RGLP Gateway Campus Traffic Study Update

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BACKGROUND

As depicted below, the RGLP Gateway Campus is situated adjacent to the intersection of Alum Creek Drive & Toy Road approximately 1.25 miles south of I-270. A plan for the development of this 161 acre site was prepared and approved in 2007. Correspondingly, a traffic study (RGLP North Campus Extension Traffic Study, prepared by Traffic Engineering Services) was completed to outline the appropriate roadway system for accommodating the proposed new land-uses. The site has since remained farm fields with no development activity.

A proposal to locate a known use, nick-named "Project Eddie" within this campus prompted the preparation of a new master plan for the campus. "Project Eddie" is to occupy a 1,016 KSF building on this site. The traffic conditions for the Project Eddie use vary from the 2007 study; this includes the number of trips and access to Rohr Road.

The revised plan is a variation of one that was approved in 2007. The new plan includes only four logistics type buildings and an out parcel for commercial uses. The logistics type buildings are planned to total approximately 2,257.6 KSF. This is less than the previous plan for this campus, which included seven logistics type buildings totaling approximately 2,630.2 KSF. Copies of the new campus plan, as well as the 2007 one are included in Appendix A.

The purpose of this study is to identify improvements needed to allow the acceptable operation of the study area intersections with the proposed development.

The recommendations of the 2007 traffic study were formalized in an agreement outlining the required improvements and responsibilities for implementation.

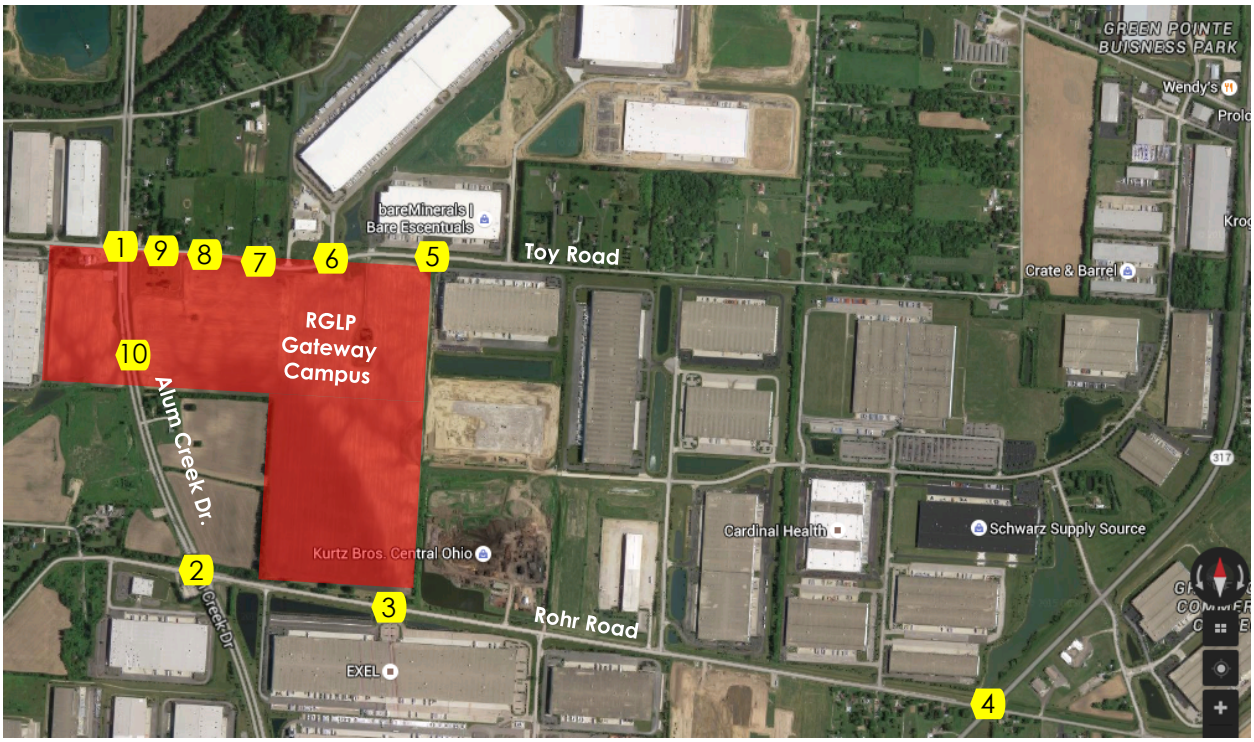
STUDY INTERSECTIONS

The following is a list of the ten study area intersections evaluated:

1 – Alum Creek Drive & Toy Road
2 – Alum Creek Drive & Rohr Road
3 – Rohr Road & Site Drive G *(RGLP)*
4 – SR 317 & Rohr Road
5 – Toy Road & Gateway Court (Drive F)
6 – Toy Road & Site Drive E *(RGLP)*
7 – Toy Road & Site Drive D *(RGLP)*
8 – Toy Road & Site Drive C *(RGLP)*
9 – Toy Road & Site Drive B *(RGLP)*
10 – Alum Creek Drive & Gateway Court (Opt #2)

Site Drives B, C, D, E, F, and G provide access to the proposed RGLP Gateway Campus business park. Site drives "E" and "F" align across from existing driveways on Toy Road. Site Drive "G" opposes an existing drive on Rohr Road.

The locations of these intersections and drives are depicted on the map below.



STUDY CRITERIA

The study intersections were evaluated for signal warrants, capacity analysis, turn lane warrants and turn lane lengths, as appropriate. Analysis was completed for AM and PM peak hours with the 2025 volumes. Capacity analysis was completed for the "Background" and "Total" traffic volume conditions for the years of 2016 and 2025.

For this study, the design speed on Toy Road is assumed to be 40 MPH. This is consistent with the requirements of the 2007 study. For all other roadways, a design speed of 60 MPH will be used for analyses.

The Design Year utilized for this study is 2025. This is consistent with the traffic study that is being performed for an adjacent site.

TRIP GENERATION

The Gateway Campus Traffic Study will incorporate some of the information from the 2007 RGLP North Campus Extension Traffic Study; particularly, the trip generation information for the majority of the site. The one exception is Building #1 (Project Eddie). Because this building is being constructed for a particular user, the trip generation for that building will be based on a previous study for the same user at another location that is similar to the operation planned for this location. The "Project Eddie" site trips were increased by a factor of 1.6 from the trip information provided. This reflects the increased number of parking spaces at this location as compared to the other similar sites upon which the trip generation was based (1,440 vs. 900). A copy of the trip data from the other study is provided in the appendix.

The table below outlines the proposed trips for the RGLP Gateway Campus.

Trip Generation - RGLP Gateway Campus

LAND-USE	SIZE (SF)	AM		PM	
		IN	OUT	IN	OUT
Project Eddie	1,016,080	296	125	67	312
Future Building 814	814,320	65	24	57	81
Building 192	192,000	15	6	13	19
Building 235 (w/o ACD)	235,200	19	7	16	24
Out Lot 2.76 AC	3,500	132	123	152	147
Total Site Trips	**2,261,100**	**527**	**285**	**305**	**583**
Pass-By Trips		**52**	**52**	**72**	**72**
Primary Site Trips		**475**	**233**	**233**	**511**

TRIP DISTRIBUTION

The proposed trip distribution is: 75% to/from the North on Alum Creek Drive, 20% to/from the South on Alum Creek Drive (south of Rohr Road), 2% to/from SR 317 (north of Rohr Road), 2% to/from Rohr Road (east of SR 317) and 1% to/from SR 317 (south of Rohr Road).

The proposed peak hour site trips are illustrated on the attached figures.

The trips calculated in the 2007 study for the out lots are also used in this study. These uses will likely generate pass-by type trips. These represent trips that are already on the adjacent street. These trips are only accounted for at the Alum Creek Drive & Toy Road intersection. The distribution of these trips is shown in the attached figures.

BACKGROUND TRAFFIC VOLUMES

The background traffic volumes for this study are based on various traffic counts completed by the FCEO (Alum Creek Drive & Toy Road – 2014), EMH&T (Rohr Road intersections), and Stantec (Toy Road & Bare Essentials Drive and Rohr Road & Proposed Site Driveway). EMH&T is preparing a traffic study for an adjacent property (Kurtz Brothers) along Rohr Road. The volumes for that study have been provided and will be used for the background traffic volumes along Rohr Road. Copies of the counts and traffic volume data are attached. The study for the Kurtz Brothers parcel includes an opening year of 2015 and a design year of 2025.

The following steps were utilized to develop year 2016 traffic volumes.

- Adding the trips from the Kurtz Brothers Study as off-site traffic, and
- Adding the site trips for the proposed "Project Eddie" development.

For year 2025, the methodology for projecting traffic volumes included the following steps.

- The Center Pointe Business Park, which is situated along the north side of Toy Road, is being expanded. Full buildout of this park would be a 67% increase compared to the current size of the park. To account for the expansion, the through volumes along Toy Road (as counted at the Bare Essentials driveway) were increased by 67%. This represents the potential growth of this portion of Center Pointe from 1.5 MSF to 2.5 MSF. The increased volumes were distributed 60% to the north and 40% to the south at the Alum Creek Drive & Toy Road intersection.

- The increased volumes for the Center Pointe expansion were added to the north-south volumes on Alum Creek Drive at Rohr Road from the Kurtz Brothers study.

- The North and South thru volumes on Alum Creek Drive at the Toy Road intersection were increased to balance with the total north-south volumes on Alum Creek Drive north of Rohr Road. This includes the growth from the Kurtz Brothers study and the Center Pointe expansion.

The volumes, as derived above, represent an increase over the 2014 traffic counts for the Alum Creek Drive & Toy Road intersection by a factor of 1.22 for the AM volumes and 1.50 for the PM volumes. This represents growth ranging from 2% annually for the AM volumes to 4.5% annually for the PM volumes.

The background volumes are depicted on the attached figures. The total site traffic and the background volumes were combined to develop the total traffic volumes. The total traffic volumes are depicted on the attached figures.

SCENARIOS

This study evaluated the traffic volumes for the AM and PM Peak Hour periods associated with the following scenarios;

- 2016 Background Traffic Volumes,
- 2016 Total Traffic Volumes Option 1,
- 2016 Total Traffic Volumes Option 2,
- 2025 Background Traffic Volumes,
- 2025 Total Traffic Volumes Option 1, and
- 2025 Total Traffic Volumes Option 2.

IMPROVEMENT OPTIONS

Two improvement options were evaluated as part of this study. **Option 1** includes access for the proposed RGLP site via drives on Toy Road and Rohr Road. **Option 2** includes the addition of a new east-west roadway intersecting Alum Creek Drive approximately 1,300 feet south of Toy Road. This roadway is known as Gateway Court.

ANALYSIS

Analysis of the options was completed with a combination of Synchro 9 and the Highway Capacity Manual 2010. Analyses included:

- Intersection level of service (LOS); the stop controlled intersections will operate satisfactorily. Tables summarizing the LOS analyses of signal controlled intersection are on pages 12 and 13, ordered by intersection analyzed.

- Turn-Lane Warrants and Turn Lane Lengths Calculations are tabulated on page 14.

- Signal warrants were evaluated at the stop controlled intersections of Toy Road & Drive B, Toy Road & Drive F (Gateway Drive), and Rohr Road & Drive G (Excel Driveway). None of the intersections along Toy Road met a sufficient volume threshold to warrant the construction of a traffic signal. The 2025 Background volumes at the Rohr Road & Excel Driveway) meet a peak hour warrant with a single lane approach on the Excel Driveway. This includes a 15% right turn reduction. The addition of a second approach lane on the Excel Driveway this driveway does not meet the peak hour warrant. The Excel Driveway is 36 feet wide. It may be possible to re-stripe this driveway to include a second northbound exit lane. It is recommended that if peak hour delays get excessive at the Excel Driveway that this driveway be re-striped or widened to allow for the addition of a second northbound exit lane.

As part of the initial review of this traffic study the Village of Groveport expressed concern of the potential for more traffic using the Rohr Road & Drive G intersection to access the "Project Eddie" facility, and that this could result in the need for a traffic signal at this intersection. A cursory review of the volumes at this location indicates that 72 vehicles are projected to turn right out and 25 vehicles turn left out of Drive G in the PM Peak, with 29 vehicles turning right out and 67 vehicles turning left out of the existing opposing (Excel) driveway. Considering right turn discounts, which for the conditions for southbound traffic on Drive G would be 50 to 55 percent, the exiting volume from "Project Eddie" at Drive G would need to be increased by more than 33 percent before the volumes at this location meet the warrants for a traffic signal. This represents an additional 32 trips exiting Drive G. This would be equivalent to more than 40 percent of the "Project Eddie" traffic using Drive G. Per the 2025 Background analyses cited in the paragraph above, the potential need for a traffic signal at this location is related to the traffic on the existing Excel Driveway, not the addition of the "Project Eddie" traffic at this location.

- An iterative series of Synchro analyses of the signalized intersections along Alum Creek Drive were completed in conjunction with the Franklin County Engineer's Office. The refinement of traffic volumes, truck percentages, peak hour factors, and LOS criteria resulting from that process are included in the analyses summarized within this report. Notably from that process, it was determined that three through lanes on Alum Creek Drive would be a maximum for this study.

The analyses results are summarized in the tables and figures on the following pages.

The analyses of the 2016 volumes are summarized in tables 1 and 3. This includes analyses of the Background and Total (Option 1 and Option 2) volumes with the existing lane configuration (Table 3), as well as the Background and Total (Option 1 and Option 2) volumes with proposed

improvements necessary to achieve a LOS C or a reasonable LOS D. For the 2016 volumes, a reasonable LOS D is defined as having an overall intersection delay of 40 seconds, or less.

The analyses of the 2025 volumes are summarized in Table 1. This includes analyses of the Background and Total (Option 1 and Option 2) volumes with proposed improvements necessary to achieve a LOS C or a reasonable LOS D. For the 2025 volumes, a reasonable LOS D is defined as having an overall intersection delay of 40 seconds, or less. The one exception to this criteria, as outlined above, is that Alum Creek Drive would have no more than three northbound through lanes and three southbound through in these analyses. This does result in LOS E at the Alum Creek Drive & Toy Road intersection for the 2025 Option 1 volumes.

Table 1 – Year 2016 Capacity Results for Signalized Intersections.

Year	Period	Alternative	ACD & Toy Road		ACD & Gateway Crt		ACD & Rohr Road		Rohr & SR 317	
			LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
2016	AM	Background (Existing Lane Configuration)	C	31.7			C	24.2	B	15.2
2016	AM	Background (with Improvements)	C	31.8			C	24.6	B	15.5
2016	AM	Option #1 (with Improvements)	C	25.7			C	21.2	C	20.4
2016	AM	Option #2 (with Improvements)	B	19.9	A	8.5	C	24.3	C	20.3
2016	PM	Background (Existing Lane Configuration)	C	31.1			D	51.8	C	25.3
2016	PM	Background (with Improvements)	C	32.5			C	30.8	C	25.3
2016	PM	Option #1 (with Improvements)	D	40.5			C	31.3	C	27.8
2016	PM	Option #2 (with Improvements)	D	38.0	A	8.5	D	36.3	C	30.5

Table 2 – Year 2025 Capacity Results for Signalized Intersections.

Year	Period	Alternative	ACD & Toy Road		ACD & Gateway Crt		ACD & Rohr Road		Rohr & SR 317	
			LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
2025	AM	Background (with Improvements)	B	18.0			C	32.9	B	15.9
2025	AM	Option #1 (with Improvements)	B	19.2			C	28.0	B	11.9
2025	AM	Option #2 (with Improvements)	B	16.2	A	7.7	C	27.7	B	16.4
2025	PM	Background (with Improvements)	C	34.2			C	33.7	C	30.1
2025	PM	Option #1 (with Improvements)	E	56.2			C	29.8	C	32.4
2025	PM	Option #2 (with Improvements)	D	38.4	A	8.7	C	29.5	C	32.4

Table 3 – Year 2016 Capacity Results for Signalized Intersections (with existing lane configuration).

Year	Period	Alternative	ACD & Toy Road		ACD & Gateway Crt		ACD & Rohr Road		Rohr & SR 317	
			LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
2016	AM	Background (Existing Lane Configuration)	C	31.7			C	24.2	B	15.2
2016	AM	Option #1 (Existing Lane Configuration)	D	41.5			D	39.4	B	19.7
2016	AM	Option #2 (Existing Lane Configuration)	D	55.0	A	8.2	D	41.8	B	19.7
2016	PM	Background (Existing Lane Configuration)	C	31.1			D	51.8	C	25.3
2016	PM	Option #1 (Existing Lane Configuration)	E	72.6			D	54.3	C	27.8
2016	PM	Option #2 (Existing Lane Configuration)	D	40.4	A	8.7	E	55.7	C	27.9

Table 4 – Year 2016 Capacity Results for Stop Controlled Intersections.

Year	Period	Alternative	Toy & Drive B		Toy & Drive C		Toy & Drive D		Toy & Drive E		Toy & Drive F		Rohr & Drive G	
			LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
2016	AM	Background (Existing Lane Configuration)												
2016	AM	Background (with Improvements)												
2016	AM	Option #1 (with Improvements)									A	2.9	A	1.3
2016	AM	Option #2 (with Improvements)											A	1.3
2016	PM	Background (Existing Lane Configuration)												
2016	PM	Background (with Improvements)												
2016	PM	Option #1 (with Improvements)									A	12.9	B	9
2016	PM	Option #2 (with Improvements)											B	9

Table 5 – Year 2025 Capacity Results for Stop Controlled Intersections.

Year	Period	Alternative	Toy & Drive B		Toy & Drive C		Toy & Drive D		Toy & Drive E		Toy & Drive F		Rohr & Drive G	
			LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
2025	AM	Background (with Improvements)												
2025	AM	Option #1 (with Improvements)	A	4.8	A	0.1	A	0.2	A	1.5	A	2	A	1.9
2025	AM	Option #2 (with Improvements)	A	2.7									A	1.9
2025	PM	Background (with Improvements)												
2025	PM	Option #1 (with Improvements)	A	5.2	A	0.3	A	0.7	A	1.6	E	42.2	A	9.8
2025	PM	Option #2 (with Improvements)	A	3									A	9

FIGURE 1 – PROPOSED LANE CONFIGURATION AND TURN LANE LENGTHS (OPTION 1)

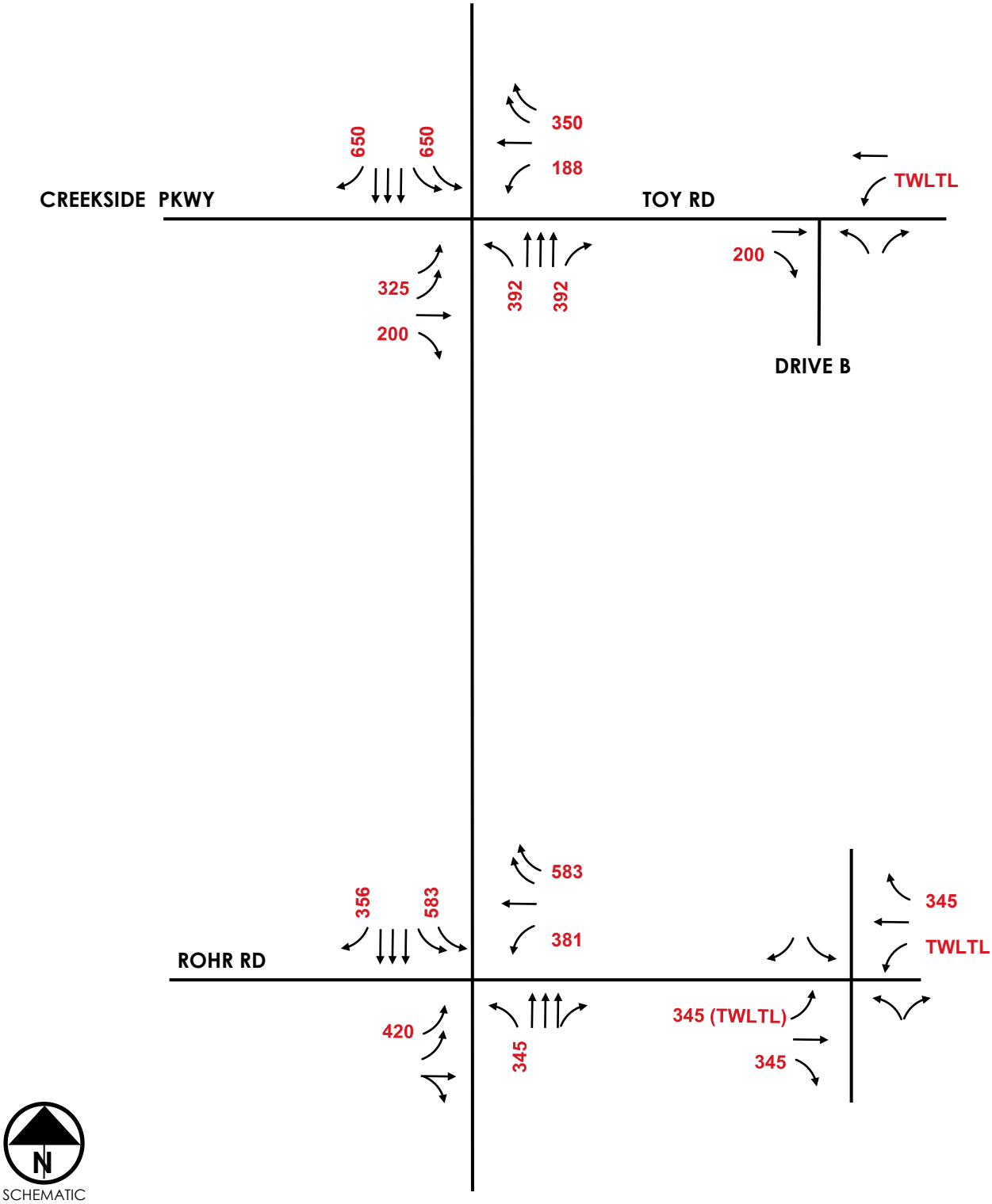


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FIGURE 2 – PROPOSED LANE CONFIGURATION AND TURN LANE LENGTHS (OPTION 2)

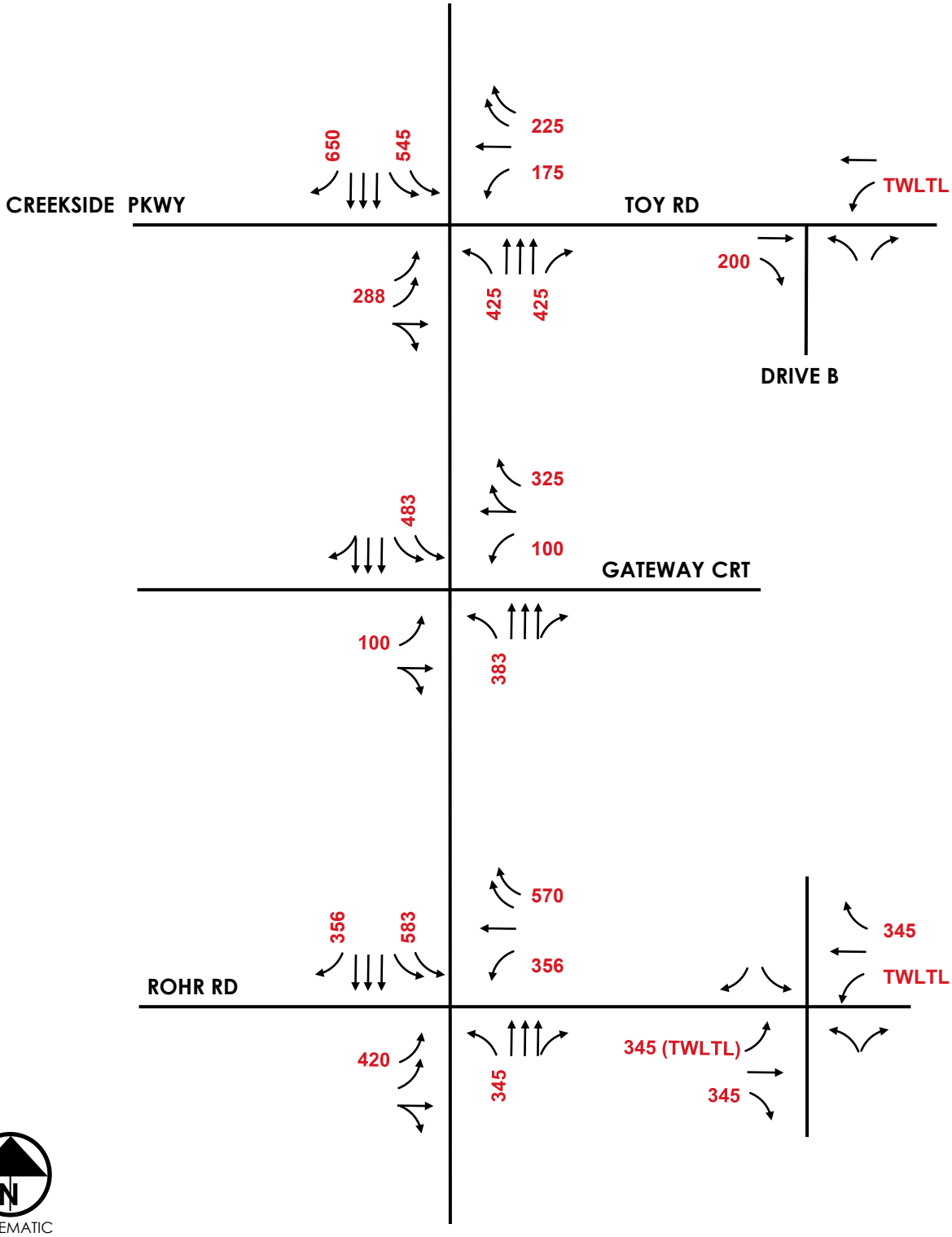

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Table 6 – Lane Configurations

Year	Alternative	Toy Road & Alum Creek Drive											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	Existing	1	2		1	2		2	1		2	1	1
2025	Background	1	2	1	2	2	1	2	1		2	1	2
2025	Option #1	1	3	1	2	3	1	2	1	1	2	1	2
2025	Option #2	1	3	1	2	3	1	2	1		2	1	2

Year	Alternative	Gatway Court & Alum Creek Drive											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	Existing		2			2							
2025	Background		2			2							
2025	Option #1		3			3							
2025	Option #2	1	3		2	3		1	1		1	1*	1

Year	Alternative	Rohr Road & Alum Creek Drive											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
	Existing	1	2		1	2		2	1		1	1	1
2025	Background	1	2	1	2	2	1	2	1		1	1	2
2025	Option #1	1	3	1	2	3	1	2	1		1	1	2
2025	Option #2	1	3	1	2	3	1	2	1		1	1	2

* - shared thru/right lane

- denotes additional lane vs. existing lane configuration.

Table 7 – Turn Lane Lengths (in feet)

Year	Alternative	Toy Road & Alum Creek Drive											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2025	Background	625		625	575		650	338			150		200
2025	Option #1	392		392	620		650	325		200	188		350
2025	Option #2	425		425	545		650	288			175		225

Year	Alternative	Gatway Court & Alum Creek Drive											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2025	Background												
2025	Option #1												
2025	Option #2	383			483			100			100		325

Year	Alternative	Rohr Road & Alum Creek Drive											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2025	Background	413		413	583		363	420			356		583
2025	Option #1	345			583		356	420			381		583
2025	Option #2	345			583		356	420			356		570

Year	Alternative	Rohr Road & Drive G											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2025	Background							345		345	345		
2025	Option #1							345		345	345		345
2025	Option #2							345		345	345		345

Year	Alternative	Toy Road & Drive B											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2025	Background												
2025	Option #1									200			
2025	Option #2									200			

Year	Alternative	Toy Road & Drive E/Westpoint											
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
2025	Background												
2025	Option #1												345
2025	Option #2												

CONCLUSIONS

The projected traffic volumes will require improvements at several of the study area intersections. These improvements include:

Background Traffic

The following improvements are needed to allow the study intersections to operate properly with the 2016 Background traffic volumes. These are the minimum improvements needed to support the traffic volumes prior to the addition of the traffic associated with the RGLP Gateway Campus.

Alum Creek Drive & Rohr Road (2016)

- Construct a second Southbound Left Turn Lane on Alum Creek Drive
- Construct a second Westbound Right Turn Lane on Toy Road

Rohr Road & Drive G (2016)

- Construct an Eastbound Right Turn Lane
- Restripe the existing Two-Way Left Turn Lane (TWLTL) to a Westbound Left Turn Lane

In addition to the improvements outlined above for the 2016 Background traffic volumes, the following improvements are necessary for the study intersections to operate properly with the projected 2025 Background traffic volumes. Again, these are the minimum improvements needed to support the projected traffic volumes prior to the addition of the traffic associated with the RGLP Gateway Campus.

Alum Creek Drive & Toy Road (2025)

- Construct a second Southbound Left Turn Lane on Alum Creek Drive
- Construct a second Westbound Right Turn Lane on Toy Road
- Construct a Northbound Right Turn Lane on Alum Creek Drive

Alum Creek Drive & Rohr Road (2025)

- Construct a Northbound Right Turn Lane on Alum Creek Drive

Total Traffic

The following improvements are needed to allow the study intersections to operate properly with the 2016 total traffic volumes associated with Option #1 and Option #2.

Alum Creek Drive & Toy Road (2016)

- Construct a Southbound Right Turn Lane on Alum Creek Drive (Option #1 & Option #2)
- Construct a Northbound Right Turn Lane on Alum Creek Drive (Option #1 & Option #2)
- Construct a second Westbound Right Turn Lane on Toy Road (Option #1 only)
- Construct an Eastbound Right Turn Lane on Toy Road (Option #1 only)

Alum Creek Drive & Gateway Court (2016)

- Construct two Southbound Left Turn Lanes on Alum Creek Drive (Option #2 only)
- Install a traffic signal at this intersection (Option #2 only)
- Construct Gateway Court with three westbound (outbound) lanes and two eastbound (receiving) lanes (Option #2 only).

Alum Creek Drive & Rohr Road (2016)

- Construct a Northbound Right Turn Lane on Alum Creek Drive (Option #1 & Option #2)

Rohr Road & Drive G (2016)

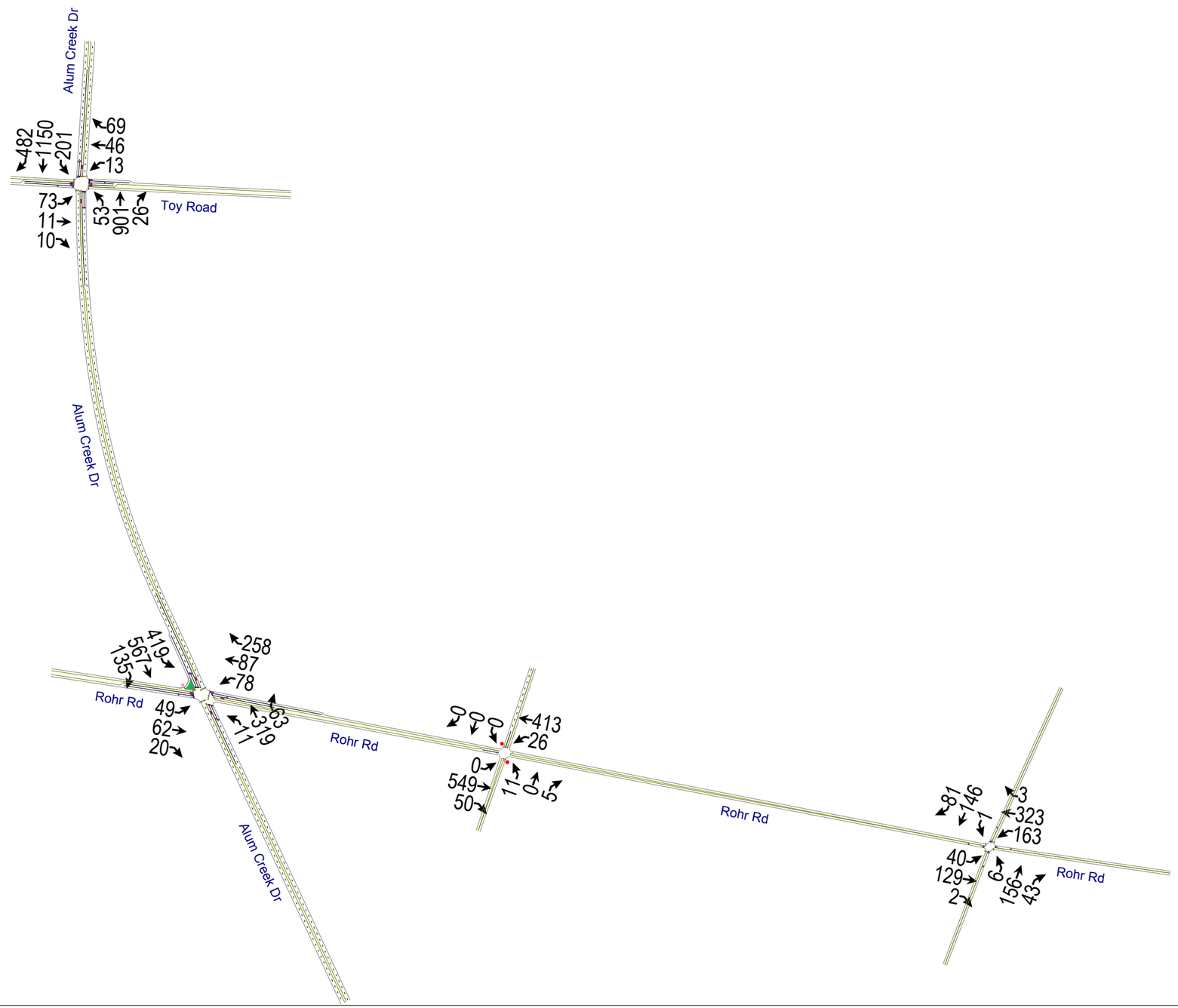
- Construct a Westbound Right Turn Lane (Option #1 & Option #2)
- Restripe the existing Two-Way Left Turn Lane (TWLTL) to an Eastbound Left Turn Lane (Option #1 & Option #2)

In addition to the improvements outlined above, the 2025 Total traffic volumes for both Option #1 and Option #2 indicate the need for a third northbound thru lane and a third southbound thru lane on Alum Creek Drive.

No improvements are outlined for the SR 317 & Rohr Road intersection.

Option 2 provides a better level-of-service than does Option 1. Additionally, Option 2 is the easiest to construct given the expedited schedule of "Project Eddie." As such, it is recommended that Option 2 be implemented.

