Detached Housing	100	100	1	1	26	74
210(3) - Single-Family Detached Housing	100	100	1	1	26	74

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	49	140	0	0	49	140
	189		0		189	
210(1) - Single-Family Detached Housing	15	42	0	0	15	42
	57		0		57	
210(2) - Single-Family Detached Housing	38	109	0	0	38	109
	147		0		147	
210(3) - Single-Family Detached Housing	32	90	0	0	32	90
	122		0		122	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	49	140	189
210(1) - Single-Family Detached Housing	15	42	57
210(2) - Single-Family Detached Housing	38	109	147
210(3) - Single-Family Detached Housing	32	90	122

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	134	381	515
External Vehicle Trips	134	381	515
New Vehicle Trips	134	381	515

Scenario - 2

Scenario Name: PM Peak Hour
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	278	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	164	96	260
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.94Ln(X) + 0.27	63%	37%	
210(1) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	74	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	47	28	75
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.94Ln(X) + 0.27	63%	37%	
210(2) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	212	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	127	75	202
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.94Ln(X) + 0.27	63%	37%	
210(3) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	172	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	104	61	165
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.94Ln(X) + 0.27	63%	37%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	63	37
210(1) - Single-Family Detached Housing	100	100	1	1	63	37
210(2) - Single-Family Detached Housing	100	100	1	1	63	37
210(3) - Single-Family Detached Housing	100	100	1	1	63	37

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	164	96	0	0	164	96
	260		0		260	
210(1) - Single-Family Detached Housing	47	28	0	0	47	28
	75		0		75	
210(2) - Single-Family Detached Housing	127	75	0	0	127	75
	202		0		202	
210(3) - Single-Family Detached Housing	104	61	0	0	104	61
	165		0		165	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	164	96	260
210(1) - Single-Family Detached Housing	47	28	75
210(2) - Single-Family Detached Housing	127	75	202
210(3) - Single-Family Detached Housing	104	61	165

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	442	260	702
External Vehicle Trips	442	260	702
New Vehicle Trips	442	260	702

Scenario - 3

Scenario Name: Weekday
User Group:
Dev. phase: 1
No. of Years to Project Traffic : 0
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
210 - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	278	Weekday	Best Fit (LOG)	1292	1292	2584
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.92Ln(X) + 2.68	50%	50%	
210(1) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	74	Weekday	Best Fit (LOG)	382	382	764
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.92Ln(X) + 2.68	50%	50%	
210(2) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	212	Weekday	Best Fit (LOG)	1007	1007	2014
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.92Ln(X) + 2.68	50%	50%	
210(3) - Single-Family Detached Housing	General Urban/Suburban	Dwelling Units	172	Weekday	Best Fit (LOG)	831	831	1662
Data Source: Trip Generation Manual, 11th Ed					Ln(T) =0.92Ln(X) + 2.68	50%	50%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
210 - Single-Family Detached Housing	100	100	1	1	50	50
210(1) - Single-Family Detached Housing	100	100	1	1	50	50
210(2) - Single-Family Detached Housing	100	100	1	1	50	50
210(3) - Single-Family Detached Housing	100	100	1	1	50	50

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
210 - Single-Family Detached Housing	1292	1292	0	0	1292	1292
	2584		0		2584	
210(1) - Single-Family Detached Housing	382	382	0	0	382	382
	764		0		764	
210(2) - Single-Family Detached Housing	1007	1007	0	0	1007	1007
	2014		0		2014	
210(3) - Single-Family Detached Housing	831	831	0	0	831	831
	1662		0		1662	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
210 - Single-Family Detached Housing	1292	1292	2584
210(1) - Single-Family Detached Housing	382	382	764
210(2) - Single-Family Detached Housing	1007	1007	2014
210(3) - Single-Family Detached Housing	831	831	1662

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	3512	3512	7024
External Vehicle Trips	3512	3512	7024
New Vehicle Trips	3512	3512	7024

Appendix C – Horizon Without Project Analyses

Intersection Level Of Service Report
Intersection 42: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.418

Intersection Setup

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	435.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Base Volume Input [veh/h]	0	296	0	0	55	55	0	0	0	15	65	15
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	296	0	0	55	55	0	0	0	15	65	15
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	80	0	0	15	15	0	0	0	4	18	4
Total Analysis Volume [veh/h]	0	322	0	0	60	60	0	0	0	16	71	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.42	0.00	0.00	0.08	0.06	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	9.74	12.99	0.00	0.00	10.01	8.76	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	A	B			B	A				A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.08	0.00	0.00	0.25	0.19	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	51.95	0.00	0.00	6.25	4.69	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.99			9.39			0.00			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.74											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 43: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.188

Intersection Setup

Name	38th Parkway		Th Au			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	38th Parkway		Th Au			
Base Volume Input [veh/h]	70	0	296	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	70	0	296	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	19	0	80	0	0	0
Total Analysis Volume [veh/h]	76	0	322	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.96	0.00	0.00	0.00	0.00	0.00
Movement LOS	C		A	A		
95th-Percentile Queue Length [veh/ln]	0.68	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	17.09	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.96		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	3.05					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 48: 38th Parkway/Powhaton Road

Control Type:	Signalized	Delay (sec / veh):	19.1
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.421

Intersection Setup

Name	Powhaton Road			Powhaton Road			38th Parkway					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	1	1	0	1	2	0	1
Entry Pocket Length [ft]	150.0	100.0	150.0	150.0	100.0	150.0	200.0	100.0	200.0	200.0	100.0	200.0
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Powhaton Road			Powhaton Road			38th Parkway					
Base Volume Input [veh/h]	73	974	614	64	711	30	20	113	132	151	31	406
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	307	0	0	15	0	0	66	0	0	203
Total Hourly Volume [veh/h]	73	974	307	64	711	15	20	113	66	151	31	203
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	20	265	83	17	193	4	5	31	18	41	8	55
Total Analysis Volume [veh/h]	79	1059	334	70	773	16	22	123	72	164	34	221
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtP	Permi	Permi	Protec	Permi	Permi	ProtP	Permi	Permi	Protec	Permi	Permi
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	31	0	9	31	0	9	40	0	20	51	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	14	0	0	27	0	0	34	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	68	60	60	4	60	60	24	13	13	7	18	18
g / C, Green / Cycle	0.68	0.60	0.60	0.04	0.59	0.59	0.24	0.13	0.13	0.07	0.18	0.18
(v / s)_i Volume / Saturation Flow Rate	0.11	0.23	0.23	0.02	0.17	0.01	0.02	0.07	0.05	0.05	0.02	0.15
s, saturation flow rate [veh/h]	712	4584	1431	3113	4584	1431	1119	1683	1431	3113	1683	1431
c, Capacity [veh/h]	533	2732	852	135	2724	850	358	214	182	230	299	254
d1, Uniform Delay [s]	5.86	10.63	10.66	46.84	9.91	8.33	29.25	41.14	40.15	45.30	34.55	40.04
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.13	0.42	1.35	3.05	0.26	0.04	0.07	2.43	1.40	4.08	0.17	8.95
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.39	0.39	0.52	0.28	0.02	0.06	0.58	0.40	0.71	0.11	0.87
d, Delay for Lane Group [s/veh]	5.99	11.05	12.02	49.89	10.17	8.37	29.32	43.57	41.55	49.39	34.72	48.99
Lane Group LOS	A	B	B	D	B	A	C	D	D	D	C	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.52	3.93	3.95	0.91	2.66	0.15	0.41	2.98	1.69	2.11	0.71	5.85
50th-Percentile Queue Length [ft/ln]	12.97	98.19	98.72	22.65	66.50	3.63	10.34	74.54	42.29	52.72	17.68	146.3
95th-Percentile Queue Length [veh/ln]	0.93	7.07	7.11	1.63	4.79	0.26	0.74	5.37	3.04	3.80	1.27	9.82
95th-Percentile Queue Length [ft/ln]	23.34	176.7	177.6	40.77	119.7	6.53	18.61	134.1	76.12	94.90	31.82	245.5

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	5.99	11.05	12.02	49.89	10.17	8.37	29.32	43.57	41.55	49.39	34.72	48.99
Movement LOS	A	B	B	D	B	A	C	D	D	D	C	D
d_A, Approach Delay [s/veh]	10.99			13.37			41.45			47.99		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.14											
Intersection LOS	B											
Intersection V/C	0.421											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.42	41.42	41.42	41.42
l_p,int, Pedestrian LOS Score for Intersection	3.517	3.233	2.405	2.985
Crosswalk LOS	D	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	540	540	720	940
d_b, Bicycle Delay [s]	26.66	26.66	20.50	14.06
l_b,int, Bicycle LOS Score for Intersection	2.538	2.040	2.027	2.586
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Signal Warrants Report For Intersection 42: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets	
	E	N	S
1	95	110	296
2	92	107	287
3	90	105	281
4	85	98	263
5	75	87	234
6	74	86	231
7	73	85	228
8	67	77	207
9	66	76	204
10	65	75	201
11	56	65	175
12	52	61	163
13	51	59	160
14	38	44	118
15	38	44	118
16	27	31	83
17	15	18	47
18	15	18	47
19	9	10	27
20	5	6	15
21	3	3	9
22	1	1	3
23	1	1	3
24	1	1	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	95	2	296	No	No	No	No	No	No	No	No	Yes	No
2	3	92	2	287	No	No	No	No	No	No	No	No	No	No
3	3	90	2	281	No	No	No	No	No	No	No	No	No	No
4	3	85	2	263	No	No	No	No	No	No	No	No	No	No
5	3	75	2	234	No	No	No	No	No	No	No	No	No	No
6	3	74	2	231	No	No	No	No	No	No	No	No	No	No
7	3	73	2	228	No	No	No	No	No	No	No	No	No	No
8	3	67	2	207	No	No	No	No	No	No	No	No	No	No
9	3	66	2	204	No	No	No	No	No	No	No	No	No	No
10	3	65	2	201	No	No	No	No	No	No	No	No	No	No
11	3	56	2	175	No	No	No	No	No	No	No	No	No	No
12	3	52	2	163	No	No	No	No	No	No	No	No	No	No
13	3	51	2	160	No	No	No	No	No	No	No	No	No	No
14	3	38	2	118	No	No	No	No	No	No	No	No	No	No
15	3	38	2	118	No	No	No	No	No	No	No	No	No	No
16	3	27	2	83	No	No	No	No	No	No	No	No	No	No
17	3	15	2	47	No	No	No	No	No	No	No	No	No	No
18	3	15	2	47	No	No	No	No	No	No	No	No	No	No
19	3	9	2	27	No	No	No	No	No	No	No	No	No	No
20	3	5	2	15	No	No	No	No	No	No	No	No	No	No
21	3	3	2	9	No	No	No	No	No	No	No	No	No	No
22	3	1	2	3	No	No	No	No	No	No	No	No	No	No
23	3	1	2	3	No	No	No	No	No	No	No	No	No	No
24	3	1	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	1	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.4	13
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:17	1:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	110	296
High Minor Volume Condition Met	No	Yes
Total Entering Volume on All Approaches During Same Hour	501	501
Number of Approaches on Intersection	3	3
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 43: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets
	W	N
1	296	70
2	287	68
3	281	67
4	263	62
5	234	55
6	231	55
7	228	54
8	207	49
9	204	48
10	201	48
11	175	41
12	163	39
13	160	38
14	118	28
15	118	28
16	83	20
17	47	11
18	47	11
19	27	6
20	15	4
21	9	2
22	3	1
23	3	1
24	3	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	296	1	70	No	No	No	No	No	No	No	No	No	No
2	3	287	1	68	No	No	No	No	No	No	No	No	No	No
3	3	281	1	67	No	No	No	No	No	No	No	No	No	No
4	3	263	1	62	No	No	No	No	No	No	No	No	No	No
5	3	234	1	55	No	No	No	No	No	No	No	No	No	No
6	3	231	1	55	No	No	No	No	No	No	No	No	No	No
7	3	228	1	54	No	No	No	No	No	No	No	No	No	No
8	3	207	1	49	No	No	No	No	No	No	No	No	No	No
9	3	204	1	48	No	No	No	No	No	No	No	No	No	No
10	3	201	1	48	No	No	No	No	No	No	No	No	No	No
11	3	175	1	41	No	No	No	No	No	No	No	No	No	No
12	3	163	1	39	No	No	No	No	No	No	No	No	No	No
13	3	160	1	38	No	No	No	No	No	No	No	No	No	No
14	3	118	1	28	No	No	No	No	No	No	No	No	No	No
15	3	118	1	28	No	No	No	No	No	No	No	No	No	No
16	3	83	1	20	No	No	No	No	No	No	No	No	No	No
17	3	47	1	11	No	No	No	No	No	No	No	No	No	No
18	3	47	1	11	No	No	No	No	No	No	No	No	No	No
19	3	27	1	6	No	No	No	No	No	No	No	No	No	No
20	3	15	1	4	No	No	No	No	No	No	No	No	No	No
21	3	9	1	2	No	No	No	No	No	No	No	No	No	No
22	3	3	1	1	No	No	No	No	No	No	No	No	No	No
23	3	3	1	1	No	No	No	No	No	No	No	No	No	No
24	3	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	16
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:18
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	70
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	366
Number of Approaches on Intersection	2
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Intersection Level Of Service Report
Intersection 42: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	11.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.266

Intersection Setup

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	435.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Base Volume Input [veh/h]	0	189	0	0	137	130	0	0	0	15	65	15
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	189	0	0	137	130	0	0	0	15	65	15
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	51	0	0	37	35	0	0	0	4	18	4
Total Analysis Volume [veh/h]	0	205	0	0	149	141	0	0	0	16	71	16
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.27	0.00	0.00	0.19	0.14	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.35	11.36	0.00	0.00	10.72	9.11	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B			B	A				A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.07	0.00	0.00	0.70	0.48	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	26.79	0.00	0.00	17.60	12.02	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.36			9.94			0.00			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	8.71											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 43: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	13.9
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.290

Intersection Setup

Name	38th Parkway		Th Au			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	38th Parkway		Th Au			
Base Volume Input [veh/h]	152	0	189	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	152	0	189	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	0	51	0	0	0
Total Analysis Volume [veh/h]	165	0	205	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.29	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.90	0.00	0.00	0.00	0.00	0.00
Movement LOS	B		A	A		
95th-Percentile Queue Length [veh/ln]	1.20	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	29.96	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.90		0.00		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	6.20					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 48: 38th Parkway/Powhaton Road

Control Type:	Signalized	Delay (sec / veh):	27.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.512

Intersection Setup

Name	Powhaton Road			Powhaton Road			38th Parkway					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	1	1	0	1	2	0	1
Entry Pocket Length [ft]	150.0	100.0	150.0	150.0	100.0	150.0	200.0	100.0	200.0	200.0	100.0	200.0
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Powhaton Road			Powhaton Road			38th Parkway					
Base Volume Input [veh/h]	152	974	168	64	711	30	20	78	83	597	111	406
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	84	0	0	15	0	0	42	0	0	203
Total Hourly Volume [veh/h]	152	974	84	64	711	15	20	78	41	597	111	203
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	41	265	23	17	193	4	5	21	11	162	30	55
Total Analysis Volume [veh/h]	165	1059	91	70	773	16	22	85	45	649	121	221
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtP	Permi	Permi	Protec	Permi	Permi	ProtP	Permi	Permi	Protec	Permi	Permi
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	16	30	0	9	23	0	9	36	0	25	52	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	14	0	0	27	0	0	34	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	57	49	49	4	46	46	35	10	10	21	28	28
g / C, Green / Cycle	0.57	0.49	0.49	0.04	0.46	0.46	0.35	0.10	0.10	0.21	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.21	0.23	0.06	0.02	0.17	0.01	0.02	0.05	0.03	0.21	0.07	0.15
s, saturation flow rate [veh/h]	776	4584	1431	3113	4584	1431	1019	1683	1431	3113	1683	1431
c, Capacity [veh/h]	475	2238	698	137	2111	659	407	165	140	654	478	406
d1, Uniform Delay [s]	11.16	17.05	14.01	46.82	17.53	14.74	21.74	42.90	42.06	39.47	27.66	30.36
k, delay calibration	0.24	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.96	0.72	0.39	2.95	0.49	0.07	0.05	2.48	1.30	14.72	0.28	1.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	0.47	0.13	0.51	0.37	0.02	0.05	0.52	0.32	0.99	0.25	0.54
d, Delay for Lane Group [s/veh]	12.11	17.77	14.39	49.77	18.02	14.81	21.79	45.38	43.36	54.19	27.93	31.49
Lane Group LOS	B	B	B	D	B	B	C	D	D	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.78	5.35	1.17	0.90	3.84	0.21	0.35	2.10	1.08	9.16	2.25	4.57
50th-Percentile Queue Length [ft/ln]	44.55	133.6	29.37	22.62	96.01	5.20	8.66	52.52	27.05	228.9	56.36	114.3
95th-Percentile Queue Length [veh/ln]	3.21	9.14	2.11	1.63	6.91	0.37	0.62	3.78	1.95	14.12	4.06	8.08
95th-Percentile Queue Length [ft/ln]	80.19	228.4	52.87	40.71	172.8	9.36	15.58	94.53	48.70	352.9	101.4	202.0