Volume Figures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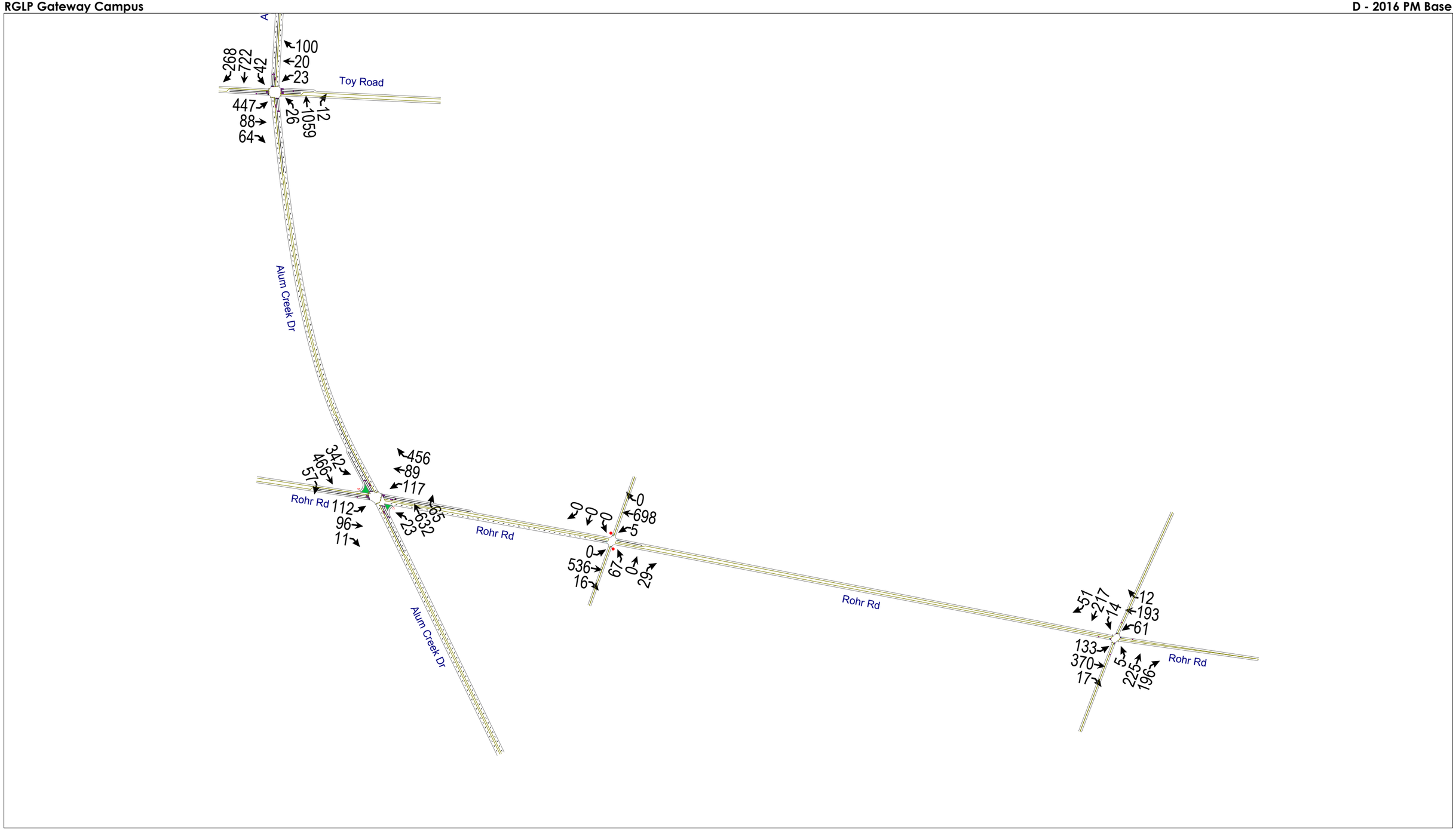
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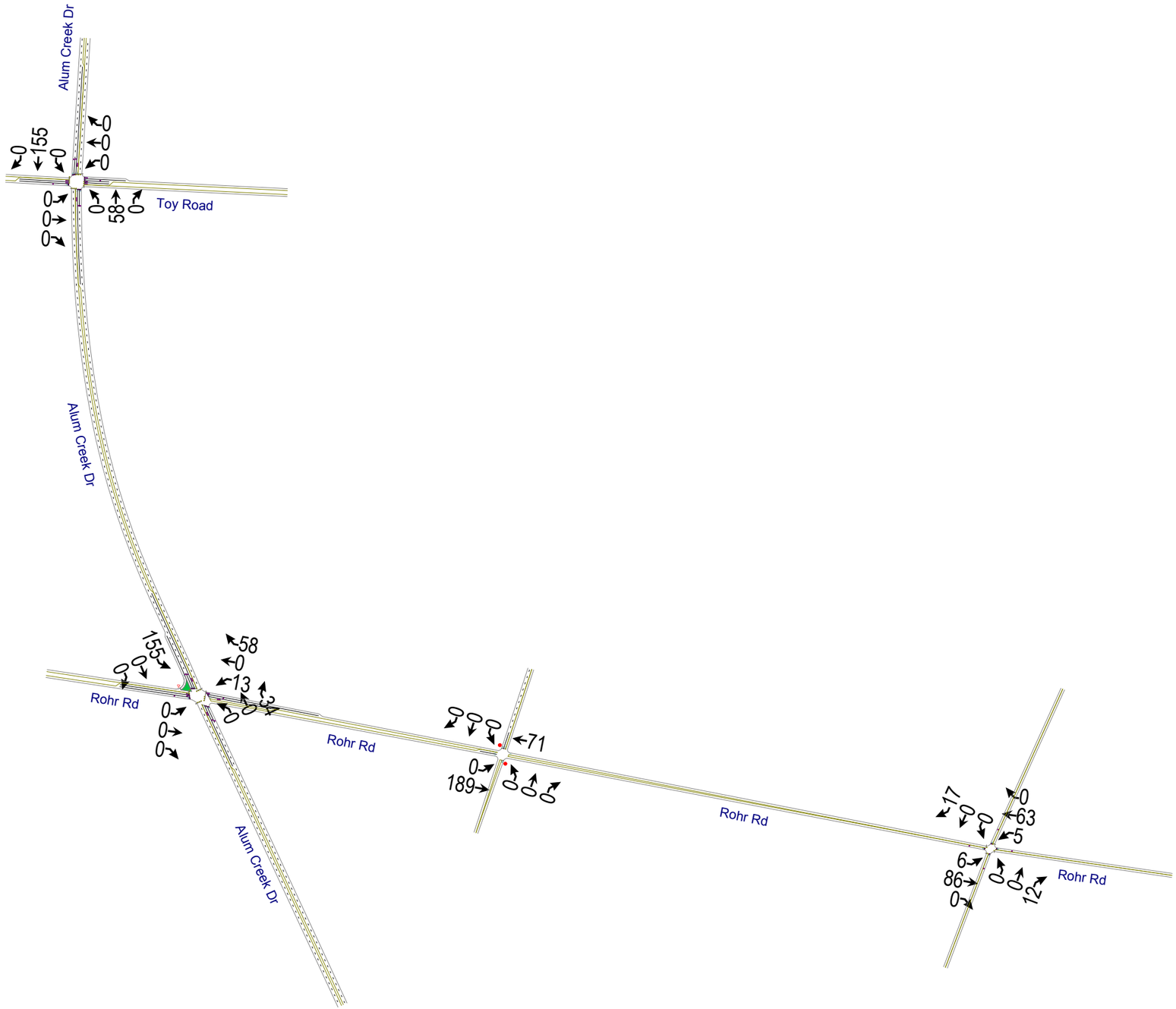
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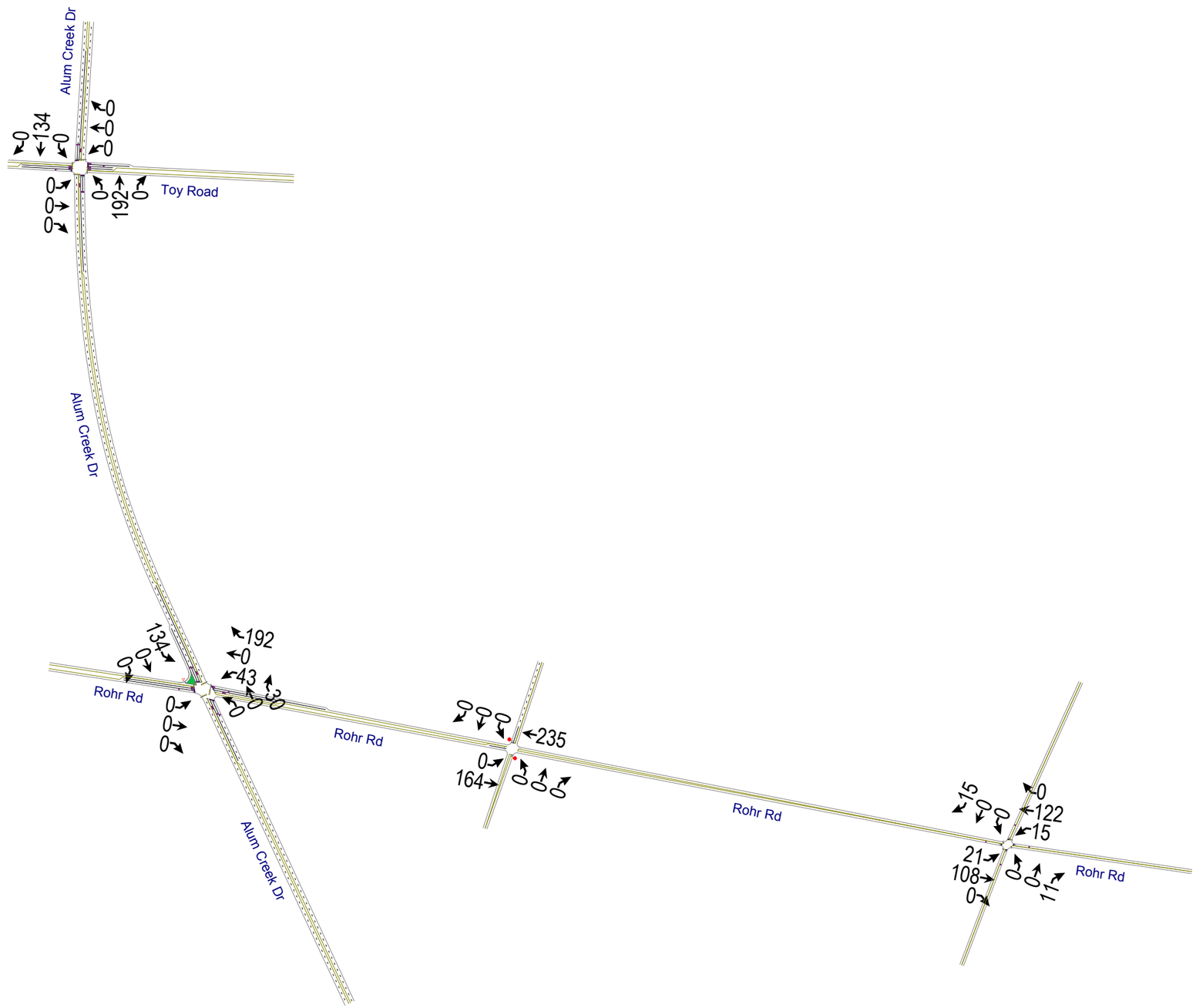
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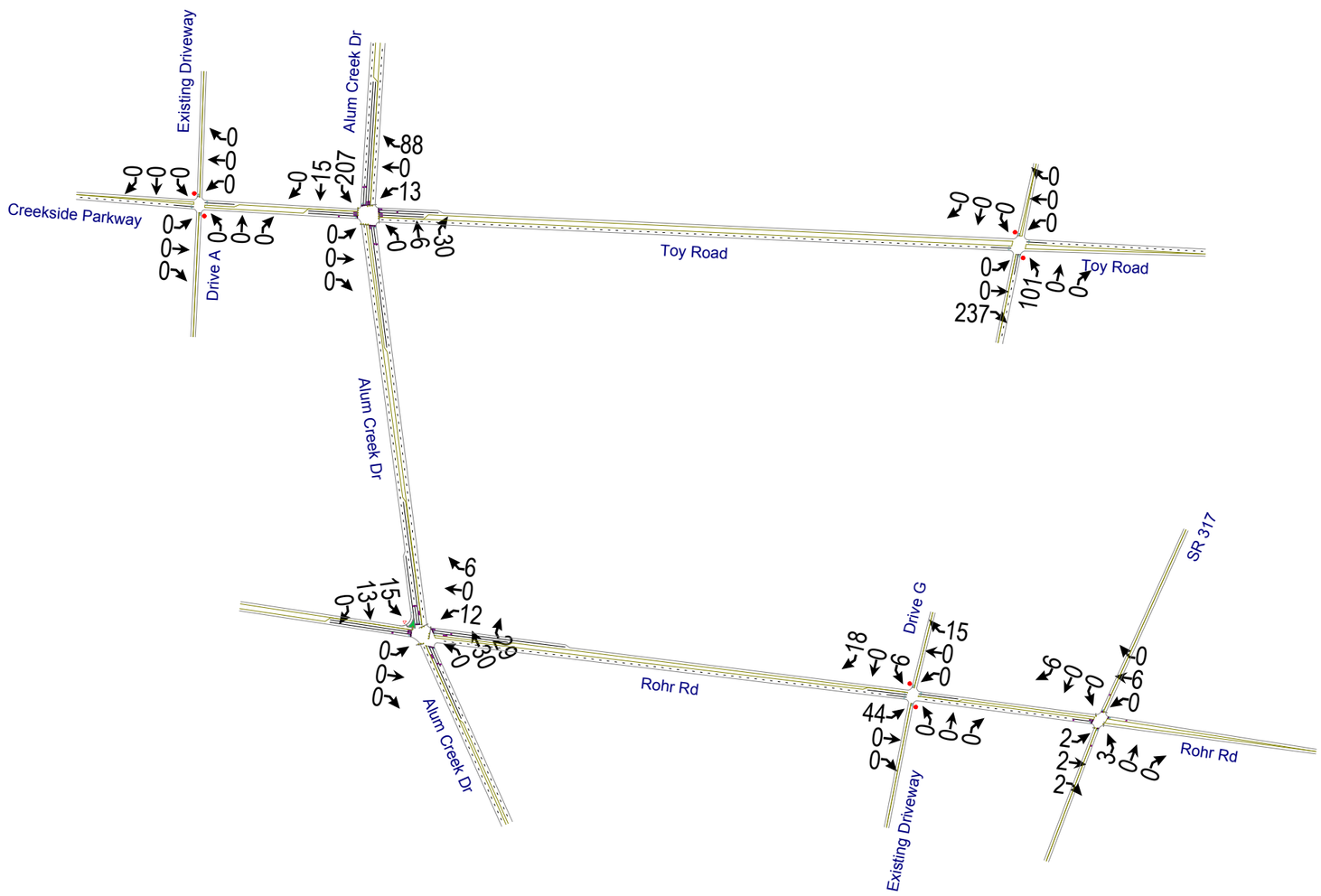
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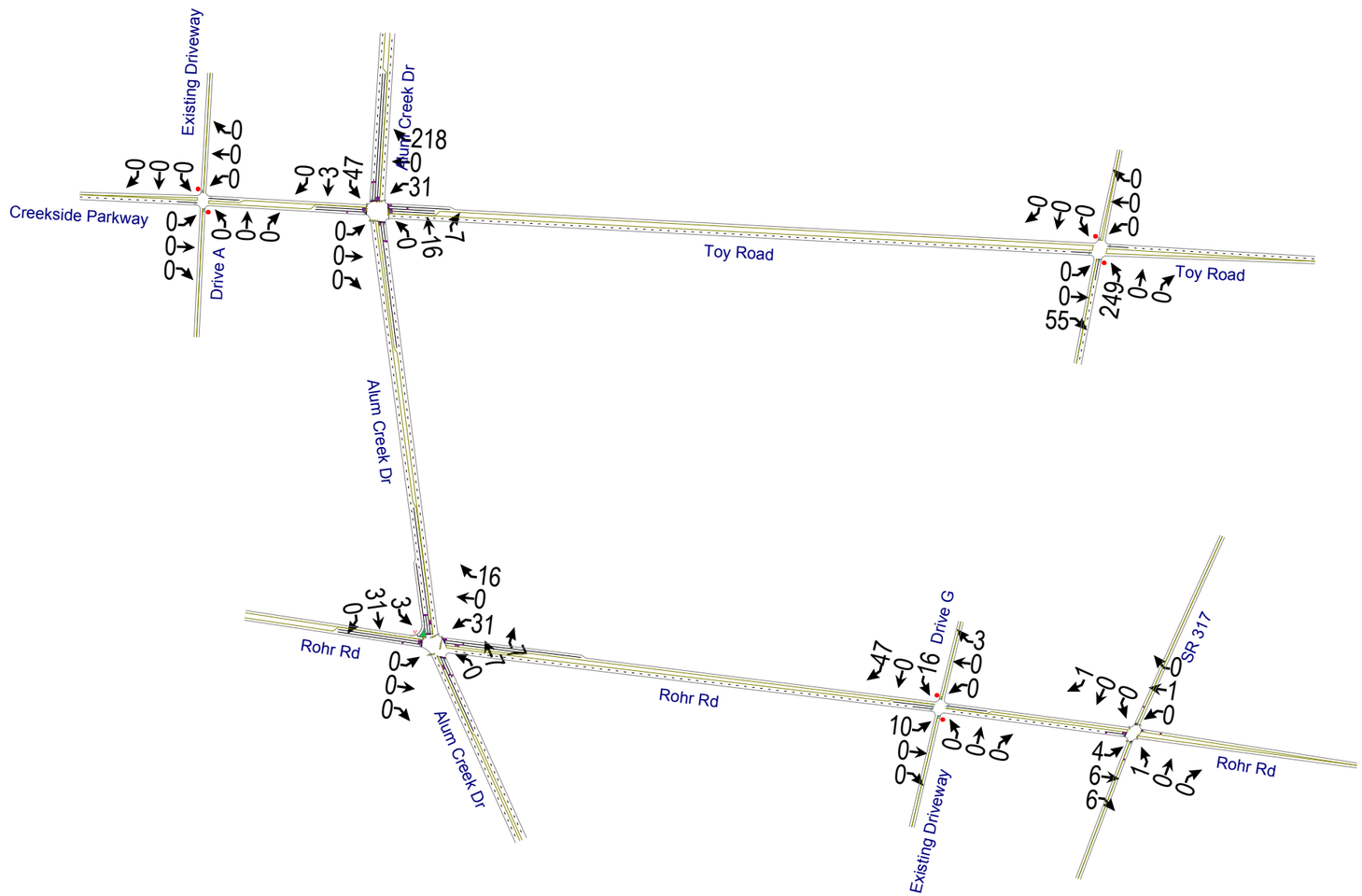
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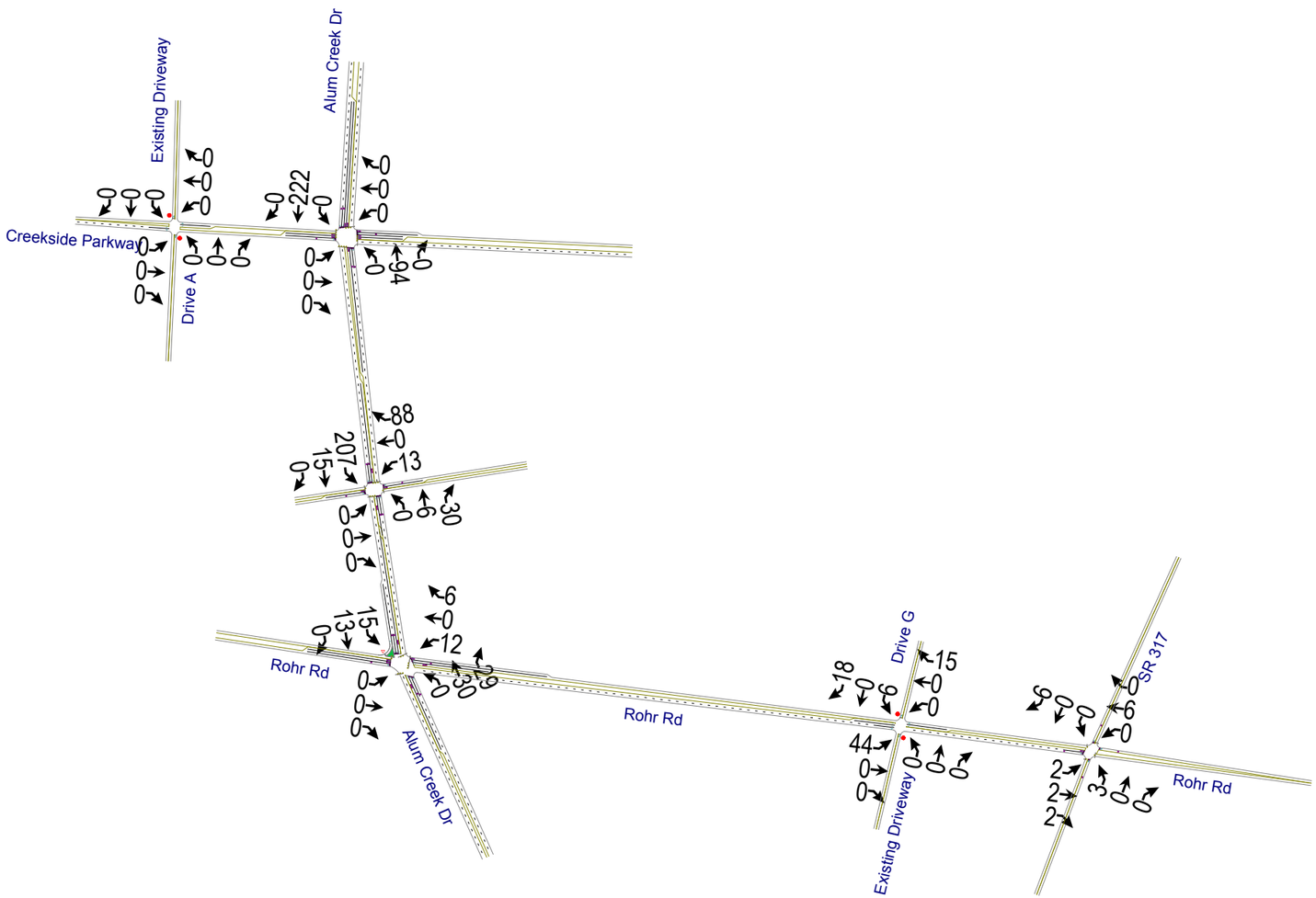
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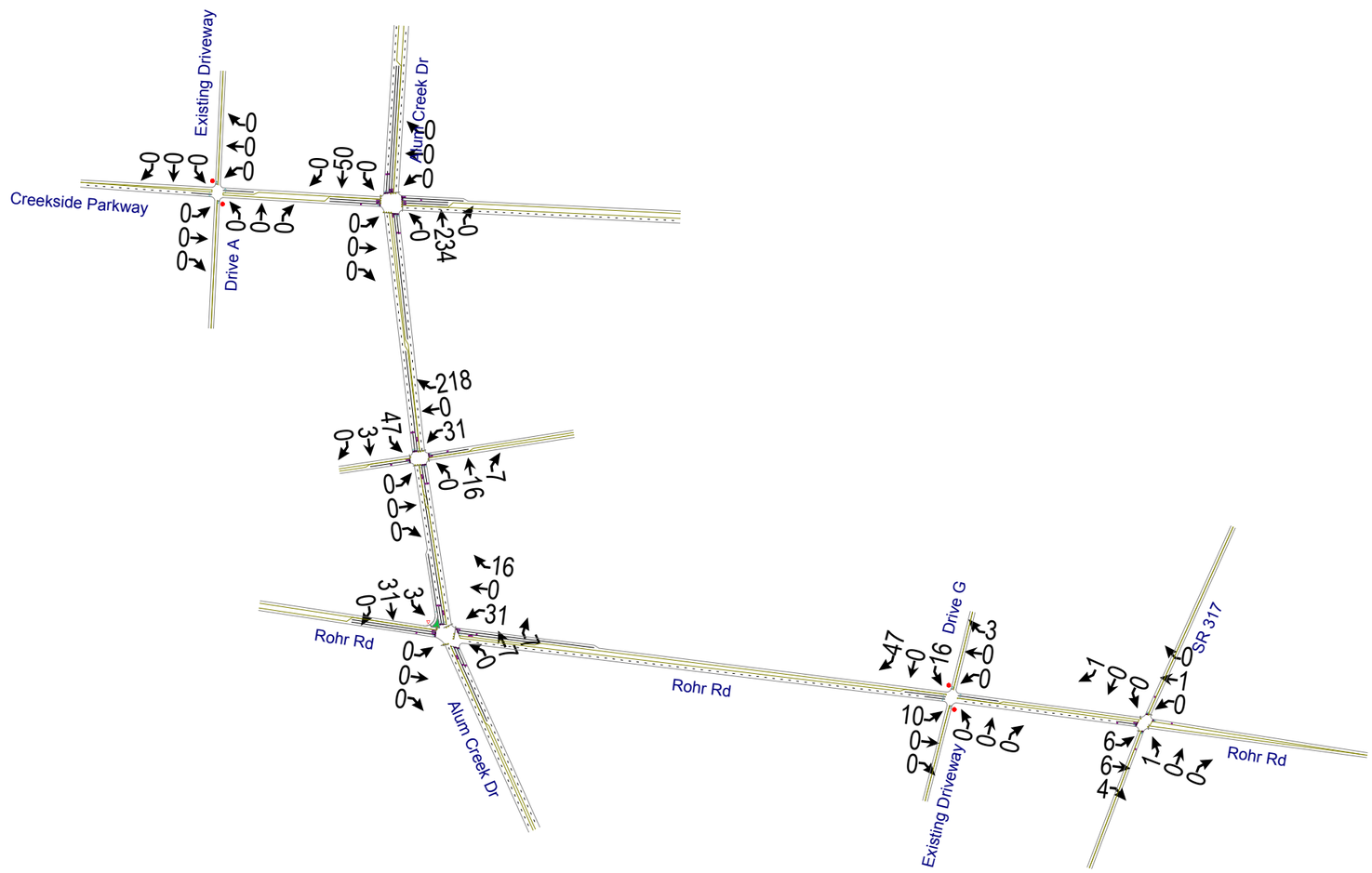
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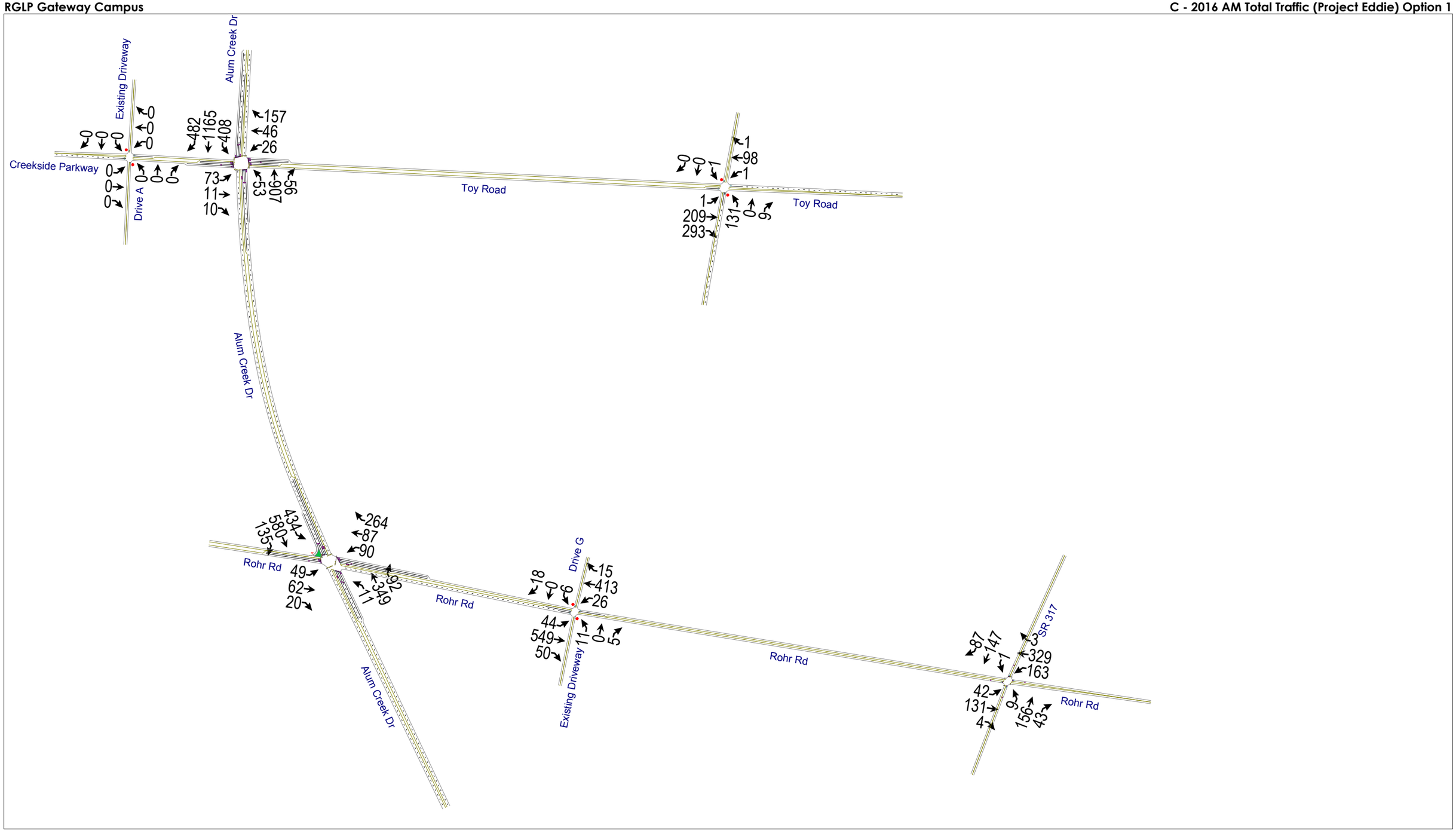
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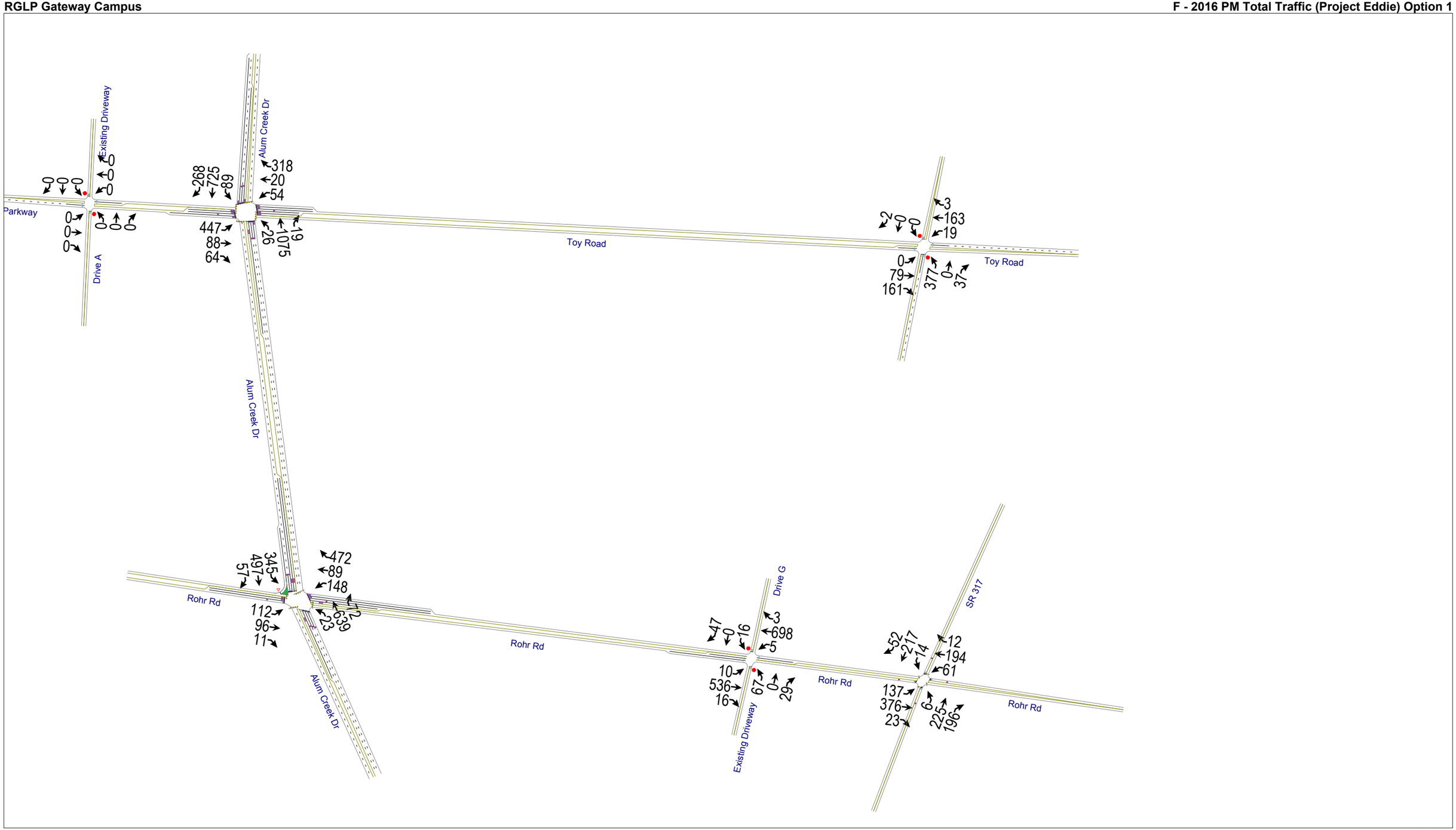
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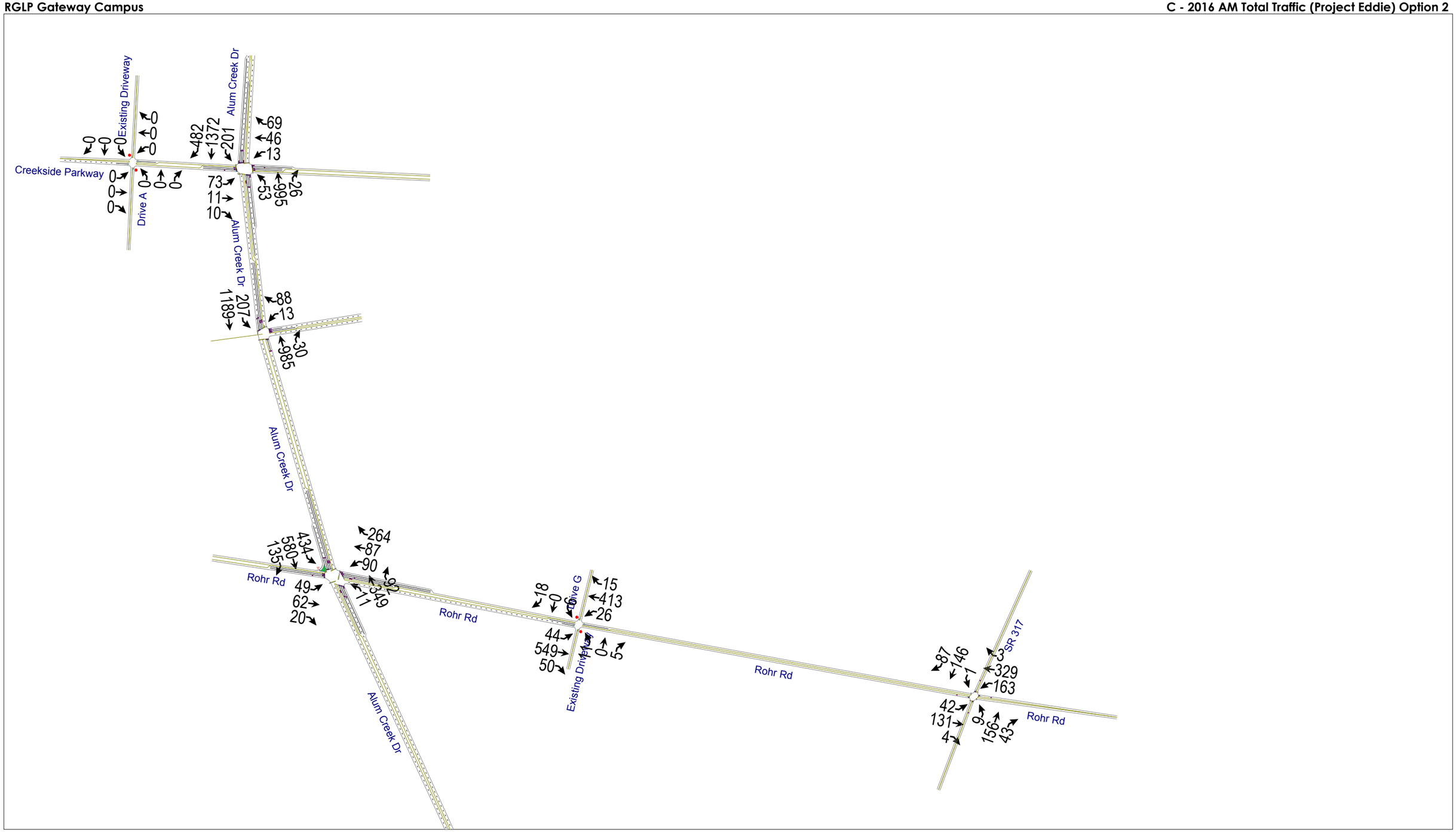
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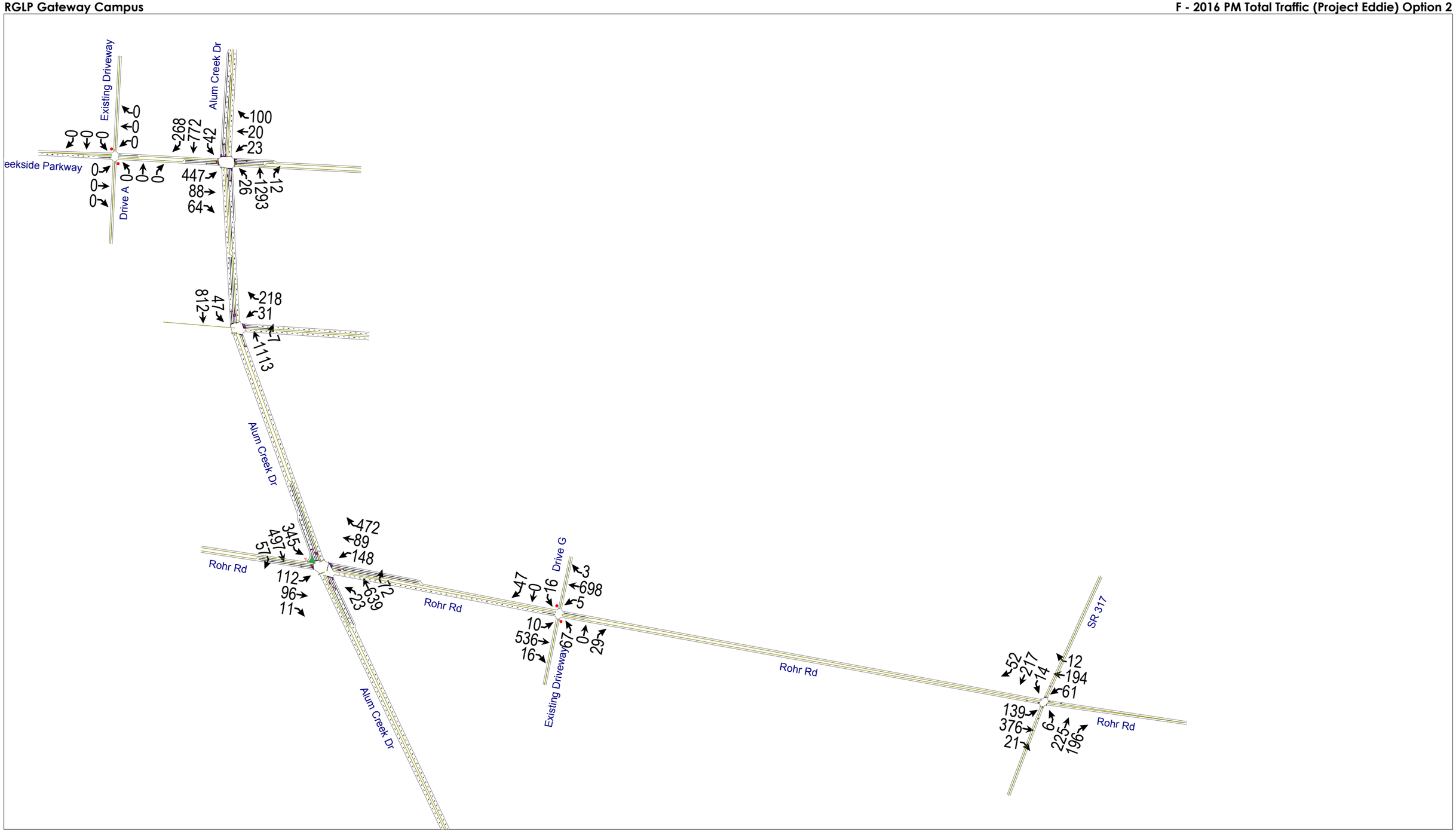
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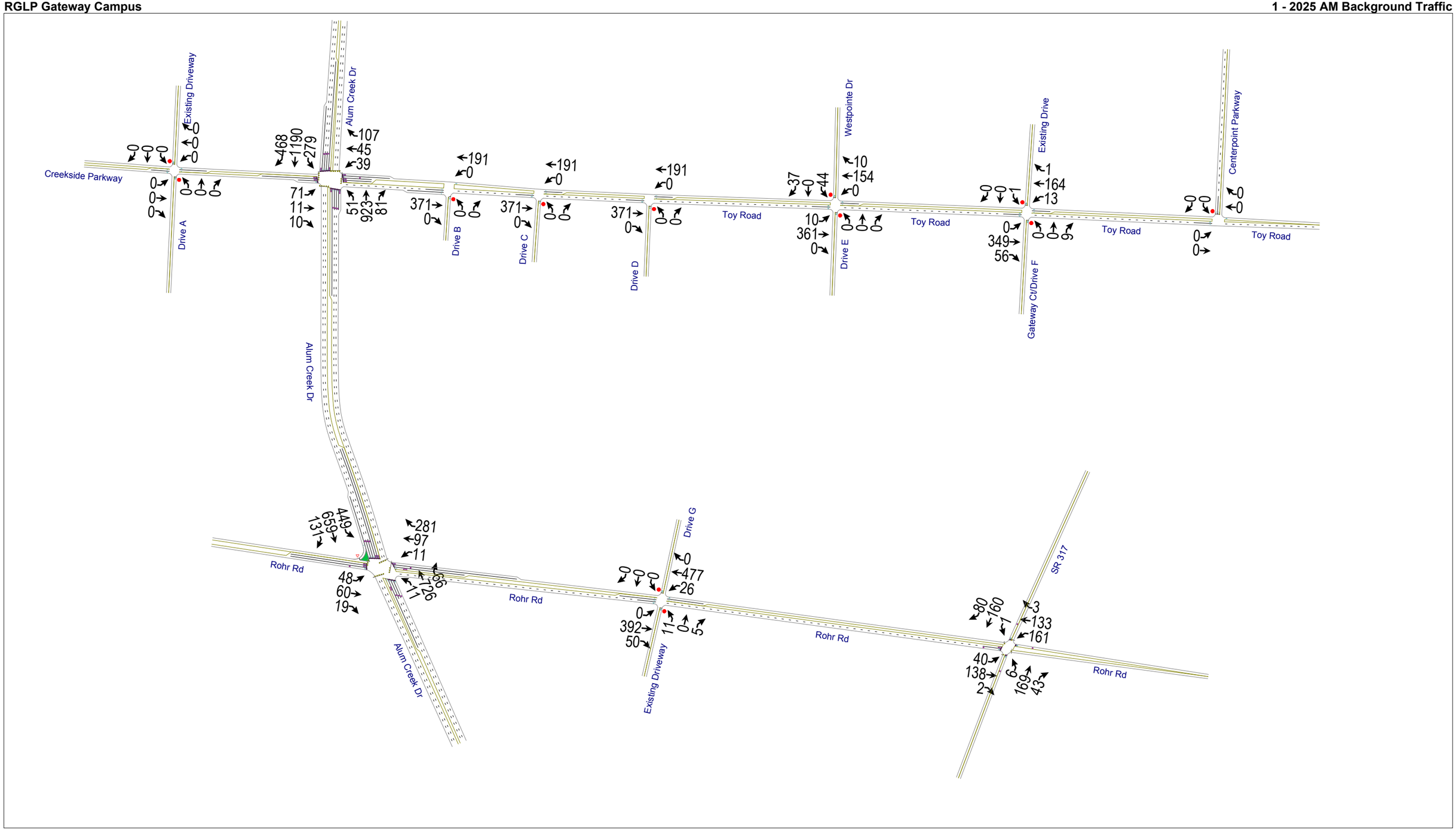
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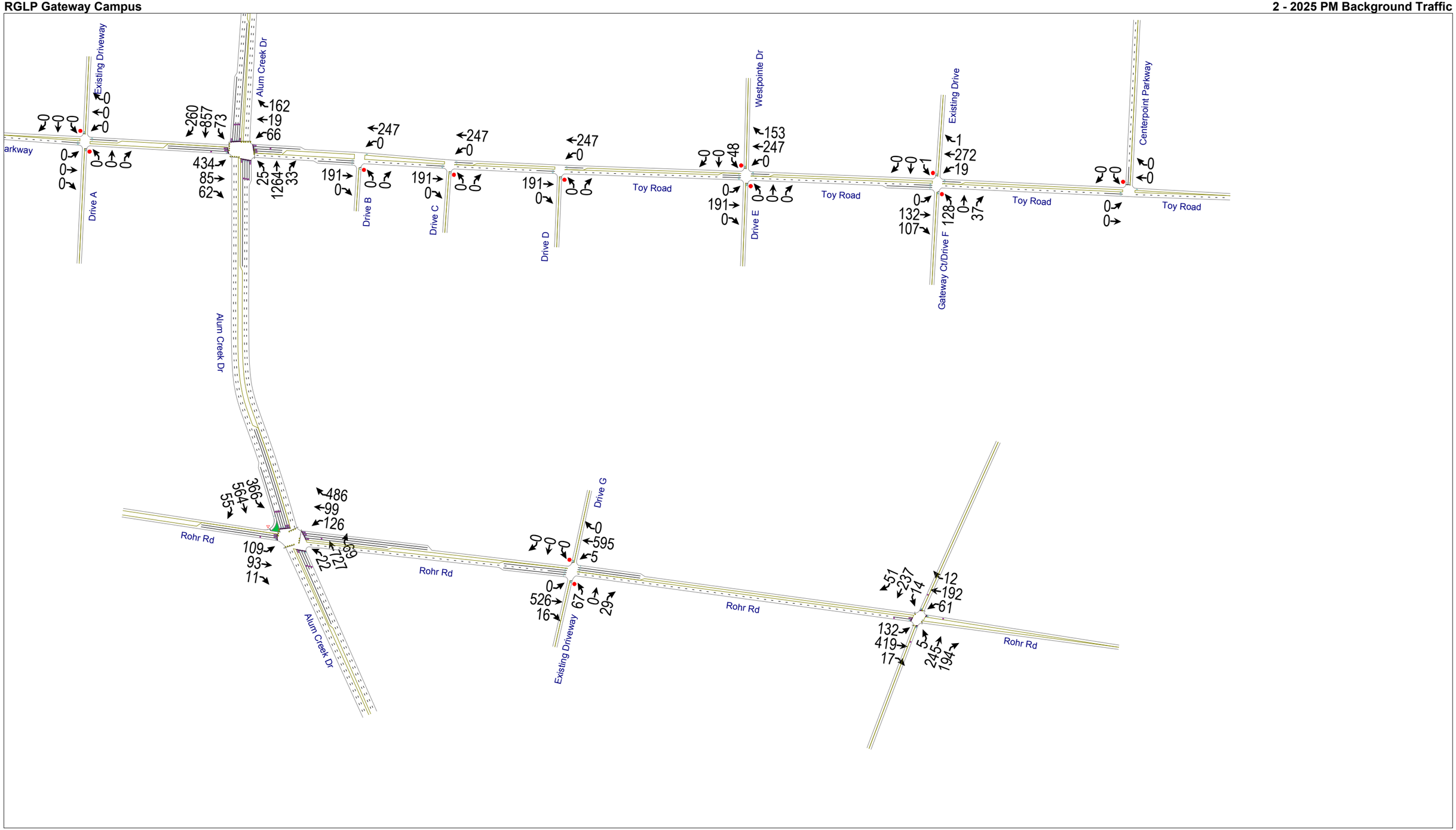
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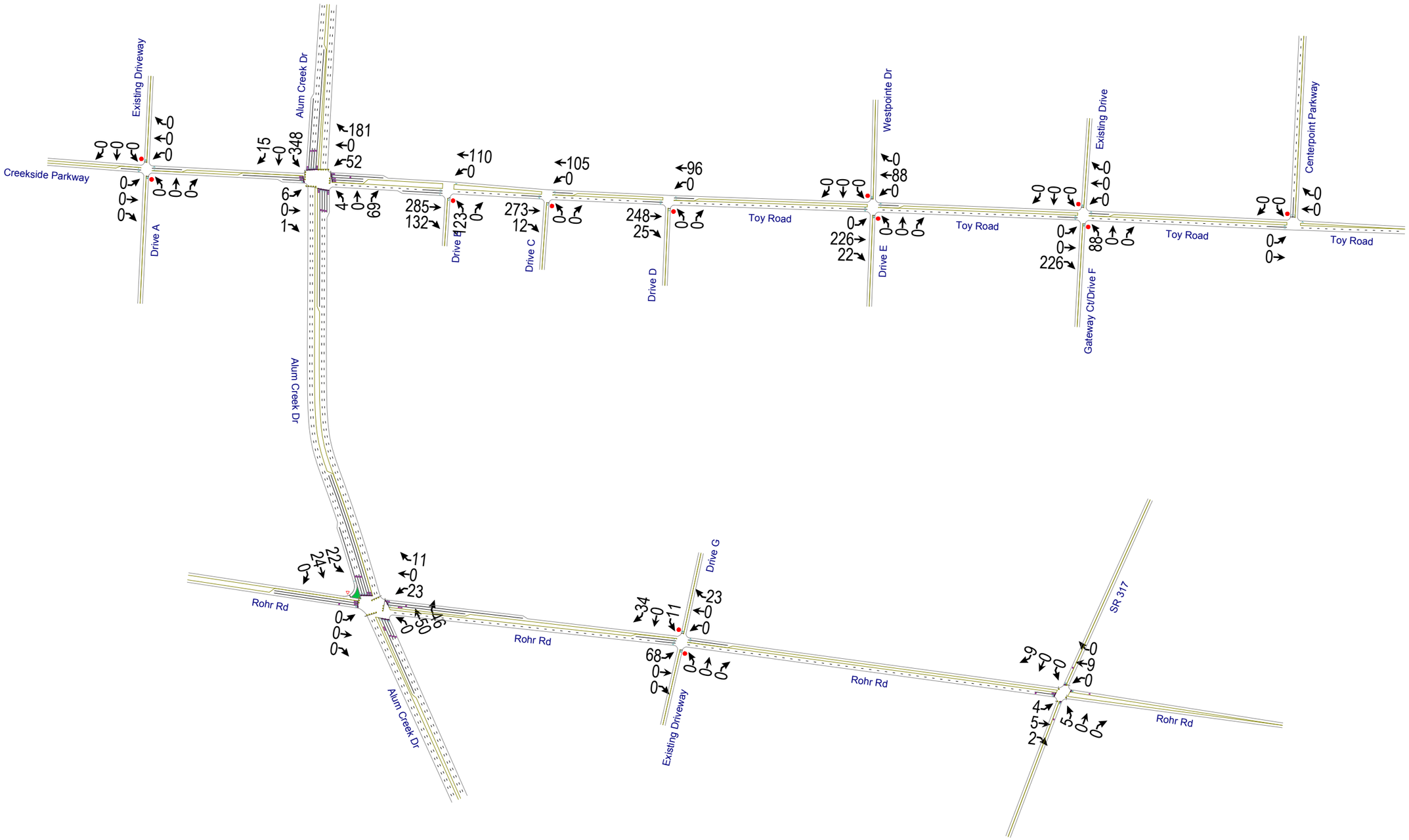
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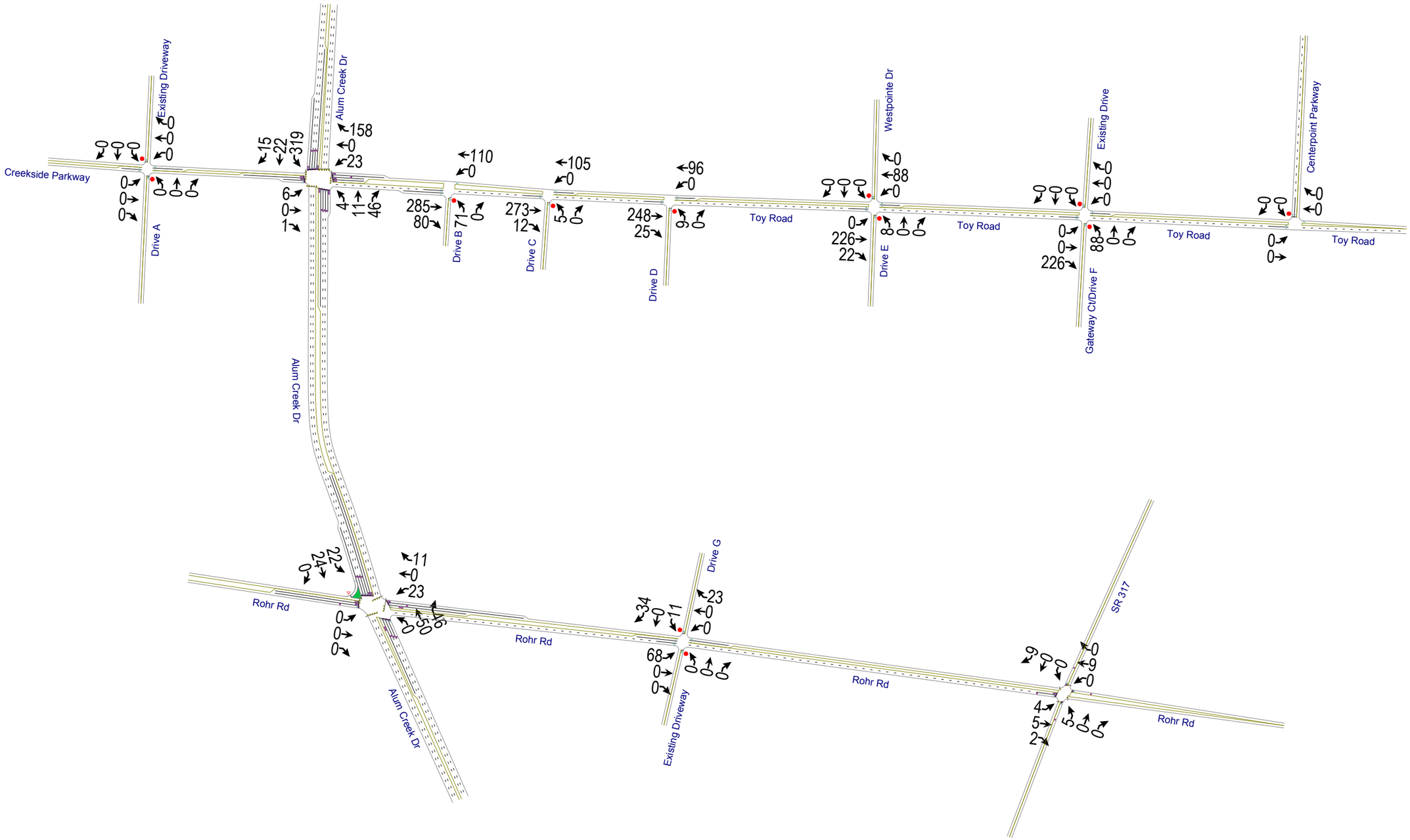
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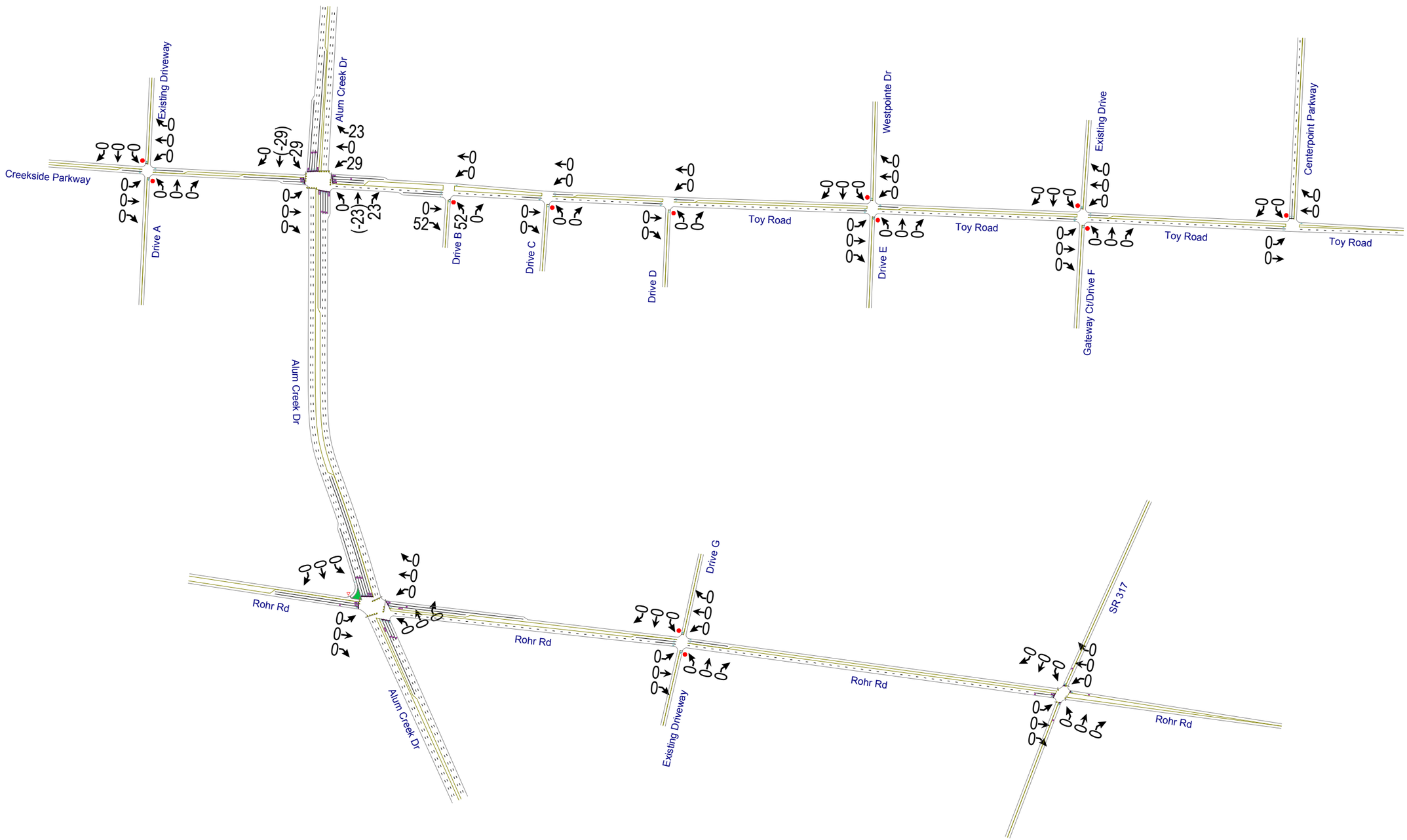
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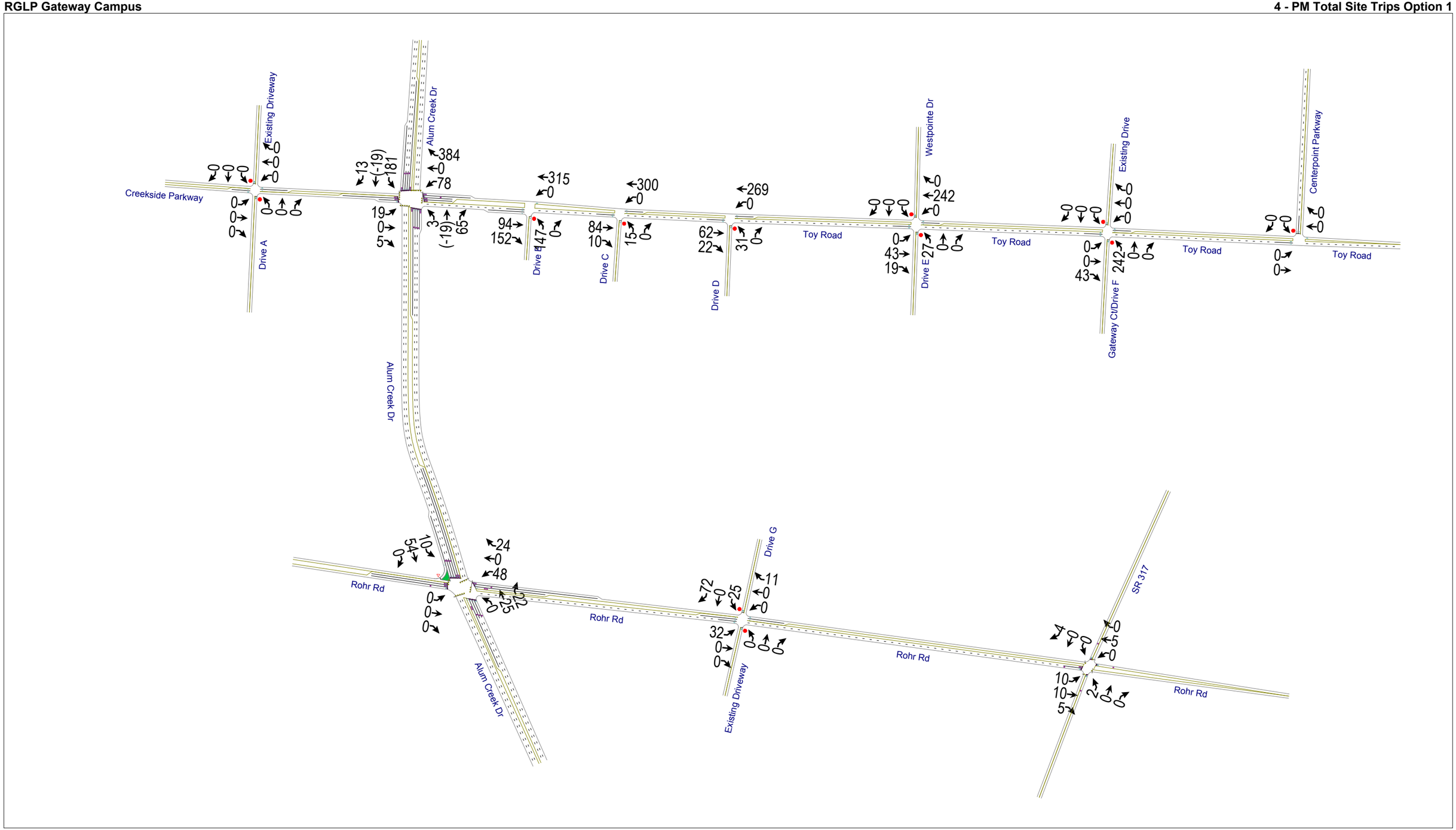
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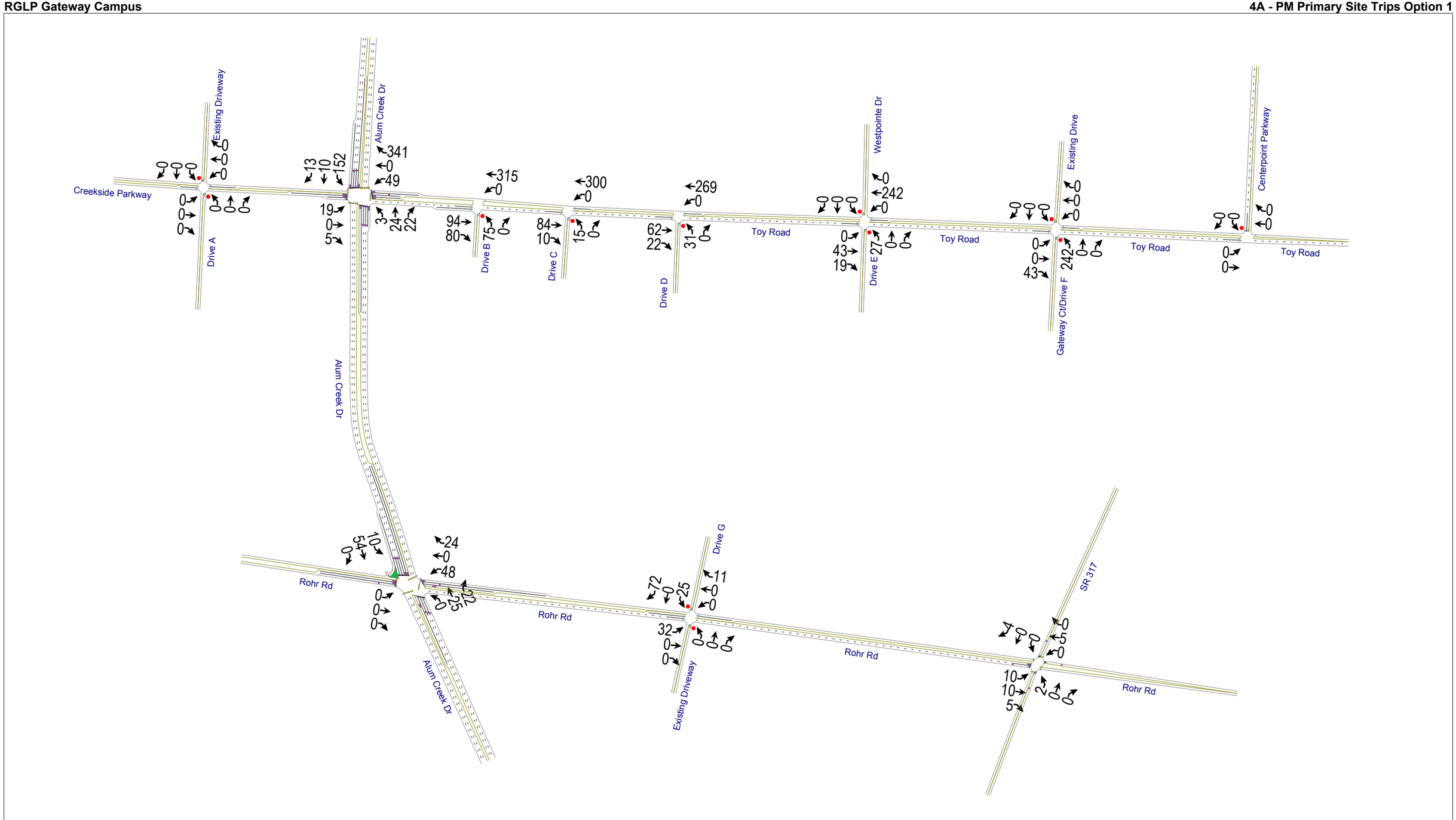
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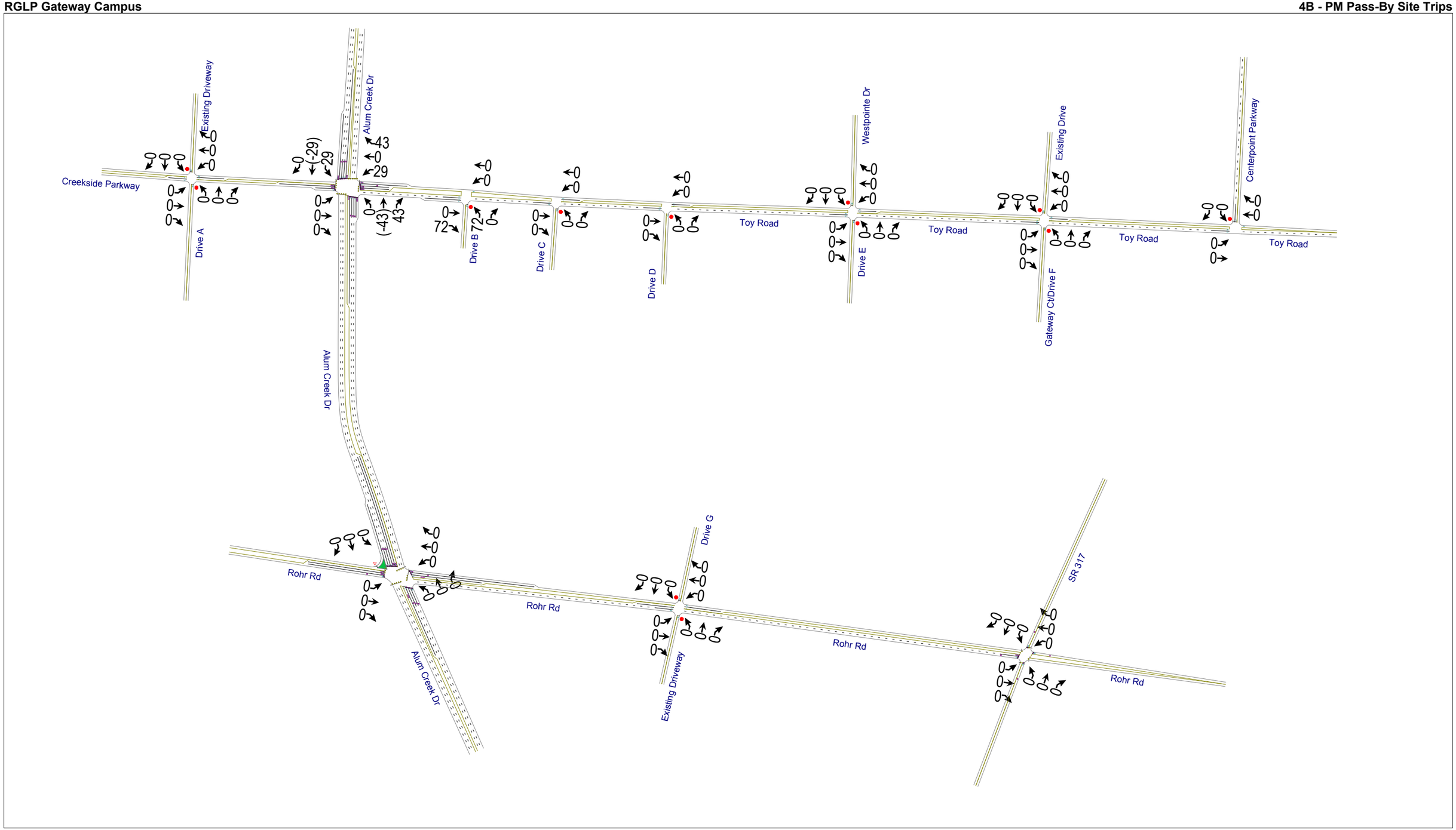
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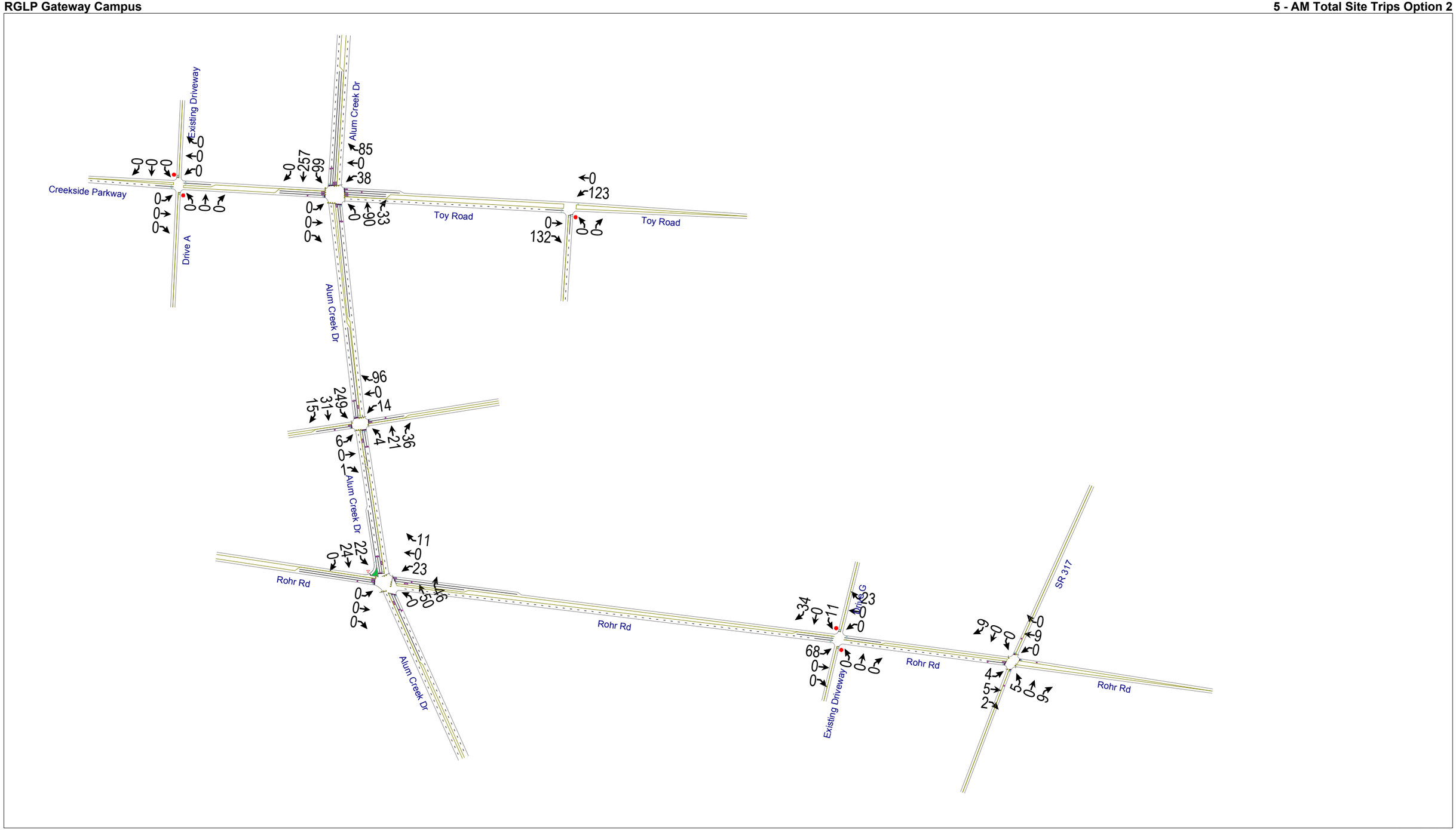
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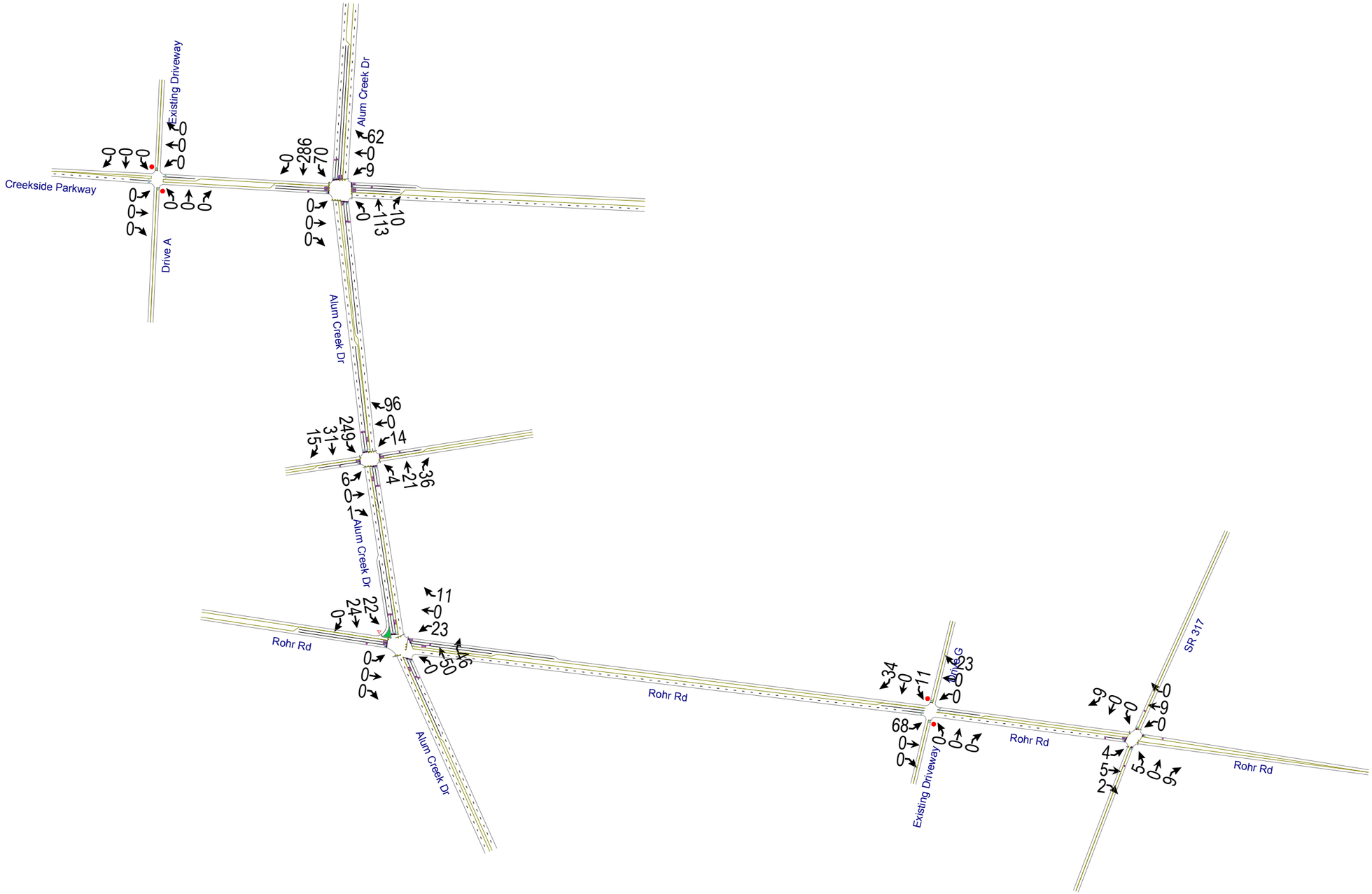
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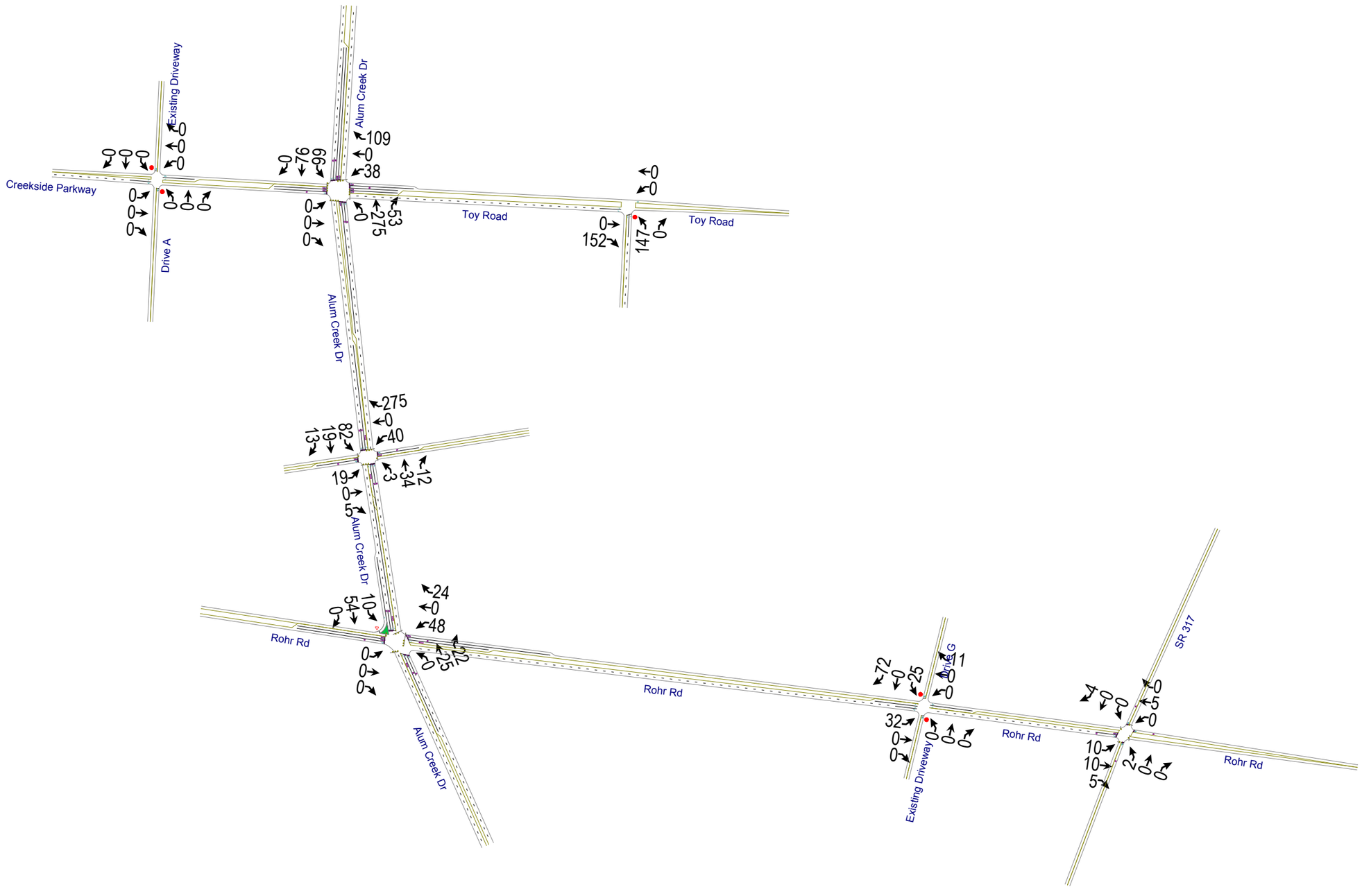
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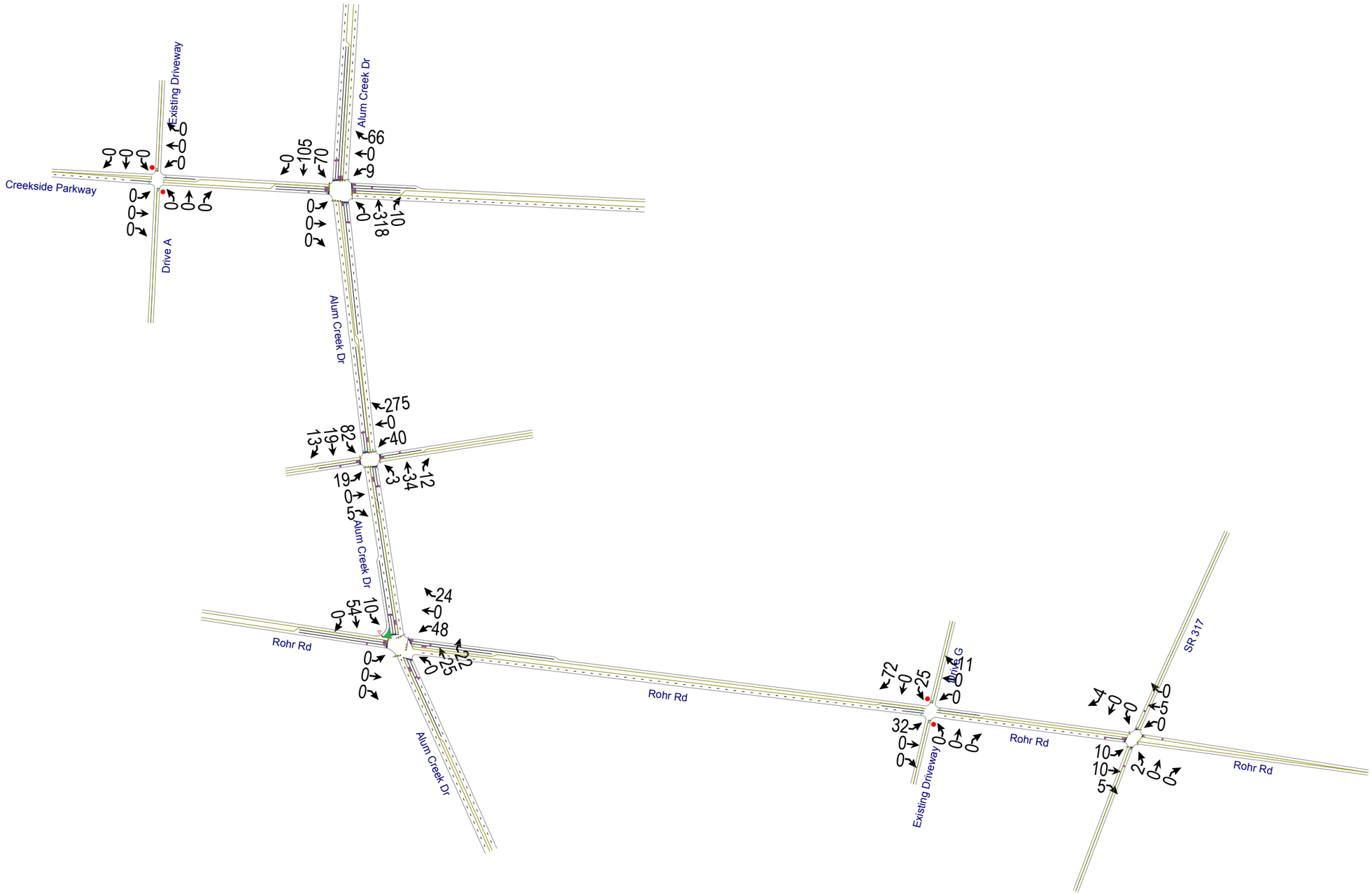
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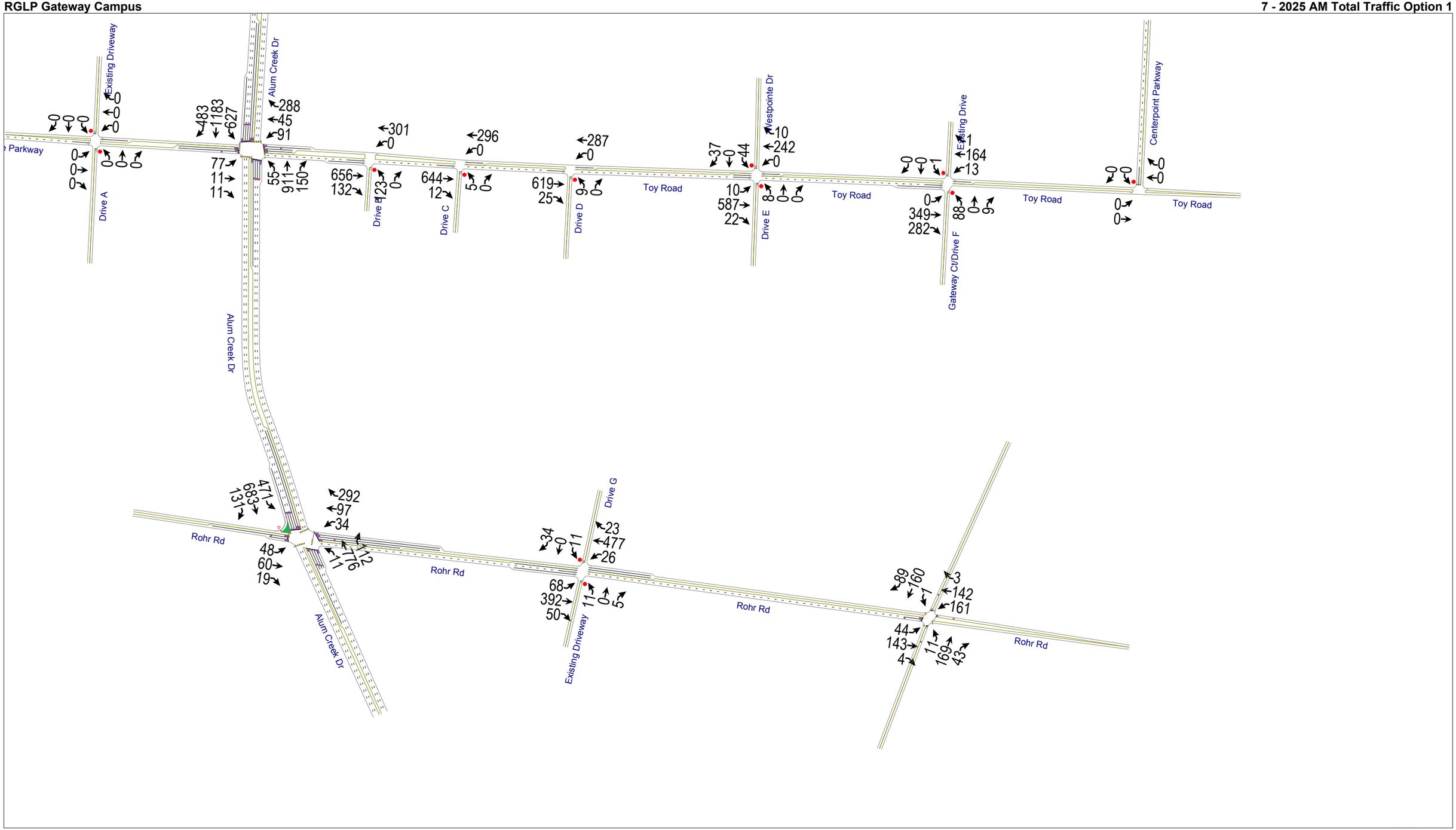
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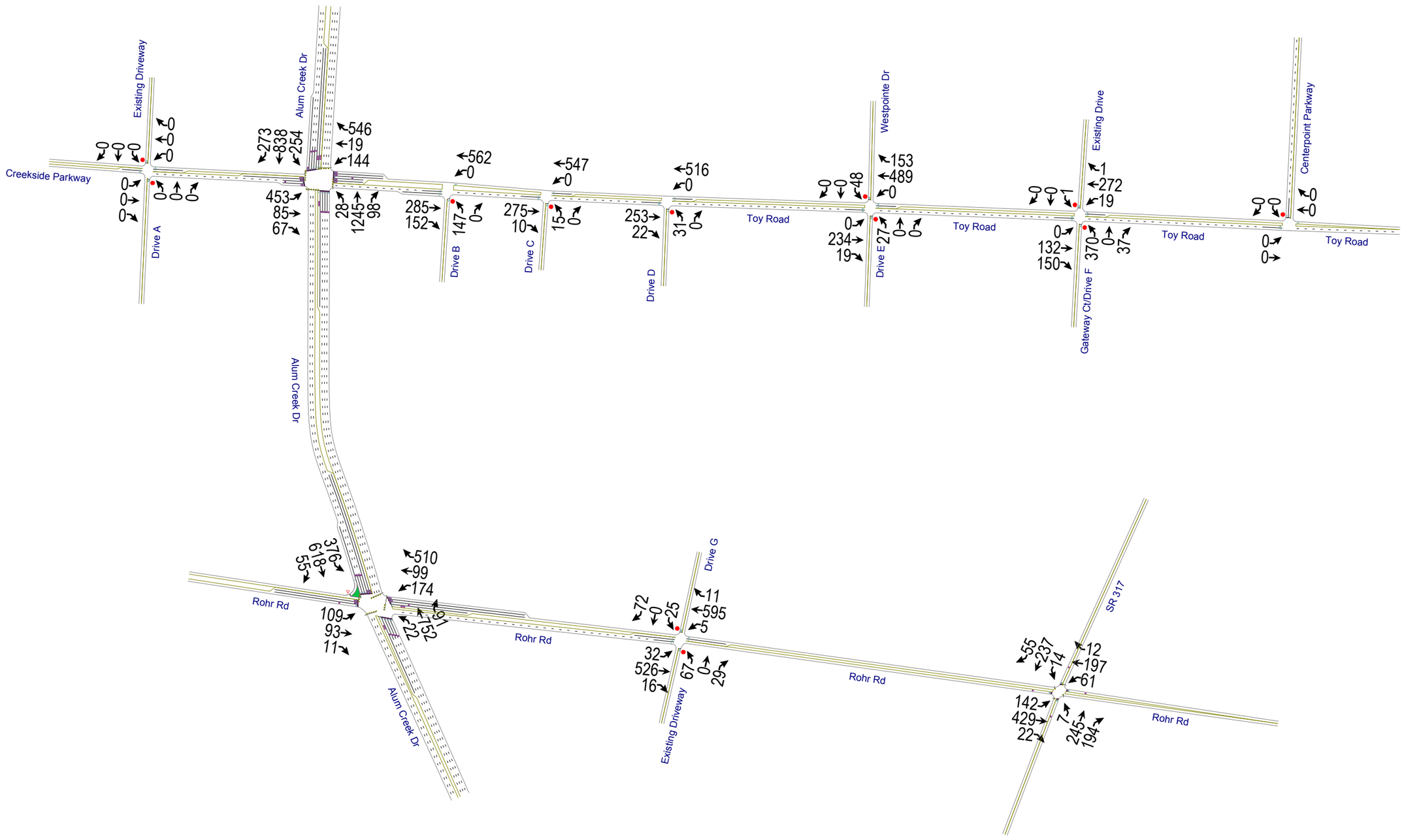
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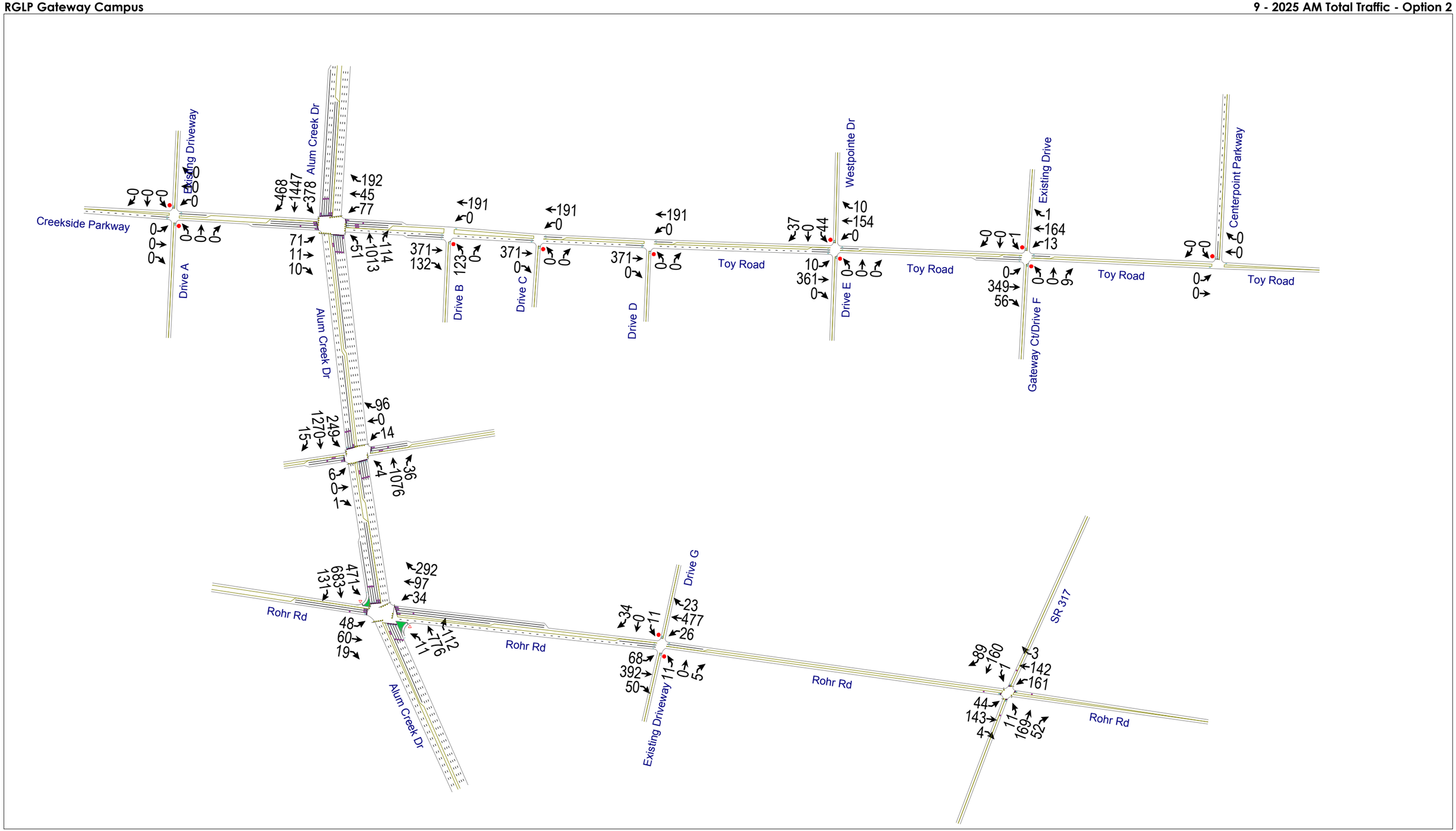
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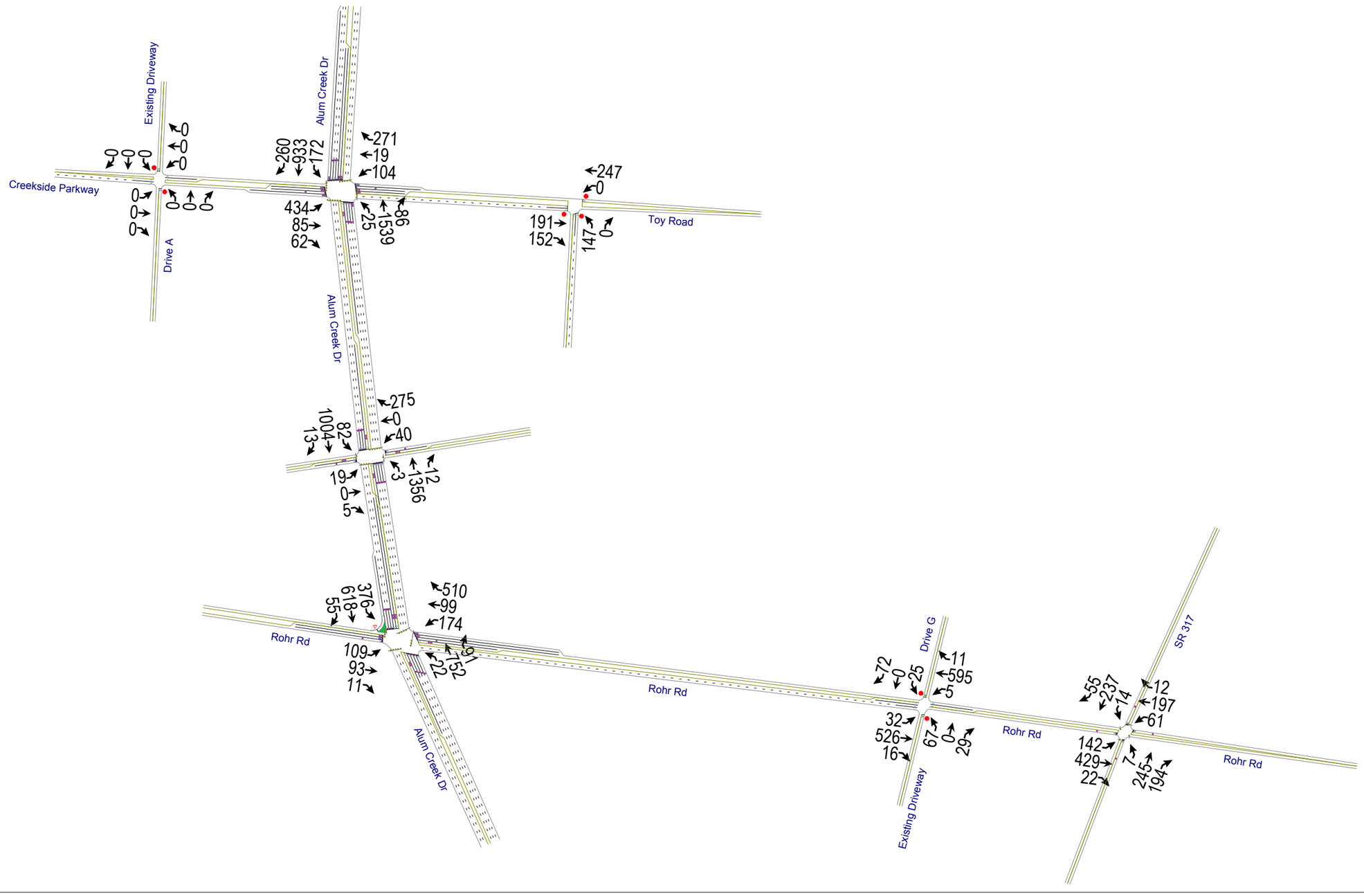
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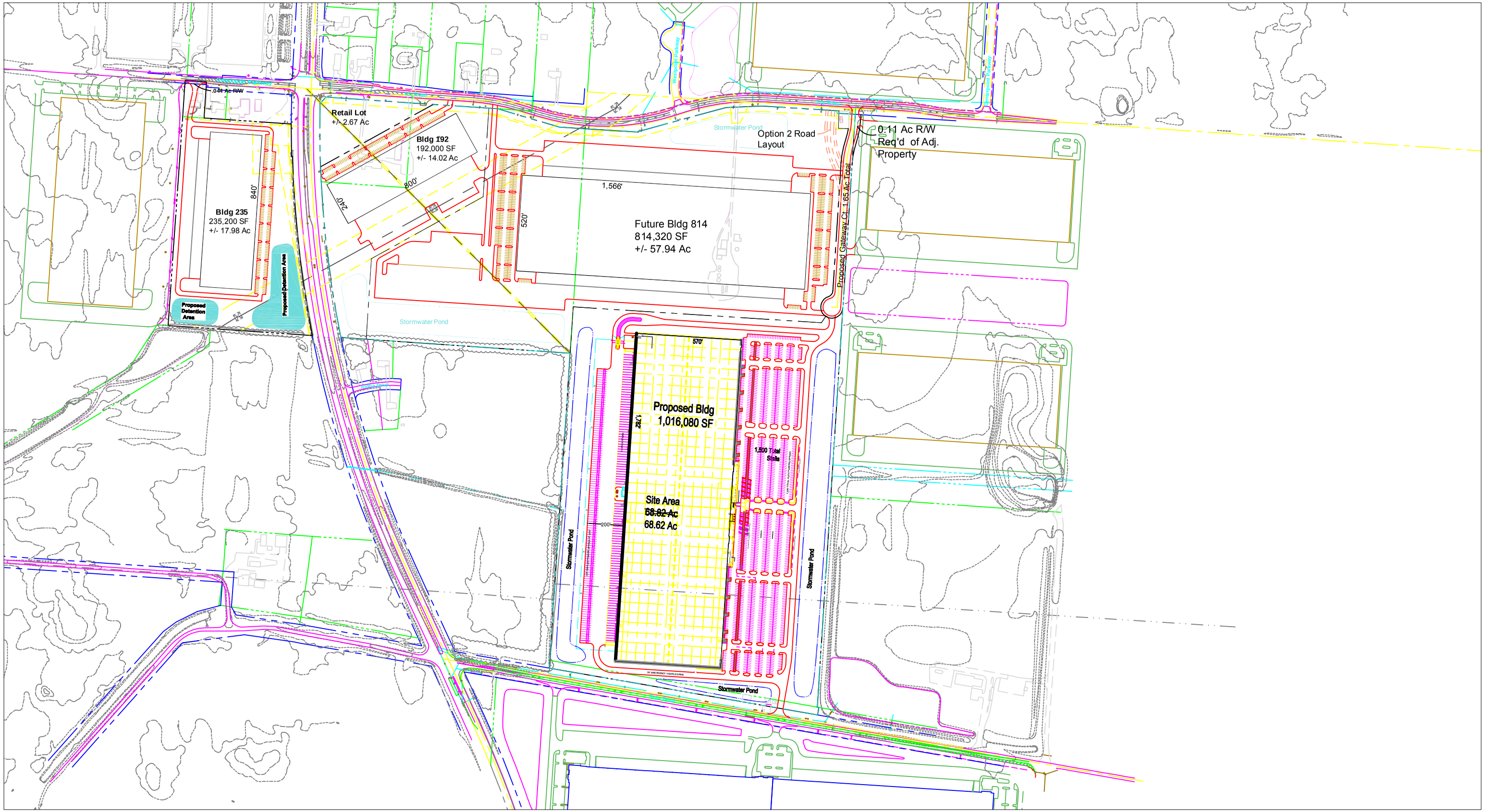
Appendices