Movement, Approach, & Intersection Results

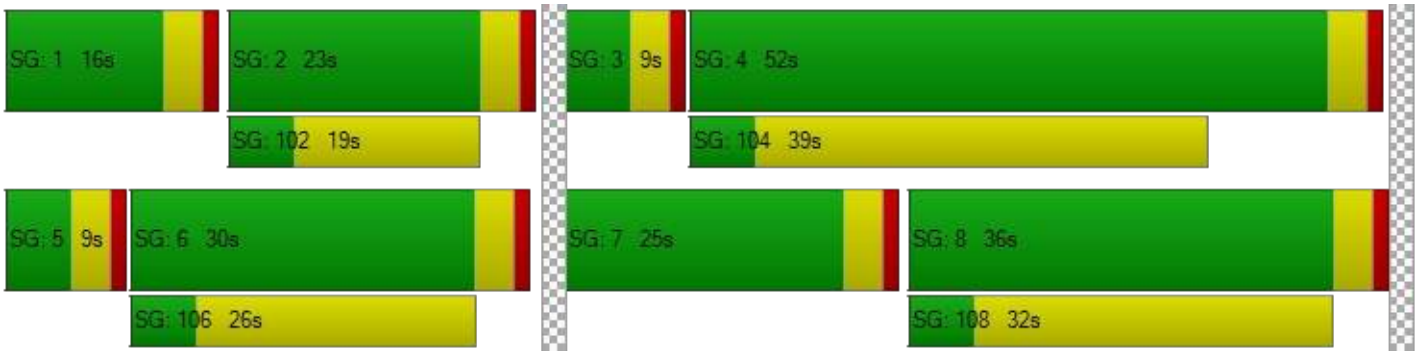
d_M, Delay for Movement [s/veh]	12.11	17.77	14.39	49.77	18.02	14.81	21.79	45.38	43.36	54.19	27.93	31.49
Movement LOS	B	B	B	D	B	B	C	D	D	D	C	C
d_A, Approach Delay [s/veh]	16.83			20.55			41.37			45.92		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	27.61											
Intersection LOS	C											
Intersection V/C	0.512											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.44	41.44	41.44	41.44
l_p,int, Pedestrian LOS Score for Intersection	3.206	3.236	2.435	2.996
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	520	380	640	959
d_b, Bicycle Delay [s]	27.41	32.84	23.15	13.55
l_b,int, Bicycle LOS Score for Intersection	2.329	2.040	1.880	3.530
Bicycle LOS	B	B	A	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Signal Warrants Report For Intersection 42: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E
Minor Approaches	N, S
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets	
	E	N	S
1	95	267	189
2	92	259	183
3	90	254	180
4	85	238	168
5	75	211	149
6	74	208	147
7	73	206	146
8	67	187	132
9	66	184	130
10	65	182	129
11	56	158	112
12	52	147	104
13	51	144	102
14	38	107	76
15	38	107	76
16	27	75	53
17	15	43	30
18	15	43	30
19	9	24	17
20	5	13	9
21	3	8	6
22	1	3	2
23	1	3	2
24	1	3	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	95	2	267	No	No	No	No	No	No	No	No	No	No
2	3	92	2	259	No	No	No	No	No	No	No	No	No	No
3	3	90	2	254	No	No	No	No	No	No	No	No	No	No
4	3	85	2	238	No	No	No	No	No	No	No	No	No	No
5	3	75	2	211	No	No	No	No	No	No	No	No	No	No
6	3	74	2	208	No	No	No	No	No	No	No	No	No	No
7	3	73	2	206	No	No	No	No	No	No	No	No	No	No
8	3	67	2	187	No	No	No	No	No	No	No	No	No	No
9	3	66	2	184	No	No	No	No	No	No	No	No	No	No
10	3	65	2	182	No	No	No	No	No	No	No	No	No	No
11	3	56	2	158	No	No	No	No	No	No	No	No	No	No
12	3	52	2	147	No	No	No	No	No	No	No	No	No	No
13	3	51	2	144	No	No	No	No	No	No	No	No	No	No
14	3	38	2	107	No	No	No	No	No	No	No	No	No	No
15	3	38	2	107	No	No	No	No	No	No	No	No	No	No
16	3	27	2	75	No	No	No	No	No	No	No	No	No	No
17	3	15	2	43	No	No	No	No	No	No	No	No	No	No
18	3	15	2	43	No	No	No	No	No	No	No	No	No	No
19	3	9	2	24	No	No	No	No	No	No	No	No	No	No
20	3	5	2	13	No	No	No	No	No	No	No	No	No	No
21	3	3	2	8	No	No	No	No	No	No	No	No	No	No
22	3	1	2	3	No	No	No	No	No	No	No	No	No	No
23	3	1	2	3	No	No	No	No	No	No	No	No	No	No
24	3	1	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9	11.4
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:44	0:35
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	267	189
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	551	551
Number of Approaches on Intersection	3	3
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 43: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets
	W	N
1	189	152
2	183	147
3	180	144
4	168	135
5	149	120
6	147	119
7	146	117
8	132	106
9	130	105
10	129	103
11	112	90
12	104	84
13	102	82
14	76	61
15	76	61
16	53	43
17	30	24
18	30	24
19	17	14
20	9	8
21	6	5
22	2	2
23	2	2
24	2	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	189	1	152	No	No	No	No	No	No	No	No	No	No
2	3	183	1	147	No	No	No	No	No	No	No	No	No	No
3	3	180	1	144	No	No	No	No	No	No	No	No	No	No
4	3	168	1	135	No	No	No	No	No	No	No	No	No	No
5	3	149	1	120	No	No	No	No	No	No	No	No	No	No
6	3	147	1	119	No	No	No	No	No	No	No	No	No	No
7	3	146	1	117	No	No	No	No	No	No	No	No	No	No
8	3	132	1	106	No	No	No	No	No	No	No	No	No	No
9	3	130	1	105	No	No	No	No	No	No	No	No	No	No
10	3	129	1	103	No	No	No	No	No	No	No	No	No	No
11	3	112	1	90	No	No	No	No	No	No	No	No	No	No
12	3	104	1	84	No	No	No	No	No	No	No	No	No	No
13	3	102	1	82	No	No	No	No	No	No	No	No	No	No
14	3	76	1	61	No	No	No	No	No	No	No	No	No	No
15	3	76	1	61	No	No	No	No	No	No	No	No	No	No
16	3	53	1	43	No	No	No	No	No	No	No	No	No	No
17	3	30	1	24	No	No	No	No	No	No	No	No	No	No
18	3	30	1	24	No	No	No	No	No	No	No	No	No	No
19	3	17	1	14	No	No	No	No	No	No	No	No	No	No
20	3	9	1	8	No	No	No	No	No	No	No	No	No	No
21	3	6	1	5	No	No	No	No	No	No	No	No	No	No
22	3	2	1	2	No	No	No	No	No	No	No	No	No	No
23	3	2	1	2	No	No	No	No	No	No	No	No	No	No
24	3	2	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:35
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	152
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	341
Number of Approaches on Intersection	2
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Appendix D – Horizon With Project Analyses

Intersection Level Of Service Report
Intersection 26: Reserve Loop/PA-31 Street

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.019

Intersection Setup

Name	PA-31 Street		Reserve Loop		Reserve Loop	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	PA-31 Street		Reserve Loop		Reserve Loop	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	3	9	0	0	48
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	17	3	9	0	0	48
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	1	2	0	0	13
Total Analysis Volume [veh/h]	18	3	10	0	0	52
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.00	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.83	8.44	7.33	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.06	0.01	0.02	0.02	0.00	0.00
95th-Percentile Queue Length [ft/ln]	1.44	0.21	0.49	0.49	0.00	0.00
d_A, Approach Delay [s/veh]	8.77		7.33		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.10					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 31: Reverse Loop/PA-40.1 Acc1

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Reserve Loop		Reserve Loop			
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		Reserve Loop			
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	34	12	5	14	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	34	12	5	14	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	9	3	1	4	4
Total Analysis Volume [veh/h]	5	37	13	5	15	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	7.26	0.00	0.00	0.00	8.94	8.50
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.21	0.21	0.00	0.00	2.32	2.32
d_A, Approach Delay [s/veh]	0.86		0.00		8.72	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.31					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 32: Reverse Loop/PA-40.1 Acc2

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name	Reserve Loop		Reserve Loop			
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		Reserve Loop			
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	25	21	5	14	14
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	25	21	5	14	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	7	6	1	4	4
Total Analysis Volume [veh/h]	5	27	23	5	15	15
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	7.28	0.00	0.00	0.00	8.94	8.54
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.09	0.09
95th-Percentile Queue Length [ft/ln]	0.21	0.21	0.00	0.00	2.34	2.34
d_A, Approach Delay [s/veh]	1.14		0.00		8.74	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	3.32					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 33: Reverse Loop/PA-40.2 Acc1

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name	Reserve Loop		Reserve Loop			
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		Reserve Loop			
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	4	20	31	4	10	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4	20	31	4	10	11
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	5	8	1	3	3
Total Analysis Volume [veh/h]	4	22	34	4	11	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.29	0.00	0.00	0.00	8.93	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.01	0.01	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.17	0.17	0.00	0.00	1.79	1.79
d_A, Approach Delay [s/veh]	1.12		0.00		8.74	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.65					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 34: 38th Parkway/Reserve Loop (E)

Control Type:	Two-way stop	Delay (sec / veh):	13.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.039

Intersection Setup

Name	Reserve Loop		38th Parkway		38th Parkway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	0	293	128	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	26	18	98	29	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	26	18	391	157	6
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	7	5	106	43	2
Total Analysis Volume [veh/h]	17	28	20	425	171	7
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.64	9.28	7.61	0.00	0.00	0.00
Movement LOS	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.12	0.10	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.05	2.50	1.09	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.93		0.34		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.96					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 35: 38th Pkwy/PA-40.2 Acc2/PA-46.2 Acc1/PA-46.1 Acc4

Control Type:	Two-way stop	Delay (sec / veh):	16.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name							38th Parkway			38th Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							38th Parkway			38th Parkway		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	293	0	0	128	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	20	9	0	12	5	87	5	5	47	3
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	0	20	9	0	12	5	380	5	5	175	3
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	4	0	5	2	0	3	1	103	1	1	48	1
Total Analysis Volume [veh/h]	17	0	22	10	0	13	5	413	5	5	190	3
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.52	0.00	0.02	0.24	0.00
d_M, Delay for Movement [s/veh]	7.27	0.00	0.00	7.28	0.00	0.00	11.08	14.42	13.23	16.49	10.93	9.78
Movement LOS	A	A	A	A	A	A	B	B	B	C	B	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.02	0.02	0.02	0.03	3.11	3.11	0.05	0.94	0.94
95th-Percentile Queue Length [ft/ln]	0.86	0.86	0.86	0.50	0.50	0.50	0.63	77.73	77.73	1.20	23.49	23.49
d_A, Approach Delay [s/veh]	3.17			3.16			14.36			11.05		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	12.39											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 36: Reverse Loop/PA-40.1 Acc3/PA-46.2 Acc2

Control Type:	Two-way stop	Delay (sec / veh):	16.0
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name							38th Parkway			38th Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							38th Parkway			38th Parkway		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	293	0	0	128	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	12	11	0	17	6	74	5	4	68	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	0	12	11	0	17	6	367	5	4	196	4
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	4	0	3	3	0	5	2	100	1	1	53	1
Total Analysis Volume [veh/h]	17	0	13	12	0	18	7	399	5	4	213	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.50	0.00	0.01	0.27	0.00
d_M, Delay for Movement [s/veh]	7.28	0.00	0.00	7.26	0.00	0.00	11.51	14.06	12.89	15.95	11.22	10.03
Movement LOS	A	A	A	A	A	A	B	B	B	C	B	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.02	0.02	0.02	0.04	2.90	2.90	0.04	1.11	1.11
95th-Percentile Queue Length [ft/ln]	0.86	0.86	0.86	0.60	0.60	0.60	0.95	72.61	72.61	0.91	27.65	27.65
d_A, Approach Delay [s/veh]	4.12			2.90			14.00			11.29		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	12.22											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 37: Reverse Loop/PA-40.1 Acc4/PA 46.2 Acc3

Control Type:	Two-way stop	Delay (sec / veh):	15.5
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.012

Intersection Setup

Name							38th Parkway			38th Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							38th Parkway			38th Parkway		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	293	0	0	128	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	0	12	11	0	17	6	63	5	4	92	4
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	0	12	11	0	17	6	356	5	4	220	4
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	4	0	3	3	0	5	2	97	1	1	60	1
Total Analysis Volume [veh/h]	17	0	13	12	0	18	7	387	5	4	239	4
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.01	0.49	0.00	0.01	0.30	0.00
d_M, Delay for Movement [s/veh]	7.28	0.00	0.00	7.26	0.00	0.00	11.95	13.80	12.63	15.53	11.51	10.32
Movement LOS	A	A	A	A	A	A	B	B	B	C	B	B
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.03	0.02	0.02	0.02	0.04	2.75	2.75	0.04	1.29	1.29
95th-Percentile Queue Length [ft/ln]	0.86	0.86	0.86	0.60	0.60	0.60	1.01	68.68	68.68	0.88	32.33	32.33
d_A, Approach Delay [s/veh]	4.12			2.90			13.75			11.56		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	12.11											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 38: Reverse Loop/PA-40.1 Acc5

Control Type:	Two-way stop	Delay (sec / veh):	14.0
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.026

Intersection Setup

Name			38th Parkway		38th Parkway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	0	293	128	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	10	18	6	64	122	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	10	18	6	357	250	3
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	5	2	97	68	1
Total Analysis Volume [veh/h]	11	20	7	388	272	3
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.01	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	13.97	10.04	7.81	0.00	0.00	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.17	0.17	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.15	4.15	0.41	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.44		0.14		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.58					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 39: 38th Pkwy/PA-46.2 Acc4/PA-46.1 Acc1

Control Type:	Two-way stop	Delay (sec / veh):	14.6
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.090

Intersection Setup

Name			38th Parkway		38th Parkway	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	293	0	0	128
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	16	54	14	6	134
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	34	16	347	14	6	262
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	4	94	4	2	71
Total Analysis Volume [veh/h]	37	17	377	15	7	285
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.03	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	14.60	10.57	0.00	0.00	8.10	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.29	0.08	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft/ln]	7.35	1.97	0.00	0.00	0.45	0.00
d_A, Approach Delay [s/veh]	13.33		0.00		0.19	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.05					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 40: 38th Parkway/Reserve Loop (W)

Control Type:	Two-way stop	Delay (sec / veh):	17.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.245

Intersection Setup

Name	Reserve Loop		38th Parkway		38th Parkway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		38th Parkway		38th Parkway	
Base Volume Input [veh/h]	56	56	74	237	54	74
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	31	6	24	37	89	79
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	87	62	98	274	143	153
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	24	17	27	74	39	42
Total Analysis Volume [veh/h]	95	67	107	298	155	166
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.25	0.08	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	17.29	9.37	8.18	0.00	0.00	0.00
Movement LOS	C	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.95	0.24	0.28	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	23.76	6.09	7.08	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.01		2.16		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	3.54					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 41: 38th Pkwy/PA 46.1 Acc2