Appendix A

Site Plans



Scale: NTS

Date: 7/13/15

SITE DATA

Gross Campus Area:	+/- 144.90 Ac (East)
	+/- 17.98 Ac (West)
Gateway Ct. R/W:	+/- 1.65 Ac
Existing Cell Tower:	+/- 0.20 Ac
Net Usable Area:	+/- 161.30 Ac

Note: Approximately 0.11 Ac in additional R/W required for new street from property owner to east of new cul de sac

DEVELOPMENT DATA

Building 235:	235,200 SF	17.98 Ac	30.03% F.A.R.
Building 192:	192,000 SF	14.02 Ac	31.44% F.A.R.
Building 814:	814,320 SF	57.94 Ac	32.26% F.A.R.
Building Eddie:	1,016,080 SF	68.62 Ac	33.99% F.A.R.
Retail Outlot:	NA	2.67 Ac	NA
Total:	2,257,600 SF	161.23 Ac	

GATEWAY CAMPUS PLAN

Rickenbacker Global Logistics Park

Alum Creek Dr,Rohr Rd, & Toy Rds
Obetz, Ohio

Duke REALTY

RGLP NORTH CAMPUS EXTENSION TRAFFIC STUDY

PREPARED BY: TRAFFIC ENGINEERING SERVICES, INC.

FIGURE 2

SITE LAYOUT

Appendix B

Trip Distribution Pattern
Trip Generation Data
Traffic Counts

RGLP - "PROJECT EDDIE" SITE TRIP DISTRIBUTION

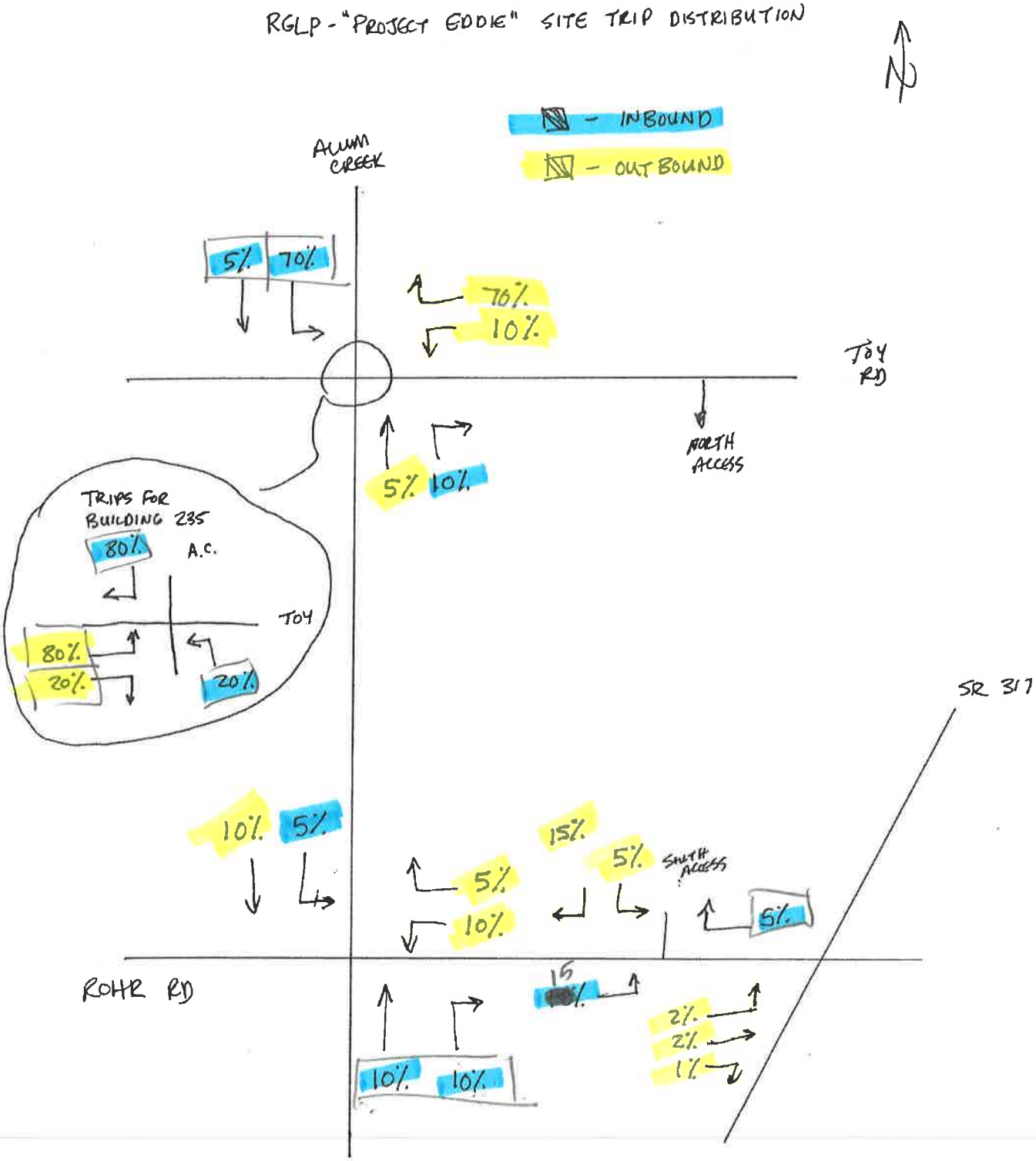


Table 5. Daily Trips by Time of Day - Normal Month (January thru October)

Hour, by Start Time	Emp. Commute Trips		Truck Trips		Misc. Trips [a]		Total Trips		
	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Total
1:00 AM	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	3	0	0	0	3	3
3:00 AM	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	2	0	0	0	2	2
5:00 AM	0	312	0	0	0	0	0	312	312
6:00 AM	23	78	3	0	0	0	26	78	104
7:00 AM	182	0	3	1	0	0	185	1	186
8:00 AM	23	0	3	3	0	0	26	3	29
9:00 AM	0	0	3	1	3	0	6	1	7
10:00 AM	0	0	3	3	6	6	9	9	18
11:00 AM	0	0	3	0	6	6	9	6	15
12:00 PM	0	0	3	6	12	12	15	18	33
1:00 PM	0	0	3	2	12	12	15	14	29
2:00 PM	0	0	3	1	12	12	15	13	28
3:00 PM	0	0	3	5	6	6	9	11	20
4:00 PM	0	34	3	1	5	8	8	43	50
5:00 PM	39	193	3	2	0	0	42	195	237
6:00 PM	312	0	3	2	0	0	315	2	317
7:00 PM	39	0	3	1	0	0	42	1	43
8:00 PM	0	0	0	3	0	0	0	3	3
9:00 PM	0	0	0	3	0	0	0	3	3
10:00 PM	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	2	0	0	0	2	2
12:00 AM	0	0	0	1	0	0	0	1	1
Total	617	617	42	42	62	62	721	721	1,442

Source: Duke Realty Corporation, September 2012.

a. Includes trips made by employees during the day for errands, visitor trips for meetings or service, and miscellaneous trips for mail, garbage, etc.

Highlighted rows indicate the volumes assumed for the AM and PM peak hours.

Indicates volumes used in the Project Eddie trip generation. These volumes were multiplied by 1.6 to account for the increase in proposed parking spaces. 6 AM and 7 AM volumes were combined to better reflect an in and out peak more consistent with the adjacent street peak.

Traffic Study Sub Area	ITE Land Use #	Description
1	NA	2675200 SF Gross Floor Area of Warehousing (Cars)
2	NA	2675200 SF Gross Floor Area of Warehousing (Trucks)
3	934	4000 SF Gross Floor Area of Fast Food Restaurant with Drive-Through Window
4	912	3500 SF Gross Floor Area of Drive-in Bank

TABLE 1A - LAND USE SUMMARY

Traffic Study Sub Area	Rate	Total	Pass-By %	Entering				Exiting			
	(Trips/Ind Var.)	*(Trips)*	*(%)*	%	Total Trips	Pass-By Trips	Primary Trips	%	Total Trips	Pass-By Trips	Primary Trips
1	1.24	3317	NA	50%	1659	NA	1659	50%	1659	NA	1659
2	0.41	1097	NA	50%	548	NA	548	50%	548	NA	548
3	496.12	1984	NA	50%	992	NA	992	50%	992	NA	992
4	246.49	863	NA	50%	431	NA	431	50%	431	NA	431
TOTALS		**7261**			**3631**	**NA**	**3631**		**3631**	**NA**	**3631**

TABLE 1B - SITE TRIP GENERATION SUMMARY - DAILY

Traffic Study Sub Area	Rate	Total	Pass-By %	Entering				Exiting			
	(Trips/Ind Var.)	*(Trips)*	*(%)*	%	Total Trips	Pass-By Trips	Primary Trips	%	Total Trips	Pass-By Trips	Primary Trips
1	0.09	235	0%	77%	181	0	181	23%	54	0	54
2	0.02	59	0%	77%	45	0	45	23%	14	0	14
3	53.11	212	49%	51%	108	53	55	49%	104	51	53
4	12.34	43	0%	56%	24	0	24	44%	19	0	19
TOTALS		**550**			**359**	**53**	**306**		**191**	**51**	**140**

TABLE 1C - SITE TRIP GENERATION SUMMARY - AM PEAK

Traffic Study Sub Area	Rate	Total	Pass-By %	Entering				Exiting			
	(Trips/Ind Var.)	*(Trips)*	*(%)*	%	Total Trips	Pass-By Trips	Primary Trips	%	Total Trips	Pass-By Trips	Primary Trips
1	0.14	364	0%	41%	149	0	149	59%	215	0	215
2	0.03	91	0%	41%	37	0	37	59%	54	0	54
3	34.64	139	50%	52%	72	36	36	48%	67	33	33
4	45.74	160	47%	50%	80	38	42	50%	80	38	42
TOTALS		**753**			**339**	**74**	**265**		**415**	**71**	**344**

TABLE 1D - SITE TRIP GENERATION SUMMARY - PM PEAK

Peak Hour Data for Intersection

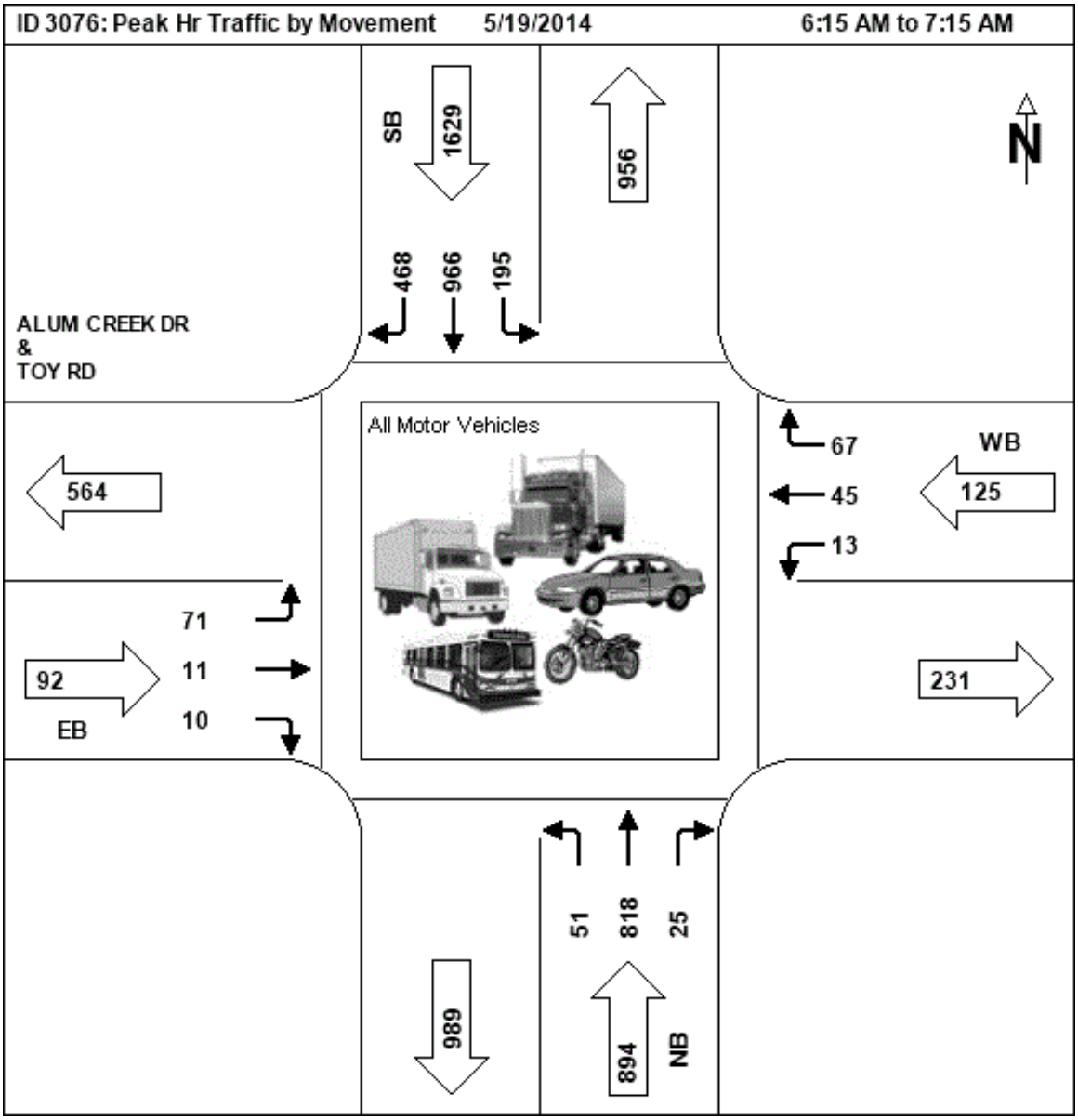
Int ID: 3076
Community: OBETZ
Road 1: ALUM CREEK DR
Road 2: TOY RD
Corridor: NA
Road 3:
Road 4:

|<< < > >>| 1-3 of 3

AM Peak Hour
05/19/2014

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
6:15 AM	24	108	4	0	136	12	2	0	0	14	40	201	112	7	353	5	10	18	0	33	536
6:30 AM	7	164	7	2	178	11	4	4	1	19	56	290	99	1	445	3	14	19	1	36	678
6:45 AM	16	270	5	0	291	24	2	3	1	29	53	305	181	6	539	0	16	20	0	36	895
7:00 AM	4	276	9	0	289	24	3	3	0	30	46	170	76	0	292	5	5	10	0	20	631
Total	51	818	25	2	894	71	11	10	2	92	195	966	468	14	1629	13	45	67	1	125	2740
PHF	0.53	0.74	0.69		0.77	0.74	0.69	0.63		0.77	0.87	0.79	0.65		0.76	0.65	0.70	0.84		0.87	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☐ Pedestrians ☐ Bikes

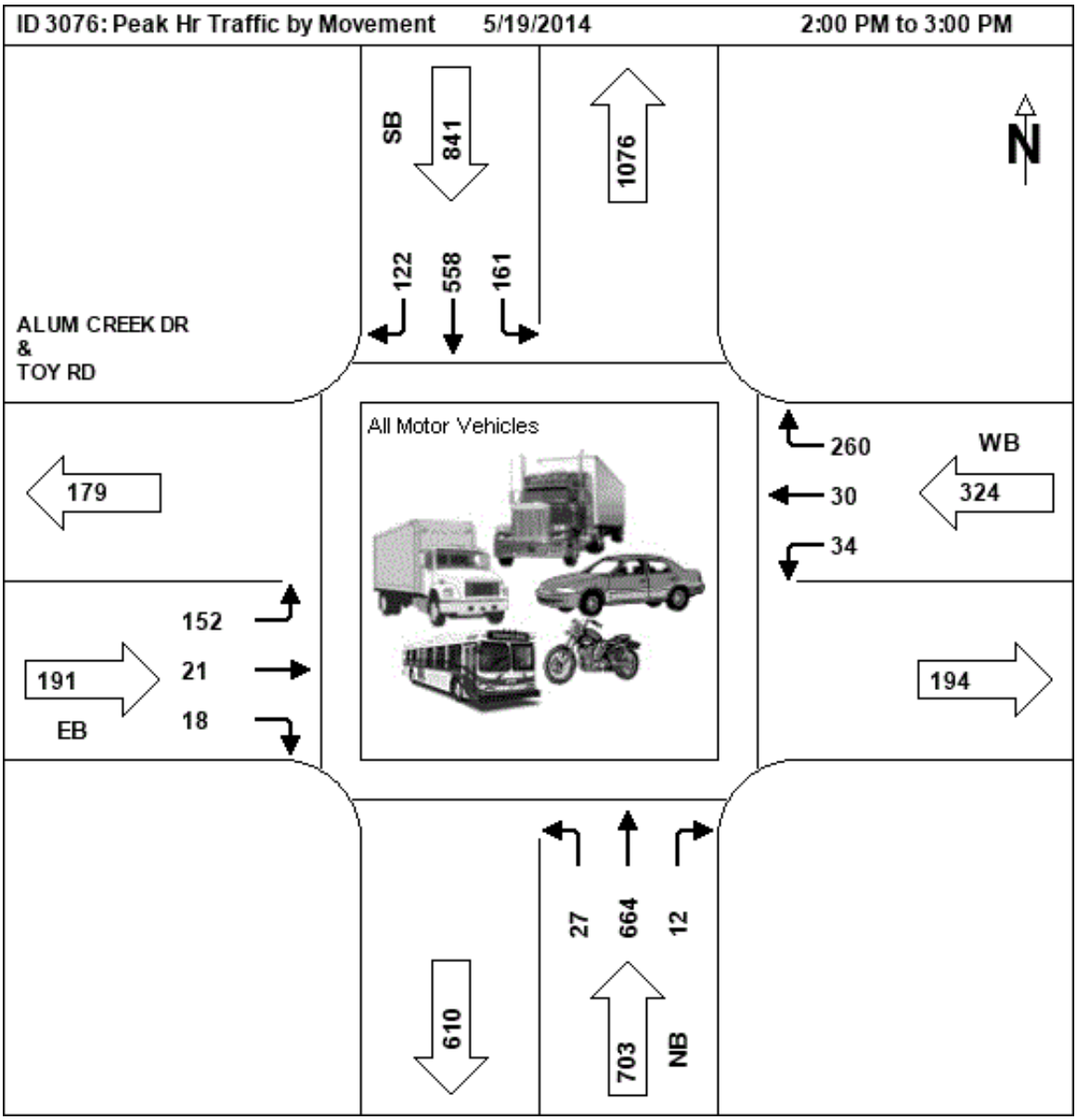


Midday Peak Hour

05/19/2014

Start Time	NB Left	NB Thru	NB Right	NB Ped	App Total	EB Left	EB Thru	EB Right	EB Ped	App Total	SB Left	SB Thru	SB Right	SB Ped	App Total	WB Left	WB Thru	WB Right	WB Ped	App Total	Int Total
2:00 PM	10	168	3	0	181	24	2	1	0	27	46	123	30	0	199	20	14	137	0	171	578
2:15 PM	8	138	3	0	149	28	3	3	0	34	45	145	24	5	214	5	10	71	3	86	483
2:30 PM	5	198	2	1	205	59	13	7	1	79	42	136	27	0	205	6	4	28	0	38	527
2:45 PM	4	160	4	0	168	41	3	7	0	51	28	154	41	0	223	3	2	24	0	29	471
Total	27	664	12	1	703	152	21	18	1	191	161	558	122	5	841	34	30	260	3	324	2059
PHF	0.68	0.84	0.75		0.86	0.64	0.40	0.64		0.60	0.88	0.91	0.74		0.94	0.43	0.54	0.47		0.47	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☐ Pedestrians ☐ Bikes

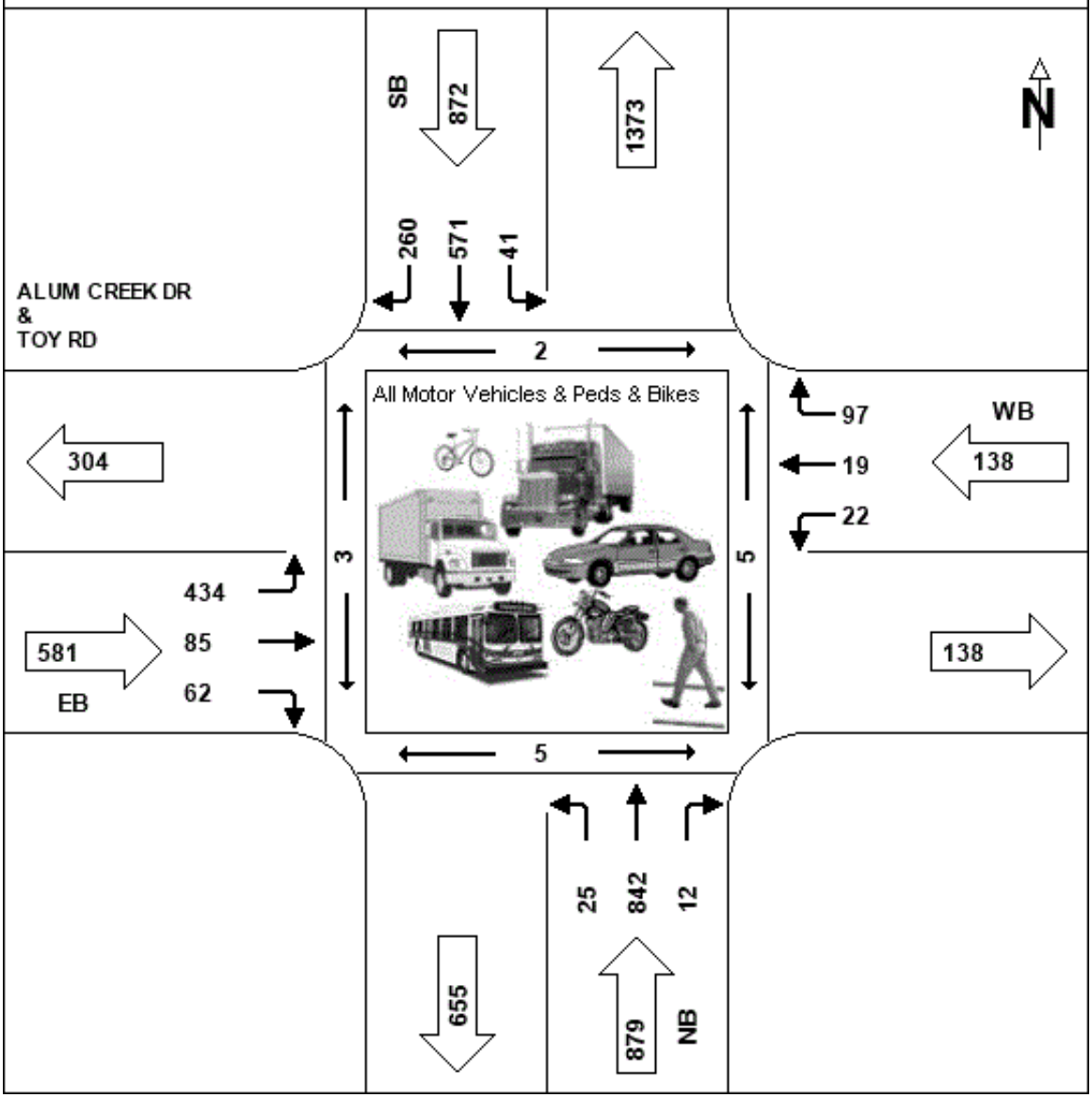


PM Peak Hour
05/19/2014

Start Time	NB Left	NB Thru	NB Right	NB Ped	App Total	EB Left	EB Thru	EB Right	EB Ped	App Total	SB Left	SB Thru	SB Right	SB Ped	App Total	WB Left	WB Thru	WB Right	WB Ped	App Total	Int Total
4:15 PM	7	187	4	0	198	53	3	7	0	63	7	145	29	0	181	4	3	21	0	28	470
4:30 PM	6	253	1	0	260	124	45	23	0	192	9	140	82	0	231	6	3	44	0	53	736
4:45 PM	9	190	2	4	201	111	15	16	4	142	16	169	101	3	286	7	8	9	2	24	653
5:00 PM	3	212	5	1	220	146	22	16	1	184	9	117	48	0	174	5	5	23	0	33	611
Total	25	842	12	5	879	434	85	62	5	581	41	571	260	3	872	22	19	97	2	138	2470
PHF	0.69	0.83	0.60		0.85	0.74	0.47	0.67		0.76	0.64	0.84	0.64		0.76	0.79	0.59	0.55		0.65	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☑ Pedestrians ☑ Bikes

ID 3076: Peak Hr Traffic by Movement 5/19/2014 4:15 PM to 5:15 PM



Peak Hour Data for Intersection

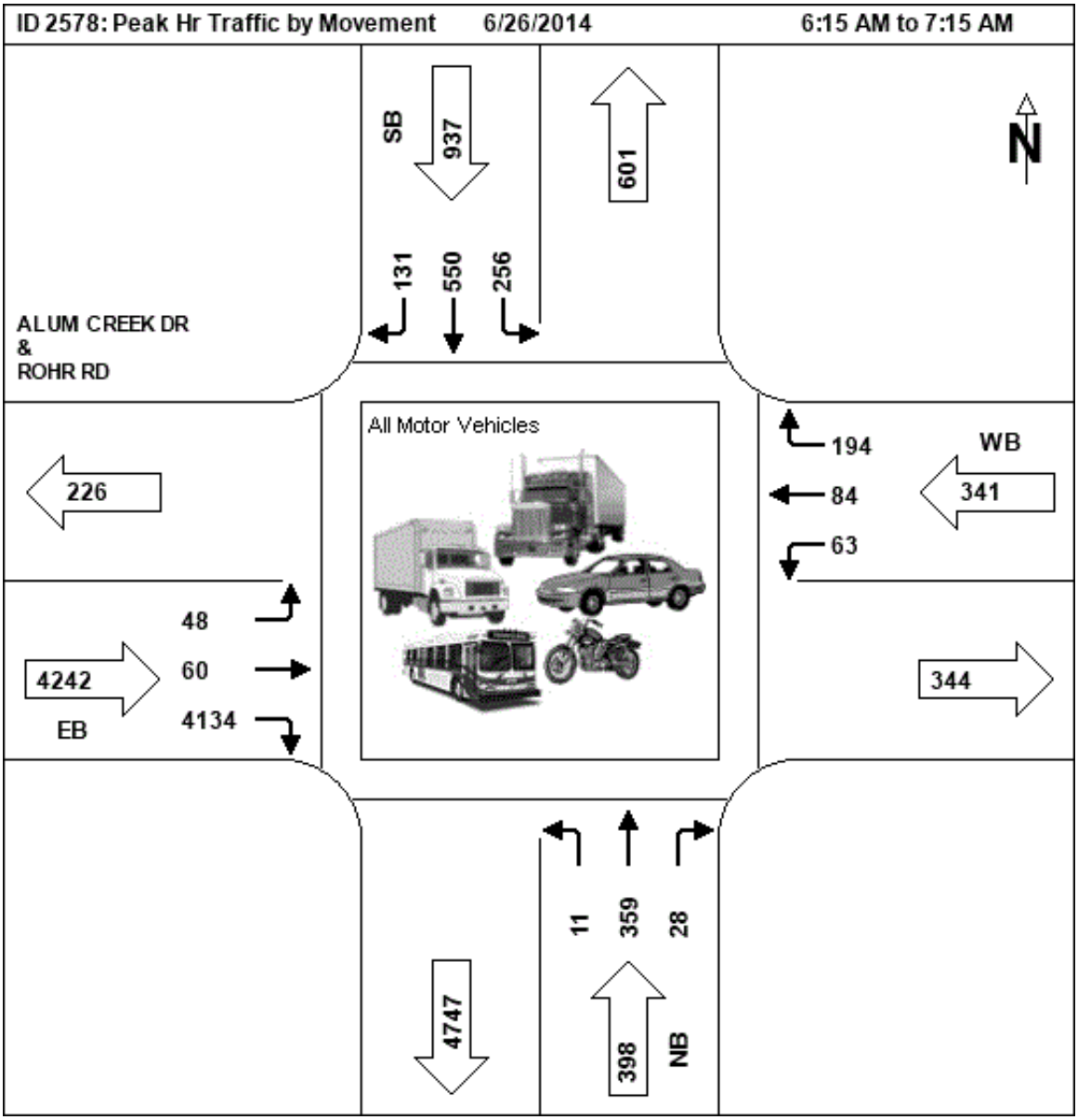
Int ID: 2578
Community: OBETZ
Road 1: ALUM CREEK DR
Road 2: ROHR RD
Corridor: NA
Road 3:
Road 4:

|<< < > >>| 1-5 of 5

AM Peak Hour
06/26/2014

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
6:15 AM	5	64	10	0	79	8	6	4	0	18	50	100	26	0	176	18	14	44	0	76	349
6:30 AM	2	115	8	0	125	10	22	4121	0	4153	74	170	44	0	288	17	32	35	0	84	4650
6:45 AM	3	67	8	0	78	7	20	8	0	35	106	170	47	0	323	18	26	43	0	87	523
7:00 AM	1	113	2	0	116	23	12	1	0	36	26	110	14	0	150	10	12	72	0	94	396
Total	11	359	28	0	398	48	60	4134	0	4242	256	550	131	0	937	63	84	194	0	341	5918
PHF	0.55	0.78	0.70		0.80	0.52	0.68	0.25		0.26	0.60	0.81	0.70		0.73	0.88	0.66	0.67		0.91	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☐ Pedestrians ☐ Bikes