Control Type:	Two-way stop	Delay (sec / veh):	13.4
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.027

Intersection Setup

Name			38th Parkway		38th Parkway	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	311	0	0	110
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	20	42	7	7	88
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	20	353	7	7	198
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	5	96	2	2	54
Total Analysis Volume [veh/h]	12	22	384	8	8	215
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.03	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.42	10.86	0.00	0.00	8.11	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.19	0.19	0.00	0.00	0.02	0.00
95th-Percentile Queue Length [ft/ln]	4.78	4.78	0.00	0.00	0.52	0.00
d_A, Approach Delay [s/veh]	11.76		0.00		0.29	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.72					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 42: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	14.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.479

Intersection Setup

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	1	0	1
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Base Volume Input [veh/h]	0	296	0	0	55	55	0	0	0	15	65	15
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	15	0	0	61	39	0	0	0	13	3	34
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	311	0	0	116	94	0	0	0	28	68	49
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	85	0	0	32	26	0	0	0	8	18	13
Total Analysis Volume [veh/h]	0	338	0	0	126	102	0	0	0	30	74	53
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.48	0.00	0.00	0.17	0.10	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.07	14.69	0.00	0.00	10.72	8.89	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B			B	A				A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	2.61	0.00	0.00	0.60	0.33	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	65.15	0.00	0.00	14.90	8.25	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	14.69			9.90			0.00			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	9.99											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 43: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	20.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.407

Intersection Setup

Name	38th Parkway		Th Au			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	38th Parkway		Th Au			
Base Volume Input [veh/h]	70	0	296	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	74	0	15	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	144	0	311	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	39	0	85	0	0	0
Total Analysis Volume [veh/h]	157	0	338	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.41	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	20.60	0.00	0.00	0.00	0.00	0.00
Movement LOS	C		A	A		
95th-Percentile Queue Length [veh/ln]	1.93	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	48.25	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.60		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	6.53					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 48: 38th Parkway/Powhaton Road

Control Type:	Signalized	Delay (sec / veh):	19.3
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.399

Intersection Setup

Name	Powhaton Road			Powhaton Road			38th Parkway					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	1	1	0	1	2	0	1
Entry Pocket Length [ft]	150.0	100.0	150.0	150.0	100.0	150.0	200.0	100.0	200.0	200.0	100.0	200.0
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Powhaton Road			Powhaton Road			38th Parkway					
Base Volume Input [veh/h]	73	974	614	64	711	30	20	113	132	151	31	406
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	0	0	0	0	13	39	0	75	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	307	0	0	22	0	0	104	0	0	203
Total Hourly Volume [veh/h]	95	974	307	64	711	21	59	113	103	151	31	203
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	26	265	83	17	193	6	16	31	28	41	8	55
Total Analysis Volume [veh/h]	103	1059	334	70	773	23	64	123	112	164	34	221
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtP	Permi	Permi	Protec	Permi	Permi	ProtP	Permi	Permi	Protec	Permi	Permi
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	9	30	0	9	30	0	13	36	0	25	48	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	14	0	0	27	0	0	34	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	68	59	59	4	59	59	24	14	14	7	16	16
g / C, Green / Cycle	0.68	0.59	0.59	0.04	0.59	0.59	0.24	0.13	0.13	0.07	0.16	0.16
(v / s)_i Volume / Saturation Flow Rate	0.13	0.21	0.21	0.02	0.15	0.01	0.05	0.07	0.07	0.05	0.02	0.14
s, saturation flow rate [veh/h]	793	5094	1589	3459	5094	1589	1292	1870	1589	3459	1870	1589
c, Capacity [veh/h]	586	3010	939	152	2988	932	410	253	215	242	304	259
d1, Uniform Delay [s]	6.03	10.58	10.61	46.71	10.09	8.68	29.58	40.06	40.26	45.46	35.74	40.76
k, delay calibration	0.11	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.14	0.32	1.05	2.17	0.21	0.05	0.18	1.44	1.94	3.30	0.16	7.86
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.18	0.35	0.36	0.46	0.26	0.02	0.16	0.49	0.52	0.68	0.11	0.85
d, Delay for Lane Group [s/veh]	6.17	10.91	11.66	48.88	10.30	8.73	29.76	41.50	42.20	48.76	35.91	48.62
Lane Group LOS	A	B	B	D	B	A	C	D	D	D	D	D
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.69	3.86	3.85	0.89	2.66	0.21	1.22	2.89	2.67	2.09	0.72	5.80
50th-Percentile Queue Length [ft/ln]	17.34	96.41	96.21	22.32	66.53	5.32	30.57	72.19	66.65	52.23	18.00	145.0
95th-Percentile Queue Length [veh/ln]	1.25	6.94	6.93	1.61	4.79	0.38	2.20	5.20	4.80	3.76	1.30	9.75
95th-Percentile Queue Length [ft/ln]	31.21	173.5	173.1	40.17	119.7	9.57	55.02	129.9	119.9	94.01	32.40	243.7

Movement, Approach, & Intersection Results

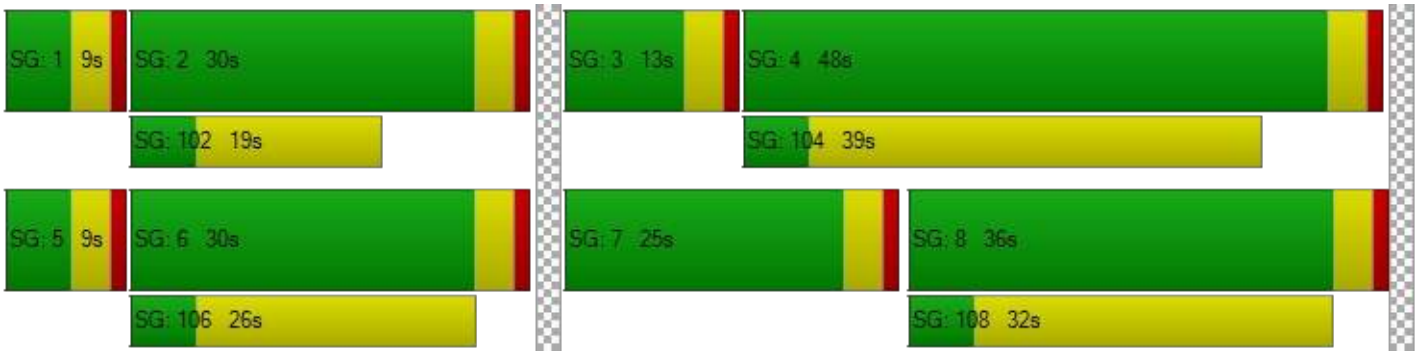
d_M, Delay for Movement [s/veh]	6.17	10.91	11.66	48.88	10.30	8.73	29.76	41.50	42.20	48.76	35.91	48.62
Movement LOS	A	B	B	D	B	A	C	D	D	D	D	D
d_A, Approach Delay [s/veh]	10.75			13.37			39.25			47.64		
Approach LOS	B			B			D			D		
d_I, Intersection Delay [s/veh]	19.27											
Intersection LOS	B											
Intersection V/C	0.399											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.44	41.44	41.44	41.44
l_p,int, Pedestrian LOS Score for Intersection	3.529	3.258	2.517	2.985
Crosswalk LOS	D	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	520	520	640	879
d_b, Bicycle Delay [s]	27.41	27.41	23.15	15.71
l_b,int, Bicycle LOS Score for Intersection	2.551	2.048	2.225	2.586
Bicycle LOS	B	B	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 82: TAH Pkwy/PA-46.1 Acc3

Control Type:	Two-way stop	Delay (sec / veh):	8.8
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.030

Intersection Setup

Name			Th Au		Th Au	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	435.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Th Au		Th Au	
Base Volume Input [veh/h]	0	0	0	0	100	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	27	0	0	23	8
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	27	0	0	123	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	7	0	0	33	2
Total Analysis Volume [veh/h]	0	29	0	0	134	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	8.77	0.00	0.00	0.00	0.00
Movement LOS		A			A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.09	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.28	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.77		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.48					
Intersection LOS	A					

Signal Warrants Report For Intersection 26: Reserve Loop/PA-31 Street

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	48	9	20
2	47	9	19
3	46	9	19
4	43	8	18
5	38	7	16
6	37	7	16
7	37	7	15
8	34	6	14
9	33	6	14
10	33	6	14
11	28	5	12
12	26	5	11
13	26	5	11
14	19	4	8
15	19	4	8
16	13	3	6
17	8	1	3
18	8	1	3
19	4	1	2
20	2	0	1
21	1	0	1
22	0	0	0
23	0	0	0
24	0	0	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	57	2	20	No	No	No	No	No	No	No	No	No	No
2	1	56	2	19	No	No	No	No	No	No	No	No	No	No
3	1	55	2	19	No	No	No	No	No	No	No	No	No	No
4	1	51	2	18	No	No	No	No	No	No	No	No	No	No
5	1	45	2	16	No	No	No	No	No	No	No	No	No	No
6	1	44	2	16	No	No	No	No	No	No	No	No	No	No
7	1	44	2	15	No	No	No	No	No	No	No	No	No	No
8	1	40	2	14	No	No	No	No	No	No	No	No	No	No
9	1	39	2	14	No	No	No	No	No	No	No	No	No	No
10	1	39	2	14	No	No	No	No	No	No	No	No	No	No
11	1	33	2	12	No	No	No	No	No	No	No	No	No	No
12	1	31	2	11	No	No	No	No	No	No	No	No	No	No
13	1	31	2	11	No	No	No	No	No	No	No	No	No	No
14	1	23	2	8	No	No	No	No	No	No	No	No	No	No
15	1	23	2	8	No	No	No	No	No	No	No	No	No	No
16	1	16	2	6	No	No	No	No	No	No	No	No	No	No
17	1	9	2	3	No	No	No	No	No	No	No	No	No	No
18	1	9	2	3	No	No	No	No	No	No	No	No	No	No
19	1	5	2	2	No	No	No	No	No	No	No	No	No	No
20	1	2	2	1	No	No	No	No	No	No	No	No	No	No
21	1	1	2	1	No	No	No	No	No	No	No	No	No	No
22	1	0	2	0	No	No	No	No	No	No	No	No	No	No
23	1	0	2	0	No	No	No	No	No	No	No	No	No	No
24	1	0	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.8
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	20
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	77
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: Reverse Loop/PA-40.1 Acc1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	39	17	28
2	38	16	27
3	37	16	27
4	35	15	25
5	31	13	22
6	30	13	22
7	30	13	22
8	27	12	20
9	27	12	19
10	27	12	19
11	23	10	17
12	21	9	15
13	21	9	15
14	16	7	11
15	16	7	11
16	11	5	8
17	6	3	4
18	6	3	4
19	4	2	3
20	2	1	1
21	1	1	1
22	0	0	0
23	0	0	0
24	0	0	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	56	1	28	No	No	No	No	No	No	No	No	No	No
2	1	54	1	27	No	No	No	No	No	No	No	No	No	No
3	1	53	1	27	No	No	No	No	No	No	No	No	No	No
4	1	50	1	25	No	No	No	No	No	No	No	No	No	No
5	1	44	1	22	No	No	No	No	No	No	No	No	No	No
6	1	43	1	22	No	No	No	No	No	No	No	No	No	No
7	1	43	1	22	No	No	No	No	No	No	No	No	No	No
8	1	39	1	20	No	No	No	No	No	No	No	No	No	No
9	1	39	1	19	No	No	No	No	No	No	No	No	No	No
10	1	39	1	19	No	No	No	No	No	No	No	No	No	No
11	1	33	1	17	No	No	No	No	No	No	No	No	No	No
12	1	30	1	15	No	No	No	No	No	No	No	No	No	No
13	1	30	1	15	No	No	No	No	No	No	No	No	No	No
14	1	23	1	11	No	No	No	No	No	No	No	No	No	No
15	1	23	1	11	No	No	No	No	No	No	No	No	No	No
16	1	16	1	8	No	No	No	No	No	No	No	No	No	No
17	1	9	1	4	No	No	No	No	No	No	No	No	No	No
18	1	9	1	4	No	No	No	No	No	No	No	No	No	No
19	1	6	1	3	No	No	No	No	No	No	No	No	No	No
20	1	3	1	1	No	No	No	No	No	No	No	No	No	No
21	1	2	1	1	No	No	No	No	No	No	No	No	No	No
22	1	0	1	0	No	No	No	No	No	No	No	No	No	No
23	1	0	1	0	No	No	No	No	No	No	No	No	No	No
24	1	0	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	28
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	84
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 32: Reverse Loop/PA-40.1 Acc2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	30	26	28
2	29	25	27
3	29	25	27
4	27	23	25
5	24	21	22
6	23	20	22
7	23	20	22
8	21	18	20
9	21	18	19
10	20	18	19
11	18	15	17
12	17	14	15
13	16	14	15
14	12	10	11
15	12	10	11
16	8	7	8
17	5	4	4
18	5	4	4
19	3	2	3
20	2	1	1
21	1	1	1
22	0	0	0
23	0	0	0
24	0	0	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	56	1	28	No	No	No	No	No	No	No	No	No	No
2	1	54	1	27	No	No	No	No	No	No	No	No	No	No
3	1	54	1	27	No	No	No	No	No	No	No	No	No	No
4	1	50	1	25	No	No	No	No	No	No	No	No	No	No
5	1	45	1	22	No	No	No	No	No	No	No	No	No	No
6	1	43	1	22	No	No	No	No	No	No	No	No	No	No
7	1	43	1	22	No	No	No	No	No	No	No	No	No	No
8	1	39	1	20	No	No	No	No	No	No	No	No	No	No
9	1	39	1	19	No	No	No	No	No	No	No	No	No	No
10	1	38	1	19	No	No	No	No	No	No	No	No	No	No
11	1	33	1	17	No	No	No	No	No	No	No	No	No	No
12	1	31	1	15	No	No	No	No	No	No	No	No	No	No
13	1	30	1	15	No	No	No	No	No	No	No	No	No	No
14	1	22	1	11	No	No	No	No	No	No	No	No	No	No
15	1	22	1	11	No	No	No	No	No	No	No	No	No	No
16	1	15	1	8	No	No	No	No	No	No	No	No	No	No
17	1	9	1	4	No	No	No	No	No	No	No	No	No	No
18	1	9	1	4	No	No	No	No	No	No	No	No	No	No
19	1	5	1	3	No	No	No	No	No	No	No	No	No	No
20	1	3	1	1	No	No	No	No	No	No	No	No	No	No
21	1	2	1	1	No	No	No	No	No	No	No	No	No	No
22	1	0	1	0	No	No	No	No	No	No	No	No	No	No
23	1	0	1	0	No	No	No	No	No	No	No	No	No	No
24	1	0	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	28
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	84
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 33: Reverse Loop/PA-40.2 Acc1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	35	24	21
2	34	23	20
3	33	23	20
4	31	21	19
5	28	19	17
6	27	19	16
7	27	18	16
8	25	17	15
9	24	17	14
10	24	16	14
11	21	14	12
12	19	13	12
13	19	13	11
14	14	10	8
15	14	10	8
16	10	7	6
17	6	4	3
18	6	4	3
19	3	2	2
20	2	1	1
21	1	1	1
22	0	0	0
23	0	0	0
24	0	0	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	59	1	21	No	No	No	No	No	No	No	No	No	No
2	1	57	1	20	No	No	No	No	No	No	No	No	No	No
3	1	56	1	20	No	No	No	No	No	No	No	No	No	No
4	1	52	1	19	No	No	No	No	No	No	No	No	No	No
5	1	47	1	17	No	No	No	No	No	No	No	No	No	No
6	1	46	1	16	No	No	No	No	No	No	No	No	No	No
7	1	45	1	16	No	No	No	No	No	No	No	No	No	No
8	1	42	1	15	No	No	No	No	No	No	No	No	No	No
9	1	41	1	14	No	No	No	No	No	No	No	No	No	No
10	1	40	1	14	No	No	No	No	No	No	No	No	No	No
11	1	35	1	12	No	No	No	No	No	No	No	No	No	No
12	1	32	1	12	No	No	No	No	No	No	No	No	No	No
13	1	32	1	11	No	No	No	No	No	No	No	No	No	No
14	1	24	1	8	No	No	No	No	No	No	No	No	No	No
15	1	24	1	8	No	No	No	No	No	No	No	No	No	No
16	1	17	1	6	No	No	No	No	No	No	No	No	No	No
17	1	10	1	3	No	No	No	No	No	No	No	No	No	No
18	1	10	1	3	No	No	No	No	No	No	No	No	No	No
19	1	5	1	2	No	No	No	No	No	No	No	No	No	No
20	1	3	1	1	No	No	No	No	No	No	No	No	No	No
21	1	2	1	1	No	No	No	No	No	No	No	No	No	No
22	1	0	1	0	No	No	No	No	No	No	No	No	No	No
23	1	0	1	0	No	No	No	No	No	No	No	No	No	No
24	1	0	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.7
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	21
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	80
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 34: 38th Parkway/Reserve Loop (E)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	163	409	42
2	158	397	41
3	155	389	40
4	145	364	37
5	129	323	33
6	127	319	33
7	126	315	32
8	114	286	29
9	112	282	29
10	111	278	29
11	96	241	25
12	90	225	23
13	88	221	23
14	65	164	17
15	65	164	17
16	46	115	12
17	26	65	7
18	26	65	7
19	15	37	4
20	8	20	2
21	5	12	1
22	2	4	0
23	2	4	0
24	2	4	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	572	2	42	No	No	No	No	No	No	No	No	No	No
2	2	555	2	41	No	No	No	No	No	No	No	No	No	No
3	2	544	2	40	No	No	No	No	No	No	No	No	No	No
4	2	509	2	37	No	No	No	No	No	No	No	No	No	No
5	2	452	2	33	No	No	No	No	No	No	No	No	No	No
6	2	446	2	33	No	No	No	No	No	No	No	No	No	No
7	2	441	2	32	No	No	No	No	No	No	No	No	No	No
8	2	400	2	29	No	No	No	No	No	No	No	No	No	No
9	2	394	2	29	No	No	No	No	No	No	No	No	No	No
10	2	389	2	29	No	No	No	No	No	No	No	No	No	No
11	2	337	2	25	No	No	No	No	No	No	No	No	No	No
12	2	315	2	23	No	No	No	No	No	No	No	No	No	No
13	2	309	2	23	No	No	No	No	No	No	No	No	No	No
14	2	229	2	17	No	No	No	No	No	No	No	No	No	No
15	2	229	2	17	No	No	No	No	No	No	No	No	No	No
16	2	161	2	12	No	No	No	No	No	No	No	No	No	No
17	2	91	2	7	No	No	No	No	No	No	No	No	No	No
18	2	91	2	7	No	No	No	No	No	No	No	No	No	No
19	2	52	2	4	No	No	No	No	No	No	No	No	No	No
20	2	28	2	2	No	No	No	No	No	No	No	No	No	No
21	2	17	2	1	No	No	No	No	No	No	No	No	No	No
22	2	6	2	0	No	No	No	No	No	No	No	No	No	No
23	2	6	2	0	No	No	No	No	No	No	No	No	No	No
24	2	6	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	42
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	614
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 35: 38th Pkwy/PA-40.2 Acc2/PA-46.2 Acc1/PA-46.1 Acc4

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	21	36	183	390
2	20	35	178	378
3	20	34	174	371
4	19	32	163	347
5	17	28	145	308
6	16	28	143	304
7	16	28	141	300
8	15	25	128	273
9	14	25	126	269
10	14	24	124	265
11	12	21	108	230
12	12	20	101	215
13	11	19	99	211
14	8	14	73	156
15	8	14	73	156
16	6	10	51	109
17	3	6	29	62
18	3	6	29	62
19	2	3	16	35
20	1	2	9	20
21	1	1	5	12
22	0	0	2	4
23	0	0	2	4
24	0	0	2	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	57	2	390	No	No	No	No	No	No	No	No	No	No
2	1	55	2	378	No	No	No	No	No	No	No	No	No	No
3	1	54	2	371	No	No	No	No	No	No	No	No	No	No
4	1	51	2	347	No	No	No	No	No	No	No	No	No	No
5	1	45	2	308	No	No	No	No	No	No	No	No	No	No
6	1	44	2	304	No	No	No	No	No	No	No	No	No	No
7	1	44	2	300	No	No	No	No	No	No	No	No	No	No
8	1	40	2	273	No	No	No	No	No	No	No	No	No	No
9	1	39	2	269	No	No	No	No	No	No	No	No	No	No
10	1	38	2	265	No	No	No	No	No	No	No	No	No	No
11	1	33	2	230	No	No	No	No	No	No	No	No	No	No
12	1	32	2	215	No	No	No	No	No	No	No	No	No	No
13	1	30	2	211	No	No	No	No	No	No	No	No	No	No
14	1	22	2	156	No	No	No	No	No	No	No	No	No	No
15	1	22	2	156	No	No	No	No	No	No	No	No	No	No
16	1	16	2	109	No	No	No	No	No	No	No	No	No	No
17	1	9	2	62	No	No	No	No	No	No	No	No	No	No
18	1	9	2	62	No	No	No	No	No	No	No	No	No	No
19	1	5	2	35	No	No	No	No	No	No	No	No	No	No
20	1	3	2	20	No	No	No	No	No	No	No	No	No	No
21	1	2	2	12	No	No	No	No	No	No	No	No	No	No
22	1	0	2	4	No	No	No	No	No	No	No	No	No	No
23	1	0	2	4	No	No	No	No	No	No	No	No	No	No
24	1	0	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.1	14.4
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:33	1:33
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	183	390
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	630	630
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 36: Reverse Loop/PA-40.1 Acc3/PA-46.2 Acc2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	28	28	204	378
2	27	27	198	367
3	27	27	194	359
4	25	25	182	336
5	22	22	161	299
6	22	22	159	295
7	22	22	157	291
8	20	20	143	265
9	19	19	141	261
10	19	19	139	257
11	17	17	120	223
12	15	15	112	208
13	15	15	110	204
14	11	11	82	151
15	11	11	82	151
16	8	8	57	106
17	4	4	33	60
18	4	4	33	60
19	3	3	18	34
20	1	1	10	19
21	1	1	6	11
22	0	0	2	4
23	0	0	2	4
24	0	0	2	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	56	2	378	No	No	No	No	No	No	No	No	No	No
2	1	54	2	367	No	No	No	No	No	No	No	No	No	No
3	1	54	2	359	No	No	No	No	No	No	No	No	No	No
4	1	50	2	336	No	No	No	No	No	No	No	No	No	No
5	1	44	2	299	No	No	No	No	No	No	No	No	No	No
6	1	44	2	295	No	No	No	No	No	No	No	No	No	No
7	1	44	2	291	No	No	No	No	No	No	No	No	No	No
8	1	40	2	265	No	No	No	No	No	No	No	No	No	No
9	1	38	2	261	No	No	No	No	No	No	No	No	No	No
10	1	38	2	257	No	No	No	No	No	No	No	No	No	No
11	1	34	2	223	No	No	No	No	No	No	No	No	No	No
12	1	30	2	208	No	No	No	No	No	No	No	No	No	No
13	1	30	2	204	No	No	No	No	No	No	No	No	No	No
14	1	22	2	151	No	No	No	No	No	No	No	No	No	No
15	1	22	2	151	No	No	No	No	No	No	No	No	No	No
16	1	16	2	106	No	No	No	No	No	No	No	No	No	No
17	1	8	2	60	No	No	No	No	No	No	No	No	No	No
18	1	8	2	60	No	No	No	No	No	No	No	No	No	No
19	1	6	2	34	No	No	No	No	No	No	No	No	No	No
20	1	2	2	19	No	No	No	No	No	No	No	No	No	No
21	1	2	2	11	No	No	No	No	No	No	No	No	No	No
22	1	0	2	4	No	No	No	No	No	No	No	No	No	No
23	1	0	2	4	No	No	No	No	No	No	No	No	No	No
24	1	0	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.3	14
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:38	1:28
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	204	378
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	638	638
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 37: Reverse Loop/PA-40.1 Acc4/PA 46.2 Acc3

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	28	28	228	367
2	27	27	221	356
3	27	27	217	349
4	25	25	203	327
5	22	22	180	290
6	22	22	178	286
7	22	22	176	283
8	20	20	160	257
9	19	19	157	253
10	19	19	155	250
11	17	17	135	217
12	15	15	125	202
13	15	15	123	198
14	11	11	91	147
15	11	11	91	147
16	8	8	64	103
17	4	4	36	59
18	4	4	36	59
19	3	3	21	33
20	1	1	11	18
21	1	1	7	11
22	0	0	2	4
23	0	0	2	4
24	0	0	2	4

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	56	2	367	No	No	No	No	No	No	No	No	No	No
2	1	54	2	356	No	No	No	No	No	No	No	No	No	No
3	1	54	2	349	No	No	No	No	No	No	No	No	No	No
4	1	50	2	327	No	No	No	No	No	No	No	No	No	No
5	1	44	2	290	No	No	No	No	No	No	No	No	No	No
6	1	44	2	286	No	No	No	No	No	No	No	No	No	No
7	1	44	2	283	No	No	No	No	No	No	No	No	No	No
8	1	40	2	257	No	No	No	No	No	No	No	No	No	No
9	1	38	2	253	No	No	No	No	No	No	No	No	No	No
10	1	38	2	250	No	No	No	No	No	No	No	No	No	No
11	1	34	2	217	No	No	No	No	No	No	No	No	No	No
12	1	30	2	202	No	No	No	No	No	No	No	No	No	No
13	1	30	2	198	No	No	No	No	No	No	No	No	No	No
14	1	22	2	147	No	No	No	No	No	No	No	No	No	No
15	1	22	2	147	No	No	No	No	No	No	No	No	No	No
16	1	16	2	103	No	No	No	No	No	No	No	No	No	No
17	1	8	2	59	No	No	No	No	No	No	No	No	No	No
18	1	8	2	59	No	No	No	No	No	No	No	No	No	No
19	1	6	2	33	No	No	No	No	No	No	No	No	No	No
20	1	2	2	18	No	No	No	No	No	No	No	No	No	No
21	1	2	2	11	No	No	No	No	No	No	No	No	No	No
22	1	0	2	4	No	No	No	No	No	No	No	No	No	No
23	1	0	2	4	No	No	No	No	No	No	No	No	No	No
24	1	0	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.6	13.8
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:43	1:24
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	228	367
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	651	651
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 38: Reverse Loop/PA-40.1 Acc5