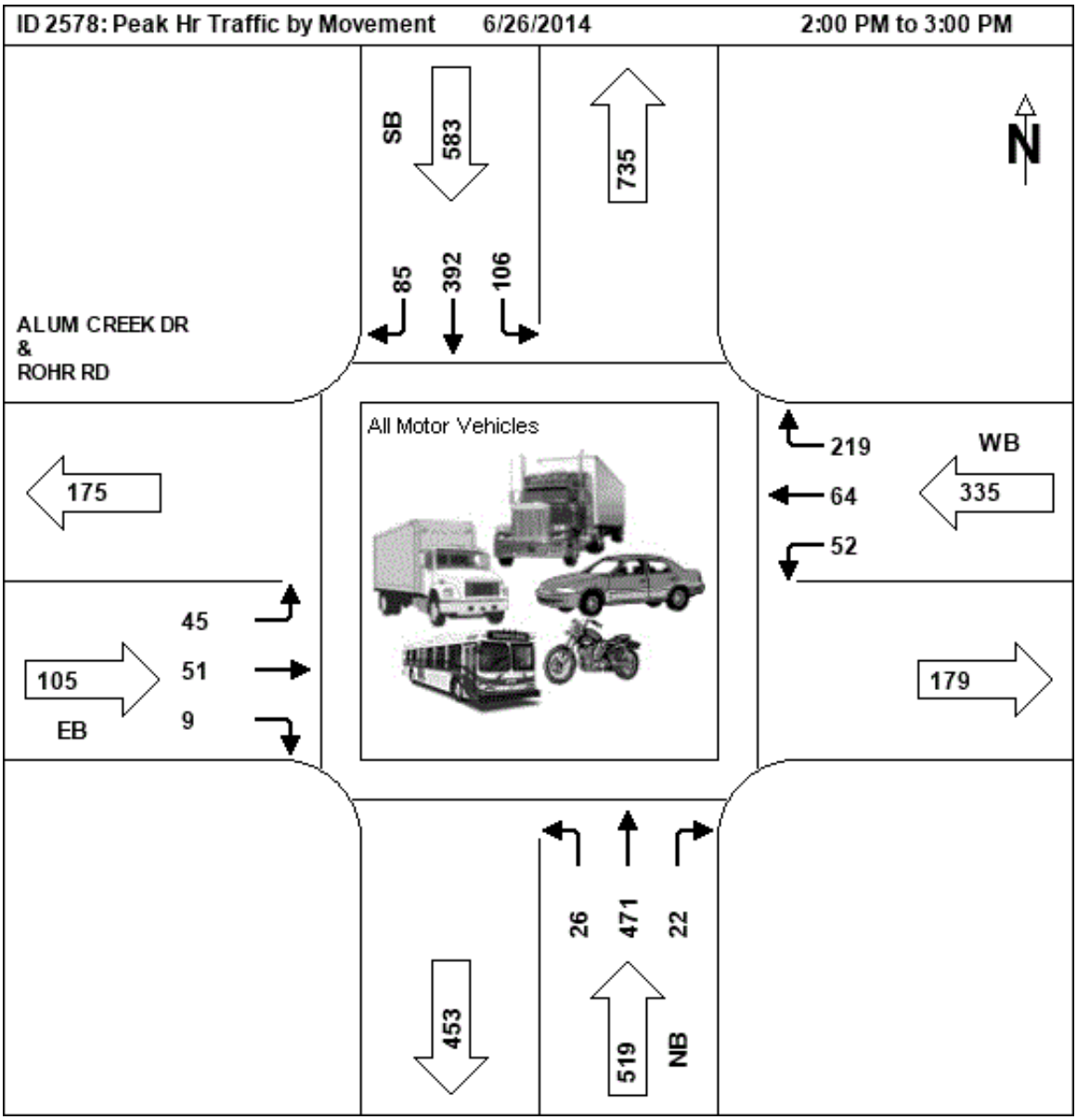


Midday Peak Hour

06/26/2014

Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
2:00 PM	5	106	3	0	114	10	12	2	0	24	22	108	17	0	147	14	15	74	0	103	388
2:15 PM	3	98	11	0	112	7	8	3	0	18	27	87	12	0	126	10	14	53	0	77	333
2:30 PM	7	162	4	0	173	15	17	3	0	35	17	100	23	0	140	12	15	52	0	79	427
2:45 PM	11	105	4	0	120	13	14	1	0	28	40	97	33	0	170	16	20	40	0	76	394
Total	26	471	22	0	519	45	51	9	0	105	106	392	85	0	583	52	64	219	0	335	1542
PHF	0.59	0.73	0.50		0.75	0.75	0.75	0.75		0.75	0.66	0.91	0.64		0.86	0.81	0.80	0.74		0.81	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☐ Pedestrians ☐ Bikes

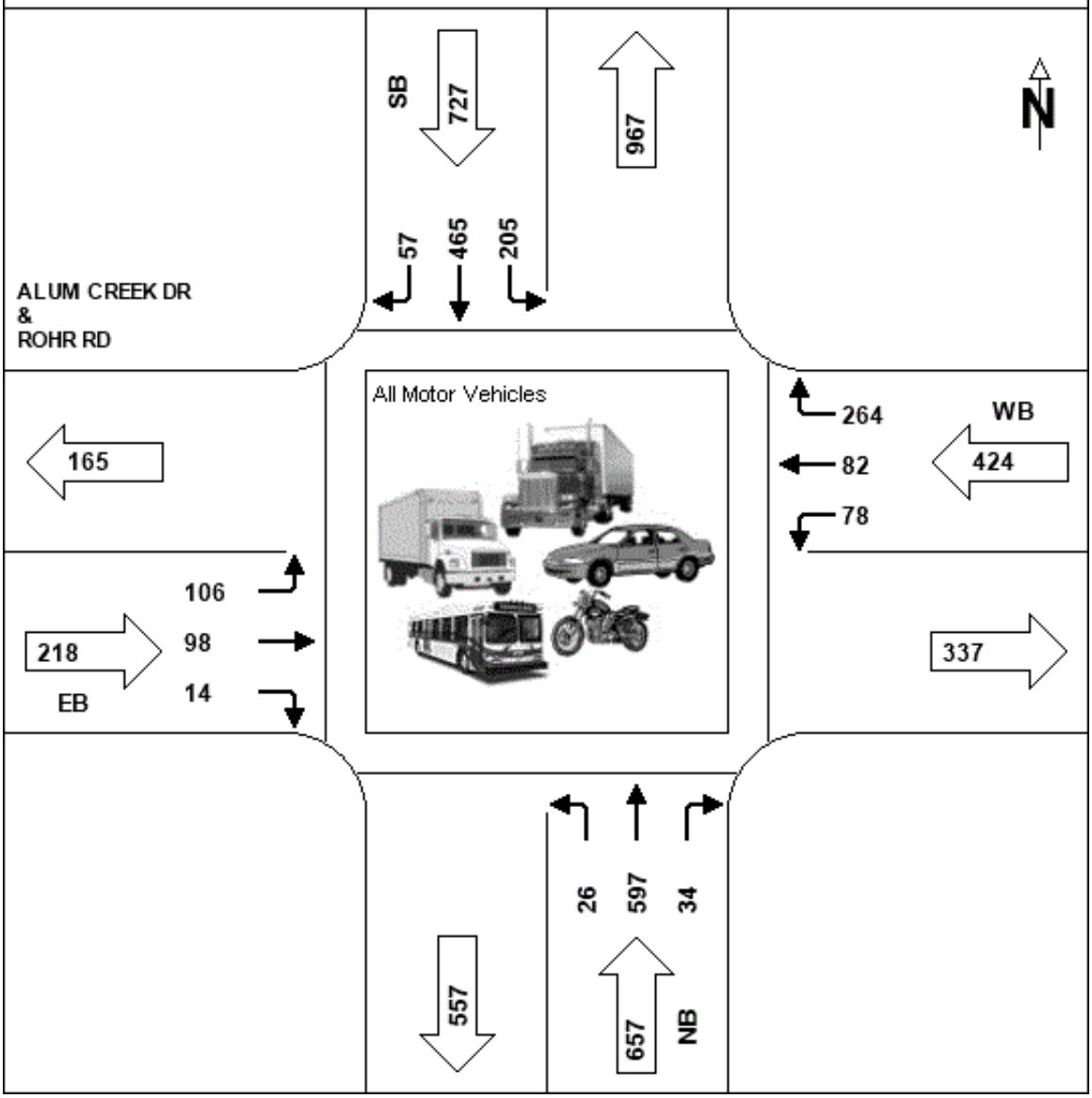


PM Peak Hour
06/26/2014

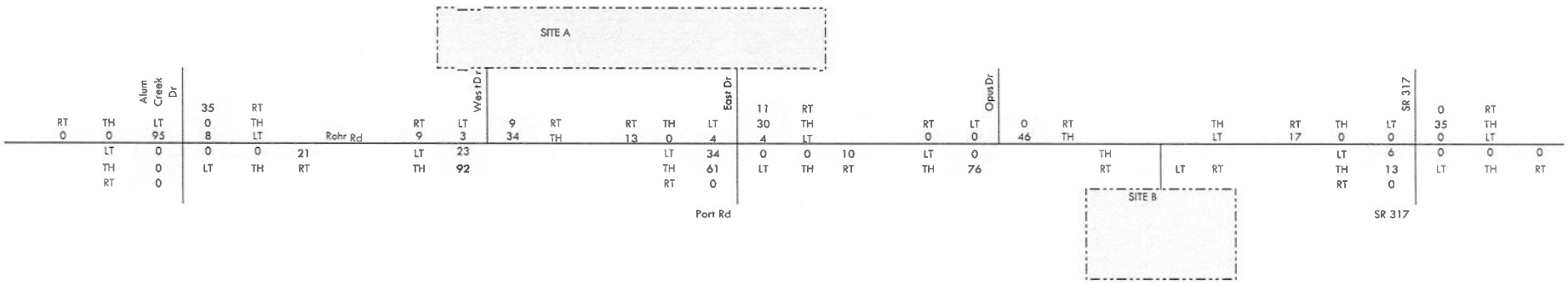
Start Time	NB Left	NB Thru	NB Right	NB Ped	NB App Total	EB Left	EB Thru	EB Right	EB Ped	EB App Total	SB Left	SB Thru	SB Right	SB Ped	SB App Total	WB Left	WB Thru	WB Right	WB Ped	WB App Total	Int Total
3:15 PM	8	124	8	0	140	14	15	4	0	33	50	116	10	0	176	18	10	47	0	75	424
3:30 PM	5	201	11	0	217	28	23	6	1	57	53	126	18	0	197	17	21	87	0	125	596
3:45 PM	4	133	5	0	142	17	18	1	0	36	58	131	15	0	204	22	13	39	0	74	456
4:00 PM	9	139	10	1	158	47	42	3	0	92	44	92	14	0	150	21	38	91	0	150	550
Total	26	597	34	1	657	106	98	14	1	218	205	465	57	0	727	78	82	264	0	424	2026
PHF	0.72	0.74	0.77		0.76	0.56	0.58	0.58		0.59	0.88	0.89	0.79		0.89	0.89	0.54	0.73		0.71	
HV %	0	0	0			0	0	0			0	0	0			0	0	0			

☑ Cars ☑ Trucks ☐ Pedestrians ☐ Bikes

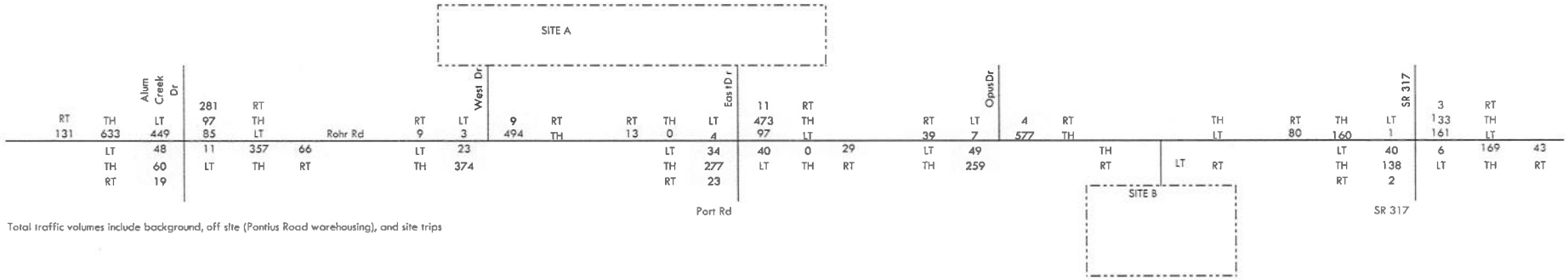
ID 2578: Peak Hr Traffic by Movement 6/26/2014 3:15 PM to 4:15 PM



Total Site trips (Site A & Site B) — **AM Peak Hour** **g=f1+g1**



2025 Total Traffic Volumes — **AM Peak Hour** **h=e+g**



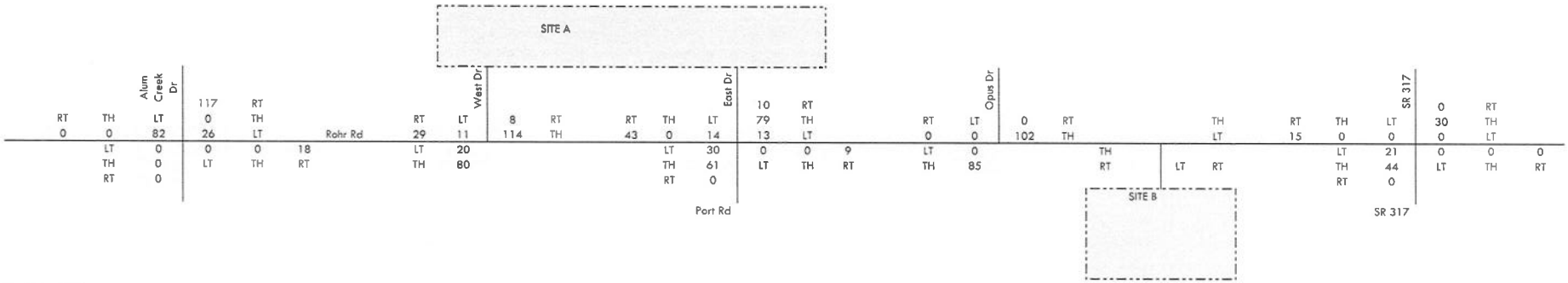
Total traffic volumes include background, off site (Pontius Road warehousing), and site trips

2025 AM Peak Hour Volumes for Rohr Road from Kurtz Brothers Study (EMH&T, 2015)

2025 PM Peak Hour Volumes for Rohr Road from Kurtz Brothers Study (EMH&T, 2015)

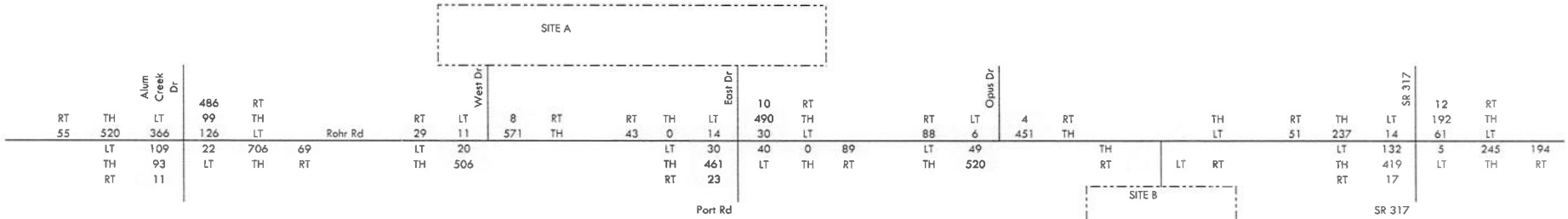
Total Site trips (Site A & Site B)
(3:30pm-4:30pm)

PM Peak Hour
g=f1+g1



2025 Total Traffic Volumes
(3:30pm-4:30pm)

PM Peak Hour
h=e+g



Total traffic volumes include background, off site (Pontius Road warehousing), and site trips

Stantec Consulting

1500 Lakeshore Dr Suite 100
Columbus, Ohio 43123
Design With Community In Mind

Tim
F 8/21/15

File Name : Toy_BareEssentials_FoodSys_driveway_AM
Site Code : 00000002
Start Date : 8/21/2015
Page No : 1

Groups Printed- cars - trucks

	Bare Essentials driveway From North					Toy Rd From East					Food Systems/Future Site driveway From South					Toy Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	0	0	1	1	0	16	7	0	23	2	0	8	0	10	26	28	0	0	54	88
06:15 AM	0	0	0	0	0	1	27	2	0	30	2	0	6	0	8	19	47	0	0	66	104
06:30 AM	0	0	0	0	0	0	30	0	0	30	0	0	7	0	7	5	63	1	0	69	106
06:45 AM	0	0	1	0	1	0	25	4	0	29	5	0	9	0	14	6	71	0	0	77	121
Total	0	0	1	1	2	1	98	13	0	112	9	0	30	0	39	56	209	1	0	266	419
07:00 AM	1	0	0	0	1	0	12	2	0	14	1	0	5	0	6	1	19	0	0	20	41
07:15 AM	1	0	0	0	1	0	5	0	0	5	0	0	2	0	2	3	18	2	0	23	31
Grand Total	2	0	1	1	4	1	115	15	0	131	10	0	37	0	47	60	246	3	0	309	491
Apprch %	50	0	25	25		0.8	87.8	11.5	0		21.3	0	78.7	0		19.4	79.6	1	0		
Total %	0.4	0	0.2	0.2	0.8	0.2	23.4	3.1	0	26.7	2	0	7.5	0	9.6	12.2	50.1	0.6	0	62.9	
cars	0	0	0	1	1	0	103	15	0	118	10	0	36	0	46	58	232	1	0	291	456
% cars	0	0	0	100	25	0	89.6	100	0	90.1	100	0	97.3	0	97.9	96.7	94.3	33.3	0	94.2	92.9
trucks	2	0	1	0	3	1	12	0	0	13	0	0	1	0	1	2	14	2	0	18	35
% trucks	100	0	100	0	75	100	10.4	0	0	9.9	0	0	2.7	0	2.1	3.3	5.7	66.7	0	5.8	7.1

	Bare Essentials driveway From North					Toy Rd From East					Food Systems/Future Site driveway From South					Toy Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 07:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:00 AM																					
06:00 AM	0	0	0	**1**	**1**	0	16	**7**	0	23	2	0	8	0	10	**26**	28	0	0	54	88
06:15 AM	0	0	0	0	0	**1**	27	2	0	**30**	2	0	6	0	8	19	47	0	0	66	104
06:30 AM	0	0	0	0	0	0	**30**	0	0	30	0	0	7	0	7	5	63	**1**	0	69	106
06:45 AM	0	0	**1**	0	1	0	25	4	0	29	**5**	0	**9**	0	**14**	6	**71**	0	0	**77**	**121**
Total Volume	0	0	1	1	2	1	98	13	0	112	9	0	30	0	39	56	209	1	0	266	419
% App. Total	0	0	50	50		0.9	87.5	11.6	0		23.1	0	76.9	0		21.1	78.6	0.4	0		
PHF	.000	.000	.250	.250	.500	.250	.817	.464	.000	.933	.450	.000	.833	.000	.696	.538	.736	.250	.000	.864	.866

Stantec Consulting

1500 Lakeshore Dr Suite 100
Columbus, Ohio 43123
Design With Community In Mind

Tim
R 8/20/15

File Name : Toy_BareEssentials_FoodSys_driveway_PM
Site Code : 00000001
Start Date : 8/20/2015
Page No : 1

Groups Printed- cars - trucks

	Bare Essentials driveway From North					Toy Rd From East					Food Systems/Future Site driveway From South					Toy Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	22	4	1	27	21	0	53	0	74	28	15	0	0	43	144
03:15 PM	1	0	0	0	1	0	14	8	0	22	9	0	41	0	50	47	18	0	0	65	138
03:30 PM	0	0	0	0	0	2	101	4	0	107	6	0	20	0	26	22	31	0	0	53	186
03:45 PM	1	0	0	0	1	1	26	3	0	30	1	0	14	0	15	10	15	0	0	25	71
Total	2	0	0	0	2	3	163	19	1	186	37	0	128	0	165	107	79	0	0	186	539
04:00 PM	2	0	0	0	2	0	38	0	0	38	2	0	7	0	9	2	15	0	0	17	66
04:15 PM	0	0	0	0	0	0	23	1	0	24	0	0	8	0	8	0	6	0	0	6	38
04:30 PM	2	0	0	0	2	0	49	1	0	50	3	0	7	0	10	1	28	0	0	29	91
Grand Total	6	0	0	0	6	3	273	21	1	298	42	0	150	0	192	110	128	0	0	238	734
Apprch %	100	0	0	0		1	91.6	7	0.3		21.9	0	78.1	0		46.2	53.8	0	0		
Total %	0.8	0	0	0	0.8	0.4	37.2	2.9	0.1	40.6	5.7	0	20.4	0	26.2	15	17.4	0	0	32.4	
cars	6	0	0	0	6	1	236	19	1	257	41	0	146	0	187	109	98	0	0	207	657
% cars	100	0	0	0	100	33.3	86.4	90.5	100	86.2	97.6	0	97.3	0	97.4	99.1	76.6	0	0	87	89.5
trucks	0	0	0	0	0	2	37	2	0	41	1	0	4	0	5	1	30	0	0	31	77
% trucks	0	0	0	0	0	66.7	13.6	9.5	0	13.8	2.4	0	2.7	0	2.6	0.9	23.4	0	0	13	10.5

	Bare Essentials driveway From North					Toy Rd From East					Food Systems/Future Site driveway From South					Toy Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	0	0	0	22	4	**1**	27	**21**	0	**53**	0	**74**	28	15	0	0	43	144
03:15 PM	**1**	0	0	0	**1**	0	14	**8**	0	22	9	0	41	0	50	**47**	18	0	0	**65**	138
03:30 PM	0	0	0	0	0	**2**	**101**	4	0	**107**	6	0	20	0	26	22	**31**	0	0	53	**186**
03:45 PM	1	0	0	0	1	1	26	3	0	30	1	0	14	0	15	10	15	0	0	25	71
Total Volume	2	0	0	0	2	3	163	19	1	186	37	0	128	0	165	107	79	0	0	186	539
% App. Total	100	0	0	0		1.6	87.6	10.2	0.5		22.4	0	77.6	0		57.5	42.5	0	0		
PHF	.500	.000	.000	.000	.500	.375	.403	.594	.250	.435	.440	.000	.604	.000	.557	.569	.637	.000	.000	.715	.724

Stantec Consulting

1500 Lakeshore Dr Suite 100
Columbus, Ohio 43123
Design With Community In Mind

Mike
F 8/21/15

File Name : Rohr_Exel_driveway_AM
Site Code : 00000234
Start Date : 8/21/2015
Page No : 1

Groups Printed- cars - trucks

	Future Site driveway From North					Rohr Rd From East					Exel driveway From South					Rohr Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	47	1	0	48	11	0	30	0	41	3	37	0	0	40	129
06:15 AM	0	0	0	0	0	0	69	3	0	72	0	0	3	0	3	8	69	0	0	77	152
06:30 AM	0	0	0	0	0	0	78	9	0	87	2	0	3	0	5	14	94	0	0	108	200
06:45 AM	0	0	0	0	0	0	109	11	0	120	1	0	5	0	6	20	136	0	0	156	282
Total	0	0	0	0	0	0	303	24	0	327	14	0	41	0	55	45	336	0	0	381	763
07:00 AM	0	0	0	0	0	0	83	3	0	86	2	0	0	0	2	8	57	0	0	65	153
07:15 AM	0	0	0	0	0	0	80	5	0	85	0	0	1	0	1	7	39	0	0	46	132
Grand Total	0	0	0	0	0	0	466	32	0	498	16	0	42	0	58	60	432	0	0	492	1048
Apprch %	0	0	0	0		0	93.6	6.4	0		27.6	0	72.4	0		12.2	87.8	0	0		
Total %	0	0	0	0	0	0	44.5	3.1	0	47.5	1.5	0	4	0	5.5	5.7	41.2	0	0	46.9	
cars	0	0	0	0	0	0	429	32	0	461	16	0	42	0	58	60	412	0	0	472	991
% cars	0	0	0	0	0	0	92.1	100	0	92.6	100	0	100	0	100	100	95.4	0	0	95.9	94.6
trucks	0	0	0	0	0	0	37	0	0	37	0	0	0	0	0	0	20	0	0	20	57
% trucks	0	0	0	0	0	0	7.9	0	0	7.4	0	0	0	0	0	0	4.6	0	0	4.1	5.4

	Future Site driveway From North					Rohr Rd From East					Exel driveway From South					Rohr Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 07:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:15 AM																					
06:15 AM	0	0	0	0	0	0	69	3	0	72	0	0	3	0	3	8	69	0	0	77	152
06:30 AM	0	0	0	0	0	0	78	9	0	87	**2**	0	3	0	5	14	94	0	0	108	200
06:45 AM	0	0	0	0	0	0	**109**	**11**	0	**120**	1	0	**5**	0	**6**	**20**	**136**	0	0	**156**	**282**
07:00 AM	0	0	0	0	0	0	83	3	0	86	2	0	0	0	2	8	57	0	0	65	153
Total Volume	0	0	0	0	0	0	339	26	0	365	5	0	11	0	16	50	356	0	0	406	787
% App. Total	0	0	0	0		0	92.9	7.1	0		31.2	0	68.8	0		12.3	87.7	0	0		
PHF	.000	.000	.000	.000	.000	.000	.778	.591	.000	.760	.625	.000	.550	.000	.667	.625	.654	.000	.000	.651	.698

Stantec Consulting

1500 Lakeshore Dr Suite 100
Columbus, Ohio 43123
Design With Community In Mind

Mike
R 8/20/15

File Name : Rohr_Exel_driveway_PM
Site Code : 00000234
Start Date : 8/20/2015
Page No : 1

Groups Printed- cars - trucks

	Future Site driveway From North					Rohr Rd From East					Exel driveway From South					Rohr Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	104	2	0	106	23	0	33	0	56	3	71	0	0	74	236
03:15 PM	0	0	0	0	0	0	74	1	0	75	7	0	9	0	16	3	93	0	0	96	187
03:30 PM	0	0	0	0	0	0	154	2	0	156	5	0	19	0	24	4	118	0	0	122	302
03:45 PM	0	0	0	0	0	0	106	1	0	107	9	0	13	0	22	5	76	0	0	81	210
Total	0	0	0	0	0	0	438	6	0	444	44	0	74	0	118	15	358	0	0	373	935
04:00 PM	0	0	0	0	0	0	124	1	0	125	8	0	26	0	34	4	81	0	0	85	244
04:15 PM	0	0	0	0	0	0	73	0	0	73	2	0	12	0	14	0	85	0	0	85	172
04:30 PM	0	0	0	0	0	0	96	1	0	97	3	0	5	0	8	1	96	0	0	97	202
Grand Total	0	0	0	0	0	0	731	8	0	739	57	0	117	0	174	20	620	0	0	640	1553
Apprch %	0	0	0	0		0	98.9	1.1	0		32.8	0	67.2	0		3.1	96.9	0	0		
Total %	0	0	0	0	0	0	47.1	0.5	0	47.6	3.7	0	7.5	0	11.2	1.3	39.9	0	0	41.2	
cars	0	0	0	0	0	0	657	7	0	664	57	0	116	0	173	20	577	0	0	597	1434
% cars	0	0	0	0	0	0	89.9	87.5	0	89.9	100	0	99.1	0	99.4	100	93.1	0	0	93.3	92.3
trucks	0	0	0	0	0	0	74	1	0	75	0	0	1	0	1	0	43	0	0	43	119
% trucks	0	0	0	0	0	0	10.1	12.5	0	10.1	0	0	0.9	0	0.6	0	6.9	0	0	6.7	7.7

	Future Site driveway From North					Rohr Rd From East					Exel driveway From South					Rohr Rd From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 04:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	0	0	0	0	0	74	1	0	75	7	0	9	0	16	3	93	0	0	96	187
03:30 PM	0	0	0	0	0	0	**154**	**2**	0	**156**	5	0	19	0	24	4	**118**	0	0	**122**	**302**
03:45 PM	0	0	0	0	0	0	106	1	0	107	**9**	0	13	0	22	**5**	76	0	0	81	210
04:00 PM	0	0	0	0	0	0	124	1	0	125	8	0	**26**	0	**34**	4	81	0	0	85	244
Total Volume	0	0	0	0	0	0	458	5	0	463	29	0	67	0	96	16	368	0	0	384	943
% App. Total	0	0	0	0		0	98.9	1.1	0		30.2	0	69.8	0		4.2	95.8	0	0		
PHF	.000	.000	.000	.000	.000	.000	.744	.625	.000	.742	.806	.000	.644	.000	.706	.800	.780	.000	.000	.787	.781

Appendix C

Capacity Analysis

Background

2016

Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

12/1/2015

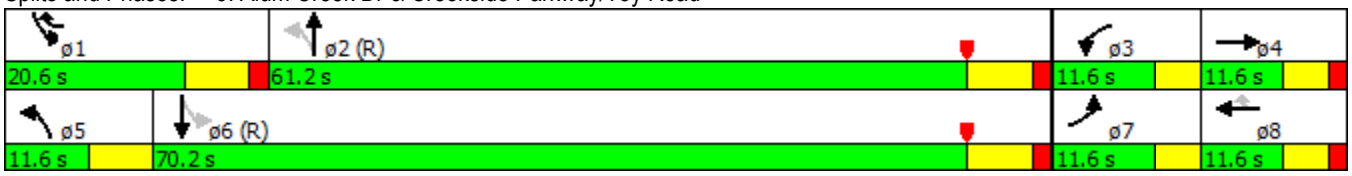
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	11	10	13	46	69	53	901	26	201	1150	482
Future Volume (vph)	73	11	10	13	46	69	53	901	26	201	1150	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	150		250	575		0	650		350
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.995			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	1441	0	3127	1696	1442	1612	3207	0	1641	3114	0
Flt Permitted	0.950			0.950			0.068			0.132		
Satd. Flow (perm)	2870	1441	0	3127	1696	1442	115	3207	0	228	3114	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				75		4			155	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		431			1286			3259			879	
Travel Time (s)		5.3			15.9			40.4			10.9	
Peak Hour Factor	0.74	0.69	0.63	0.65	0.70	0.84	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	22%	22%	22%	12%	12%	12%	12%	12%	12%	10%	10%	10%
Adj. Flow (vph)	99	16	16	20	66	82	77	1218	38	231	1456	742
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	32	0	20	66	82	77	1256	0	231	2198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru			Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		70	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	11.6	11.6		11.6	11.6	20.6	11.6	61.2		20.6	70.2	
Total Split (%)	11.0%	11.0%		11.0%	11.0%	19.6%	11.0%	58.3%		19.6%	66.9%	
Maximum Green (s)	8.0	6.5		8.0	6.5	14.0	6.5	54.6		14.0	63.6	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	7.6	11.4		6.2	6.4	20.0	70.0	62.5		79.4	72.1	
Actuated g/C Ratio	0.07	0.11		0.06	0.06	0.19	0.67	0.60		0.76	0.69	
v/c Ratio	0.48	0.19		0.11	0.64	0.24	0.48	0.66		0.73	1.01	
Control Delay	54.5	31.0		47.8	76.2	10.7	22.7	14.2		24.3	41.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.5	31.0		47.8	76.2	10.7	22.7	14.2		24.3	41.0	
LOS	D	C		D	E	B	C	B		C	D	
Approach Delay		48.8			40.9			14.7			39.4	
Approach LOS		D			D			B			D	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 51 (49%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 31.7 Intersection LOS: C
Intersection Capacity Utilization 74.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



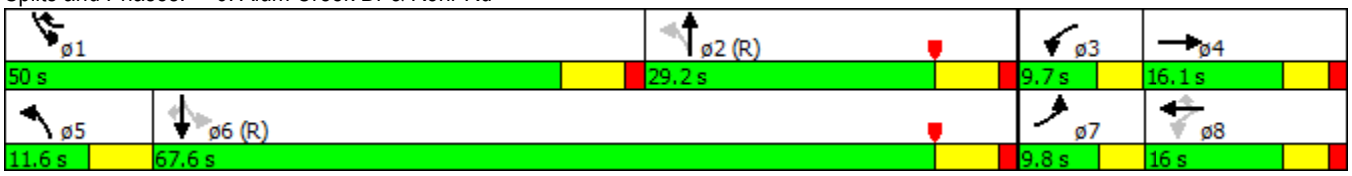
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	62	20	78	87	258	11	319	63	419	567	135
Future Volume (vph)	49	62	20	78	87	258	11	319	63	419	567	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		0	631		356
Storage Lanes	2		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.959				0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	1531	0	1612	1696	1442	1543	3011	0	1612	3223	1442
Flt Permitted	0.950			0.558			0.385			0.248		
Satd. Flow (perm)	2943	1531	0	947	1696	1442	625	3011	0	421	3223	1442
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				77		19				193
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1879			2068			3259	
Travel Time (s)		11.7			23.3			25.6			40.4	
Peak Hour Factor	0.52	0.68	0.59	0.88	0.66	0.67	0.55	0.69	0.71	0.60	0.81	0.70
Heavy Vehicles (%)	19%	19%	19%	12%	12%	12%	17%	17%	17%	12%	12%	12%
Adj. Flow (vph)	94	91	34	89	132	385	20	462	89	698	700	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	125	0	89	132	385	20	551	0	698	700	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2			6		6
Detector Phase	7	4		3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.6	11.6		9.6	11.6	11.6	11.6	11.6		11.6	11.6	11.6
Total Split (s)	9.8	16.1		9.7	16.0	50.0	11.6	29.2		50.0	67.6	67.6
Total Split (%)	9.3%	15.3%		9.2%	15.2%	47.6%	11.0%	27.8%		47.6%	64.4%	64.4%
Maximum Green (s)	6.2	11.0		6.1	10.9	43.4	6.5	22.6		43.4	61.0	61.0
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	5.1
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Act Effct Green (s)	6.2	10.6		16.9	10.5	56.1	34.7	27.9		75.0	70.7	70.7
Actuated g/C Ratio	0.06	0.10		0.16	0.10	0.53	0.33	0.27		0.71	0.67	0.67
v/c Ratio	0.54	0.75		0.47	0.78	0.48	0.08	0.68		0.92	0.32	0.19
Control Delay	60.2	68.3		44.3	76.1	13.5	15.3	40.4		20.2	3.1	0.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	60.2	68.3		44.3	76.1	13.5	15.3	40.4		20.2	3.1	0.8
LOS	E	E		D	E	B	B	D		C	A	A
Approach Delay		64.8			31.7			39.5			10.3	
Approach LOS		E			C			D			B	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 60.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

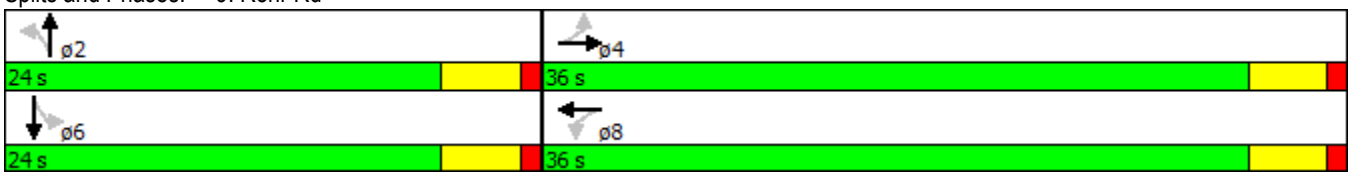


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	132	2	158	330	3	6	156	43	1	147	87
Future Volume (vph)	43	132	2	158	330	3	6	156	43	1	147	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.999			0.972			0.950	
Flt Protected		0.988			0.984			0.998				
Satd. Flow (prot)	0	1705	0	0	1698	0	0	1676	0	0	1641	0
Flt Permitted		0.833			0.828			0.986			0.999	
Satd. Flow (perm)	0	1437	0	0	1429	0	0	1655	0	0	1639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			24			52	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3022			1118			771			1068	
Travel Time (s)		37.5			13.9			9.6			13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	47	143	2	172	359	3	7	170	47	1	160	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	534	0	0	224	0	0	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	36.0	36.0		36.0	36.0		24.0	24.0		24.0	24.0	
Total Split (%)	60.0%	60.0%		60.0%	60.0%		40.0%	40.0%		40.0%	40.0%	
Maximum Green (s)	31.5	31.5		31.5	31.5		19.5	19.5		19.5	19.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		20.1			20.1			11.3			11.3	
Actuated g/C Ratio		0.49			0.49			0.27			0.27	
v/c Ratio		0.27			0.77			0.48			0.53	
Control Delay		7.6			17.3			16.4			15.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.6			17.3			16.4			15.8	
LOS		A			B			B			B	
Approach Delay		7.6			17.3			16.4			15.8	
Approach LOS		A			B			B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 41.2	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 62.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd



Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

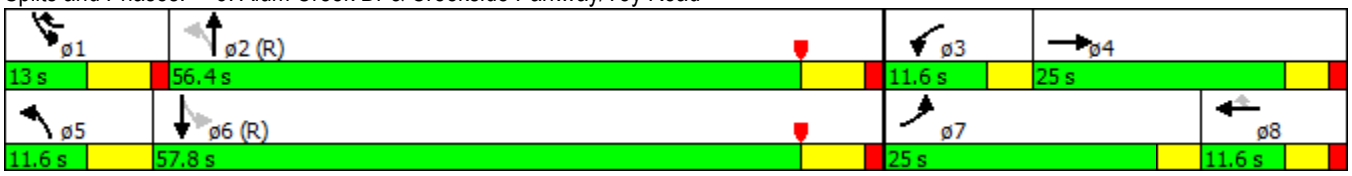
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	88	64	23	20	100	26	1059	12	42	722	268
Future Volume (vph)	447	88	64	23	20	100	26	1059	12	42	722	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	150		250	575		0	650		350
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949				0.850		0.998			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1701	0	2943	1597	1357	1504	3002	0	1456	2769	0
Flt Permitted	0.950			0.950			0.140			0.102		
Satd. Flow (perm)	3303	1701	0	2943	1597	1357	222	3002	0	156	2769	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21				111		2			108	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		431			1286			3272			879	
Travel Time (s)		5.3			15.9			40.6			10.9	
Peak Hour Factor	0.74	0.47	0.67	0.79	0.59	0.55	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	6%	6%	6%	19%	19%	19%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	604	187	96	29	34	182	38	1276	20	66	860	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	283	0	29	34	182	38	1296	0	66	1279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru			Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		70	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	25.0	25.0		11.6	11.6	13.0	11.6	56.4		13.0	57.8	
Total Split (%)	23.6%	23.6%		10.9%	10.9%	12.3%	10.9%	53.2%		12.3%	54.5%	
Maximum Green (s)	21.4	19.9		8.0	6.5	6.4	6.5	49.8		6.4	51.2	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	21.1	20.1		6.6	6.3	13.1	62.3	55.0		64.8	60.9	
Actuated g/C Ratio	0.20	0.19		0.06	0.06	0.12	0.59	0.52		0.61	0.57	
v/c Ratio	0.92	0.83		0.16	0.36	0.69	0.19	0.83		0.39	0.78	
Control Delay	62.2	59.8		48.7	58.9	31.3	7.3	18.8		15.8	22.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	62.2	59.8		48.7	58.9	31.3	7.3	18.8		15.8	22.9	
LOS	E	E		D	E	C	A	B		B	C	
Approach Delay		61.4			37.2			18.4			22.5	
Approach LOS		E			D			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 106
Actuated Cycle Length: 106
Offset: 40 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 31.1 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	96	11	117	89	456	23	632	65	342	466	57
Future Volume (vph)	112	96	11	117	89	456	23	632	65	342	466	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		0	631		356
Storage Lanes	2		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.985				0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1766	0	1504	1583	1346	1517	2994	0	1433	2865	1282
Flt Permitted	0.950			0.405			0.458			0.118		
Satd. Flow (perm)	3303	1766	0	641	1583	1346	731	2994	0	178	2865	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				74		11				72
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1847			2199			3272	
Travel Time (s)		11.7			22.9			27.3			40.6	
Peak Hour Factor	0.56	0.58	0.58	0.89	0.54	0.73	0.72	0.74	0.77	0.88	0.89	0.79
Heavy Vehicles (%)	6%	6%	6%	20%	20%	20%	19%	19%	19%	26%	26%	26%
Adj. Flow (vph)	200	166	19	131	165	625	32	854	84	389	524	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	185	0	131	165	625	32	938	0	389	524	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	Perm	NA		pm+pt	NA	pm+ov
Protected Phases	7	4		3	8	1		2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2			6		6
Detector Phase	7	4		3	8	1	2	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.1	11.6		9.6	11.6	11.6	11.6	11.6		11.6	11.6	11.1
Total Split (s)	12.0	17.6		10.4	16.0	35.1	42.9	42.9		35.1	78.0	12.0
Total Split (%)	11.3%	16.6%		9.8%	15.1%	33.1%	40.5%	40.5%		33.1%	73.6%	11.3%
Maximum Green (s)	6.9	12.5		6.8	10.9	28.5	36.3	36.3		28.5	71.4	6.9
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	1.5	1.5		0.0	1.5	1.5	1.5	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1		3.6	5.1	6.6	6.6	6.6		6.6	6.6	5.1
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	None
Act Effct Green (s)	6.9	12.5		19.2	10.9	44.5	36.3	36.3		71.4	71.4	84.9
Actuated g/C Ratio	0.07	0.12		0.18	0.10	0.42	0.34	0.34		0.67	0.67	0.80
v/c Ratio	0.93	0.88		0.77	1.02	1.03	0.13	0.91		0.85	0.27	0.07
Control Delay	95.9	82.9		65.5	124.0	72.1	25.8	46.7		32.4	5.8	0.2
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	95.9	82.9		65.5	124.0	72.1	25.8	46.7		32.4	5.8	0.2
LOS	F	F		E	F	E	C	D		C	A	A
Approach Delay		89.7			80.4			46.0			15.9	
Approach LOS		F			F			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 106	
Actuated Cycle Length: 106	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 51.8	Intersection LOS: D
Intersection Capacity Utilization 67.2%	ICU Level of Service C
Analysis Period (min) 15	

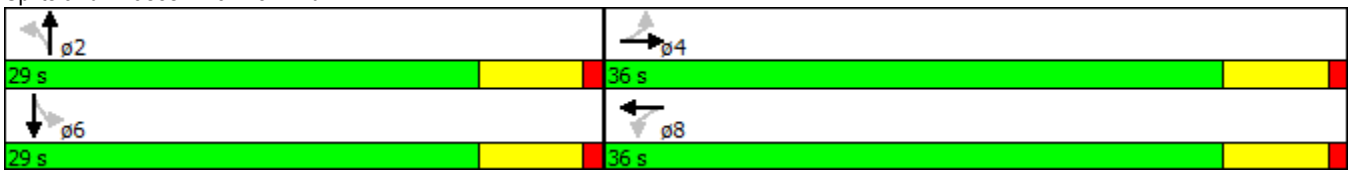
Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	370	17	61	193	12	5	225	196	14	217	51
Future Volume (vph)	133	370	17	61	193	12	5	225	196	14	217	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.996			0.994			0.938			0.976	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1698	0	0	1698	0	0	1619	0	0	1682	0
Flt Permitted		0.833			0.815			0.995			0.971	
Satd. Flow (perm)	0	1433	0	0	1399	0	0	1612	0	0	1637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			73			19	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3964			1118			771			1068	
Travel Time (s)		49.1			13.9			9.6			13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	145	402	18	66	210	13	5	245	213	15	236	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	565	0	0	289	0	0	463	0	0	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.1	24.1		24.1	24.1		24.1	24.1		24.1	24.1	
Total Split (s)	36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0	
Total Split (%)	55.4%	55.4%		55.4%	55.4%		44.6%	44.6%		44.6%	44.6%	
Maximum Green (s)	29.9	29.9		29.9	29.9		22.9	22.9		22.9	22.9	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.1			6.1			6.1			6.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		25.9			25.9			18.6			18.6	
Actuated g/C Ratio		0.45			0.45			0.33			0.33	
v/c Ratio		0.87			0.45			0.81			0.56	
Control Delay		31.6			14.0			28.2			20.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		31.6			14.0			28.2			20.1	
LOS		C			B			C			C	
Approach Delay		31.6			14.0			28.2			20.1	
Approach LOS		C			B			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 65	
Actuated Cycle Length: 57.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd



Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

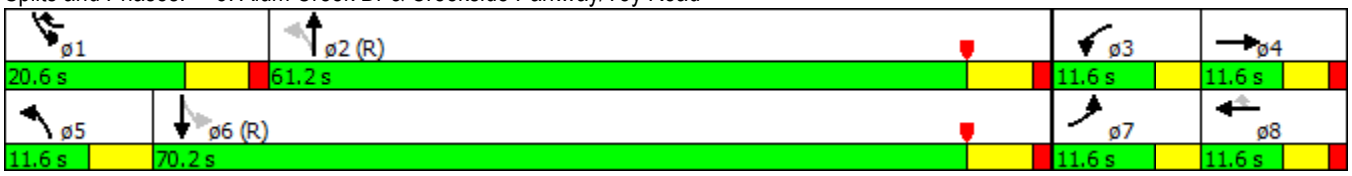
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	11	10	13	46	69	53	901	26	201	1150	482
Future Volume (vph)	73	11	10	13	46	69	53	901	26	201	1150	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	150		250	575		0	650		350
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.995			0.949	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	1441	0	3127	1696	1442	1612	3207	0	1641	3114	0
Flt Permitted	0.950			0.950			0.068			0.132		
Satd. Flow (perm)	2870	1441	0	3127	1696	1442	115	3207	0	228	3114	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				75		4			155	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		431			1286			3259			879	
Travel Time (s)		5.3			15.9			40.4			10.9	
Peak Hour Factor	0.74	0.69	0.63	0.65	0.70	0.84	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	22%	22%	22%	12%	12%	12%	12%	12%	12%	10%	10%	10%
Adj. Flow (vph)	99	16	16	20	66	82	77	1218	38	231	1456	742
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	32	0	20	66	82	77	1256	0	231	2198	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru			Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		70	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	11.6	11.6		11.6	11.6	20.6	11.6	61.2		20.6	70.2	
Total Split (%)	11.0%	11.0%		11.0%	11.0%	19.6%	11.0%	58.3%		19.6%	66.9%	
Maximum Green (s)	8.0	6.5		8.0	6.5	14.0	6.5	54.6		14.0	63.6	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	7.6	11.4		6.2	6.4	20.0	70.0	62.5		79.4	72.1	
Actuated g/C Ratio	0.07	0.11		0.06	0.06	0.19	0.67	0.60		0.76	0.69	
v/c Ratio	0.48	0.19		0.11	0.64	0.24	0.48	0.66		0.73	1.01	
Control Delay	54.5	31.0		47.8	76.2	10.7	25.5	14.6		24.3	41.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	54.5	31.0		47.8	76.2	10.7	25.5	14.6		24.3	41.0	
LOS	D	C		D	E	B	C	B		C	D	
Approach Delay		48.8			40.9			15.2			39.4	
Approach LOS		D			D			B			D	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 105
Offset: 55 (52%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 31.8 Intersection LOS: C
Intersection Capacity Utilization 74.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road

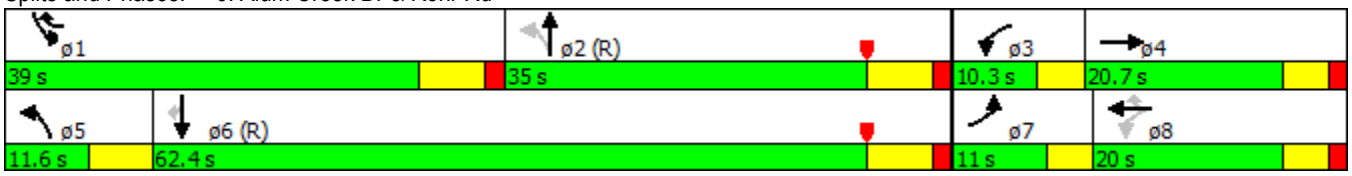


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	62	20	78	87	258	11	319	63	419	567	135
Future Volume (vph)	49	62	20	78	87	258	11	319	63	419	567	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		0	631		356
Storage Lanes	2		0	1		2	1		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.97	0.95	1.00
Frt		0.959				0.850		0.976				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	1531	0	1612	1696	2538	1543	3011	0	3127	3223	1442
Flt Permitted	0.950			0.609			0.385			0.950		
Satd. Flow (perm)	2943	1531	0	1033	1696	2538	625	3011	0	3127	3223	1442
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15				226		21				193
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1879			2068			3259	
Travel Time (s)		11.7			23.3			25.6			40.4	
Peak Hour Factor	0.52	0.68	0.59	0.88	0.66	0.67	0.55	0.69	0.71	0.60	0.81	0.70
Heavy Vehicles (%)	19%	19%	19%	12%	12%	12%	17%	17%	17%	12%	12%	12%
Adj. Flow (vph)	94	91	34	89	132	385	20	462	89	698	700	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	125	0	89	132	385	20	551	0	698	700	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2					6
Detector Phase	7	4		3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.6	11.6		9.6	11.6	11.6	11.6	11.6		11.6	11.6	11.6
Total Split (s)	11.0	20.7		10.3	20.0	39.0	11.6	35.0		39.0	62.4	62.4
Total Split (%)	10.5%	19.7%		9.8%	19.0%	37.1%	11.0%	33.3%		37.1%	59.4%	59.4%
Maximum Green (s)	7.4	15.6		6.7	14.9	32.4	6.5	28.4		32.4	55.8	55.8
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	5.1
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Act Effct Green (s)	7.2	13.1		19.4	12.5	45.8	44.1	37.2		28.2	67.6	67.6
Actuated g/C Ratio	0.07	0.12		0.18	0.12	0.44	0.42	0.35		0.27	0.64	0.64
v/c Ratio	0.47	0.61		0.39	0.65	0.31	0.06	0.51		0.83	0.34	0.19
Control Delay	55.0	50.9		37.6	59.1	7.3	11.9	30.1		40.5	3.7	0.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	55.0	50.9		37.6	59.1	7.3	11.9	30.1		40.5	3.7	0.8
LOS	E	D		D	E	A	B	C		D	A	A
Approach Delay		52.7			23.0			29.5			19.5	
Approach LOS		D			C			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay: 24.6	Intersection LOS: C
Intersection Capacity Utilization 49.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

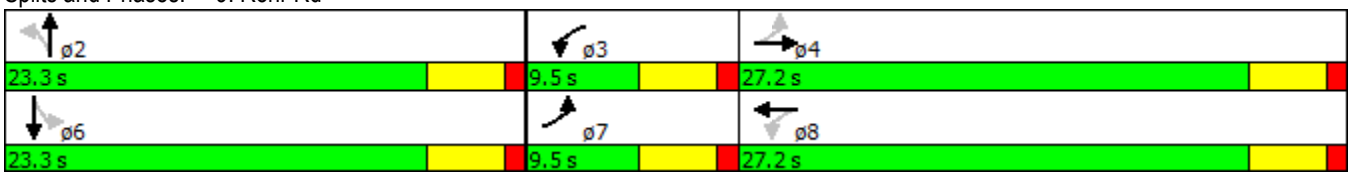


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	129	2	163	323	3	6	156	43	1	146	81
Future Volume (vph)	40	129	2	163	323	3	6	156	43	1	146	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.999			0.972			0.952	
Flt Protected		0.989			0.984			0.998				
Satd. Flow (prot)	0	1707	0	0	1698	0	0	1676	0	0	1644	0
Flt Permitted		0.843			0.824			0.986			0.999	
Satd. Flow (perm)	0	1455	0	0	1422	0	0	1655	0	0	1643	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			1			23			48	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3022			1118			771			1068	
Travel Time (s)		37.5			13.9			9.6			13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	43	140	2	177	351	3	7	170	47	1	159	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	185	0	0	531	0	0	224	0	0	248	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	7	4		3	8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	9.5	27.2		9.5	27.2		23.3	23.3		23.3	23.3	
Total Split (%)	15.8%	45.3%		15.8%	45.3%		38.8%	38.8%		38.8%	38.8%	
Maximum Green (s)	5.0	22.7		5.0	22.7		18.8	18.8		18.8	18.8	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)		7.0			7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0			0		0	0		0	0	
Act Effct Green (s)		18.5			18.5			10.4			10.4	
Actuated g/C Ratio		0.48			0.48			0.27			0.27	
v/c Ratio		0.26			0.77			0.48			0.52	
Control Delay		7.4			19.0			15.1			14.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		7.4			19.0			15.1			14.5	
LOS		A			B			B			B	
Approach Delay		7.4			19.0			15.1			14.5	
Approach LOS		A			B			B			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 38.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 15.5	Intersection LOS: B
Intersection Capacity Utilization 61.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd



Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

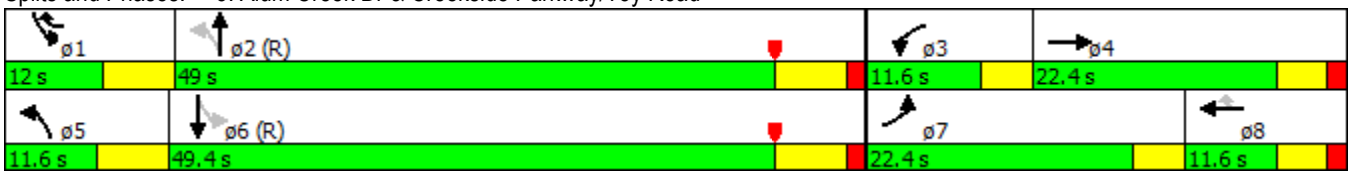
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	88	64	23	20	100	26	1059	12	42	722	268
Future Volume (vph)	447	88	64	23	20	100	26	1059	12	42	722	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		0	150		250	575		0	650		350
Storage Lanes	2		0	2		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949				0.850		0.998			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1701	0	2943	1597	1357	1504	3002	0	1456	2769	0
Flt Permitted	0.950			0.950			0.127			0.098		
Satd. Flow (perm)	3303	1701	0	2943	1597	1357	201	3002	0	150	2769	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24				124		2			114	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		431			1286			3272			879	
Travel Time (s)		5.3			15.9			40.6			10.9	
Peak Hour Factor	0.74	0.47	0.67	0.79	0.59	0.55	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	6%	6%	6%	19%	19%	19%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	604	187	96	29	34	182	38	1276	20	66	860	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	283	0	29	34	182	38	1296	0	66	1279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru			Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		70	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		50	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	22.4	22.4		11.6	11.6	12.0	11.6	49.0		12.0	49.4	
Total Split (%)	23.6%	23.6%		12.2%	12.2%	12.6%	12.2%	51.6%		12.6%	52.0%	
Maximum Green (s)	18.8	17.3		8.0	6.5	6.9	6.5	42.4		6.9	42.8	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5		0.0	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6		5.1	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	18.8	17.9		6.5	6.3	13.2	55.0	47.7		57.9	52.3	
Actuated g/C Ratio	0.20	0.19		0.07	0.07	0.14	0.58	0.50		0.61	0.55	
v/c Ratio	0.93	0.83		0.14	0.32	0.62	0.20	0.86		0.37	0.81	
Control Delay	59.6	56.2		42.9	50.8	22.2	9.3	25.1		14.5	24.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	59.6	56.2		42.9	50.8	22.2	9.3	25.1		14.5	24.2	
LOS	E	E		D	D	C	A	C		B	C	
Approach Delay		58.5			28.6			24.7			23.7	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 95
Offset: 28 (29%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 32.5 Intersection LOS: C
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	96	11	117	89	456	23	632	65	342	466	57
Future Volume (vph)	112	96	11	117	89	456	23	632	65	342	466	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		0	631		356
Storage Lanes	2		0	1		2	1		0	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.97	0.95	1.00
Frt		0.985				0.850		0.987				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1766	0	1504	1583	2369	1517	2994	0	2779	2865	1282
Flt Permitted	0.950			0.483			0.458			0.950		
Satd. Flow (perm)	3303	1766	0	765	1583	2369	731	2994	0	2779	2865	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				104		13				72
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1847			2199			3272	
Travel Time (s)		11.7			22.9			27.3			40.6	
Peak Hour Factor	0.56	0.58	0.58	0.89	0.54	0.73	0.72	0.74	0.77	0.88	0.89	0.79
Heavy Vehicles (%)	6%	6%	6%	20%	20%	20%	19%	19%	19%	26%	26%	26%
Adj. Flow (vph)	200	166	19	131	165	625	32	854	84	389	524	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	185	0	131	165	625	32	938	0	389	524	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	Perm	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1		2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2					6
Detector Phase	7	4		3	8	1	2	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.1	11.6		9.6	11.6	11.6	11.6	11.6		11.6	11.6	11.1
Total Split (s)	12.0	19.0		11.0	18.0	22.4	42.6	42.6		22.4	65.0	12.0
Total Split (%)	12.6%	20.0%		11.6%	18.9%	23.6%	44.8%	44.8%		23.6%	68.4%	12.6%
Maximum Green (s)	8.4	13.9		7.4	14.4	17.3	37.5	37.5		17.3	58.4	8.4
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	0.0	0.0	0.0	0.0		0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	3.6	5.1	5.1	5.1		5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	None
Act Effct Green (s)	8.3	12.9		20.6	13.3	33.2	39.7	39.7		16.2	59.5	74.5
Actuated g/C Ratio	0.09	0.14		0.22	0.14	0.35	0.42	0.42		0.17	0.63	0.78
v/c Ratio	0.69	0.76		0.59	0.75	0.70	0.10	0.75		0.82	0.29	0.07
Control Delay	55.5	59.0		40.2	60.1	26.3	19.5	28.2		42.8	5.8	0.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	55.5	59.0		40.2	60.1	26.3	19.5	28.2		42.8	5.8	0.8
LOS	E	E		D	E	C	B	C		D	A	A
Approach Delay		57.2			34.3			27.9			20.1	
Approach LOS		E			C			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 30.8	Intersection LOS: C
Intersection Capacity Utilization 54.3%	ICU Level of Service A
Analysis Period (min) 15	

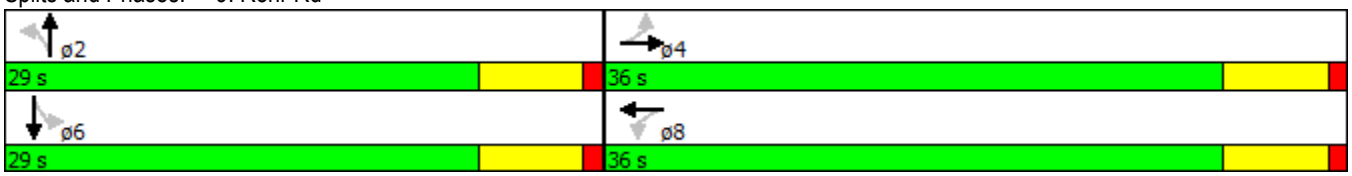
Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	370	17	61	193	12	5	225	196	14	217	51
Future Volume (vph)	133	370	17	61	193	12	5	225	196	14	217	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.996			0.994			0.938			0.976	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1698	0	0	1698	0	0	1619	0	0	1682	0
Flt Permitted		0.833			0.815			0.995			0.971	
Satd. Flow (perm)	0	1433	0	0	1399	0	0	1612	0	0	1637	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			73			19	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		3964			1118			771			1068	
Travel Time (s)		49.1			13.9			9.6			13.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	145	402	18	66	210	13	5	245	213	15	236	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	565	0	0	289	0	0	463	0	0	306	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.1	24.1		24.1	24.1		24.1	24.1		24.1	24.1	
Total Split (s)	36.0	36.0		36.0	36.0		29.0	29.0		29.0	29.0	
Total Split (%)	55.4%	55.4%		55.4%	55.4%		44.6%	44.6%		44.6%	44.6%	
Maximum Green (s)	29.9	29.9		29.9	29.9		22.9	22.9		22.9	22.9	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.1			6.1			6.1			6.1	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		25.9			25.9			18.6			18.6	
Actuated g/C Ratio		0.45			0.45			0.33			0.33	
v/c Ratio		0.87			0.45			0.81			0.56	
Control Delay		31.6			14.0			28.2			20.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		31.6			14.0			28.2			20.1	
LOS		C			B			C			C	
Approach Delay		31.6			14.0			28.2			20.1	
Approach LOS		C			B			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 65	
Actuated Cycle Length: 57.1	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 25.3	Intersection LOS: C
Intersection Capacity Utilization 74.4%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd



2025

Phasings

3: Alum Creek Dr & Creekside Parkway/Toy Road

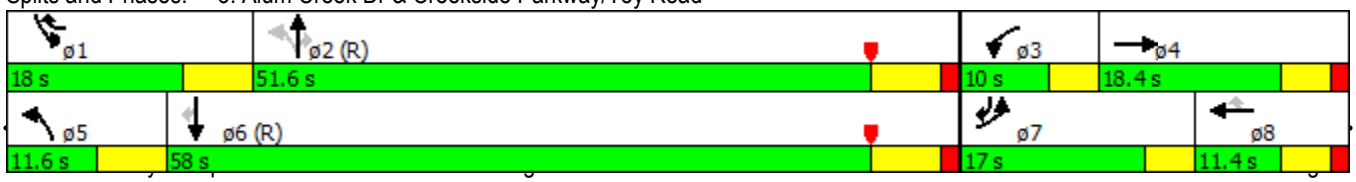
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	11	10	39	45	107	51	923	81	279	1190	468
Future Volume (vph)	71	11	10	39	45	107	51	923	81	279	1190	468
Satd. Flow (prot)	2870	1441	0	3127	1696	2538	1612	3223	1442	3183	3282	1468
Flt Permitted	0.950			0.950			0.109			0.950		
Satd. Flow (perm)	2870	1441	0	3127	1696	2538	185	3223	1442	3183	3282	1468
Satd. Flow (RTOR)		16				127			217			399
Lane Group Flow (vph)	96	32	0	60	64	127	74	1247	117	321	1506	720
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		2			6
Detector Phase	7	4		3	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	10.1		10.0	10.1	11.6	11.6	11.6	11.6	11.6	11.6	10.0
Total Split (s)	17.0	18.4		10.0	11.4	18.0	11.6	51.6	51.6	18.0	58.0	17.0
Total Split (%)	17.3%	18.8%		10.2%	11.6%	18.4%	11.8%	52.7%	52.7%	18.4%	59.2%	17.3%
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5	1.5	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6	6.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	9.6	8.8		8.7	6.2	21.7	59.2	51.5	51.5	12.6	59.9	76.8
Actuated g/C Ratio	0.10	0.09		0.09	0.06	0.22	0.60	0.53	0.53	0.13	0.61	0.78
v/c Ratio	0.34	0.22		0.22	0.60	0.19	0.37	0.74	0.14	0.79	0.75	0.58
Control Delay	43.9	28.7		44.5	68.1	6.2	10.9	11.5	0.3	56.3	19.3	4.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	43.9	28.7		44.5	68.1	6.2	10.9	11.5	0.3	56.3	19.3	4.5
LOS	D	C		D	E	A	B	B	A	E	B	A
Approach Delay		40.1			31.1			10.6			19.7	
Approach LOS		D			C			B			B	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 98
Offset: 40 (41%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 18.0 Intersection LOS: B
Intersection Capacity Utilization 59.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Phasings
6: Alum Creek Dr & Rohr Rd

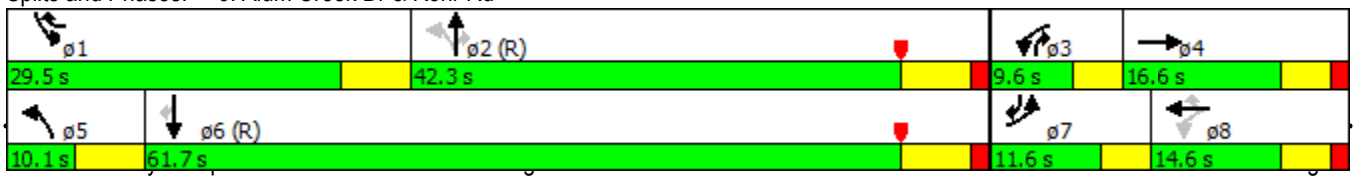
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	60	19	11	97	281	11	726	66	449	659	131
Future Volume (vph)	48	60	19	11	97	281	11	726	66	449	659	131
Satd. Flow (prot)	2943	1533	0	1612	1696	2538	1543	3085	1380	3127	3223	1442
Flt Permitted	0.950			0.680			0.345			0.950		
Satd. Flow (perm)	2943	1533	0	1154	1696	2538	560	3085	1380	3127	3223	1442
Satd. Flow (RTOR)		15				96			137			187
Lane Group Flow (vph)	92	120	0	13	147	419	20	1052	93	748	814	187
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	10.1	11.6	9.6	11.6	11.6	11.6
Total Split (s)	11.6	16.6		9.6	14.6	29.5	10.1	42.3	9.6	29.5	61.7	11.6
Total Split (%)	11.8%	16.9%		9.8%	14.9%	30.1%	10.3%	43.2%	9.8%	30.1%	63.0%	11.8%
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	3.6	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6	3.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	7.5	13.2		16.5	9.5	39.0	42.7	36.2	48.3	24.4	61.7	75.8
Actuated g/C Ratio	0.08	0.13		0.17	0.10	0.40	0.44	0.37	0.49	0.25	0.63	0.77
v/c Ratio	0.41	0.55		0.06	0.90	0.39	0.07	0.92	0.12	0.96	0.40	0.16
Control Delay	48.7	46.0		30.3	93.0	17.2	8.8	44.2	1.2	51.4	6.1	1.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.7	46.0		30.3	93.0	17.2	8.8	44.2	1.2	51.4	6.1	1.5
LOS	D	D		C	F	B	A	D	A	D	A	A
Approach Delay		47.2			36.7			40.2			25.0	
Approach LOS		D			D			D			C	

Intersection Summary

Cycle Length: 98
Actuated Cycle Length: 98
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.96
Intersection Signal Delay: 32.9 — Intersection LOS: C
Intersection Capacity Utilization 54.9% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Alum Creek Dr & Rohr Rd



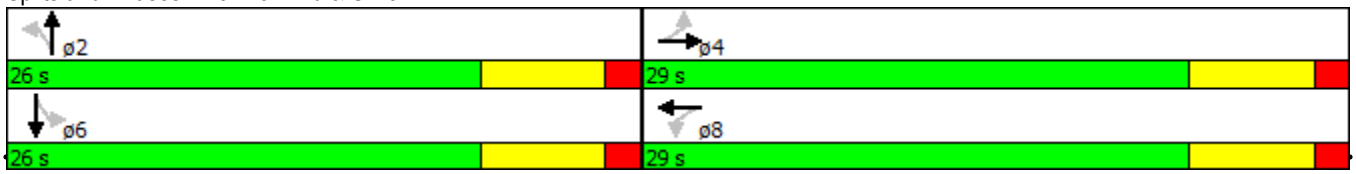
Phasings
9: Rohr Rd & SR 317

3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	138	2	161	133	3	6	169	43	1	160	80
Future Volume (vph)	40	138	2	161	133	3	6	169	43	1	160	80
Satd. Flow (prot)	0	1707	0	0	1681	0	0	1679	0	0	1650	0
Flt Permitted		0.854			0.728			0.982			0.998	
Satd. Flow (perm)	0	1474	0	0	1256	0	0	1650	0	0	1646	0
Satd. Flow (RTOR)		1			1			25			50	
Lane Group Flow (vph)	0	195	0	0	323	0	0	238	0	0	262	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	29.0	29.0		29.0	29.0		26.0	26.0		26.0	26.0	
Total Split (%)	52.7%	52.7%		52.7%	52.7%		47.3%	47.3%		47.3%	47.3%	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		14.8			14.8			11.0			11.0	
Actuated g/C Ratio		0.37			0.37			0.28			0.28	
v/c Ratio		0.35			0.69			0.50			0.53	
Control Delay		11.4			19.6			15.7			15.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.4			19.6			15.7			15.0	
LOS		B			B			B			B	
Approach Delay		11.4			19.6			15.7			15.0	
Approach LOS		B			B			B			B	

Intersection Summary	
Cycle Length: 55	
Actuated Cycle Length: 39.7	
Natural Cycle: 55	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 15.9	Intersection LOS: B
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



Phasings

3: Alum Creek Dr & Creekside Parkway/Toy Road

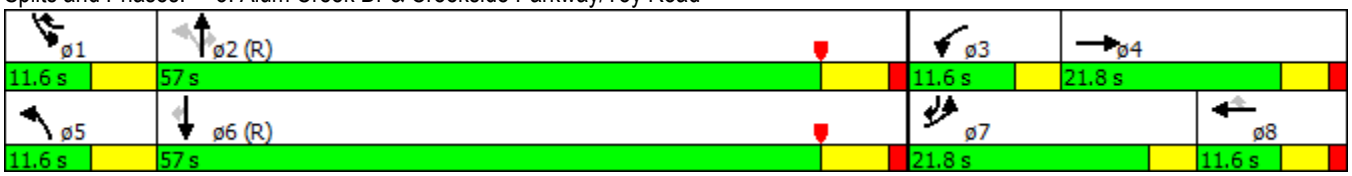
3/24/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	434	85	62	66	19	162	25	1264	33	73	857	260
Future Volume (vph)	434	85	62	66	19	162	25	1264	33	73	857	260
Satd. Flow (prot)	3303	1701	0	2943	1597	2389	1504	3008	1346	2824	2911	1302
Flt Permitted	0.950			0.950			0.218			0.950		
Satd. Flow (perm)	3303	1701	0	2943	1597	2389	345	3008	1346	2824	2911	1302
Satd. Flow (RTOR)		22				116			154			406
Lane Group Flow (vph)	586	274	0	84	32	295	36	1523	55	114	1020	406
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		2			6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	21.8	21.8		11.6	11.6	11.6	11.6	57.0	57.0	11.6	57.0	21.8
Total Split (%)	21.4%	21.4%		11.4%	11.4%	11.4%	11.4%	55.9%	55.9%	11.4%	55.9%	21.4%
Maximum Green (s)	18.2	16.7		8.0	6.5	6.5	6.5	50.4	50.4	6.5	50.4	18.2
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5	1.5	0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6	6.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	20.4	16.7		7.4	6.3	13.5	60.5	52.9	52.9	6.5	57.5	85.9
Actuated g/C Ratio	0.20	0.16		0.07	0.06	0.13	0.59	0.52	0.52	0.06	0.56	0.84
v/c Ratio	0.89	0.93		0.39	0.33	0.71	0.13	0.98	0.07	0.64	0.62	0.35
Control Delay	57.5	76.4		50.5	55.1	34.4	6.8	34.9	0.1	63.4	19.0	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	57.5	76.4		50.5	55.1	34.4	6.8	34.9	0.1	63.4	19.0	1.3
LOS	E	E		D	E	C	A	C	A	E	B	A
Approach Delay		63.5			39.3			33.1			17.6	
Approach LOS		E			D			C			B	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 102
Offset: 40 (39%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 34.2 — Intersection LOS: C
Intersection Capacity Utilization 66.1% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	93	11	126	99	486	22	727	69	366	564	55
Future Volume (vph)	109	93	11	126	99	486	22	727	69	366	564	55
Satd. Flow (prot)	3303	1764	0	1504	1583	2369	1517	3034	1357	2779	2865	1282
Flt Permitted	0.950			0.447			0.411			0.950		
Satd. Flow (perm)	3303	1764	0	708	1583	2369	656	3034	1357	2779	2865	1282
Satd. Flow (RTOR)		5				77			170			77
Lane Group Flow (vph)	195	179	0	142	183	666	31	982	90	416	634	70
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases				8		8	2		2			6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	12.2	21.0		12.2	21.0	24.1	11.6	44.7	44.7	24.1	57.2	12.2
Total Split (%)	12.0%	20.6%		12.0%	20.6%	23.6%	11.4%	43.8%	43.8%	23.6%	56.1%	12.0%
Maximum Green (s)	8.6	15.9		8.6	15.9	19.0	6.5	38.1	38.1	19.0	50.6	8.6
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5	1.5	0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6	6.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	8.5	14.8		24.7	14.7	38.1	47.7	40.1	40.1	18.3	56.5	71.7
Actuated g/C Ratio	0.08	0.15		0.24	0.14	0.37	0.47	0.39	0.39	0.18	0.55	0.70
v/c Ratio	0.71	0.69		0.60	0.80	0.71	0.09	0.82	0.14	0.84	0.40	0.08
Control Delay	60.2	54.5		41.0	67.8	28.5	9.5	35.6	0.5	44.1	12.9	3.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	54.5		41.0	67.8	28.5	9.5	35.6	0.5	44.1	12.9	3.4
LOS	E	D		D	E	C	A	D	A	D	B	A
Approach Delay		57.5			37.6			32.0			23.9	
Approach LOS		E			D			C			C	

Intersection Summary	
Cycle Length: 102	
Actuated Cycle Length: 102	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 33.7	Intersection LOS: C
Intersection Capacity Utilization 58.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 33: Alum Creek Dr & Rohr Rd

Phasings
9: Rohr Rd

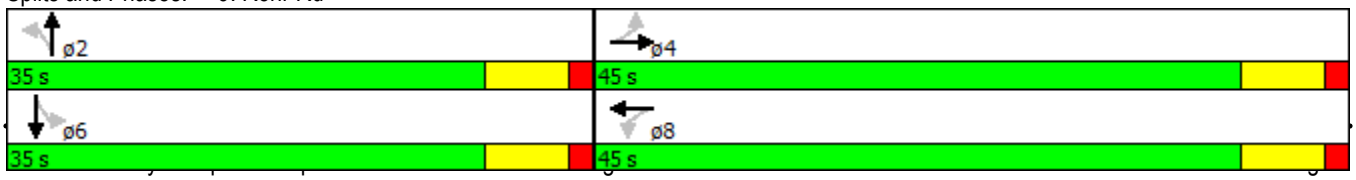
3/24/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	132	419	17	61	192	12	5	245	194	14	237	51
Future Volume (vph)	132	419	17	61	192	12	5	245	194	14	237	51
Satd. Flow (prot)	0	1701	0	0	1698	0	0	1624	0	0	1684	0
Flt Permitted		0.842			0.792			0.996			0.971	
Satd. Flow (perm)	0	1449	0	0	1360	0	0	1619	0	0	1639	0
Satd. Flow (RTOR)		3			4			54			14	
Lane Group Flow (vph)	0	616	0	0	288	0	0	482	0	0	328	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	45.0	45.0		45.0	45.0		35.0	35.0		35.0	35.0	
Total Split (%)	56.3%	56.3%		56.3%	56.3%		43.8%	43.8%		43.8%	43.8%	
Maximum Green (s)	38.4	38.4		38.4	38.4		28.4	28.4		28.4	28.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		33.4			33.4			23.5			23.5	
Actuated g/C Ratio		0.47			0.47			0.33			0.33	
v/c Ratio		0.90			0.45			0.84			0.59	
Control Delay		36.1			15.6			35.0			24.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		36.1			15.6			35.0			24.5	
LOS		D			B			D			C	
Approach Delay		36.1			15.6			35.0			24.5	
Approach LOS		D			B			D			C	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 70.6
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 30.1 — Intersection LOS: C
Intersection Capacity Utilization 78.3% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd



Option 1

2016

Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

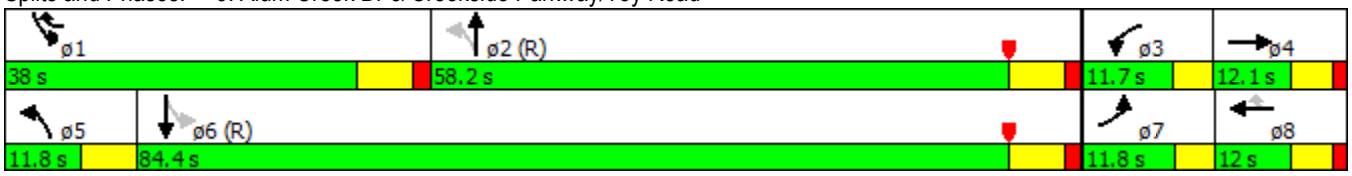
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	11	10	26	46	157	53	907	56	408	1165	482
Future Volume (vph)	73	11	10	26	46	157	53	907	56	408	1165	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.991			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	1441	0	1612	1696	1442	1612	3194	0	1641	3118	0
Flt Permitted	0.950			0.950			0.075			0.067		
Satd. Flow (perm)	2870	1441	0	1612	1696	1442	127	3194	0	116	3118	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				65		7			149	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			3747			3188			879	
Travel Time (s)		10.7			46.5			39.5			10.9	
Peak Hour Factor	0.74	0.69	0.63	0.65	0.70	0.84	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	22%	22%	22%	12%	12%	12%	12%	12%	12%	10%	10%	10%
Adj. Flow (vph)	99	16	16	40	66	187	77	1226	81	469	1475	742
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	32	0	40	66	187	77	1307	0	469	2217	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	11.8	12.1		11.7	12.0	38.0	11.8	58.2		38.0	84.4	
Total Split (%)	9.8%	10.1%		9.8%	10.0%	31.7%	9.8%	48.5%		31.7%	70.3%	
Maximum Green (s)	8.2	7.0		8.1	6.9	31.4	6.7	51.6		31.4	77.8	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	8.0	6.4		10.0	6.8	40.4	62.4	54.8		92.2	83.1	
Actuated g/C Ratio	0.07	0.05		0.08	0.06	0.34	0.52	0.46		0.77	0.69	
v/c Ratio	0.52	0.35		0.30	0.69	0.35	0.55	0.89		0.98	1.01	
Control Delay	64.3	44.1		58.7	89.7	20.2	39.3	31.5		71.2	40.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	64.3	44.1		58.7	89.7	20.2	39.3	31.5		71.2	40.2	
LOS	E	D		E	F	C	D	C		E	D	
Approach Delay		59.3			41.1			31.9			45.6	
Approach LOS		E			D			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 73 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 41.5 Intersection LOS: D
Intersection Capacity Utilization 74.5% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



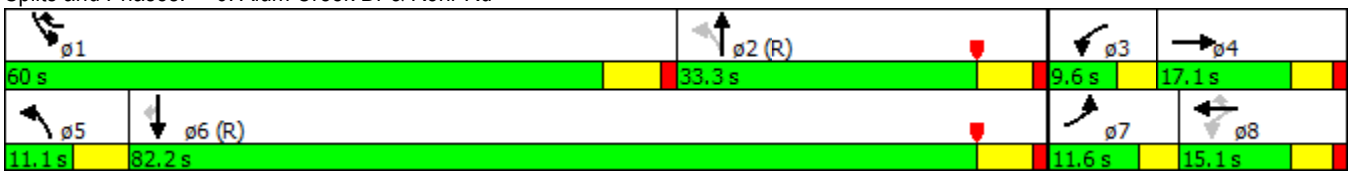
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Future Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.959				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	1531	0	1612	1696	1442	1543	2990	0	1612	3223	1442
Flt Permitted	0.950			0.583			0.379			0.950		
Satd. Flow (perm)	2943	1531	0	989	1696	1442	615	2990	0	1612	3223	1442
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12				74		24				193
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1937			2103			3188	
Travel Time (s)		11.7			24.0			26.1			39.5	
Peak Hour Factor	0.52	0.68	0.59	0.88	0.66	0.67	0.55	0.69	0.71	0.60	0.81	0.70
Heavy Vehicles (%)	19%	19%	19%	12%	12%	12%	17%	17%	17%	12%	12%	12%
Adj. Flow (vph)	94	91	34	102	132	394	20	506	130	723	716	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	125	0	102	132	394	20	636	0	723	716	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2					6
Detector Phase	7	4		3	8	1	5	2		1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6		11.6	11.6	11.6
Total Split (s)	11.6	17.1		9.6	15.1	60.0	11.1	33.3		60.0	82.2	82.2
Total Split (%)	9.7%	14.3%		8.0%	12.6%	50.0%	9.3%	27.8%		50.0%	68.5%	68.5%
Maximum Green (s)	8.0	12.0		6.0	10.0	53.4	6.0	26.7		53.4	75.6	75.6
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	5.1
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Act Effct Green (s)	7.7	11.6		17.6	10.0	68.5	33.8	27.0		53.4	82.7	82.7
Actuated g/C Ratio	0.06	0.10		0.15	0.08	0.57	0.28	0.22		0.44	0.69	0.69
v/c Ratio	0.50	0.79		0.58	0.94	0.46	0.09	0.92		1.01	0.32	0.18
Control Delay	63.6	80.8		57.4	115.6	13.9	18.4	63.8		52.3	2.7	0.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	63.6	80.8		57.4	115.6	13.9	18.4	63.8		52.3	2.7	0.3
LOS	E	F		E	F	B	B	E		D	A	A
Approach Delay		73.4			42.3			62.4			24.4	
Approach LOS		E			D			E			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 39.4 Intersection LOS: D
Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Alum Creek Dr & Rohr Rd



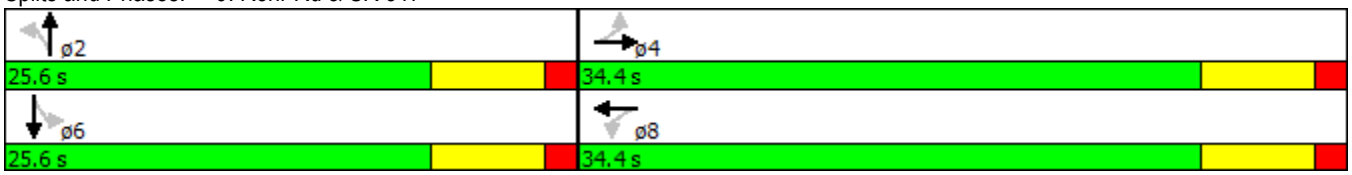
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	131	4	163	329	3	9	156	43	1	147	87
Future Volume (vph)	42	131	4	163	329	3	9	156	43	1	147	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.996			0.999			0.972			0.950	
Flt Protected	0.950				0.984			0.998				
Satd. Flow (prot)	1641	1720	0	0	1698	0	0	1676	0	0	1641	0
Flt Permitted	0.482				0.834			0.974			0.998	
Satd. Flow (perm)	833	1720	0	0	1439	0	0	1635	0	0	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			23			52	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3389			1118			771			1068	
Travel Time (s)		42.0			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	46	142	4	177	358	3	10	170	47	1	160	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	146	0	0	538	0	0	227	0	0	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	34.4	34.4		34.4	34.4		25.6	25.6		25.6	25.6	
Total Split (%)	57.3%	57.3%		57.3%	57.3%		42.7%	42.7%		42.7%	42.7%	
Maximum Green (s)	27.8	27.8		27.8	27.8		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	6.6	6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	21.8	21.8			21.8			11.7			11.7	
Actuated g/C Ratio	0.46	0.46			0.46			0.25			0.25	
v/c Ratio	0.12	0.18			0.81			0.54			0.58	
Control Delay	9.0	8.6			23.8			20.0			18.9	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	9.0	8.6			23.8			20.0			18.9	
LOS	A	A			C			B			B	
Approach Delay		8.7			23.8			20.0			18.9	
Approach LOS		A			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 47.3
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 19.7 Intersection LOS: B
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd & SR 317



Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

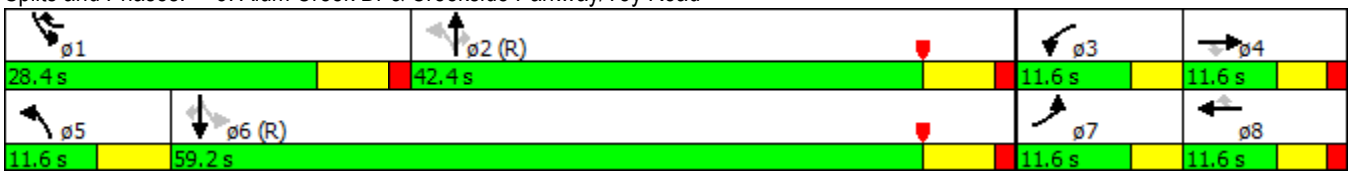
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	11	10	26	46	157	53	907	56	408	1165	482
Future Volume (vph)	73	11	10	26	46	157	53	907	56	408	1165	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		1	2		2	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	1557	1324	3127	1696	2538	1612	3223	1442	1641	3282	1468
Flt Permitted	0.950			0.950			0.161			0.090		
Satd. Flow (perm)	2870	1557	1324	3127	1696	2538	273	3223	1442	155	3282	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			219			96			202			676
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			3747			3188			879	
Travel Time (s)		10.7			46.5			39.5			10.9	
Peak Hour Factor	0.74	0.69	0.63	0.65	0.70	0.84	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	22%	22%	22%	12%	12%	12%	12%	12%	12%	10%	10%	10%
Adj. Flow (vph)	99	16	16	40	66	187	77	1226	81	469	1475	742
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	16	16	40	66	187	77	1226	81	469	1475	742
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	70	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	50	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	50	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (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
Detector 1 Queue (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
Detector 1 Delay (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
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	11.6	11.6	11.6	11.6	11.6	28.4	11.6	42.4	42.4	28.4	59.2	59.2
Total Split (%)	12.3%	12.3%	12.3%	12.3%	12.3%	30.2%	12.3%	45.1%	45.1%	30.2%	63.0%	63.0%
Maximum Green (s)	8.0	6.5	6.5	8.0	6.5	21.8	6.5	35.8	35.8	21.8	52.6	52.6
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	0.0	1.5	1.5	0.0	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	3.6	5.1	5.1	3.6	5.1	6.6	5.1	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	7.5	9.0	9.0	6.7	6.3	31.1	48.0	40.5	40.5	68.9	61.2	61.2
Actuated g/C Ratio	0.08	0.10	0.10	0.07	0.07	0.33	0.51	0.43	0.43	0.73	0.65	0.65
v/c Ratio	0.43	0.11	0.05	0.18	0.58	0.21	0.34	0.88	0.11	1.02	0.69	0.62
Control Delay	47.1	42.4	0.3	42.6	63.3	11.0	10.4	31.0	0.4	76.6	16.4	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.1	42.4	0.3	42.6	63.3	11.0	10.4	31.0	0.4	76.6	16.4	4.2
LOS	D	D	A	D	E	B	B	C	A	E	B	A
Approach Delay		40.8			27.1			28.0			23.6	
Approach LOS		D			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 94
Actuated Cycle Length: 94
Offset: 35 (37%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 25.7 Intersection LOS: C
Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road

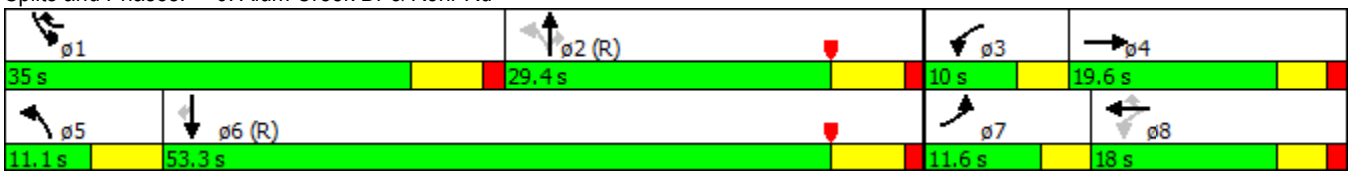


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Future Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		2	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt		0.959				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	1531	0	1612	1696	2538	1543	3085	1380	3127	3223	1442
Flt Permitted	0.950			0.638			0.379			0.950		
Satd. Flow (perm)	2943	1531	0	1082	1696	2538	615	3085	1380	3127	3223	1442
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				192			202			193
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1937			2103			3188	
Travel Time (s)		11.7			24.0			26.1			39.5	
Peak Hour Factor	0.52	0.68	0.59	0.88	0.66	0.67	0.55	0.69	0.71	0.60	0.81	0.70
Heavy Vehicles (%)	19%	19%	19%	12%	12%	12%	17%	17%	17%	12%	12%	12%
Adj. Flow (vph)	94	91	34	102	132	394	20	506	130	723	716	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	125	0	102	132	394	20	506	130	723	716	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru			Thru	Right		Thru	Right		Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100	20	70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6	11.6	11.6	11.6	11.6
Total Split (s)	11.6	19.6		10.0	18.0	35.0	11.1	29.4	29.4	35.0	53.3	53.3
Total Split (%)	12.3%	20.9%		10.6%	19.1%	37.2%	11.8%	31.3%	31.3%	37.2%	56.7%	56.7%
Maximum Green (s)	8.0	14.5		6.4	12.9	28.4	6.0	22.8	22.8	28.4	46.7	46.7
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	7.5	11.7		18.7	11.3	42.2	36.3	29.4	29.4	25.8	57.5	57.5
Actuated g/C Ratio	0.08	0.12		0.20	0.12	0.45	0.39	0.31	0.31	0.27	0.61	0.61
v/c Ratio	0.40	0.61		0.40	0.65	0.32	0.07	0.52	0.23	0.84	0.36	0.20
Control Delay	46.3	45.8		33.0	54.3	8.1	11.7	31.2	1.7	28.7	6.9	2.9
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.3	45.8		33.0	54.3	8.1	11.7	31.2	1.7	28.7	6.9	2.9
LOS	D	D		C	D	A	B	C	A	C	A	A
Approach Delay		46.0			21.9			24.8			16.1	
Approach LOS		D			C			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 94	
Actuated Cycle Length: 94	
Offset: 92 (98%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 21.2	Intersection LOS: C
Intersection Capacity Utilization 48.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

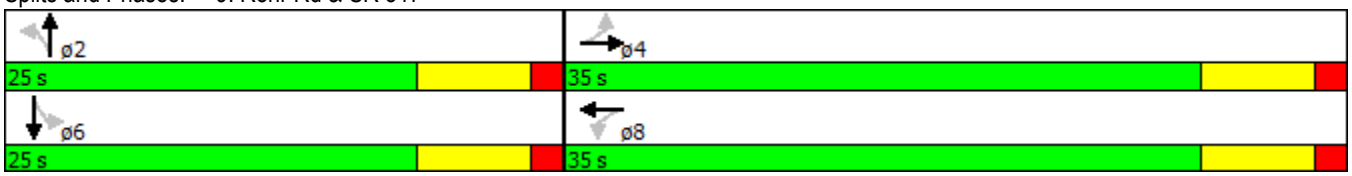


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	131	4	163	329	3	9	156	43	1	147	87
Future Volume (vph)	42	131	4	163	329	3	9	156	43	1	147	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.999			0.972			0.950	
Flt Protected		0.988			0.984			0.998				
Satd. Flow (prot)	0	1701	0	0	1698	0	0	1676	0	0	1641	0
Flt Permitted		0.810			0.816			0.974			0.998	
Satd. Flow (perm)	0	1395	0	0	1408	0	0	1635	0	0	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			23			51	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3389			1118			771			1068	
Travel Time (s)		42.0			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	46	142	4	177	358	3	10	170	47	1	160	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	538	0	0	227	0	0	256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	28.4	28.4		28.4	28.4		18.4	18.4		18.4	18.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		22.3			22.3			11.8			11.8	
Actuated g/C Ratio		0.47			0.47			0.25			0.25	
v/c Ratio		0.30			0.82			0.54			0.58	
Control Delay		9.8			24.7			20.3			19.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.8			24.7			20.3			19.3	
LOS		A			C			C			B	
Approach Delay		9.8			24.7			20.3			19.3	
Approach LOS		A			C			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 47.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 20.4	Intersection LOS: C
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

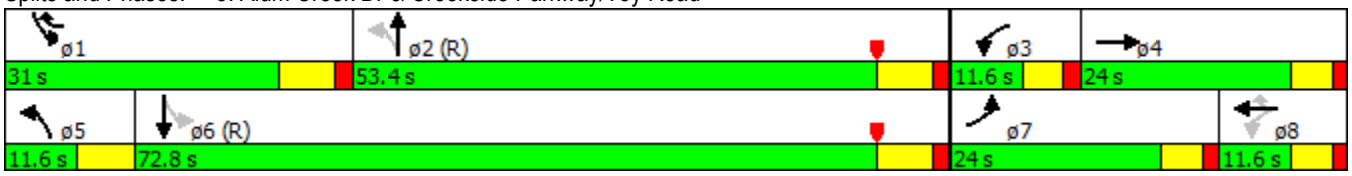
1/13/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	88	64	54	20	318	26	1075	19	89	725	268
Future Volume (vph)	447	88	64	54	20	318	26	1075	19	89	725	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949				0.850		0.996			0.951	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1701	0	1517	1597	1357	1504	2996	0	1456	2769	0
Flt Permitted	0.950						0.209			0.074		
Satd. Flow (perm)	3303	1701	0	1597	1597	1357	331	2996	0	113	2769	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18				125		2			110	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			3753			3288			879	
Travel Time (s)		10.7			46.5			40.8			10.9	
Peak Hour Factor	0.74	0.47	0.67	0.79	0.59	0.55	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	6%	6%	6%	19%	19%	19%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	604	187	96	68	34	578	38	1295	32	139	863	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	283	0	68	34	578	38	1327	0	139	1282	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	24.0	24.0		11.6	11.6	31.0	11.6	53.4		31.0	72.8	
Total Split (%)	20.0%	20.0%		9.7%	9.7%	25.8%	9.7%	44.5%		25.8%	60.7%	
Maximum Green (s)	18.9	18.9		6.5	6.5	24.4	6.5	46.8		24.4	66.2	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1	6.6	5.1	6.6		6.6	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	21.2	18.9		10.3	6.3	31.4	56.4	49.1		80.1	73.3	
Actuated g/C Ratio	0.18	0.16		0.09	0.05	0.26	0.47	0.41		0.67	0.61	
v/c Ratio	1.03	1.00		0.51	0.41	1.30	0.18	1.08		0.40	0.74	
Control Delay	94.7	101.3		54.4	69.7	177.8	7.5	69.7		21.1	20.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	94.7	101.3		54.4	69.7	177.8	7.5	69.7		21.1	20.0	
LOS	F	F		D	E	F	A	E		C	B	
Approach Delay		96.8			160.1			68.0			20.1	
Approach LOS		F			F			E			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 55 (46%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay: 72.6	Intersection LOS: E
Intersection Capacity Utilization 78.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Future Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.985				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1766	0	1504	1583	1346	1517	2988	0	1433	2865	1282
Flt Permitted	0.950			0.270			0.443			0.090		
Satd. Flow (perm)	3303	1766	0	428	1583	1346	707	2988	0	136	2865	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				65		10				72
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1877			1878			3288	
Travel Time (s)		11.7			23.3			23.3			40.8	
Peak Hour Factor	0.56	0.58	0.58	0.89	0.54	0.73	0.72	0.74	0.77	0.88	0.89	0.79
Heavy Vehicles (%)	6%	6%	6%	20%	20%	20%	19%	19%	19%	26%	26%	26%
Adj. Flow (vph)	200	166	19	166	165	647	32	864	94	392	558	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	185	0	166	165	647	32	958	0	392	558	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2			6		6
Detector Phase	7	4		3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6		11.6	11.6	11.6
Total Split (s)	12.0	18.6		13.7	20.3	42.4	11.2	45.3		42.4	76.5	12.0
Total Split (%)	10.0%	15.5%		11.4%	16.9%	35.3%	9.3%	37.8%		35.3%	63.8%	10.0%
Maximum Green (s)	8.4	13.5		10.1	15.2	35.8	6.1	38.7		35.8	69.9	8.4
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	0.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	8.4	13.5		26.8	15.2	56.1	45.8	38.7		81.1	74.5	89.5
Actuated g/C Ratio	0.07	0.11		0.22	0.13	0.47	0.38	0.32		0.68	0.62	0.75
v/c Ratio	0.87	0.92		0.89	0.82	0.98	0.10	0.99		0.82	0.31	0.07
Control Delay	88.2	96.6		84.6	82.4	58.5	12.7	66.4		31.7	10.0	1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	88.2	96.6		84.6	82.4	58.5	12.7	66.4		31.7	10.0	1.7
LOS	F	F		F	F	E	B	E		C	A	A
Approach Delay		92.2			67.0			64.6			17.7	
Approach LOS		F			E			E			B	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 54.3 Intersection LOS: D
Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

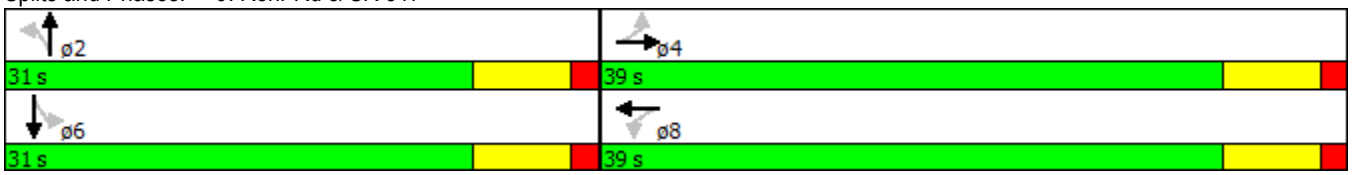
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	376	23	61	194	12	6	225	196	14	217	52
Future Volume (vph)	137	376	23	61	194	12	6	225	196	14	217	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. 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
Frt		0.994			0.994			0.938			0.975	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1695	0	0	1698	0	0	1619	0	0	1681	0
Flt Permitted		0.832			0.804			0.993			0.970	
Satd. Flow (perm)	0	1428	0	0	1380	0	0	1609	0	0	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			4			67			18	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3523			1118			771			1068	
Travel Time (s)		43.7			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	149	409	25	66	211	13	7	245	213	15	236	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	290	0	0	465	0	0	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	70	100		20	100		20	100		20	100	
Trailing Detector (ft)	50	0		0	0		0	0		0	0	
Detector 1 Position(ft)	50	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	55.7%	55.7%		55.7%	55.7%		44.3%	44.3%		44.3%	44.3%	
Maximum Green (s)	32.4	32.4		32.4	32.4		24.4	24.4		24.4	24.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		28.5			28.5			20.1			20.1	
Actuated g/C Ratio		0.46			0.46			0.32			0.32	
v/c Ratio		0.89			0.46			0.82			0.57	
Control Delay		34.8			14.9			31.2			21.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		34.8			14.9			31.2			21.8	
LOS		C			B			C			C	
Approach Delay		34.8			14.9			31.2			21.8	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 62.3
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 27.8 Intersection LOS: C
Intersection Capacity Utilization 76.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd & SR 317



Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

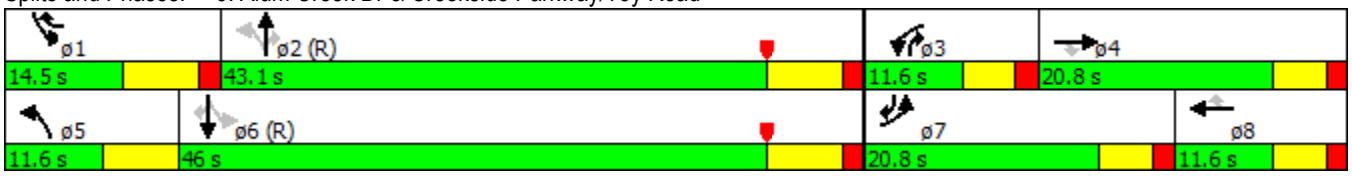
1/13/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	88	64	54	20	318	26	1075	19	89	725	268
Future Volume (vph)	447	88	64	54	20	318	26	1075	19	89	725	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		1	2		2	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	0.88	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1792	1524	2943	1597	2389	1504	3008	1346	1456	2911	1302
Flt Permitted	0.950			0.950			0.297			0.093		
Satd. Flow (perm)	3303	1792	1524	2943	1597	2389	470	3008	1346	142	2911	1302
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			167			167			149			419
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			3753			3288			879	
Travel Time (s)		10.7			46.5			40.8			10.9	
Peak Hour Factor	0.74	0.47	0.67	0.79	0.59	0.55	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	6%	6%	6%	19%	19%	19%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	604	187	96	68	34	578	38	1295	32	139	863	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	187	96	68	34	578	38	1295	32	139	863	419
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	70	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	50	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	50	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (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
Detector 1 Queue (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
Detector 1 Delay (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
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			4			8	2		2	6		6
Detector Phase	7	4	4	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	20.8	20.8	20.8	11.6	11.6	14.5	11.6	43.1	11.6	14.5	46.0	20.8
Total Split (%)	23.1%	23.1%	23.1%	12.9%	12.9%	16.1%	12.9%	47.9%	12.9%	16.1%	51.1%	23.1%
Maximum Green (s)	15.7	15.7	15.7	6.5	6.5	7.9	6.5	36.5	6.5	7.9	39.4	15.7
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	5.1	5.1	5.1	3.6	5.1	5.1	3.6
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (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
Total Lost Time (s)	5.1	5.1	5.1	5.1	5.1	6.6	5.1	6.6	5.1	6.6	6.6	5.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	17.4	15.0	15.0	6.3	6.3	14.9	46.7	39.5	52.4	52.0	47.2	73.2
Actuated g/C Ratio	0.19	0.17	0.17	0.07	0.07	0.17	0.52	0.44	0.58	0.58	0.52	0.81
v/c Ratio	0.95	0.63	0.24	0.33	0.31	1.08	0.12	0.98	0.04	0.71	0.57	0.37
Control Delay	63.2	45.0	2.0	44.3	47.3	89.4	6.9	39.8	0.1	37.1	18.4	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.2	45.0	2.0	44.3	47.3	89.4	6.9	39.8	0.1	37.1	18.4	1.5
LOS	E	D	A	D	D	F	A	D	A	D	B	A
Approach Delay		52.7			82.7			37.9			15.3	
Approach LOS		D			F			D			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 39 (43%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 40.5	Intersection LOS: D
Intersection Capacity Utilization 69.3%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Future Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		2	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1766	0	1504	1583	2369	1517	3034	1357	2779	2865	1282
Flt Permitted	0.950			0.423			0.443			0.950		
Satd. Flow (perm)	3303	1766	0	670	1583	2369	707	3034	1357	2779	2865	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				87			211			131
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1877			1878			3288	
Travel Time (s)		11.7			23.3			23.3			40.8	
Peak Hour Factor	0.56	0.58	0.58	0.89	0.54	0.73	0.72	0.74	0.77	0.88	0.89	0.79
Heavy Vehicles (%)	6%	6%	6%	20%	20%	20%	19%	19%	19%	26%	26%	26%
Adj. Flow (vph)	200	166	19	166	165	647	32	864	94	392	558	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	185	0	166	165	647	32	864	94	392	558	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru			Thru	Right		Thru	Right		Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100	20	70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6	11.6	11.6	11.6	11.6
Total Split (s)	11.6	18.0		12.0	18.4	22.8	11.1	37.2	37.2	22.8	48.9	48.9
Total Split (%)	12.9%	20.0%		13.3%	20.4%	25.3%	12.3%	41.3%	41.3%	25.3%	54.3%	54.3%
Maximum Green (s)	8.0	12.9		8.4	13.3	16.2	6.0	30.6	30.6	16.2	42.3	42.3
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	0.0	1.5		0.0	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	6.6	5.1	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	C-Min
Act Effct Green (s)	8.0	12.1		22.7	12.7	33.2	39.0	32.0	32.0	15.5	47.5	47.5
Actuated g/C Ratio	0.09	0.13		0.25	0.14	0.37	0.43	0.36	0.36	0.17	0.53	0.53
v/c Ratio	0.68	0.76		0.67	0.74	0.70	0.09	0.80	0.15	0.82	0.37	0.10
Control Delay	52.9	57.7		41.3	58.0	24.9	9.3	33.7	0.5	50.4	4.5	0.6
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	57.7		41.3	58.0	24.9	9.3	33.7	0.5	50.4	4.5	0.6
LOS	D	E		D	E	C	A	C	A	D	A	A
Approach Delay		55.2			33.3			29.8			21.8	
Approach LOS		E			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.82
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15

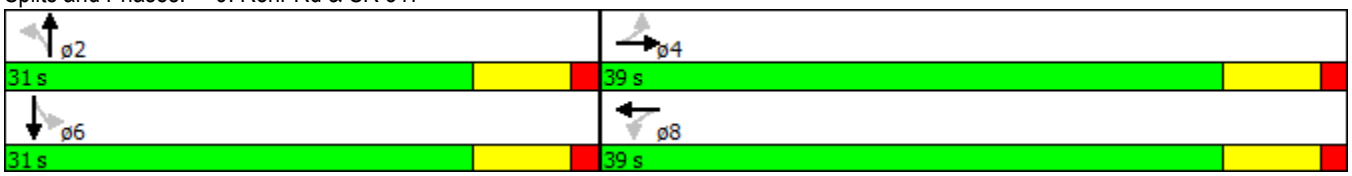
Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	376	23	61	194	12	6	225	196	14	217	52
Future Volume (vph)	137	376	23	61	194	12	6	225	196	14	217	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.994			0.994			0.938			0.975	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1695	0	0	1698	0	0	1619	0	0	1681	0
Flt Permitted		0.832			0.804			0.993			0.970	
Satd. Flow (perm)	0	1428	0	0	1380	0	0	1609	0	0	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			4			67			18	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3523			1118			771			1068	
Travel Time (s)		43.7			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	149	409	25	66	211	13	7	245	213	15	236	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	290	0	0	465	0	0	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	70	100		20	100		20	100		20	100	
Trailing Detector (ft)	50	0		0	0		0	0		0	0	
Detector 1 Position(ft)	50	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	55.7%	55.7%		55.7%	55.7%		44.3%	44.3%		44.3%	44.3%	
Maximum Green (s)	32.4	32.4		32.4	32.4		24.4	24.4		24.4	24.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		28.5			28.5			20.1			20.1	
Actuated g/C Ratio		0.46			0.46			0.32			0.32	
v/c Ratio		0.89			0.46			0.82			0.57	
Control Delay		34.8			14.9			31.2			21.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		34.8			14.9			31.2			21.8	
LOS		C			B			C			C	
Approach Delay		34.8			14.9			31.2			21.8	
Approach LOS		C			B			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 62.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



2025

Phasings

3: Alum Creek Dr & Creekside Parkway/Toy Road

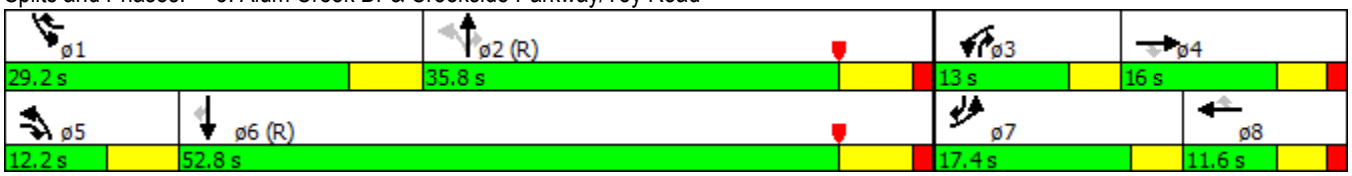
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	11	11	91	45	288	55	911	150	627	1183	483
Future Volume (vph)	77	11	11	91	45	288	55	911	150	627	1183	483
Satd. Flow (prot)	2870	1557	1324	3127	1696	2538	1612	4631	1442	3183	4715	1468
Flt Permitted	0.950			0.950			0.163			0.950		
Satd. Flow (perm)	2870	1557	1324	3127	1696	2538	277	4631	1442	3183	4715	1468
Satd. Flow (RTOR)			143			205			217			417
Lane Group Flow (vph)	104	16	17	140	64	343	80	1231	217	721	1497	743
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8	2		2			6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	17.4	16.0	12.2	13.0	11.6	29.2	12.2	35.8	13.0	29.2	52.8	17.4
Total Split (%)	18.5%	17.0%	13.0%	13.8%	12.3%	31.1%	13.0%	38.1%	13.8%	31.1%	56.2%	18.5%
Maximum Green (s)	13.8	10.9	7.1	9.4	6.5	24.1	7.1	29.2	9.4	24.1	46.2	13.8
Yellow Time (s)	3.6	3.6	5.1	3.6	3.6	5.1	5.1	5.1	3.6	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1	5.1	3.6	5.1	5.1	5.1	6.6	3.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	9.6	7.1	11.9	13.2	6.3	32.8	44.0	36.3	56.1	23.5	55.6	72.5
Actuated g/C Ratio	0.10	0.08	0.13	0.14	0.07	0.35	0.47	0.39	0.60	0.25	0.59	0.77
v/c Ratio	0.35	0.14	0.06	0.32	0.56	0.34	0.37	0.69	0.23	0.91	0.54	0.61
Control Delay	41.9	41.9	0.4	39.0	62.1	9.0	10.6	15.5	0.9	50.6	14.3	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	41.9	0.4	39.0	62.1	9.0	10.6	15.5	0.9	50.6	14.3	4.9
LOS	D	D	A	D	E	A	B	B	A	D	B	A
Approach Delay		36.7			22.9			13.2			20.8	
Approach LOS		D			C			B			C	

Intersection Summary

Cycle Length: 94
Actuated Cycle Length: 94
Offset: 40 (43%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 19.2 — Intersection LOS: B
Intersection Capacity Utilization 58.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Phasings
6: Alum Creek Dr & Rohr Rd

3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	60	19	34	97	292	11	776	112	471	683	131
Future Volume (vph)	48	60	19	34	97	292	11	776	112	471	683	131
Satd. Flow (prot)	2943	1533	0	1612	1696	2538	1543	4354	0	3127	4631	1442
Flt Permitted	0.950			0.680			0.323			0.950		
Satd. Flow (perm)	2943	1533	0	1154	1696	2538	525	4354	0	3127	4631	1442
Satd. Flow (RTOR)		16				84		29				187
Lane Group Flow (vph)	92	120	0	39	147	436	20	1283	0	785	843	187
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases				8		8	2					6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	9.6	11.6		9.6	11.6	11.6	11.6	11.6		11.6	11.6	9.6
Total Split (s)	9.9	15.3		9.6	15.0	31.0	11.6	38.1		31.0	57.5	9.9
Total Split (%)	10.5%	16.3%		10.2%	16.0%	33.0%	12.3%	40.5%		33.0%	61.2%	10.5%
Maximum Green (s)	6.3	10.2		6.0	9.9	25.9	6.5	31.5		25.9	50.9	6.3
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5		0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6		5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	6.1	13.7		17.0	9.8	40.5	38.9	32.1		25.6	58.5	71.2
Actuated g/C Ratio	0.06	0.15		0.18	0.10	0.43	0.41	0.34		0.27	0.62	0.76
v/c Ratio	0.48	0.51		0.17	0.83	0.38	0.07	0.85		0.92	0.29	0.16
Control Delay	51.3	42.5		30.9	77.8	15.5	9.2	35.1		41.6	3.9	1.1
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	51.3	42.5		30.9	77.8	15.5	9.2	35.1		41.6	3.9	1.1
LOS	D	D		C	E	B	A	D		D	A	A
Approach Delay		46.3			31.2			34.7			19.9	
Approach LOS		D			C			C			B	

Intersection Summary	
Cycle Length: 94	
Actuated Cycle Length: 94	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay: 28.0	Intersection LOS: C
Intersection Capacity Utilization 53.5%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Phasings
9: Rohr Rd

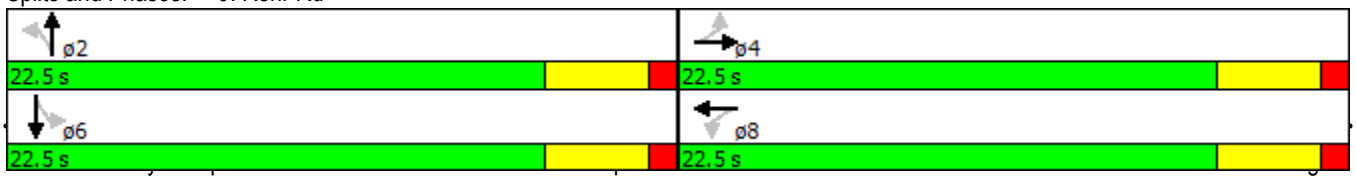
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	143	4	161	142	3	11	169	43	1	160	89
Future Volume (vph)	44	143	4	161	142	3	11	169	43	1	160	89
Satd. Flow (prot)	0	1703	0	0	1681	0	0	1679	0	0	1644	0
Flt Permitted		0.865			0.746			0.976			0.999	
Satd. Flow (perm)	0	1490	0	0	1287	0	0	1642	0	0	1643	0
Satd. Flow (RTOR)		3			1			32			74	
Lane Group Flow (vph)	0	207	0	0	332	0	0	243	0	0	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	18.0	18.0		18.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		12.8			12.8			10.8			10.8	
Actuated g/C Ratio		0.39			0.39			0.33			0.33	
v/c Ratio		0.36			0.66			0.43			0.46	
Control Delay		9.1			15.8			11.1			10.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.1			15.8			11.1			10.0	
LOS		A			B			B			B	
Approach Delay		9.1			15.8			11.1			10.0	
Approach LOS		A			B			B			B	

Intersection Summary

Cycle Length: 45
Actuated Cycle Length: 32.9
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.66
Intersection Signal Delay: 11.9 — Intersection LOS: B
Intersection Capacity Utilization 57.8% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd



Phasings

3: Alum Creek Dr & Creekside Parkway/Toy Road

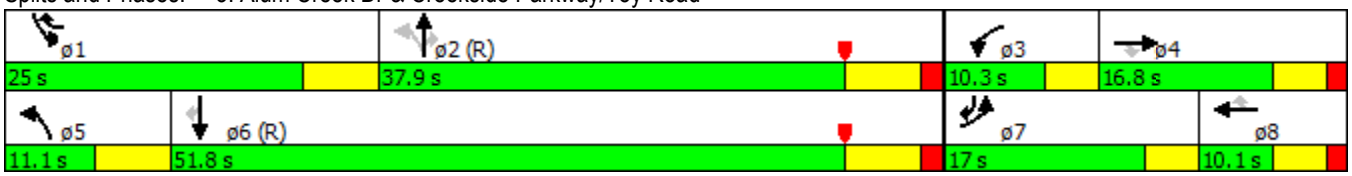
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	453	85	67	144	19	546	28	1245	98	254	838	273
Future Volume (vph)	453	85	67	144	19	546	28	1245	98	254	838	273
Satd. Flow (prot)	3303	1792	1524	2943	1597	2389	1504	4322	1346	2824	4183	1302
Flt Permitted	0.950			0.950			0.275			0.950		
Satd. Flow (perm)	3303	1792	1524	2943	1597	2389	435	4322	1346	2824	4183	1302
Satd. Flow (RTOR)			211			131			236			427
Lane Group Flow (vph)	612	181	100	182	32	993	41	1500	163	397	998	427
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases			4			8	2		2			6
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	15.0	15.0	10.1	10.1	11.6	11.1	11.6	11.6	11.6	11.6	10.0
Total Split (s)	17.0	16.8	16.8	10.3	10.1	25.0	11.1	37.9	37.9	25.0	51.8	17.0
Total Split (%)	18.9%	18.7%	18.7%	11.4%	11.2%	27.8%	12.3%	42.1%	42.1%	27.8%	57.6%	18.9%
Maximum Green (s)	13.4	11.7	11.7	6.7	5.0	19.9	6.0	31.3	31.3	19.9	45.2	13.4
Yellow Time (s)	3.6	3.6	3.6	3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5	1.5	0.0	1.5	0.0	0.0	1.5	1.5	0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1	5.1	3.6	5.1	5.1	5.1	6.6	6.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	17.1	11.3	11.3	6.7	5.0	26.0	38.8	31.7	31.7	19.9	50.1	75.2
Actuated g/C Ratio	0.19	0.13	0.13	0.07	0.06	0.29	0.43	0.35	0.35	0.22	0.56	0.84
v/c Ratio	0.98	0.80	0.27	0.83	0.36	1.27	0.16	0.99	0.26	0.64	0.43	0.37
Control Delay	71.2	65.4	1.7	72.0	52.8	157.9	6.7	40.2	0.9	37.1	13.3	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.2	65.4	1.7	72.0	52.8	157.9	6.7	40.2	0.9	37.1	13.3	1.4
LOS	E	E	A	E	D	F	A	D	A	D	B	A
Approach Delay		62.3			142.1			35.6			15.7	
Approach LOS		E			F			D			B	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 37 (41%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.27
Intersection Signal Delay: 56.2 — Intersection LOS: E
Intersection Capacity Utilization 69.2% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	93	11	174	99	510	22	752	91	376	618	55
Future Volume (vph)	109	93	11	174	99	510	22	752	91	376	618	55
Satd. Flow (prot)	3303	1764	0	1504	1583	2369	1517	4289	0	2779	4117	1282
Flt Permitted	0.950			0.391			0.376			0.950		
Satd. Flow (perm)	3303	1764	0	619	1583	2369	600	4289	0	2779	4117	1282
Satd. Flow (RTOR)		6				87		23				87
Lane Group Flow (vph)	195	179	0	196	183	699	31	1134	0	427	694	70
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases				8		8	2					6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6		11.6	11.6	11.6
Total Split (s)	11.8	18.0		14.0	20.2	23.0	11.1	35.0		23.0	46.9	11.8
Total Split (%)	13.1%	20.0%		15.6%	22.4%	25.6%	12.3%	38.9%		25.6%	52.1%	13.1%
Maximum Green (s)	8.2	12.9		10.4	15.1	17.9	6.0	28.4		17.9	40.3	8.2
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5		0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6		5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	8.1	12.0		25.6	14.0	36.2	37.4	30.4		17.1	46.1	60.8
Actuated g/C Ratio	0.09	0.13		0.28	0.16	0.40	0.42	0.34		0.19	0.51	0.68
v/c Ratio	0.66	0.75		0.72	0.75	0.70	0.10	0.77		0.81	0.33	0.08
Control Delay	51.0	56.0		41.3	55.5	23.2	10.4	31.3		38.6	9.6	3.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	51.0	56.0		41.3	55.5	23.2	10.4	31.3		38.6	9.6	3.8
LOS	D	E		D	E	C	B	C		D	A	A
Approach Delay		53.4			32.0			30.7			19.6	
Approach LOS		D			C			C			B	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 29.8	Intersection LOS: C
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Phasings
9: Rohr Rd & SR 317

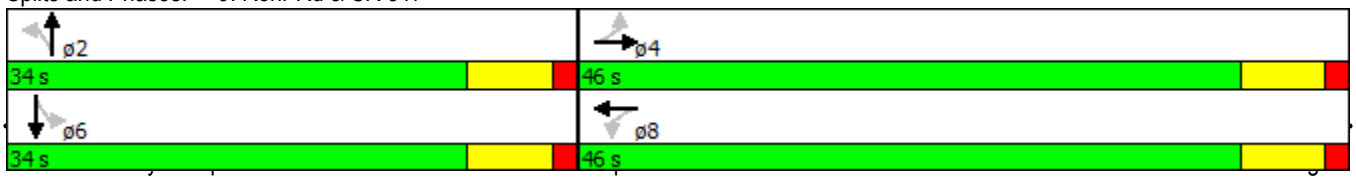
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	429	22	61	197	12	7	245	194	14	237	55
Future Volume (vph)	142	429	22	61	197	12	7	245	194	14	237	55
Satd. Flow (prot)	0	1698	0	0	1698	0	0	1624	0	0	1682	0
Flt Permitted		0.836			0.789			0.992			0.972	
Satd. Flow (perm)	0	1437	0	0	1355	0	0	1612	0	0	1639	0
Satd. Flow (RTOR)		3			4			53			15	
Lane Group Flow (vph)	0	644	0	0	293	0	0	485	0	0	333	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	46.0	46.0		46.0	46.0		34.0	34.0		34.0	34.0	
Total Split (%)	57.5%	57.5%		57.5%	57.5%		42.5%	42.5%		42.5%	42.5%	
Maximum Green (s)	39.4	39.4		39.4	39.4		27.4	27.4		27.4	27.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		35.4			35.4			23.7			23.7	
Actuated g/C Ratio		0.49			0.49			0.33			0.33	
v/c Ratio		0.92			0.44			0.86			0.61	
Control Delay		38.9			15.2			38.6			25.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		38.9			15.2			38.6			25.8	
LOS		D			B			D			C	
Approach Delay		38.9			15.2			38.6			25.8	
Approach LOS		D			B			D			C	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 72.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 32.4 — Intersection LOS: C
Intersection Capacity Utilization 81.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd & SR 317



Option 2

2016

Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

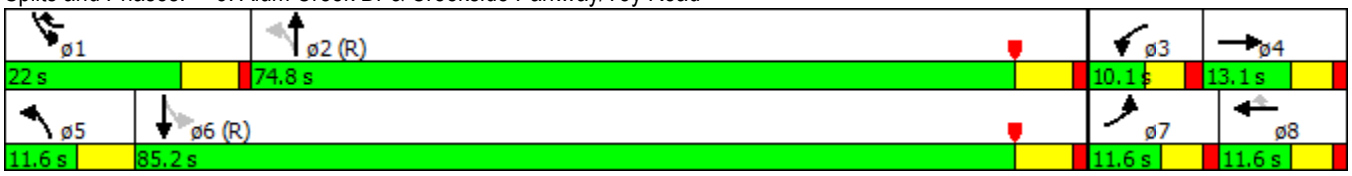
1/13/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	11	10	13	46	69	53	995	26	201	1372	482
Future Volume (vph)	73	11	10	13	46	69	53	995	26	201	1372	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.925				0.850		0.996			0.955	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	1441	0	1612	1696	1442	1612	3210	0	1641	3134	0
Flt Permitted	0.950			0.950			0.056			0.112		
Satd. Flow (perm)	2870	1441	0	1612	1696	1442	95	3210	0	193	3134	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				79		4			115	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			1441			1279			879	
Travel Time (s)		10.7			17.9			15.9			10.9	
Peak Hour Factor	0.74	0.69	0.63	0.65	0.70	0.84	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	22%	22%	22%	12%	12%	12%	12%	12%	12%	10%	10%	10%
Adj. Flow (vph)	99	16	16	20	66	82	77	1345	38	231	1737	742
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	32	0	20	66	82	77	1383	0	231	2479	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		10.1	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	11.6	13.1		10.1	11.6	22.0	11.6	74.8		22.0	85.2	
Total Split (%)	9.7%	10.9%		8.4%	9.7%	18.3%	9.7%	62.3%		18.3%	71.0%	
Maximum Green (s)	6.5	8.0		5.0	6.5	15.8	6.5	68.2		15.8	78.6	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.1	0.0	1.5		1.1	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.1	5.1		5.1	5.1	6.2	5.1	6.6		6.2	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	6.5	11.7		5.0	6.5	21.8	81.3	73.8		92.8	83.5	
Actuated g/C Ratio	0.05	0.10		0.04	0.05	0.18	0.68	0.62		0.77	0.70	
v/c Ratio	0.64	0.21		0.30	0.73	0.25	0.55	0.70		0.77	1.12	
Control Delay	74.5	35.5		67.5	96.1	10.8	33.4	12.9		32.2	81.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	74.5	35.5		67.5	96.1	10.8	33.4	12.9		32.2	81.0	
LOS	E	D		E	F	B	C	B		C	F	
Approach Delay		65.0			51.1			13.9			76.9	
Approach LOS		E			D			B			E	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 55.0	Intersection LOS: D
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



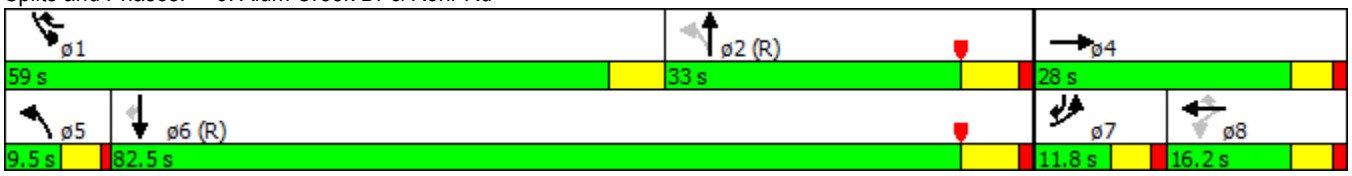
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Future Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.959				0.850		0.969				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	1531	0	1612	1696	1442	1543	2990	0	1612	3223	1442
Flt Permitted	0.950			0.677			0.379			0.950		
Satd. Flow (perm)	2943	1531	0	1148	1696	1442	615	2990	0	1612	3223	1442
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				79		24				193
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1938			2285			1954	
Travel Time (s)		11.7			24.0			28.3			24.2	
Peak Hour Factor	0.52	0.68	0.59	0.88	0.66	0.67	0.55	0.69	0.71	0.60	0.81	0.70
Heavy Vehicles (%)	19%	19%	19%	12%	12%	12%	17%	17%	17%	12%	12%	12%
Adj. Flow (vph)	94	91	34	102	132	394	20	506	130	723	716	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	125	0	102	132	394	20	636	0	723	716	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA		Prot	NA	pm+ov
Protected Phases	7	4			8	1	5	2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2					6
Detector Phase	7	4		8	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	9.5	11.6		11.6	11.6	11.6
Total Split (s)	11.8	28.0		16.2	16.2	59.0	9.5	33.0		59.0	82.5	11.8
Total Split (%)	9.8%	23.3%		13.5%	13.5%	49.2%	7.9%	27.5%		49.2%	68.8%	9.8%
Maximum Green (s)	6.7	22.9		11.1	11.1	53.9	5.0	26.4		53.9	75.9	6.7
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	3.5	5.1		5.1	5.1	3.6
All-Red Time (s)	1.5	1.5		1.5	1.5	0.0	1.0	1.5		0.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1		5.1	5.1	5.1	4.5	6.6		5.1	6.6	5.1
Lead/Lag	Lead			Lag	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	6.7	22.9		11.1	11.1	70.1	33.5	26.4		53.9	81.6	94.9
Actuated g/C Ratio	0.06	0.19		0.09	0.09	0.58	0.28	0.22		0.45	0.68	0.79
v/c Ratio	0.58	0.41		0.96	0.85	0.45	0.10	0.94		1.00	0.33	0.16
Control Delay	69.7	42.5		132.6	94.4	12.8	18.4	67.2		56.1	5.7	1.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	69.7	42.5		132.6	94.4	12.8	18.4	67.2		56.1	5.7	1.4
LOS	E	D		F	F	B	B	E		E	A	A
Approach Delay		54.2			49.4			65.7			27.5	
Approach LOS		D			D			E			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 28 (23%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 41.8 Intersection LOS: D
Intersection Capacity Utilization 62.3% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