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	253	363	28
2	245	352	27
3	240	345	27
4	225	323	25
5	200	287	22
6	197	283	22
7	195	280	22
8	177	254	20
9	175	250	19
10	172	247	19
11	149	214	17
12	139	200	15
13	137	196	15
14	101	145	11
15	101	145	11
16	71	102	8
17	40	58	4
18	40	58	4
19	23	33	3
20	13	18	1
21	8	11	1
22	3	4	0
23	3	4	0
24	3	4	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	616	1	28	No	No	No	No	No	No	No	No	No	No
2	2	597	1	27	No	No	No	No	No	No	No	No	No	No
3	2	585	1	27	No	No	No	No	No	No	No	No	No	No
4	2	548	1	25	No	No	No	No	No	No	No	No	No	No
5	2	487	1	22	No	No	No	No	No	No	No	No	No	No
6	2	480	1	22	No	No	No	No	No	No	No	No	No	No
7	2	475	1	22	No	No	No	No	No	No	No	No	No	No
8	2	431	1	20	No	No	No	No	No	No	No	No	No	No
9	2	425	1	19	No	No	No	No	No	No	No	No	No	No
10	2	419	1	19	No	No	No	No	No	No	No	No	No	No
11	2	363	1	17	No	No	No	No	No	No	No	No	No	No
12	2	339	1	15	No	No	No	No	No	No	No	No	No	No
13	2	333	1	15	No	No	No	No	No	No	No	No	No	No
14	2	246	1	11	No	No	No	No	No	No	No	No	No	No
15	2	246	1	11	No	No	No	No	No	No	No	No	No	No
16	2	173	1	8	No	No	No	No	No	No	No	No	No	No
17	2	98	1	4	No	No	No	No	No	No	No	No	No	No
18	2	98	1	4	No	No	No	No	No	No	No	No	No	No
19	2	56	1	3	No	No	No	No	No	No	No	No	No	No
20	2	31	1	1	No	No	No	No	No	No	No	No	No	No
21	2	19	1	1	No	No	No	No	No	No	No	No	No	No
22	2	7	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:05
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	28
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	644
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 39: 38th Pkwy/PA-46.2 Acc4/PA-46.1 Acc1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	268	361	50
2	260	350	49
3	255	343	48
4	239	321	45
5	212	285	40
6	209	282	39
7	206	278	39
8	188	253	35
9	185	249	35
10	182	245	34
11	158	213	30
12	147	199	28
13	145	195	27
14	107	144	20
15	107	144	20
16	75	101	14
17	43	58	8
18	43	58	8
19	24	32	5
20	13	18	3
21	8	11	2
22	3	4	1
23	3	4	1
24	3	4	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	629	2	50	No	No	No	No	No	No	No	No	No	No
2	2	610	2	49	No	No	No	No	No	No	No	No	No	No
3	2	598	2	48	No	No	No	No	No	No	No	No	No	No
4	2	560	2	45	No	No	No	No	No	No	No	No	No	No
5	2	497	2	40	No	No	No	No	No	No	No	No	No	No
6	2	491	2	39	No	No	No	No	No	No	No	No	No	No
7	2	484	2	39	No	No	No	No	No	No	No	No	No	No
8	2	441	2	35	No	No	No	No	No	No	No	No	No	No
9	2	434	2	35	No	No	No	No	No	No	No	No	No	No
10	2	427	2	34	No	No	No	No	No	No	No	No	No	No
11	2	371	2	30	No	No	No	No	No	No	No	No	No	No
12	2	346	2	28	No	No	No	No	No	No	No	No	No	No
13	2	340	2	27	No	No	No	No	No	No	No	No	No	No
14	2	251	2	20	No	No	No	No	No	No	No	No	No	No
15	2	251	2	20	No	No	No	No	No	No	No	No	No	No
16	2	176	2	14	No	No	No	No	No	No	No	No	No	No
17	2	101	2	8	No	No	No	No	No	No	No	No	No	No
18	2	101	2	8	No	No	No	No	No	No	No	No	No	No
19	2	56	2	5	No	No	No	No	No	No	No	No	No	No
20	2	31	2	3	No	No	No	No	No	No	No	No	No	No
21	2	19	2	2	No	No	No	No	No	No	No	No	No	No
22	2	7	2	1	No	No	No	No	No	No	No	No	No	No
23	2	7	2	1	No	No	No	No	No	No	No	No	No	No
24	2	7	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.3
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:11
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	50
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	679
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 40: 38th Parkway/Reserve Loop (W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	296	372	149
2	287	361	145
3	281	353	142
4	263	331	133
5	234	294	118
6	231	290	116
7	228	286	115
8	207	260	104
9	204	257	103
10	201	253	101
11	175	219	88
12	163	205	82
13	160	201	80
14	118	149	60
15	118	149	60
16	83	104	42
17	47	60	24
18	47	60	24
19	27	33	13
20	15	19	7
21	9	11	4
22	3	4	1
23	3	4	1
24	3	4	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	668	2	149	No	No	Yes	Yes	No	No	Yes	Yes	No	No
2	2	648	2	145	No	No	Yes	Yes	No	No	Yes	Yes	No	No
3	2	634	2	142	No	No	Yes	Yes	No	No	Yes	Yes	No	No
4	2	594	2	133	No	No	No	Yes	No	No	No	Yes	No	No
5	2	528	2	118	No	No	No	Yes	No	No	No	Yes	No	No
6	2	521	2	116	No	No	No	Yes	No	No	No	Yes	No	No
7	2	514	2	115	No	No	No	Yes	No	No	No	Yes	No	No
8	2	467	2	104	No	No	No	No	No	No	No	No	No	No
9	2	461	2	103	No	No	No	No	No	No	No	No	No	No
10	2	454	2	101	No	No	No	No	No	No	No	No	No	No
11	2	394	2	88	No	No	No	No	No	No	No	No	No	No
12	2	368	2	82	No	No	No	No	No	No	No	No	No	No
13	2	361	2	80	No	No	No	No	No	No	No	No	No	No
14	2	267	2	60	No	No	No	No	No	No	No	No	No	No
15	2	267	2	60	No	No	No	No	No	No	No	No	No	No
16	2	187	2	42	No	No	No	No	No	No	No	No	No	No
17	2	107	2	24	No	No	No	No	No	No	No	No	No	No
18	2	107	2	24	No	No	No	No	No	No	No	No	No	No
19	2	60	2	13	No	No	No	No	No	No	No	No	No	No
20	2	34	2	7	No	No	No	No	No	No	No	No	No	No
21	2	20	2	4	No	No	No	No	No	No	No	No	No	No
22	2	7	2	1	No	No	No	No	No	No	No	No	No	No
23	2	7	2	1	No	No	No	No	No	No	No	No	No	No
24	2	7	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	3	7	0	0	3	7	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	14
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:34
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	149
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	817
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 41: 38th Pkwy/PA 46.1 Acc2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	205	360	31
2	199	349	30
3	195	342	29
4	182	320	28
5	162	284	24
6	160	281	24
7	158	277	24
8	144	252	22
9	141	248	21
10	139	245	21
11	121	212	18
12	113	198	17
13	111	194	17
14	82	144	12
15	82	144	12
16	57	101	9
17	33	58	5
18	33	58	5
19	18	32	3
20	10	18	2
21	6	11	1
22	2	4	0
23	2	4	0
24	2	4	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	565	1	31	No	No	No	No	No	No	No	No	No	No
2	2	548	1	30	No	No	No	No	No	No	No	No	No	No
3	2	537	1	29	No	No	No	No	No	No	No	No	No	No
4	2	502	1	28	No	No	No	No	No	No	No	No	No	No
5	2	446	1	24	No	No	No	No	No	No	No	No	No	No
6	2	441	1	24	No	No	No	No	No	No	No	No	No	No
7	2	435	1	24	No	No	No	No	No	No	No	No	No	No
8	2	396	1	22	No	No	No	No	No	No	No	No	No	No
9	2	389	1	21	No	No	No	No	No	No	No	No	No	No
10	2	384	1	21	No	No	No	No	No	No	No	No	No	No
11	2	333	1	18	No	No	No	No	No	No	No	No	No	No
12	2	311	1	17	No	No	No	No	No	No	No	No	No	No
13	2	305	1	17	No	No	No	No	No	No	No	No	No	No
14	2	226	1	12	No	No	No	No	No	No	No	No	No	No
15	2	226	1	12	No	No	No	No	No	No	No	No	No	No
16	2	158	1	9	No	No	No	No	No	No	No	No	No	No
17	2	91	1	5	No	No	No	No	No	No	No	No	No	No
18	2	91	1	5	No	No	No	No	No	No	No	No	No	No
19	2	50	1	3	No	No	No	No	No	No	No	No	No	No
20	2	28	1	2	No	No	No	No	No	No	No	No	No	No
21	2	17	1	1	No	No	No	No	No	No	No	No	No	No
22	2	6	1	0	No	No	No	No	No	No	No	No	No	No
23	2	6	1	0	No	No	No	No	No	No	No	No	No	No
24	2	6	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	11.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:06
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	31
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	596
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets	
	E	N	S
1	145	210	311
2	141	204	302
3	138	200	295
4	129	187	277
5	115	166	246
6	113	164	243
7	112	162	239
8	102	147	218
9	100	145	215
10	99	143	211
11	86	124	183
12	80	116	171
13	78	113	168
14	58	84	124
15	58	84	124
16	41	59	87
17	23	34	50
18	23	34	50
19	13	19	28
20	7	11	16
21	4	6	9
22	1	2	3
23	1	2	3
24	1	2	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	145	2	311	No	No	No	No	No	No	No	No	No	No
2	4	141	2	302	No	No	No	No	No	No	No	No	No	No
3	4	138	2	295	No	No	No	No	No	No	No	No	No	No
4	4	129	2	277	No	No	No	No	No	No	No	No	No	No
5	4	115	2	246	No	No	No	No	No	No	No	No	No	No
6	4	113	2	243	No	No	No	No	No	No	No	No	No	No
7	4	112	2	239	No	No	No	No	No	No	No	No	No	No
8	4	102	2	218	No	No	No	No	No	No	No	No	No	No
9	4	100	2	215	No	No	No	No	No	No	No	No	No	No
10	4	99	2	211	No	No	No	No	No	No	No	No	No	No
11	4	86	2	183	No	No	No	No	No	No	No	No	No	No
12	4	80	2	171	No	No	No	No	No	No	No	No	No	No
13	4	78	2	168	No	No	No	No	No	No	No	No	No	No
14	4	58	2	124	No	No	No	No	No	No	No	No	No	No
15	4	58	2	124	No	No	No	No	No	No	No	No	No	No
16	4	41	2	87	No	No	No	No	No	No	No	No	No	No
17	4	23	2	50	No	No	No	No	No	No	No	No	No	No
18	4	23	2	50	No	No	No	No	No	No	No	No	No	No
19	4	13	2	28	No	No	No	No	No	No	No	No	No	No
20	4	7	2	16	No	No	No	No	No	No	No	No	No	No
21	4	4	2	9	No	No	No	No	No	No	No	No	No	No
22	4	1	2	3	No	No	No	No	No	No	No	No	No	No
23	4	1	2	3	No	No	No	No	No	No	No	No	No	No
24	4	1	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	9.9	14.7
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:34	1:16
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	210	311
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	666	666
Number of Approaches on Intersection	3	3
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 43: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets
	W	N
1	311	144
2	302	140
3	295	137
4	277	128
5	246	114
6	243	112
7	239	111
8	218	101
9	215	99
10	211	98
11	183	85
12	171	79
13	168	78
14	124	58
15	124	58
16	87	40
17	50	23
18	50	23
19	28	13
20	16	7
21	9	4
22	3	1
23	3	1
24	3	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	311	1	144	No	No	No	No	No	No	No	No	No	No
2	3	302	1	140	No	No	No	No	No	No	No	No	No	No
3	3	295	1	137	No	No	No	No	No	No	No	No	No	No
4	3	277	1	128	No	No	No	No	No	No	No	No	No	No
5	3	246	1	114	No	No	No	No	No	No	No	No	No	No
6	3	243	1	112	No	No	No	No	No	No	No	No	No	No
7	3	239	1	111	No	No	No	No	No	No	No	No	No	No
8	3	218	1	101	No	No	No	No	No	No	No	No	No	No
9	3	215	1	99	No	No	No	No	No	No	No	No	No	No
10	3	211	1	98	No	No	No	No	No	No	No	No	No	No
11	3	183	1	85	No	No	No	No	No	No	No	No	No	No
12	3	171	1	79	No	No	No	No	No	No	No	No	No	No
13	3	168	1	78	No	No	No	No	No	No	No	No	No	No
14	3	124	1	58	No	No	No	No	No	No	No	No	No	No
15	3	124	1	58	No	No	No	No	No	No	No	No	No	No
16	3	87	1	40	No	No	No	No	No	No	No	No	No	No
17	3	50	1	23	No	No	No	No	No	No	No	No	No	No
18	3	50	1	23	No	No	No	No	No	No	No	No	No	No
19	3	28	1	13	No	No	No	No	No	No	No	No	No	No
20	3	16	1	7	No	No	No	No	No	No	No	No	No	No
21	3	9	1	4	No	No	No	No	No	No	No	No	No	No
22	3	3	1	1	No	No	No	No	No	No	No	No	No	No
23	3	3	1	1	No	No	No	No	No	No	No	No	No	No
24	3	3	1	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.6
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:49
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	144
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	455
Number of Approaches on Intersection	2
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 82: TAH Pkwy/PA-46.1 Acc3

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets
	E	N
1	131	27
2	127	26
3	124	26
4	117	24
5	103	21
6	102	21
7	101	21
8	92	19
9	90	19
10	89	18
11	77	16
12	72	15
13	71	15
14	52	11
15	52	11
16	37	8
17	21	4
18	21	4
19	12	2
20	7	1
21	4	1
22	1	0
23	1	0
24	1	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	131	1	27	No	No	No	No	No	No	No	No	No	No
2	3	127	1	26	No	No	No	No	No	No	No	No	No	No
3	3	124	1	26	No	No	No	No	No	No	No	No	No	No
4	3	117	1	24	No	No	No	No	No	No	No	No	No	No
5	3	103	1	21	No	No	No	No	No	No	No	No	No	No
6	3	102	1	21	No	No	No	No	No	No	No	No	No	No
7	3	101	1	21	No	No	No	No	No	No	No	No	No	No
8	3	92	1	19	No	No	No	No	No	No	No	No	No	No
9	3	90	1	19	No	No	No	No	No	No	No	No	No	No
10	3	89	1	18	No	No	No	No	No	No	No	No	No	No
11	3	77	1	16	No	No	No	No	No	No	No	No	No	No
12	3	72	1	15	No	No	No	No	No	No	No	No	No	No
13	3	71	1	15	No	No	No	No	No	No	No	No	No	No
14	3	52	1	11	No	No	No	No	No	No	No	No	No	No
15	3	52	1	11	No	No	No	No	No	No	No	No	No	No
16	3	37	1	8	No	No	No	No	No	No	No	No	No	No
17	3	21	1	4	No	No	No	No	No	No	No	No	No	No
18	3	21	1	4	No	No	No	No	No	No	No	No	No	No
19	3	12	1	2	No	No	No	No	No	No	No	No	No	No
20	3	7	1	1	No	No	No	No	No	No	No	No	No	No
21	3	4	1	1	No	No	No	No	No	No	No	No	No	No
22	3	1	1	0	No	No	No	No	No	No	No	No	No	No
23	3	1	1	0	No	No	No	No	No	No	No	No	No	No
24	3	1	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.8
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:03
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	27
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	158
Number of Approaches on Intersection	2
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Intersection Level Of Service Report
Intersection 26: Reserve Loop/PA-31 Street

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.062

Intersection Setup

Name	PA-31 Street		Reserve Loop		Reserve Loop	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	PA-31 Street		Reserve Loop		Reserve Loop	
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	56	8	6	0	0	34
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	56	8	6	0	0	34
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	2	2	0	0	9
Total Analysis Volume [veh/h]	61	9	7	0	0	37
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	8.93	8.43	7.30	0.00	0.00	0.00
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.20	0.03	0.01	0.01	0.00	0.00
95th-Percentile Queue Length [ft/ln]	4.99	0.64	0.34	0.34	0.00	0.00
d_A, Approach Delay [s/veh]	8.87		7.30		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.89					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 31: Reverse Loop/PA-40.1 Acc1

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Reserve Loop		Reserve Loop			
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		Reserve Loop			
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	24	40	16	10	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	24	40	16	10	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	7	11	4	3	3
Total Analysis Volume [veh/h]	17	26	43	17	11	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.35	0.00	0.00	0.00	9.20	8.63
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.71	0.71	0.00	0.00	1.80	1.80
d_A, Approach Delay [s/veh]	2.91		0.00		8.92	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.57					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 32: Reverse Loop/PA-40.1 Acc2

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.013

Intersection Setup

Name	Reserve Loop		Reserve Loop			
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		Reserve Loop			
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	16	31	33	16	10	10
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	16	31	33	16	10	10
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	4	8	9	4	3	3
Total Analysis Volume [veh/h]	17	34	36	17	11	11
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.34	0.00	0.00	0.00	9.21	8.60
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.03	0.03	0.00	0.00	0.07	0.07
95th-Percentile Queue Length [ft/ln]	0.71	0.71	0.00	0.00	1.79	1.79
d_A, Approach Delay [s/veh]	2.45		0.00		8.91	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	2.54					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 33: Reverse Loop/PA-40.2 Acc1

Control Type:	Two-way stop	Delay (sec / veh):	9.2
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name	Reserve Loop		Reserve Loop			
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		Reserve Loop			
Base Volume Input [veh/h]	0	0	0	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	12	40	32	11	7	7
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	12	40	32	11	7	7
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	11	9	3	2	2
Total Analysis Volume [veh/h]	13	43	35	12	8	8
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			No
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	7.32	0.00	0.00	0.00	9.16	8.56
Movement LOS	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.00	0.00	0.05	0.05
95th-Percentile Queue Length [ft/ln]	0.55	0.55	0.00	0.00	1.29	1.29
d_A, Approach Delay [s/veh]	1.70		0.00		8.86	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	1.99					
Intersection LOS	A					

Intersection Level Of Service Report
Intersection 34: 38th Parkway/Reserve Loop (E)

Control Type:	Two-way stop	Delay (sec / veh):	15.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.034

Intersection Setup

Name	Reserve Loop		38th Parkway		38th Parkway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	0	185	293	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	28	33	63	92	19
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	28	33	248	385	19
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	3	8	9	67	105	5
Total Analysis Volume [veh/h]	12	30	36	270	418	21
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.05	0.03	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	15.44	11.04	8.32	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.15	0.10	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.60	3.77	2.49	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.30		0.98		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	1.04					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 35: 38th Pkwy/PA-40.2 Acc2/PA-46.2 Acc1/PA-46.1 Acc4

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.045

Intersection Setup

Name							38th Parkway			38th Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							38th Parkway			38th Parkway		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	185	0	0	293	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	13	6	0	9	14	78	18	15	96	9
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	13	6	0	9	14	263	18	15	389	9
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	3	0	4	2	0	2	4	71	5	4	106	2
Total Analysis Volume [veh/h]	12	0	14	7	0	10	15	286	20	16	423	10
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.00	0.00	0.00	0.05	0.35	0.02	0.03	0.51	0.01
d_M, Delay for Movement [s/veh]	7.26	0.00	0.00	7.26	0.00	0.00	16.43	11.83	10.80	12.76	13.98	12.97
Movement LOS	A	A	A	A	A	A	C	B	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.01	0.01	0.01	0.14	1.69	1.69	0.10	3.08	3.08
95th-Percentile Queue Length [ft/ln]	0.60	0.60	0.60	0.35	0.35	0.35	3.56	42.15	42.15	2.58	76.90	76.90
d_A, Approach Delay [s/veh]	3.35			2.99			11.98			13.91		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	12.58											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 36: Reverse Loop/PA-40.1 Acc3/PA-46.2 Acc2

Control Type:	Two-way stop	Delay (sec / veh):	16.7
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.067

Intersection Setup

Name							38th Parkway			38th Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							38th Parkway			38th Parkway		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	185	0	0	293	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	8	8	0	11	20	94	18	11	91	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	8	8	0	11	20	279	18	11	384	13
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	3	0	2	2	0	3	5	76	5	3	104	4
Total Analysis Volume [veh/h]	12	0	9	9	0	12	22	303	20	12	417	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.07	0.37	0.02	0.03	0.51	0.01
d_M, Delay for Movement [s/veh]	7.26	0.00	0.00	7.25	0.00	0.00	16.66	12.06	11.03	13.09	14.00	12.96
Movement LOS	A	A	A	A	A	A	C	B	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.02	0.02	0.02	0.21	1.84	1.84	0.08	3.07	3.07
95th-Percentile Queue Length [ft/ln]	0.60	0.60	0.60	0.45	0.45	0.45	5.32	45.97	45.97	2.02	76.68	76.68
d_A, Approach Delay [s/veh]	4.15			3.11			12.30			13.95		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	12.74											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 37: Reverse Loop/PA-40.1 Acc4/PA 46.2 Acc3

Control Type:	Two-way stop	Delay (sec / veh):	16.6
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.066

Intersection Setup

Name							38th Parkway			38th Parkway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							38th Parkway			38th Parkway		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	185	0	0	293	0
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	11	0	8	8	0	11	20	117	18	11	90	13
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	11	0	8	8	0	11	20	302	18	11	383	13
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	3	0	2	2	0	3	5	82	5	3	104	4
Total Analysis Volume [veh/h]	12	0	9	9	0	12	22	328	20	12	416	14
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Free	Free	Stop	Stop
Flared Lane			No	No
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance			No	No
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.00	0.01	0.00	0.00	0.07	0.40	0.02	0.03	0.51	0.01
d_M, Delay for Movement [s/veh]	7.26	0.00	0.00	7.25	0.00	0.00	16.62	12.42	11.39	13.68	13.98	12.94
Movement LOS	A	A	A	A	A	A	C	B	B	B	B	B
95th-Percentile Queue Length [veh/ln]	0.02	0.02	0.02	0.02	0.02	0.02	0.21	2.08	2.08	0.09	3.05	3.05
95th-Percentile Queue Length [ft/ln]	0.60	0.60	0.60	0.45	0.45	0.45	5.30	51.88	51.88	2.17	76.34	76.34
d_A, Approach Delay [s/veh]	4.15			3.11			12.62			13.94		
Approach LOS	A			A			B			B		
d_I, Intersection Delay [s/veh]	12.86											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 38: Reverse Loop/PA-40.1 Acc5

Control Type:	Two-way stop	Delay (sec / veh):	16.4
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.021

Intersection Setup

Name			38th Parkway		38th Parkway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	0	185	293	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	13	22	148	102	11
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	13	22	333	395	11
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	4	6	90	107	3
Total Analysis Volume [veh/h]	7	14	24	362	429	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.02	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	16.39	11.14	8.29	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	3.44	3.44	1.64	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.89		0.52		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.55					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 39: 38th Pkwy/PA-46.2 Acc4/PA-46.1 Acc1

Control Type:	Two-way stop	Delay (sec / veh):	17.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.078

Intersection Setup

Name			38th Parkway		38th Parkway	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	185	0	0	293
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	11	159	47	19	95
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	11	344	47	19	388
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	3	93	13	5	105
Total Analysis Volume [veh/h]	25	12	374	51	21	422
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.08	0.02	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	17.25	10.64	0.00	0.00	8.23	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.25	0.06	0.00	0.00	0.06	0.00
95th-Percentile Queue Length [ft/ln]	6.34	1.41	0.00	0.00	1.41	0.00
d_A, Approach Delay [s/veh]	15.11		0.00		0.39	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.81					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 40: 38th Parkway/Reserve Loop (W)

Control Type:	Two-way stop	Delay (sec / veh):	25.4
Analysis Method:	HCM 7th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.495

Intersection Setup

Name	Reserve Loop		38th Parkway		38th Parkway	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Reserve Loop		38th Parkway		38th Parkway	
Base Volume Input [veh/h]	54	54	73	131	220	73
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	102	21	16	103	63	56
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	156	75	89	234	283	129
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	20	24	64	77	35
Total Analysis Volume [veh/h]	170	82	97	254	308	140
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.50	0.11	0.09	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	25.36	10.54	8.55	0.00	0.00	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	2.63	0.38	0.29	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	65.67	9.42	7.15	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	20.54		2.36		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	5.71					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 41: 38th Pkwy/PA 46.1 Acc2

Control Type:	Two-way stop	Delay (sec / veh):	15.2
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.025

Intersection Setup

Name			38th Parkway		38th Parkway	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			38th Parkway		38th Parkway	
Base Volume Input [veh/h]	0	0	204	0	0	274
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	13	107	22	24	60
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	8	13	311	22	24	334
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	4	85	6	7	91
Total Analysis Volume [veh/h]	9	14	338	24	26	363
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane	No		
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.02	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	15.24	10.52	0.00	0.00	8.08	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.14	0.14	0.00	0.00	0.07	0.00
95th-Percentile Queue Length [ft/ln]	3.52	3.52	0.00	0.00	1.67	0.00
d_A, Approach Delay [s/veh]	12.37		0.00		0.54	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.64					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 42: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	13.7
Analysis Method:	HCM 7th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.385

Intersection Setup

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	0	0	1	0	0	0	1	0	1
Entry Pocket Length [ft]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00			35.00			30.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	38th Parkway			38th Parkway			Th Au			Th Au		
Base Volume Input [veh/h]	0	189	0	0	137	130	0	0	0	15	65	15
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	48	0	0	42	27	0	0	0	9	2	81
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	237	0	0	179	157	0	0	0	24	67	96
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	0	64	0	0	49	43	0	0	0	7	18	26
Total Analysis Volume [veh/h]	0	258	0	0	195	171	0	0	0	26	73	104
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.39	0.00	0.00	0.26	0.17	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	12.65	13.71	0.00	0.00	11.32	9.20	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS	B	B			B	A				A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	1.82	0.00	0.00	1.01	0.60	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	45.44	0.00	0.00	25.33	14.89	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	13.71			10.33			0.00			0.00		
Approach LOS	B			B			A			A		
d_I, Intersection Delay [s/veh]	8.85											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 43: The Aurora Highlands Parkway/38th Parkway

Control Type:	Two-way stop	Delay (sec / veh):	18.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.451

Intersection Setup

Name	38th Parkway		Th Au			
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	38th Parkway		Th Au			
Base Volume Input [veh/h]	152	0	189	0	0	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	0	48	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	202	0	237	0	0	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	0	64	0	0	0
Total Analysis Volume [veh/h]	220	0	258	0	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.45	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	18.32	0.00	0.00	0.00	0.00	0.00
Movement LOS	C		A	A		
95th-Percentile Queue Length [veh/ln]	2.31	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	57.73	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	18.32		0.00		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	8.43					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 48: 38th Parkway/Powhaton Road

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 7th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.462

Intersection Setup

Name	Powhaton Road			Powhaton Road			38th Parkway					
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	1	2	0	1	1	0	1	2	0	1
Entry Pocket Length [ft]	150.0	100.0	150.0	150.0	100.0	150.0	200.0	100.0	200.0	200.0	100.0	200.0
No. of Lanes in Exit Pocket	0	0	0	0	0	1	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Powhaton Road			Powhaton Road			38th Parkway					
Base Volume Input [veh/h]	152	974	168	64	711	30	20	78	83	597	111	406
Base Volume Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	73	0	0	0	0	38	23	0	52	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	84	0	0	34	0	0	68	0	0	203
Total Hourly Volume [veh/h]	225	974	84	64	711	34	43	78	67	597	111	203
Peak Hour Factor	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.920
Other Adjustment Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Total 15-Minute Volume [veh/h]	61	265	23	17	193	9	12	21	18	162	30	55
Total Analysis Volume [veh/h]	245	1059	91	70	773	37	47	85	73	649	121	221
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing major street [ped/h]	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing minor street [ped/h]	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	100
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtP	Permi	Permi	Protec	Permi	Permi	ProtP	Permi	Permi	Protec	Permi	Permi
Signal Group	1	6	0	5	2	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	10	0	5	10	0	5	10	0	5	10	0
Maximum Green [s]	30	30	0	30	30	0	30	30	0	30	30	0
Amber [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	14	30	0	9	25	0	11	36	0	25	50	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	21	0	0	14	0	0	27	0	0	34	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	No		No	No	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	100	100	100	100	100	100	100	100	100	100	100	100
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.00	2.00	2.00	2.00	2.00	0.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	58	49	49	4	45	45	34	10	10	21	27	27
g / C, Green / Cycle	0.58	0.49	0.49	0.04	0.45	0.45	0.34	0.10	0.10	0.21	0.27	0.27
(v / s)_i Volume / Saturation Flow Rate	0.28	0.21	0.06	0.02	0.15	0.02	0.04	0.05	0.05	0.19	0.06	0.14
s, saturation flow rate [veh/h]	884	5094	1589	3459	5094	1589	1161	1870	1589	3459	1870	1589
c, Capacity [veh/h]	546	2505	782	150	2270	708	456	185	158	712	501	426
d1, Uniform Delay [s]	11.32	16.31	13.71	46.73	18.13	15.74	22.19	42.54	42.56	38.85	28.68	31.15
k, delay calibration	0.40	0.50	0.50	0.11	0.50	0.50	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.10	0.53	0.30	2.24	0.41	0.14	0.10	1.76	2.11	5.02	0.25	0.98
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.45	0.42	0.12	0.47	0.34	0.05	0.10	0.46	0.46	0.91	0.24	0.52
d, Delay for Lane Group [s/veh]	13.42	16.84	14.01	48.98	18.53	15.88	22.29	44.31	44.68	43.87	28.92	32.13
Lane Group LOS	B	B	B	D	B	B	C	D	D	D	C	C
Critical Lane Group	No	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	2.85	5.12	1.15	0.89	3.88	0.50	0.75	2.06	1.79	8.16	2.29	4.60
50th-Percentile Queue Length [ft/ln]	71.26	128.0	28.72	22.34	97.04	12.52	18.81	51.59	44.69	204.0	57.34	114.9
95th-Percentile Queue Length [veh/ln]	5.13	8.83	2.07	1.61	6.99	0.90	1.35	3.71	3.22	12.85	4.13	8.12
95th-Percentile Queue Length [ft/ln]	128.2	220.8	51.70	40.21	174.6	22.54	33.86	92.86	80.44	321.1	103.2	202.8

Movement, Approach, & Intersection Results

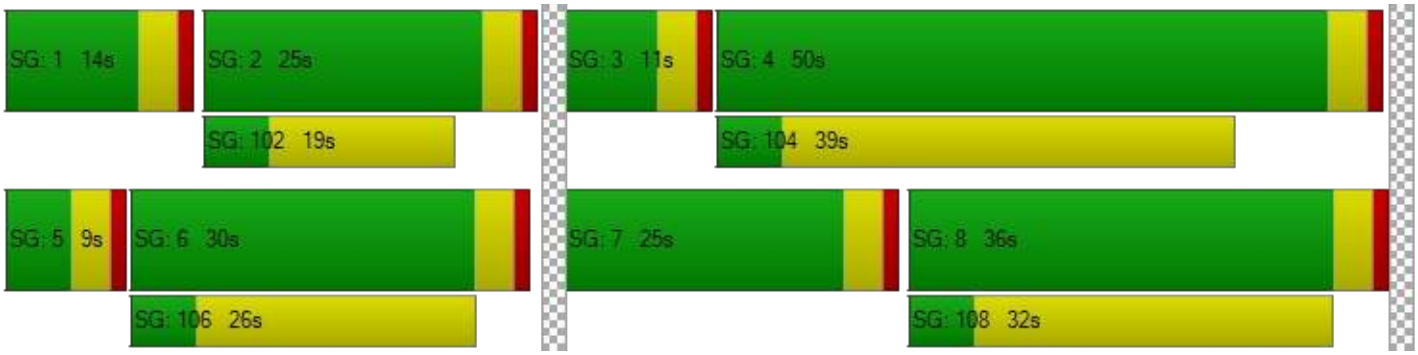
d_M, Delay for Movement [s/veh]	13.42	16.84	14.01	48.98	18.53	15.88	22.29	44.31	44.68	43.87	28.92	32.13
Movement LOS	B	B	B	D	B	B	C	D	D	D	C	C
d_A, Approach Delay [s/veh]	16.05			20.84			39.39			39.43		
Approach LOS	B			C			D			D		
d_I, Intersection Delay [s/veh]	25.32											
Intersection LOS	C											
Intersection V/C	0.462											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	9.0	9.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	41.42	41.42	41.42	41.42
l_p,int, Pedestrian LOS Score for Intersection	3.222	3.279	2.570	2.996
Crosswalk LOS	C	C	B	C
s_b, Saturation Flow Rate of the bicycle lane [bicycles/h]	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	520	420	640	920
d_b, Bicycle Delay [s]	27.40	31.22	23.14	14.59
l_b,int, Bicycle LOS Score for Intersection	2.373	2.062	2.010	3.530
Bicycle LOS	B	B	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 82: TAH Pkwy/PA-46.1 Acc3

Control Type:	Two-way stop	Delay (sec / veh):	8.9
Analysis Method:	HCM 7th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name			Th Au		Th Au	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	435.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Th Au		Th Au	
Base Volume Input [veh/h]	0	0	0	0	100	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	19	0	0	73	27
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	19	0	0	173	27
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	5	0	0	47	7
Total Analysis Volume [veh/h]	0	21	0	0	188	29
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	8.90	0.00	0.00	0.00	0.00
Movement LOS		A			A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.07	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.70	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	8.90		0.00		0.00	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	A					

Signal Warrants Report For Intersection 26: Reserve Loop/PA-31 Street

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	34	6	64
2	33	6	62
3	32	6	61
4	30	5	57
5	27	5	51
6	27	5	50
7	26	5	49
8	24	4	45
9	23	4	44
10	23	4	44
11	20	4	38
12	19	3	35
13	18	3	35
14	14	2	26
15	14	2	26
16	10	2	18
17	5	1	10
18	5	1	10
19	3	1	6
20	2	0	3
21	1	0	2
22	0	0	1
23	0	0	1
24	0	0	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	40	2	64	No	No	No	No	No	No	No	No	No	No
2	1	39	2	62	No	No	No	No	No	No	No	No	No	No
3	1	38	2	61	No	No	No	No	No	No	No	No	No	No
4	1	35	2	57	No	No	No	No	No	No	No	No	No	No
5	1	32	2	51	No	No	No	No	No	No	No	No	No	No
6	1	32	2	50	No	No	No	No	No	No	No	No	No	No
7	1	31	2	49	No	No	No	No	No	No	No	No	No	No
8	1	28	2	45	No	No	No	No	No	No	No	No	No	No
9	1	27	2	44	No	No	No	No	No	No	No	No	No	No
10	1	27	2	44	No	No	No	No	No	No	No	No	No	No
11	1	24	2	38	No	No	No	No	No	No	No	No	No	No
12	1	22	2	35	No	No	No	No	No	No	No	No	No	No
13	1	21	2	35	No	No	No	No	No	No	No	No	No	No
14	1	16	2	26	No	No	No	No	No	No	No	No	No	No
15	1	16	2	26	No	No	No	No	No	No	No	No	No	No
16	1	12	2	18	No	No	No	No	No	No	No	No	No	No
17	1	6	2	10	No	No	No	No	No	No	No	No	No	No
18	1	6	2	10	No	No	No	No	No	No	No	No	No	No
19	1	4	2	6	No	No	No	No	No	No	No	No	No	No
20	1	2	2	3	No	No	No	No	No	No	No	No	No	No
21	1	1	2	2	No	No	No	No	No	No	No	No	No	No
22	1	0	2	1	No	No	No	No	No	No	No	No	No	No
23	1	0	2	1	No	No	No	No	No	No	No	No	No	No
24	1	0	2	1	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.9
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:09
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	64
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	104
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 31: Reverse Loop/PA-40.1 Acc1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	40	56	20
2	39	54	19
3	38	53	19
4	36	50	18
5	32	44	16
6	31	44	16
7	31	43	15
8	28	39	14
9	28	39	14
10	27	38	14
11	24	33	12
12	22	31	11
13	22	30	11
14	16	22	8
15	16	22	8
16	11	16	6
17	6	9	3
18	6	9	3
19	4	5	2
20	2	3	1
21	1	2	1
22	0	1	0
23	0	1	0
24	0	1	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	96	1	20	No	No	No	No	No	No	No	No	No	No
2	1	93	1	19	No	No	No	No	No	No	No	No	No	No
3	1	91	1	19	No	No	No	No	No	No	No	No	No	No
4	1	86	1	18	No	No	No	No	No	No	No	No	No	No
5	1	76	1	16	No	No	No	No	No	No	No	No	No	No
6	1	75	1	16	No	No	No	No	No	No	No	No	No	No
7	1	74	1	15	No	No	No	No	No	No	No	No	No	No
8	1	67	1	14	No	No	No	No	No	No	No	No	No	No
9	1	67	1	14	No	No	No	No	No	No	No	No	No	No
10	1	65	1	14	No	No	No	No	No	No	No	No	No	No
11	1	57	1	12	No	No	No	No	No	No	No	No	No	No
12	1	53	1	11	No	No	No	No	No	No	No	No	No	No
13	1	52	1	11	No	No	No	No	No	No	No	No	No	No
14	1	38	1	8	No	No	No	No	No	No	No	No	No	No
15	1	38	1	8	No	No	No	No	No	No	No	No	No	No
16	1	27	1	6	No	No	No	No	No	No	No	No	No	No
17	1	15	1	3	No	No	No	No	No	No	No	No	No	No
18	1	15	1	3	No	No	No	No	No	No	No	No	No	No
19	1	9	1	2	No	No	No	No	No	No	No	No	No	No
20	1	5	1	1	No	No	No	No	No	No	No	No	No	No
21	1	3	1	1	No	No	No	No	No	No	No	No	No	No
22	1	1	1	0	No	No	No	No	No	No	No	No	No	No
23	1	1	1	0	No	No	No	No	No	No	No	No	No	No
24	1	1	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	20
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	116
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 32: Reverse Loop/PA-40.1 Acc2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	S	N	W
1	47	49	20
2	46	48	19
3	45	47	19
4	42	44	18
5	37	39	16
6	37	38	16
7	36	38	15
8	33	34	14
9	32	34	14
10	32	33	14
11	28	29	12
12	26	27	11
13	25	26	11
14	19	20	8
15	19	20	8
16	13	14	6
17	8	8	3
18	8	8	3
19	4	4	2
20	2	2	1
21	1	1	1
22	0	0	0
23	0	0	0
24	0	0	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	96	1	20	No	No	No	No	No	No	No	No	No	No
2	1	94	1	19	No	No	No	No	No	No	No	No	No	No
3	1	92	1	19	No	No	No	No	No	No	No	No	No	No
4	1	86	1	18	No	No	No	No	No	No	No	No	No	No
5	1	76	1	16	No	No	No	No	No	No	No	No	No	No
6	1	75	1	16	No	No	No	No	No	No	No	No	No	No
7	1	74	1	15	No	No	No	No	No	No	No	No	No	No
8	1	67	1	14	No	No	No	No	No	No	No	No	No	No
9	1	66	1	14	No	No	No	No	No	No	No	No	No	No
10	1	65	1	14	No	No	No	No	No	No	No	No	No	No
11	1	57	1	12	No	No	No	No	No	No	No	No	No	No
12	1	53	1	11	No	No	No	No	No	No	No	No	No	No
13	1	51	1	11	No	No	No	No	No	No	No	No	No	No
14	1	39	1	8	No	No	No	No	No	No	No	No	No	No
15	1	39	1	8	No	No	No	No	No	No	No	No	No	No
16	1	27	1	6	No	No	No	No	No	No	No	No	No	No
17	1	16	1	3	No	No	No	No	No	No	No	No	No	No
18	1	16	1	3	No	No	No	No	No	No	No	No	No	No
19	1	8	1	2	No	No	No	No	No	No	No	No	No	No
20	1	4	1	1	No	No	No	No	No	No	No	No	No	No
21	1	2	1	1	No	No	No	No	No	No	No	No	No	No
22	1	0	1	0	No	No	No	No	No	No	No	No	No	No
23	1	0	1	0	No	No	No	No	No	No	No	No	No	No
24	1	0	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	20
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	116
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 33: Reverse Loop/PA-40.2 Acc1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	N	S	W
1	43	52	14
2	42	50	14
3	41	49	13
4	38	46	12
5	34	41	11
6	34	41	11
7	33	40	11
8	30	36	10
9	30	36	10
10	29	35	10
11	25	31	8
12	24	29	8
13	23	28	8
14	17	21	6
15	17	21	6
16	12	15	4
17	7	8	2
18	7	8	2
19	4	5	1
20	2	3	1
21	1	2	0
22	0	1	0
23	0	1	0
24	0	1	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	95	1	14	No	No	No	No	No	No	No	No	No	No
2	1	92	1	14	No	No	No	No	No	No	No	No	No	No
3	1	90	1	13	No	No	No	No	No	No	No	No	No	No
4	1	84	1	12	No	No	No	No	No	No	No	No	No	No
5	1	75	1	11	No	No	No	No	No	No	No	No	No	No
6	1	75	1	11	No	No	No	No	No	No	No	No	No	No
7	1	73	1	11	No	No	No	No	No	No	No	No	No	No
8	1	66	1	10	No	No	No	No	No	No	No	No	No	No
9	1	66	1	10	No	No	No	No	No	No	No	No	No	No
10	1	64	1	10	No	No	No	No	No	No	No	No	No	No
11	1	56	1	8	No	No	No	No	No	No	No	No	No	No
12	1	53	1	8	No	No	No	No	No	No	No	No	No	No
13	1	51	1	8	No	No	No	No	No	No	No	No	No	No
14	1	38	1	6	No	No	No	No	No	No	No	No	No	No
15	1	38	1	6	No	No	No	No	No	No	No	No	No	No
16	1	27	1	4	No	No	No	No	No	No	No	No	No	No
17	1	15	1	2	No	No	No	No	No	No	No	No	No	No
18	1	15	1	2	No	No	No	No	No	No	No	No	No	No
19	1	9	1	1	No	No	No	No	No	No	No	No	No	No
20	1	5	1	1	No	No	No	No	No	No	No	No	No	No
21	1	3	1	0	No	No	No	No	No	No	No	No	No	No
22	1	1	1	0	No	No	No	No	No	No	No	No	No	No
23	1	1	1	0	No	No	No	No	No	No	No	No	No	No
24	1	1	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	14
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	109
Number of Approaches on Intersection	3
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 34: 38th Parkway/Reserve Loop (E)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	404	281	39
2	392	273	38
3	384	267	37
4	360	250	35
5	319	222	31
6	315	219	30
7	311	216	30
8	283	197	27
9	279	194	27
10	275	191	27
11	238	166	23
12	222	155	21
13	218	152	21
14	162	112	16
15	162	112	16
16	113	79	11
17	65	45	6
18	65	45	6
19	36	25	4
20	20	14	2
21	12	8	1
22	4	3	0
23	4	3	0
24	4	3	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	685	2	39	No	No	No	No	No	No	No	No	No	No
2	2	665	2	38	No	No	No	No	No	No	No	No	No	No
3	2	651	2	37	No	No	No	No	No	No	No	No	No	No
4	2	610	2	35	No	No	No	No	No	No	No	No	No	No
5	2	541	2	31	No	No	No	No	No	No	No	No	No	No
6	2	534	2	30	No	No	No	No	No	No	No	No	No	No
7	2	527	2	30	No	No	No	No	No	No	No	No	No	No
8	2	480	2	27	No	No	No	No	No	No	No	No	No	No
9	2	473	2	27	No	No	No	No	No	No	No	No	No	No
10	2	466	2	27	No	No	No	No	No	No	No	No	No	No
11	2	404	2	23	No	No	No	No	No	No	No	No	No	No
12	2	377	2	21	No	No	No	No	No	No	No	No	No	No
13	2	370	2	21	No	No	No	No	No	No	No	No	No	No
14	2	274	2	16	No	No	No	No	No	No	No	No	No	No
15	2	274	2	16	No	No	No	No	No	No	No	No	No	No
16	2	192	2	11	No	No	No	No	No	No	No	No	No	No
17	2	110	2	6	No	No	No	No	No	No	No	No	No	No
18	2	110	2	6	No	No	No	No	No	No	No	No	No	No
19	2	61	2	4	No	No	No	No	No	No	No	No	No	No
20	2	34	2	2	No	No	No	No	No	No	No	No	No	No
21	2	20	2	1	No	No	No	No	No	No	No	No	No	No
22	2	7	2	0	No	No	No	No	No	No	No	No	No	No
23	2	7	2	0	No	No	No	No	No	No	No	No	No	No
24	2	7	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.3
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:07
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	39
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	724
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 35: 38th Pkwy/PA-40.2 Acc2/PA-46.2 Acc1/PA-46.1 Acc4

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	15	24	413	295
2	15	23	401	286
3	14	23	392	280
4	13	21	368	263
5	12	19	326	233
6	12	19	322	230
7	12	18	318	227
8	11	17	289	207
9	10	17	285	204
10	10	16	281	201
11	9	14	244	174
12	8	13	227	162
13	8	13	223	159
14	6	10	165	118
15	6	10	165	118
16	4	7	116	83
17	2	4	66	47
18	2	4	66	47
19	1	2	37	27
20	1	1	21	15
21	0	1	12	9
22	0	0	4	3
23	0	0	4	3
24	0	0	4	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	39	2	413	No	No	No	No	No	No	No	No	Yes	No
2	1	38	2	401	No	No	No	No	No	No	No	No	Yes	No
3	1	37	2	392	No	No	No	No	No	No	No	No	Yes	No
4	1	34	2	368	No	No	No	No	No	No	No	No	No	No
5	1	31	2	326	No	No	No	No	No	No	No	No	No	No
6	1	31	2	322	No	No	No	No	No	No	No	No	No	No
7	1	30	2	318	No	No	No	No	No	No	No	No	No	No
8	1	28	2	289	No	No	No	No	No	No	No	No	No	No
9	1	27	2	285	No	No	No	No	No	No	No	No	No	No
10	1	26	2	281	No	No	No	No	No	No	No	No	No	No
11	1	23	2	244	No	No	No	No	No	No	No	No	No	No
12	1	21	2	227	No	No	No	No	No	No	No	No	No	No
13	1	21	2	223	No	No	No	No	No	No	No	No	No	No
14	1	16	2	165	No	No	No	No	No	No	No	No	No	No
15	1	16	2	165	No	No	No	No	No	No	No	No	No	No
16	1	11	2	116	No	No	No	No	No	No	No	No	No	No
17	1	6	2	66	No	No	No	No	No	No	No	No	No	No
18	1	6	2	66	No	No	No	No	No	No	No	No	No	No
19	1	3	2	37	No	No	No	No	No	No	No	No	No	No
20	1	2	2	21	No	No	No	No	No	No	No	No	No	No
21	1	1	2	12	No	No	No	No	No	No	No	No	No	No
22	1	0	2	4	No	No	No	No	No	No	No	No	No	No
23	1	0	2	4	No	No	No	No	No	No	No	No	No	No
24	1	0	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	3	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9	12
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:35	0:58
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	413	295
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	747	747
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 36: Reverse Loop/PA-40.1 Acc3/PA-46.2 Acc2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	19	19	408	317
2	18	18	396	307
3	18	18	388	301
4	17	17	363	282
5	15	15	322	250
6	15	15	318	247
7	15	15	314	244
8	13	13	286	222
9	13	13	282	219
10	13	13	277	216
11	11	11	241	187
12	10	10	224	174
13	10	10	220	171
14	8	8	163	127
15	8	8	163	127
16	5	5	114	89
17	3	3	65	51
18	3	3	65	51
19	2	2	37	29
20	1	1	20	16
21	1	1	12	10
22	0	0	4	3
23	0	0	4	3
24	0	0	4	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	38	2	408	No	No	No	No	No	No	No	No	Yes	No
2	1	36	2	396	No	No	No	No	No	No	No	No	Yes	No
3	1	36	2	388	No	No	No	No	No	No	No	No	No	No
4	1	34	2	363	No	No	No	No	No	No	No	No	No	No
5	1	30	2	322	No	No	No	No	No	No	No	No	No	No
6	1	30	2	318	No	No	No	No	No	No	No	No	No	No
7	1	30	2	314	No	No	No	No	No	No	No	No	No	No
8	1	26	2	286	No	No	No	No	No	No	No	No	No	No
9	1	26	2	282	No	No	No	No	No	No	No	No	No	No
10	1	26	2	277	No	No	No	No	No	No	No	No	No	No
11	1	22	2	241	No	No	No	No	No	No	No	No	No	No
12	1	20	2	224	No	No	No	No	No	No	No	No	No	No
13	1	20	2	220	No	No	No	No	No	No	No	No	No	No
14	1	16	2	163	No	No	No	No	No	No	No	No	No	No
15	1	16	2	163	No	No	No	No	No	No	No	No	No	No
16	1	10	2	114	No	No	No	No	No	No	No	No	No	No
17	1	6	2	65	No	No	No	No	No	No	No	No	No	No
18	1	6	2	65	No	No	No	No	No	No	No	No	No	No
19	1	4	2	37	No	No	No	No	No	No	No	No	No	No
20	1	2	2	20	No	No	No	No	No	No	No	No	No	No
21	1	2	2	12	No	No	No	No	No	No	No	No	No	No
22	1	0	2	4	No	No	No	No	No	No	No	No	No	No
23	1	0	2	4	No	No	No	No	No	No	No	No	No	No
24	1	0	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	2	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9	12.3
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:34	1:04
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	408	317
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	763	763
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 37: Reverse Loop/PA-40.1 Acc4/PA 46.2 Acc3

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	S, N
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	S	N	E	W
1	19	19	407	340
2	18	18	395	330
3	18	18	387	323
4	17	17	362	303
5	15	15	322	269
6	15	15	317	265
7	15	15	313	262
8	13	13	285	238
9	13	13	281	235
10	13	13	277	231
11	11	11	240	201
12	10	10	224	187
13	10	10	220	184
14	8	8	163	136
15	8	8	163	136
16	5	5	114	95
17	3	3	65	54
18	3	3	65	54
19	2	2	37	31
20	1	1	20	17
21	1	1	12	10
22	0	0	4	3
23	0	0	4	3
24	0	0	4	3

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	1	38	2	407	No	No	No	No	No	No	No	No	Yes	No
2	1	36	2	395	No	No	No	No	No	No	No	No	Yes	No
3	1	36	2	387	No	No	No	No	No	No	No	No	No	No
4	1	34	2	362	No	No	No	No	No	No	No	No	No	No
5	1	30	2	322	No	No	No	No	No	No	No	No	No	No
6	1	30	2	317	No	No	No	No	No	No	No	No	No	No
7	1	30	2	313	No	No	No	No	No	No	No	No	No	No
8	1	26	2	285	No	No	No	No	No	No	No	No	No	No
9	1	26	2	281	No	No	No	No	No	No	No	No	No	No
10	1	26	2	277	No	No	No	No	No	No	No	No	No	No
11	1	22	2	240	No	No	No	No	No	No	No	No	No	No
12	1	20	2	224	No	No	No	No	No	No	No	No	No	No
13	1	20	2	220	No	No	No	No	No	No	No	No	No	No
14	1	16	2	163	No	No	No	No	No	No	No	No	No	No
15	1	16	2	163	No	No	No	No	No	No	No	No	No	No
16	1	10	2	114	No	No	No	No	No	No	No	No	No	No
17	1	6	2	65	No	No	No	No	No	No	No	No	No	No
18	1	6	2	65	No	No	No	No	No	No	No	No	No	No
19	1	4	2	37	No	No	No	No	No	No	No	No	No	No
20	1	2	2	20	No	No	No	No	No	No	No	No	No	No
21	1	2	2	12	No	No	No	No	No	No	No	No	No	No
22	1	0	2	4	No	No	No	No	No	No	No	No	No	No
23	1	0	2	4	No	No	No	No	No	No	No	No	No	No
24	1	0	2	4	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	2	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	13.9	12.6
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:34	1:11
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	407	340
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	785	785
Number of Approaches on Intersection	4	4
Total Volume Condition Met	No	No
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 38: Reverse Loop/PA-40.1 Acc5

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	406	355	19
2	394	344	18
3	386	337	18
4	361	316	17
5	321	280	15
6	317	277	15
7	313	273	15
8	284	248	13
9	280	245	13
10	276	241	13
11	240	209	11
12	223	195	10
13	219	192	10
14	162	142	8
15	162	142	8
16	114	99	5
17	65	57	3
18	65	57	3
19	37	32	2
20	20	18	1
21	12	11	1
22	4	4	0
23	4	4	0
24	4	4	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	761	1	19	No	No	No	No	No	No	No	No	No	No
2	2	738	1	18	No	No	No	No	No	No	No	No	No	No
3	2	723	1	18	No	No	No	No	No	No	No	No	No	No
4	2	677	1	17	No	No	No	No	No	No	No	No	No	No
5	2	601	1	15	No	No	No	No	No	No	No	No	No	No
6	2	594	1	15	No	No	No	No	No	No	No	No	No	No
7	2	586	1	15	No	No	No	No	No	No	No	No	No	No
8	2	532	1	13	No	No	No	No	No	No	No	No	No	No
9	2	525	1	13	No	No	No	No	No	No	No	No	No	No
10	2	517	1	13	No	No	No	No	No	No	No	No	No	No
11	2	449	1	11	No	No	No	No	No	No	No	No	No	No
12	2	418	1	10	No	No	No	No	No	No	No	No	No	No
13	2	411	1	10	No	No	No	No	No	No	No	No	No	No
14	2	304	1	8	No	No	No	No	No	No	No	No	No	No
15	2	304	1	8	No	No	No	No	No	No	No	No	No	No
16	2	213	1	5	No	No	No	No	No	No	No	No	No	No
17	2	122	1	3	No	No	No	No	No	No	No	No	No	No
18	2	122	1	3	No	No	No	No	No	No	No	No	No	No
19	2	69	1	2	No	No	No	No	No	No	No	No	No	No
20	2	38	1	1	No	No	No	No	No	No	No	No	No	No
21	2	23	1	1	No	No	No	No	No	No	No	No	No	No
22	2	8	1	0	No	No	No	No	No	No	No	No	No	No
23	2	8	1	0	No	No	No	No	No	No	No	No	No	No
24	2	8	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	780
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 39: 38th Pkwy/PA-46.2 Acc4/PA-46.1 Acc1

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	407	391	34
2	395	379	33
3	387	371	32
4	362	348	30
5	322	309	27
6	317	305	27
7	313	301	26
8	285	274	24
9	281	270	23
10	277	266	23
11	240	231	20
12	224	215	19
13	220	211	18
14	163	156	14
15	163	156	14
16	114	109	10
17	65	63	5
18	65	63	5
19	37	35	3
20	20	20	2
21	12	12	1
22	4	4	0
23	4	4	0
24	4	4	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	798	2	34	No	No	No	No	No	No	No	No	No	No
2	2	774	2	33	No	No	No	No	No	No	No	No	No	No
3	2	758	2	32	No	No	No	No	No	No	No	No	No	No
4	2	710	2	30	No	No	No	No	No	No	No	No	No	No
5	2	631	2	27	No	No	No	No	No	No	No	No	No	No
6	2	622	2	27	No	No	No	No	No	No	No	No	No	No
7	2	614	2	26	No	No	No	No	No	No	No	No	No	No
8	2	559	2	24	No	No	No	No	No	No	No	No	No	No
9	2	551	2	23	No	No	No	No	No	No	No	No	No	No
10	2	543	2	23	No	No	No	No	No	No	No	No	No	No
11	2	471	2	20	No	No	No	No	No	No	No	No	No	No
12	2	439	2	19	No	No	No	No	No	No	No	No	No	No
13	2	431	2	18	No	No	No	No	No	No	No	No	No	No
14	2	319	2	14	No	No	No	No	No	No	No	No	No	No
15	2	319	2	14	No	No	No	No	No	No	No	No	No	No
16	2	223	2	10	No	No	No	No	No	No	No	No	No	No
17	2	128	2	5	No	No	No	No	No	No	No	No	No	No
18	2	128	2	5	No	No	No	No	No	No	No	No	No	No
19	2	72	2	3	No	No	No	No	No	No	No	No	No	No
20	2	40	2	2	No	No	No	No	No	No	No	No	No	No
21	2	24	2	1	No	No	No	No	No	No	No	No	No	No
22	2	8	2	0	No	No	No	No	No	No	No	No	No	No
23	2	8	2	0	No	No	No	No	No	No	No	No	No	No
24	2	8	2	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	15.1
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:08
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	34
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	832
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 40: 38th Parkway/Reserve Loop (W)

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	N
1	412	323	231
2	400	313	224
3	391	307	219
4	367	287	206
5	325	255	182
6	321	252	180
7	317	249	178
8	288	226	162
9	284	223	159
10	280	220	157
11	243	191	136
12	227	178	127
13	222	174	125
14	165	129	92
15	165	129	92
16	115	90	65
17	66	52	37
18	66	52	37
19	37	29	21
20	21	16	12
21	12	10	7
22	4	3	2
23	4	3	2
24	4	3	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	735	2	231	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
2	2	713	2	224	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
3	2	698	2	219	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
4	2	654	2	206	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
5	2	580	2	182	No	Yes	Yes	Yes	No	No	No	Yes	No	No
6	2	573	2	180	No	Yes	Yes	Yes	No	No	No	Yes	No	No
7	2	566	2	178	No	Yes	Yes	Yes	No	No	No	Yes	No	No
8	2	514	2	162	No	Yes	Yes	Yes	No	No	No	Yes	No	No
9	2	507	2	159	No	No	Yes	Yes	No	No	No	Yes	No	No
10	2	500	2	157	No	No	Yes	Yes	No	No	No	No	No	No
11	2	434	2	136	No	No	No	Yes	No	No	No	No	No	No
12	2	405	2	127	No	No	No	Yes	No	No	No	No	No	No
13	2	396	2	125	No	No	No	Yes	No	No	No	No	No	No
14	2	294	2	92	No	No	No	No	No	No	No	No	No	No
15	2	294	2	92	No	No	No	No	No	No	No	No	No	No
16	2	205	2	65	No	No	No	No	No	No	No	No	No	No
17	2	118	2	37	No	No	No	No	No	No	No	No	No	No
18	2	118	2	37	No	No	No	No	No	No	No	No	No	No
19	2	66	2	21	No	No	No	No	No	No	No	No	No	No
20	2	37	2	12	No	No	No	No	No	No	No	No	No	No
21	2	22	2	7	No	No	No	No	No	No	No	No	No	No
22	2	7	2	2	No	No	No	No	No	No	No	No	No	No
23	2	7	2	2	No	No	No	No	No	No	No	No	No	No
24	2	7	2	2	No	No	No	No	No	No	No	No	No	No
Hours Met					4	8	10	13	0	1	4	9	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	20.5
Number of Lanes on Minor Street Approach	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:19
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	231
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	966
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 41: 38th Pkwy/PA 46.1 Acc2

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E, W
Minor Approaches	S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets
	E	W	S
1	358	333	21
2	347	323	20
3	340	316	20
4	319	296	19
5	283	263	17
6	279	260	16
7	276	256	16
8	251	233	15
9	247	230	14
10	243	226	14
11	211	196	12
12	197	183	12
13	193	180	11
14	143	133	8
15	143	133	8
16	100	93	6
17	57	53	3
18	57	53	3
19	32	30	2
20	18	17	1
21	11	10	1
22	4	3	0
23	4	3	0
24	4	3	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	691	1	21	No	No	No	No	No	No	No	No	No	No
2	2	670	1	20	No	No	No	No	No	No	No	No	No	No
3	2	656	1	20	No	No	No	No	No	No	No	No	No	No
4	2	615	1	19	No	No	No	No	No	No	No	No	No	No
5	2	546	1	17	No	No	No	No	No	No	No	No	No	No
6	2	539	1	16	No	No	No	No	No	No	No	No	No	No
7	2	532	1	16	No	No	No	No	No	No	No	No	No	No
8	2	484	1	15	No	No	No	No	No	No	No	No	No	No
9	2	477	1	14	No	No	No	No	No	No	No	No	No	No
10	2	469	1	14	No	No	No	No	No	No	No	No	No	No
11	2	407	1	12	No	No	No	No	No	No	No	No	No	No
12	2	380	1	12	No	No	No	No	No	No	No	No	No	No
13	2	373	1	11	No	No	No	No	No	No	No	No	No	No
14	2	276	1	8	No	No	No	No	No	No	No	No	No	No
15	2	276	1	8	No	No	No	No	No	No	No	No	No	No
16	2	193	1	6	No	No	No	No	No	No	No	No	No	No
17	2	110	1	3	No	No	No	No	No	No	No	No	No	No
18	2	110	1	3	No	No	No	No	No	No	No	No	No	No
19	2	62	1	2	No	No	No	No	No	No	No	No	No	No
20	2	35	1	1	No	No	No	No	No	No	No	No	No	No
21	2	21	1	1	No	No	No	No	No	No	No	No	No	No
22	2	7	1	0	No	No	No	No	No	No	No	No	No	No
23	2	7	1	0	No	No	No	No	No	No	No	No	No	No
24	2	7	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	12.4
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:04
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	21
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	712
Number of Approaches on Intersection	3
Total Volume Condition Met	Yes
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 42: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E
Minor Approaches	N, S
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets	
	E	N	S
1	187	336	237
2	181	326	230
3	178	319	225
4	166	299	211
5	148	265	187
6	146	262	185
7	144	259	182
8	131	235	166
9	129	232	164
10	127	228	161
11	110	198	140
12	103	185	130
13	101	181	128
14	75	134	95
15	75	134	95
16	52	94	66
17	30	54	38
18	30	54	38
19	17	30	21
20	9	17	12
21	6	10	7
22	2	3	2
23	2	3	2
24	2	3	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	4	187	2	336	No	No	No	No	No	No	No	No	No	No
2	4	181	2	326	No	No	No	No	No	No	No	No	No	No
3	4	178	2	319	No	No	No	No	No	No	No	No	No	No
4	4	166	2	299	No	No	No	No	No	No	No	No	No	No
5	4	148	2	265	No	No	No	No	No	No	No	No	No	No
6	4	146	2	262	No	No	No	No	No	No	No	No	No	No
7	4	144	2	259	No	No	No	No	No	No	No	No	No	No
8	4	131	2	235	No	No	No	No	No	No	No	No	No	No
9	4	129	2	232	No	No	No	No	No	No	No	No	No	No
10	4	127	2	228	No	No	No	No	No	No	No	No	No	No
11	4	110	2	198	No	No	No	No	No	No	No	No	No	No
12	4	103	2	185	No	No	No	No	No	No	No	No	No	No
13	4	101	2	181	No	No	No	No	No	No	No	No	No	No
14	4	75	2	134	No	No	No	No	No	No	No	No	No	No
15	4	75	2	134	No	No	No	No	No	No	No	No	No	No
16	4	52	2	94	No	No	No	No	No	No	No	No	No	No
17	4	30	2	54	No	No	No	No	No	No	No	No	No	No
18	4	30	2	54	No	No	No	No	No	No	No	No	No	No
19	4	17	2	30	No	No	No	No	No	No	No	No	No	No
20	4	9	2	17	No	No	No	No	No	No	No	No	No	No
21	4	6	2	10	No	No	No	No	No	No	No	No	No	No
22	4	2	2	3	No	No	No	No	No	No	No	No	No	No
23	4	2	2	3	No	No	No	No	No	No	No	No	No	No
24	4	2	2	3	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N	S
Total Stopped Delay Per Vehicle on Minor Approach (s)	10.3	13.7
Number of Lanes on Minor Street Approach	2	2
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:57	0:54
Delay Condition Met	No	No
Volume on Minor Street Approach During Same Hour	336	237
High Minor Volume Condition Met	Yes	Yes
Total Entering Volume on All Approaches During Same Hour	760	760
Number of Approaches on Intersection	3	3
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	No	No
Warrant Met for Intersection	**No**	

Signal Warrants Report For Intersection 43: The Aurora Highlands Parkway/38th Parkway

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	W
Minor Approaches	N
Speed > 40mph	Yes
Population < 10,000	No
Warrant Factor	70%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets
	W	N
1	237	202
2	230	196
3	225	192
4	211	180
5	187	160
6	185	158
7	182	156
8	166	141
9	164	139
10	161	137
11	140	119
12	130	111
13	128	109
14	95	81
15	95	81
16	66	57
17	38	32
18	38	32
19	21	18
20	12	10
21	7	6
22	2	2
23	2	2
24	2	2

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	237	1	202	No	No	No	No	No	No	No	No	No	No
2	3	230	1	196	No	No	No	No	No	No	No	No	No	No
3	3	225	1	192	No	No	No	No	No	No	No	No	No	No
4	3	211	1	180	No	No	No	No	No	No	No	No	No	No
5	3	187	1	160	No	No	No	No	No	No	No	No	No	No
6	3	185	1	158	No	No	No	No	No	No	No	No	No	No
7	3	182	1	156	No	No	No	No	No	No	No	No	No	No
8	3	166	1	141	No	No	No	No	No	No	No	No	No	No
9	3	164	1	139	No	No	No	No	No	No	No	No	No	No
10	3	161	1	137	No	No	No	No	No	No	No	No	No	No
11	3	140	1	119	No	No	No	No	No	No	No	No	No	No
12	3	130	1	111	No	No	No	No	No	No	No	No	No	No
13	3	128	1	109	No	No	No	No	No	No	No	No	No	No
14	3	95	1	81	No	No	No	No	No	No	No	No	No	No
15	3	95	1	81	No	No	No	No	No	No	No	No	No	No
16	3	66	1	57	No	No	No	No	No	No	No	No	No	No
17	3	38	1	32	No	No	No	No	No	No	No	No	No	No
18	3	38	1	32	No	No	No	No	No	No	No	No	No	No
19	3	21	1	18	No	No	No	No	No	No	No	No	No	No
20	3	12	1	10	No	No	No	No	No	No	No	No	No	No
21	3	7	1	6	No	No	No	No	No	No	No	No	No	No
22	3	2	1	2	No	No	No	No	No	No	No	No	No	No
23	3	2	1	2	No	No	No	No	No	No	No	No	No	No
24	3	2	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	18.3
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	1:01
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	202
High Minor Volume Condition Met	Yes
Total Entering Volume on All Approaches During Same Hour	439
Number of Approaches on Intersection	2
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**

Signal Warrants Report For Intersection 82: TAH Pkwy/PA-46.1 Acc3

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	No
#2	Four Hour Vehicular Volume	No
#3	Peak Hour	No

Intersection Warrants Parameters

Major Approaches	E
Minor Approaches	N
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets	Minor Streets
	E	N
1	200	19
2	194	18
3	190	18
4	178	17
5	158	15
6	156	15
7	154	15
8	140	13
9	138	13
10	136	13
11	118	11
12	110	10
13	108	10
14	80	8
15	80	8
16	56	5
17	32	3
18	32	3
19	18	2
20	10	1
21	6	1
22	2	0
23	2	0
24	2	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	3	200	1	19	No	No	No	No	No	No	No	No	No	No
2	3	194	1	18	No	No	No	No	No	No	No	No	No	No
3	3	190	1	18	No	No	No	No	No	No	No	No	No	No
4	3	178	1	17	No	No	No	No	No	No	No	No	No	No
5	3	158	1	15	No	No	No	No	No	No	No	No	No	No
6	3	156	1	15	No	No	No	No	No	No	No	No	No	No
7	3	154	1	15	No	No	No	No	No	No	No	No	No	No
8	3	140	1	13	No	No	No	No	No	No	No	No	No	No
9	3	138	1	13	No	No	No	No	No	No	No	No	No	No
10	3	136	1	13	No	No	No	No	No	No	No	No	No	No
11	3	118	1	11	No	No	No	No	No	No	No	No	No	No
12	3	110	1	10	No	No	No	No	No	No	No	No	No	No
13	3	108	1	10	No	No	No	No	No	No	No	No	No	No
14	3	80	1	8	No	No	No	No	No	No	No	No	No	No
15	3	80	1	8	No	No	No	No	No	No	No	No	No	No
16	3	56	1	5	No	No	No	No	No	No	No	No	No	No
17	3	32	1	3	No	No	No	No	No	No	No	No	No	No
18	3	32	1	3	No	No	No	No	No	No	No	No	No	No
19	3	18	1	2	No	No	No	No	No	No	No	No	No	No
20	3	10	1	1	No	No	No	No	No	No	No	No	No	No
21	3	6	1	1	No	No	No	No	No	No	No	No	No	No
22	3	2	1	0	No	No	No	No	No	No	No	No	No	No
23	3	2	1	0	No	No	No	No	No	No	No	No	No	No
24	3	2	1	0	No	No	No	No	No	No	No	No	No	No
Hours Met					0	0	0	0	0	0	0	0	0	0

Warrant 3 Condition A

Orientation	N
Total Stopped Delay Per Vehicle on Minor Approach (s)	8.9
Number of Lanes on Minor Street Approach	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	0:02
Delay Condition Met	No
Volume on Minor Street Approach During Same Hour	19
High Minor Volume Condition Met	No
Total Entering Volume on All Approaches During Same Hour	219
Number of Approaches on Intersection	2
Total Volume Condition Met	No
Warrant Met for Approach	No
Warrant Met for Intersection	**No**