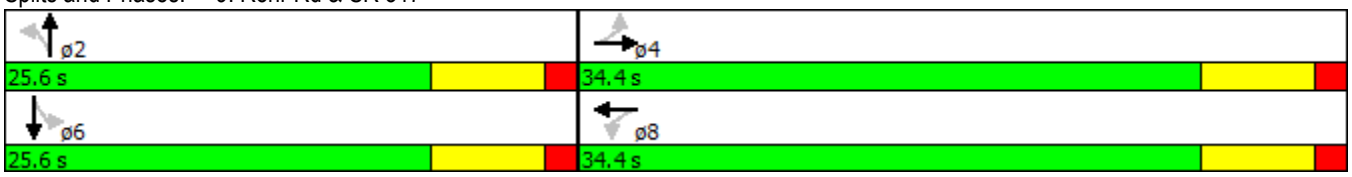


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	131	4	163	329	3	9	156	43	1	146	87
Future Volume (vph)	42	131	4	163	329	3	9	156	43	1	146	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.999			0.972			0.950	
Flt Protected	0.950				0.984			0.998				
Satd. Flow (prot)	1641	1720	0	0	1698	0	0	1676	0	0	1641	0
Flt Permitted	0.482				0.834			0.974			0.998	
Satd. Flow (perm)	833	1720	0	0	1439	0	0	1635	0	0	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			1			23			52	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3105			1118			771			1068	
Travel Time (s)		38.5			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	46	142	4	177	358	3	10	170	47	1	159	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	146	0	0	538	0	0	227	0	0	255	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	34.4	34.4		34.4	34.4		25.6	25.6		25.6	25.6	
Total Split (%)	57.3%	57.3%		57.3%	57.3%		42.7%	42.7%		42.7%	42.7%	
Maximum Green (s)	27.8	27.8		27.8	27.8		19.0	19.0		19.0	19.0	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	6.6	6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	21.8	21.8			21.8			11.7			11.7	
Actuated g/C Ratio	0.46	0.46			0.46			0.25			0.25	
v/c Ratio	0.12	0.18			0.81			0.54			0.58	
Control Delay	9.0	8.6			23.8			20.0			18.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	9.0	8.6			23.8			20.0			18.8	
LOS	A	A			C			C			B	
Approach Delay		8.7			23.8			20.0			18.8	
Approach LOS		A			C			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 47.3	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 19.7	Intersection LOS: B
Intersection Capacity Utilization 67.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	88	0	985	30	207	1189	0
Future Volume (vph)	0	0	0	13	0	88	0	985	30	207	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		0	500		0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.97	0.95	1.00
Frt						0.850		0.995				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1641	0	2584	0	2993	0	2824	2911	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1641	0	2584	0	2993	0	2824	2911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						96		5				
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		401			776			1954			1279	
Travel Time (s)		9.1			17.6			24.2			15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	0	0	0	14	0	96	0	1331	43	238	1505	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	14	0	96	0	1374	0	238	1505	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2		1	2	
Detector Template				Left		Right		Thru			Thru	
Leading Detector (ft)				20		20		100		70	100	
Trailing Detector (ft)				0		0		0		50	0	
Detector 1 Position(ft)				0		0		0		50	0	
Detector 1 Size(ft)				20		20		6		20	6	
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)				0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type				Perm		pm+ov		NA		Prot	NA	
Protected Phases						1		2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8						
Detector Phase				8		1		2		1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0		5.0	5.0	
Minimum Split (s)				11.6		11.6		11.6		11.6	11.6	
Total Split (s)				12.0		25.0		83.0		25.0	108.0	
Total Split (%)				10.0%		20.8%		69.2%		20.8%	90.0%	
Maximum Green (s)				6.9		18.4		76.4		18.4	101.4	
Yellow Time (s)				3.6		5.1		5.1		5.1	5.1	
All-Red Time (s)				1.5		1.5		1.5		1.5	1.5	
Lost Time Adjust (s)				0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)				5.1		6.6		6.6		6.6	6.6	
Lead/Lag						Lead		Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Recall Mode				None		None		C-Min		None	C-Min	
Act Effct Green (s)				6.3		19.6		87.2		14.8	112.6	
Actuated g/C Ratio				0.05		0.16		0.73		0.12	0.94	
v/c Ratio				0.16		0.19		0.63		0.69	0.55	
Control Delay				58.5		7.8		8.2		48.6	1.4	
Queue Delay				0.0		0.0		0.0		0.0	0.0	
Total Delay				58.5		7.8		8.2		48.6	1.4	
LOS				E		A		A		D	A	
Approach Delay								8.2			7.9	
Approach LOS								A			A	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 104 (87%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 8.2 Intersection LOS: A
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 32: Alum Creek Dr

Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

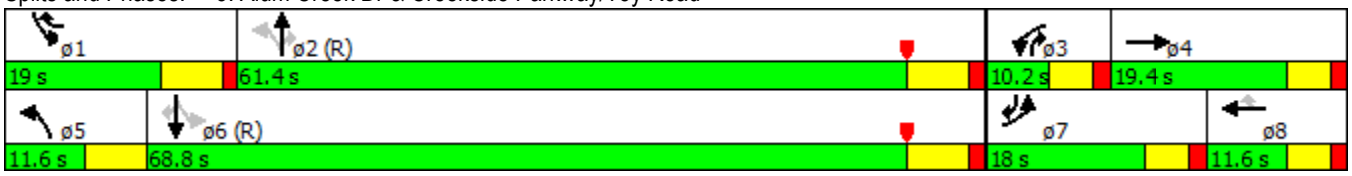
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	11	10	13	46	69	53	995	26	201	1372	482
Future Volume (vph)	73	11	10	13	46	69	53	995	26	201	1372	482
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		0	2		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.925				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2870	1441	0	3127	1696	1442	1612	3223	1442	1641	3282	1468
Flt Permitted	0.950			0.950			0.069			0.099		
Satd. Flow (perm)	2870	1441	0	3127	1696	1442	117	3223	1442	171	3282	1468
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16				137			183			321
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			1441			1279			879	
Travel Time (s)		10.7			17.9			15.9			10.9	
Peak Hour Factor	0.74	0.69	0.63	0.65	0.70	0.84	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	22%	22%	22%	12%	12%	12%	12%	12%	12%	10%	10%	10%
Adj. Flow (vph)	99	16	16	20	66	82	77	1345	38	231	1737	742
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	32	0	20	66	82	77	1345	38	231	1737	742
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	70	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	50	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	50	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2		2	6		6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		10.1	11.6	11.6	11.6	11.6	10.1	11.6	11.6	11.6
Total Split (s)	18.0	19.4		10.2	11.6	19.0	11.6	61.4	10.2	19.0	68.8	18.0
Total Split (%)	16.4%	17.6%		9.3%	10.5%	17.3%	10.5%	55.8%	9.3%	17.3%	62.5%	16.4%
Maximum Green (s)	12.9	14.3		5.1	6.5	12.8	6.5	54.8	5.1	12.8	62.2	12.9
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	3.6	5.1	5.1	3.6
All-Red Time (s)	1.5	1.5		1.5	1.5	1.1	0.0	1.5	1.5	1.1	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1		5.1	5.1	6.2	5.1	6.6	5.1	6.2	6.6	5.1
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	9.8	12.9		5.3	6.5	21.9	67.9	60.4	72.3	79.7	70.2	87.5
Actuated g/C Ratio	0.09	0.12		0.05	0.06	0.20	0.62	0.55	0.66	0.72	0.64	0.80
v/c Ratio	0.39	0.17		0.13	0.67	0.21	0.50	0.76	0.04	0.79	0.83	0.60
Control Delay	51.1	29.5		52.5	81.7	2.1	25.9	16.8	0.0	38.3	22.4	5.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.1	29.5		52.5	81.7	2.1	25.9	16.8	0.0	38.3	22.4	5.5
LOS	D	C		D	F	A	C	B	A	D	C	A
Approach Delay		45.8			39.3			16.8			19.2	
Approach LOS		D			D			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 63 (57%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 19.9 Intersection LOS: B
Intersection Capacity Utilization 64.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



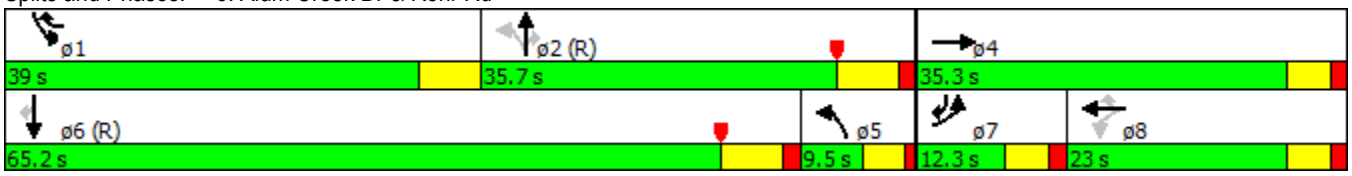
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Future Volume (vph)	49	62	20	90	87	264	11	349	92	434	580	135
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		2	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt		0.959				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2943	1531	0	1612	1696	2538	1543	3085	1380	3127	3223	1442
Flt Permitted	0.950			0.677			0.379			0.950		
Satd. Flow (perm)	2943	1531	0	1148	1696	2538	615	3085	1380	3127	3223	1442
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17				185			130			193
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1938			2285			1954	
Travel Time (s)		11.7			24.0			28.3			24.2	
Peak Hour Factor	0.52	0.68	0.59	0.88	0.66	0.67	0.55	0.69	0.71	0.60	0.81	0.70
Heavy Vehicles (%)	19%	19%	19%	12%	12%	12%	17%	17%	17%	12%	12%	12%
Adj. Flow (vph)	94	91	34	102	132	394	20	506	130	723	716	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	125	0	102	132	394	20	506	130	723	716	193
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru			Thru	Right		Thru	Right		Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100	20	70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Perm	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4			8	1	5	2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		8	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	9.5	11.6	11.6	11.6	11.6	11.6
Total Split (s)	12.3	35.3		23.0	23.0	39.0	9.5	35.7	35.7	39.0	65.2	12.3
Total Split (%)	11.2%	32.1%		20.9%	20.9%	35.5%	8.6%	32.5%	32.5%	35.5%	59.3%	11.2%
Maximum Green (s)	7.2	30.2		17.9	17.9	33.9	5.0	29.1	29.1	33.9	58.6	7.2
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	3.5	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	1.5	1.5		1.5	1.5	0.0	1.0	1.5	1.5	0.0	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1		5.1	5.1	5.1	4.5	6.6	6.6	5.1	6.6	5.1
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?							Yes				Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	7.0	26.4		14.3	14.3	49.5	39.0	36.7	36.7	30.1	66.4	79.0
Actuated g/C Ratio	0.06	0.24		0.13	0.13	0.45	0.35	0.33	0.33	0.27	0.60	0.72
v/c Ratio	0.50	0.33		0.69	0.60	0.32	0.07	0.49	0.24	0.84	0.37	0.18
Control Delay	59.4	31.1		68.1	56.0	9.5	29.2	33.1	6.7	34.9	7.0	1.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.4	31.1		68.1	56.0	9.5	29.2	33.1	6.7	34.9	7.0	1.7
LOS	E	C		E	E	A	C	C	A	C	A	A
Approach Delay		43.3			28.8			27.8			18.7	
Approach LOS		D			C			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 10 (9%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 24.3 Intersection LOS: C
Intersection Capacity Utilization 47.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

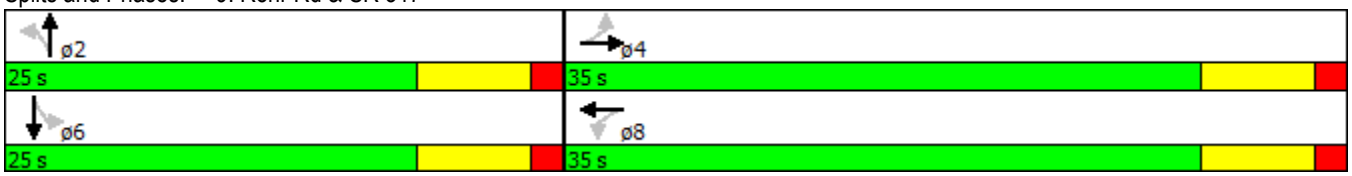


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	131	4	163	329	3	9	156	43	1	146	87
Future Volume (vph)	42	131	4	163	329	3	9	156	43	1	146	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.999			0.972			0.950	
Flt Protected		0.988			0.984			0.998				
Satd. Flow (prot)	0	1701	0	0	1698	0	0	1676	0	0	1641	0
Flt Permitted		0.810			0.816			0.974			0.998	
Satd. Flow (perm)	0	1395	0	0	1408	0	0	1635	0	0	1638	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			23			51	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3105			1118			771			1068	
Travel Time (s)		38.5			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	46	142	4	177	358	3	10	170	47	1	159	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	538	0	0	227	0	0	255	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	35.0	35.0		35.0	35.0		25.0	25.0		25.0	25.0	
Total Split (%)	58.3%	58.3%		58.3%	58.3%		41.7%	41.7%		41.7%	41.7%	
Maximum Green (s)	28.4	28.4		28.4	28.4		18.4	18.4		18.4	18.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		22.3			22.3			11.8			11.8	
Actuated g/C Ratio		0.47			0.47			0.25			0.25	
v/c Ratio		0.30			0.82			0.54			0.58	
Control Delay		9.8			24.6			20.3			19.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		9.8			24.6			20.3			19.3	
LOS		A			C			C			B	
Approach Delay		9.8			24.6			20.3			19.3	
Approach LOS		A			C			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 47.9	
Natural Cycle: 60	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 20.3	Intersection LOS: C
Intersection Capacity Utilization 69.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	88	0	985	30	207	1189	0
Future Volume (vph)	0	0	0	13	0	88	0	985	30	207	1189	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		0	500		0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.97	0.95	1.00
Frt						0.850		0.995				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1641	0	2584	0	2993	0	2824	2911	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1641	0	2584	0	2993	0	2824	2911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						96		5				
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		401			776			1954			1279	
Travel Time (s)		9.1			17.6			24.2			15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.69	0.74	0.69	0.87	0.79	0.65
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	0	0	0	14	0	96	0	1331	43	238	1505	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	14	0	96	0	1374	0	238	1505	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2		1	2	
Detector Template				Left		Right		Thru			Thru	
Leading Detector (ft)				20		20		100		70	100	
Trailing Detector (ft)				0		0		0		50	0	
Detector 1 Position(ft)				0		0		0		50	0	
Detector 1 Size(ft)				20		20		6		20	6	
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)				0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type				Perm		pm+ov		NA		Prot	NA	
Protected Phases						1		2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8						
Detector Phase				8		1		2		1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0		5.0	5.0	
Minimum Split (s)				11.6		11.6		11.6		11.6	11.6	
Total Split (s)				12.0		23.0		75.0		23.0	98.0	
Total Split (%)				10.9%		20.9%		68.2%		20.9%	89.1%	
Maximum Green (s)				6.9		16.4		68.4		16.4	91.4	
Yellow Time (s)				3.6		5.1		5.1		5.1	5.1	
All-Red Time (s)				1.5		1.5		1.5		1.5	1.5	
Lost Time Adjust (s)				0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)				5.1		6.6		6.6		6.6	6.6	
Lead/Lag						Lead		Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Recall Mode				None		None		C-Min		None	C-Min	
Act Effct Green (s)				6.3		18.5		78.3		13.7	102.6	
Actuated g/C Ratio				0.06		0.17		0.71		0.12	0.93	
v/c Ratio				0.15		0.19		0.64		0.68	0.55	
Control Delay				52.7		7.3		8.4		47.8	2.1	
Queue Delay				0.0		0.0		0.0		0.0	0.0	
Total Delay				52.7		7.3		8.4		47.8	2.1	
LOS				D		A		A		D	A	
Approach Delay								8.4			8.3	
Approach LOS								A			A	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 80 (73%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 8.5 Intersection LOS: A
Intersection Capacity Utilization 51.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 32: Alum Creek Dr

Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

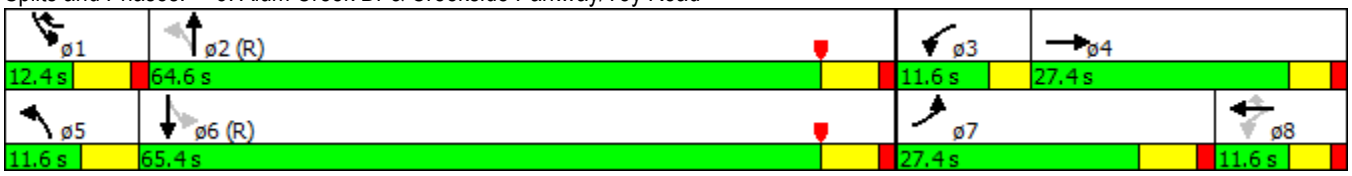
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	88	64	23	20	100	26	1293	12	42	772	268
Future Volume (vph)	447	88	64	23	20	100	26	1293	12	42	772	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		0	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.949				0.850		0.998			0.953	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1701	0	1517	1597	1357	1504	3002	0	1456	2774	0
Flt Permitted	0.950						0.126			0.062		
Satd. Flow (perm)	3303	1701	0	1597	1597	1357	200	3002	0	95	2774	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				130		2			93	
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			1046			1274			879	
Travel Time (s)		10.7			13.0			15.8			10.9	
Peak Hour Factor	0.74	0.47	0.67	0.79	0.59	0.55	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	6%	6%	6%	19%	19%	19%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	604	187	96	29	34	182	38	1558	20	66	919	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	283	0	29	34	182	38	1578	0	66	1338	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100	20	70	100		20	100	
Trailing Detector (ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Position(ft)	0	0		0	0	0	50	0		0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8	1	5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2			6		
Detector Phase	7	4		3	8	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	27.4	27.4		11.6	11.6	12.4	11.6	64.6		12.4	65.4	
Total Split (%)	23.6%	23.6%		10.0%	10.0%	10.7%	10.0%	55.7%		10.7%	56.4%	
Maximum Green (s)	20.8	22.3		8.0	6.5	5.8	6.5	58.0		5.8	58.8	
Yellow Time (s)	5.1	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.6	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	20.8	22.5		11.8	6.3	12.7	70.0	62.7		71.7	68.2	
Actuated g/C Ratio	0.18	0.19		0.10	0.05	0.11	0.60	0.54		0.62	0.59	
v/c Ratio	1.02	0.82		0.19	0.40	0.69	0.20	0.97		0.52	0.80	
Control Delay	89.4	61.3		35.1	66.5	29.2	7.0	33.3		30.5	24.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	89.4	61.3		35.1	66.5	29.2	7.0	33.3		30.5	24.5	
LOS	F	E		D	E	C	A	C		C	C	
Approach Delay		80.4			35.1			32.7			24.7	
Approach LOS		F			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 116
Actuated Cycle Length: 116
Offset: 64 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 40.4 Intersection LOS: D
Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Future Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	1.00
Frt		0.985				0.850		0.985				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1766	0	1504	1583	1346	1517	2988	0	1433	2865	1282
Flt Permitted	0.950			0.294			0.443			0.105		
Satd. Flow (perm)	3303	1766	0	466	1583	1346	707	2988	0	158	2865	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				82		11				72
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1869			2367			1973	
Travel Time (s)		11.7			23.2			29.3			24.5	
Peak Hour Factor	0.56	0.58	0.58	0.89	0.54	0.73	0.72	0.74	0.77	0.88	0.89	0.79
Heavy Vehicles (%)	6%	6%	6%	20%	20%	20%	19%	19%	19%	26%	26%	26%
Adj. Flow (vph)	200	166	19	166	165	647	32	864	94	392	558	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	185	0	166	165	647	32	958	0	392	558	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2		1	2	1
Detector Template	Left	Thru			Thru	Right		Thru			Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100		70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0		50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2			6		6
Detector Phase	7	4		3	8	1	5	2		1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6		11.6	11.6	11.6
Total Split (s)	13.0	18.0		13.2	18.2	38.4	11.2	46.4		38.4	73.6	13.0
Total Split (%)	11.2%	15.5%		11.4%	15.7%	33.1%	9.7%	40.0%		33.1%	63.4%	11.2%
Maximum Green (s)	7.9	12.9		9.6	13.1	31.8	6.1	39.8		31.8	67.0	7.9
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	1.5	1.5		0.0	1.5	1.5	0.0	1.5		1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1		3.6	5.1	6.6	5.1	6.6		6.6	6.6	5.1
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	None
Act Effct Green (s)	7.9	12.9		25.2	13.6	50.5	46.3	39.3		77.7	71.1	85.6
Actuated g/C Ratio	0.07	0.11		0.22	0.12	0.44	0.40	0.34		0.67	0.61	0.74
v/c Ratio	0.89	0.93		0.86	0.89	1.02	0.10	0.94		0.86	0.32	0.07
Control Delay	91.7	98.4		78.4	94.1	71.5	11.4	54.2		44.6	11.8	3.0
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	91.7	98.4		78.4	94.1	71.5	11.4	54.2		44.6	11.8	3.0
LOS	F	F		E	F	E	B	D		D	B	A
Approach Delay		94.9			76.5			52.9			23.8	
Approach LOS		F			E			D			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 116	
Actuated Cycle Length: 116	
Offset: 24 (21%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 55.7	Intersection LOS: E
Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	

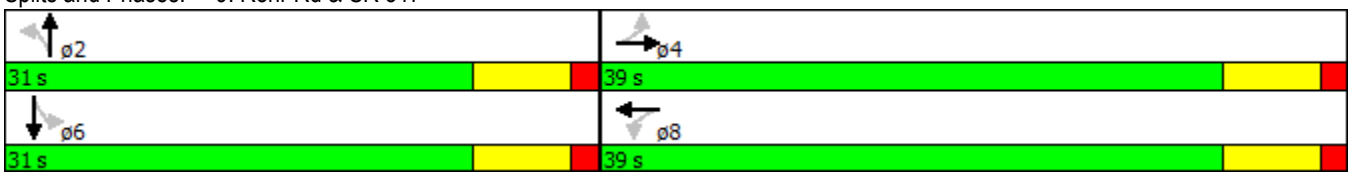
Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	376	21	61	194	12	6	225	196	14	217	52
Future Volume (vph)	139	376	21	61	194	12	6	225	196	14	217	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.995			0.994			0.938			0.975	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1696	0	0	1698	0	0	1619	0	0	1681	0
Flt Permitted		0.830			0.804			0.993			0.970	
Satd. Flow (perm)	0	1426	0	0	1380	0	0	1609	0	0	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			4			67			18	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3811			1118			771			1068	
Travel Time (s)		47.2			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	151	409	23	66	211	13	7	245	213	15	236	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	290	0	0	465	0	0	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	70	100		20	100		20	100		20	100	
Trailing Detector (ft)	50	0		0	0		0	0		0	0	
Detector 1 Position(ft)	50	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	39.0	39.0		39.0	39.0		31.0	31.0		31.0	31.0	
Total Split (%)	55.7%	55.7%		55.7%	55.7%		44.3%	44.3%		44.3%	44.3%	
Maximum Green (s)	32.4	32.4		32.4	32.4		24.4	24.4		24.4	24.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		28.6			28.6			20.1			20.1	
Actuated g/C Ratio		0.46			0.46			0.32			0.32	
v/c Ratio		0.89			0.46			0.82			0.57	
Control Delay		34.9			14.9			31.2			21.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		34.9			14.9			31.2			21.8	
LOS		C			B			C			C	
Approach Delay		34.9			14.9			31.2			21.8	
Approach LOS		C			B			C			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 62.3	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 27.9	Intersection LOS: C
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	31	0	218	0	1113	7	47	812	0
Future Volume (vph)	0	0	0	31	0	218	0	1113	7	47	812	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		0	500		0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.97	0.95	1.00
Frt						0.850		0.999				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1641	0	2584	0	3005	0	2824	2911	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1641	0	2584	0	3005	0	2824	2911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						149		2				
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		558			1037			1973			1274	
Travel Time (s)		12.7			23.6			24.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	0	0	0	34	0	237	0	1341	12	73	967	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	34	0	237	0	1353	0	73	967	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2		1	2	
Detector Template						Right		Thru			Thru	
Leading Detector (ft)				20		20		100		70	100	
Trailing Detector (ft)				0		0		0		50	0	
Detector 1 Position(ft)				0		0		0		50	0	
Detector 1 Size(ft)				20		20		6		20	6	
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)				0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type				Prot		pt+ov		NA		Prot	NA	
Protected Phases				3		3 1		2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases												
Detector Phase				3		3 1		2		1	6	
Switch Phase												
Minimum Initial (s)				5.0				5.0		5.0	5.0	
Minimum Split (s)				9.5				11.6		11.6	11.6	
Total Split (s)				14.2				87.6		14.2	101.8	
Total Split (%)				12.2%				75.5%		12.2%	87.8%	
Maximum Green (s)				9.7				81.0		7.6	95.2	
Yellow Time (s)				3.5				5.1		5.1	5.1	
All-Red Time (s)				1.0				1.5		1.5	1.5	
Lost Time Adjust (s)				0.0				0.0		0.0	0.0	
Total Lost Time (s)				4.5				6.6		6.6	6.6	
Lead/Lag								Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0				3.0		3.0	3.0	
Recall Mode				None				C-Min		None	C-Min	
Act Effct Green (s)				9.2		22.8		82.1		7.1	95.7	
Actuated g/C Ratio				0.08		0.20		0.71		0.06	0.82	
v/c Ratio				0.26		0.38		0.64		0.42	0.40	
Control Delay				53.8		16.4		7.6		49.1	3.9	
Queue Delay				0.0		0.0		0.0		0.0	0.0	
Total Delay				53.8		16.4		7.6		49.1	3.9	
LOS				D		B		A		D	A	
Approach Delay								7.6			7.0	
Approach LOS								A			A	

Intersection Summary	
Area Type: Other	
Cycle Length: 116	
Actuated Cycle Length: 116	
Offset: 94 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 47.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 32: Alum Creek Dr

Lanes, Volumes, Timings
3: Alum Creek Dr & Creekside Parkway/Toy Road

1/13/2016

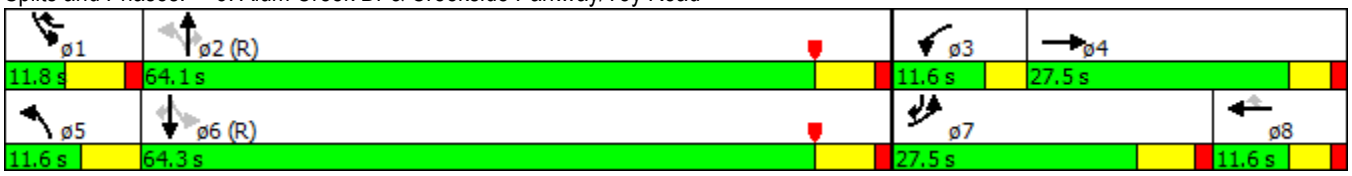
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	447	88	64	23	20	100	26	1293	12	42	772	268
Future Volume (vph)	447	88	64	23	20	100	26	1293	12	42	772	268
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		350	225		300	625		400	625		800
Storage Lanes	2		0	2		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	0.97	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt		0.949				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1701	0	2943	1597	1357	1504	3008	1346	1456	2911	1302
Flt Permitted	0.950			0.950			0.261			0.063		
Satd. Flow (perm)	3303	1701	0	2943	1597	1357	413	3008	1346	97	2911	1302
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20				131			165			419
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		860			1046			1274			879	
Travel Time (s)		10.7			13.0			15.8			10.9	
Peak Hour Factor	0.74	0.47	0.67	0.79	0.59	0.55	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	6%	6%	6%	19%	19%	19%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	604	187	96	29	34	182	38	1558	20	66	919	419
Shared Lane Traffic (%)												
Lane Group Flow (vph)	604	283	0	29	34	182	38	1558	20	66	919	419
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100	20	70	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0	0	50	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0	0	50	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases						8	2		2	6		6
Detector Phase	7	4		3	8	1	5	2	2	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	27.5	27.5		11.6	11.6	11.8	11.6	64.1	64.1	11.8	64.3	27.5
Total Split (%)	23.9%	23.9%		10.1%	10.1%	10.3%	10.1%	55.7%	55.7%	10.3%	55.9%	23.9%
Maximum Green (s)	20.9	22.4		8.0	6.5	5.2	6.5	57.5	57.5	5.2	57.7	20.9
Yellow Time (s)	5.1	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	1.5	1.5		0.0	1.5	1.5	0.0	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.6	5.1		3.6	5.1	6.6	5.1	6.6	6.6	6.6	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	20.9	22.8		6.6	6.3	12.2	69.5	62.1	62.1	70.2	67.1	97.2
Actuated g/C Ratio	0.18	0.20		0.06	0.05	0.11	0.60	0.54	0.54	0.61	0.58	0.85
v/c Ratio	1.01	0.80		0.17	0.39	0.70	0.12	0.96	0.02	0.55	0.54	0.36
Control Delay	85.6	58.7		53.4	65.6	29.9	5.8	38.9	0.1	32.5	18.2	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.6	58.7		53.4	65.6	29.9	5.8	38.9	0.1	32.5	18.2	1.3
LOS	F	E		D	E	C	A	D	A	C	B	A
Approach Delay		77.0			37.6			37.7			13.8	
Approach LOS		E			D			D			B	

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 51 (44%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 38.0 Intersection LOS: D
Intersection Capacity Utilization 69.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Future Volume (vph)	112	96	11	148	89	472	23	639	72	345	497	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	420		0	356		650	388		400	631		356
Storage Lanes	2		0	1		2	1		1	2		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt		0.985				0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3303	1766	0	1504	1583	2369	1517	3034	1357	2779	2865	1282
Flt Permitted	0.950			0.334			0.443			0.950		
Satd. Flow (perm)	3303	1766	0	529	1583	2369	707	3034	1357	2779	2865	1282
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				86			131			72
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		941			1869			2367			1973	
Travel Time (s)		11.7			23.2			29.3			24.5	
Peak Hour Factor	0.56	0.58	0.58	0.89	0.54	0.73	0.72	0.74	0.77	0.88	0.89	0.79
Heavy Vehicles (%)	6%	6%	6%	20%	20%	20%	19%	19%	19%	26%	26%	26%
Adj. Flow (vph)	200	166	19	166	165	647	32	864	94	392	558	72
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	185	0	166	165	647	32	864	94	392	558	72
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru			Thru	Right		Thru	Right		Thru	Right
Leading Detector (ft)	20	100		70	100	20	70	100	20	70	100	20
Trailing Detector (ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Position(ft)	0	0		50	0	0	50	0	0	50	0	0
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2	3	1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8	2		2			6
Detector Phase	7	4		3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6	9.6	11.6	11.6	11.6
Total Split (s)	14.6	21.4		16.7	23.5	27.0	11.2	49.9	16.7	27.0	65.7	14.6
Total Split (%)	12.7%	18.6%		14.5%	20.4%	23.5%	9.7%	43.4%	14.5%	23.5%	57.1%	12.7%
Maximum Green (s)	9.5	16.3		13.1	18.4	20.4	6.1	43.3	13.1	20.4	59.1	9.5
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	3.6	5.1	5.1	3.6
All-Red Time (s)	1.5	1.5		0.0	1.5	1.5	0.0	1.5	0.0	1.5	1.5	1.5
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.1	5.1		3.6	5.1	6.6	5.1	6.6	3.6	6.6	6.6	5.1
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	9.4	15.2		31.2	17.0	41.2	53.2	46.1	65.4	19.1	65.1	81.2
Actuated g/C Ratio	0.08	0.13		0.27	0.15	0.36	0.46	0.40	0.57	0.17	0.57	0.71
v/c Ratio	0.74	0.78		0.66	0.71	0.72	0.09	0.71	0.11	0.85	0.34	0.08
Control Delay	68.7	70.0		46.0	63.0	31.9	11.1	33.9	1.1	53.5	11.1	2.8
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.7	70.0		46.0	63.0	31.9	11.1	33.9	1.1	53.5	11.1	2.8
LOS	E	E		D	E	C	B	C	A	D	B	A
Approach Delay		69.4			39.5			30.0			26.8	
Approach LOS		E			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 115
Actuated Cycle Length: 115
Offset: 112 (97%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 36.3 Intersection LOS: D
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15

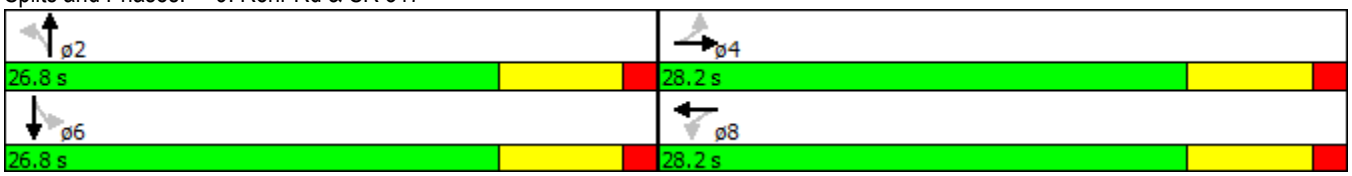
Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	376	21	61	194	12	6	225	196	14	217	52
Future Volume (vph)	139	376	21	61	194	12	6	225	196	14	217	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. 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
Frt		0.995			0.994			0.938			0.975	
Flt Protected		0.987			0.989			0.999			0.998	
Satd. Flow (prot)	0	1696	0	0	1698	0	0	1619	0	0	1681	0
Flt Permitted		0.834			0.798			0.992			0.969	
Satd. Flow (perm)	0	1433	0	0	1370	0	0	1607	0	0	1632	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			5			87			23	
Link Speed (mph)		55			55			30			30	
Link Distance (ft)		3811			1118			771			1068	
Travel Time (s)		47.2			13.9			17.5			24.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%	10%
Adj. Flow (vph)	151	409	23	66	211	13	7	245	213	15	236	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	583	0	0	290	0	0	465	0	0	308	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template		Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	70	100		20	100		20	100		20	100	
Trailing Detector (ft)	50	0		0	0		0	0		0	0	
Detector 1 Position(ft)	50	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	28.2	28.2		28.2	28.2		26.8	26.8		26.8	26.8	
Total Split (%)	51.3%	51.3%		51.3%	51.3%		48.7%	48.7%		48.7%	48.7%	
Maximum Green (s)	21.6	21.6		21.6	21.6		20.2	20.2		20.2	20.2	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		21.7			21.7			16.5			16.5	
Actuated g/C Ratio		0.42			0.42			0.32			0.32	
v/c Ratio		0.96			0.50			0.81			0.57	
Control Delay		48.5			15.5			25.7			17.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		48.5			15.5			25.7			17.8	
LOS		D			B			C			B	
Approach Delay		48.5			15.5			25.7			17.8	
Approach LOS		D			B			C			B	

Intersection Summary	
Area Type: Other	
Cycle Length: 55	
Actuated Cycle Length: 51.5	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 30.5	Intersection LOS: C
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9: Rohr Rd & SR 317



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	31	0	218	0	1113	7	47	812	0
Future Volume (vph)	0	0	0	31	0	218	0	1113	7	47	812	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	200		200	200		0	500		0
Storage Lanes	0		0	1		0	0		0	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	0.95	0.97	0.95	1.00
Frt						0.850		0.999				
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	0	0	1641	0	2584	0	3005	0	2824	2911	0
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	0	0	1641	0	2584	0	3005	0	2824	2911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						145		2				
Link Speed (mph)		30			30			55			55	
Link Distance (ft)		558			1037			1973			1274	
Travel Time (s)		12.7			23.6			24.5			15.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.69	0.83	0.60	0.64	0.84	0.64
Heavy Vehicles (%)	10%	10%	10%	10%	10%	10%	20%	20%	20%	24%	24%	24%
Adj. Flow (vph)	0	0	0	34	0	237	0	1341	12	73	967	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	34	0	237	0	1353	0	73	967	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway 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
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors				1		1		2		1	2	
Detector Template						Right		Thru			Thru	
Leading Detector (ft)				20		20		100		70	100	
Trailing Detector (ft)				0		0		0		50	0	
Detector 1 Position(ft)				0		0		0		50	0	
Detector 1 Size(ft)				20		20		6		20	6	
Detector 1 Type				Cl+Ex		Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Queue (s)				0.0		0.0		0.0		0.0	0.0	
Detector 1 Delay (s)				0.0		0.0		0.0		0.0	0.0	
Detector 2 Position(ft)								94			94	
Detector 2 Size(ft)								6			6	
Detector 2 Type								Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)								0.0			0.0	
Turn Type				Perm		pm+ov		NA		Prot	NA	
Protected Phases						1		2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases				8		8						
Detector Phase				8		1		2		1	6	
Switch Phase												
Minimum Initial (s)				5.0		5.0		5.0		5.0	5.0	
Minimum Split (s)				11.6		11.6		11.6		11.6	11.6	
Total Split (s)				12.0		17.0		86.0		17.0	103.0	
Total Split (%)				10.4%		14.8%		74.8%		14.8%	89.6%	
Maximum Green (s)				8.4		10.4		79.4		10.4	96.4	
Yellow Time (s)				3.6		5.1		5.1		5.1	5.1	
All-Red Time (s)				0.0		1.5		1.5		1.5	1.5	
Lost Time Adjust (s)				0.0		0.0		0.0		0.0	0.0	
Total Lost Time (s)				3.6		6.6		6.6		6.6	6.6	
Lead/Lag						Lead		Lag		Lead		
Lead-Lag Optimize?												
Vehicle Extension (s)				3.0		3.0		3.0		3.0	3.0	
Recall Mode				None		None		C-Min		None	C-Min	
Act Effct Green (s)				7.3		15.1		86.7		8.0	104.0	
Actuated g/C Ratio				0.06		0.13		0.75		0.07	0.90	
v/c Ratio				0.33		0.51		0.60		0.37	0.37	
Control Delay				59.5		20.9		8.0		45.7	1.7	
Queue Delay				0.0		0.0		0.0		0.0	0.0	
Total Delay				59.5		20.9		8.0		45.7	1.7	
LOS				E		C		A		D	A	
Approach Delay								8.0			4.8	
Approach LOS								A			A	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 73 (63%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 8.5	Intersection LOS: A
Intersection Capacity Utilization 49.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 32: Alum Creek Dr

2025

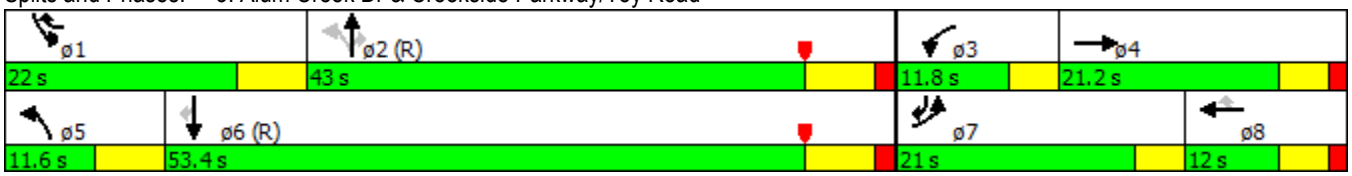
Phasings
3: Alum Creek Dr & Creekside Parkway/Toy Road

3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	71	11	10	77	45	192	51	1013	114	378	1447	468
Future Volume (vph)	71	11	10	77	45	192	51	1013	114	378	1447	468
Satd. Flow (prot)	2870	1441	0	3127	1696	2538	1612	4631	1442	3183	4715	1468
Flt Permitted	0.950			0.950			0.097			0.950		
Satd. Flow (perm)	2870	1441	0	3127	1696	2538	165	4631	1442	3183	4715	1468
Satd. Flow (RTOR)		16				229			217			387
Lane Group Flow (vph)	96	32	0	118	64	229	74	1369	165	434	1832	720
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		2			6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	21.0	21.2		11.8	12.0	22.0	11.6	43.0	43.0	22.0	53.4	21.0
Total Split (%)	21.4%	21.6%		12.0%	12.2%	22.4%	11.8%	43.9%	43.9%	22.4%	54.5%	21.4%
Maximum Green (s)	17.4	16.1		8.2	6.9	16.9	6.5	36.4	36.4	16.9	46.8	17.4
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5	1.5	0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6	6.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	9.4	8.1		10.1	6.7	25.9	54.9	47.4	47.4	16.3	59.8	76.5
Actuated g/C Ratio	0.10	0.08		0.10	0.07	0.26	0.56	0.48	0.48	0.17	0.61	0.78
v/c Ratio	0.35	0.24		0.37	0.56	0.27	0.41	0.61	0.20	0.82	0.64	0.59
Control Delay	44.1	30.1		45.1	63.1	4.5	22.4	7.9	0.9	53.3	15.5	4.7
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.1	30.1		45.1	63.1	4.5	22.4	7.9	0.9	53.3	15.5	4.7
LOS	D	C		D	E	A	C	A	A	D	B	A
Approach Delay		40.6			25.3			7.8			18.4	
Approach LOS		D			C			A			B	

Intersection Summary	
Cycle Length: 98	
Actuated Cycle Length: 98	
Offset: 90 (92%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 16.2	Intersection LOS: B
Intersection Capacity Utilization 55.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: Alum Creek Dr & Creekside Parkway/Toy Road



Phasings
6: Alum Creek Dr & Rohr Rd

3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	60	19	34	97	292	11	776	112	471	683	131
Future Volume (vph)	48	60	19	34	97	292	11	776	112	471	683	131
Satd. Flow (prot)	2943	1533	0	1612	1696	2538	1543	4354	0	3127	4631	1442
Flt Permitted	0.950			0.680			0.323			0.950		
Satd. Flow (perm)	2943	1533	0	1154	1696	2538	525	4354	0	3127	4631	1442
Satd. Flow (RTOR)		17				110		28				187
Lane Group Flow (vph)	92	120	0	39	147	436	20	1283	0	785	843	187
Turn Type	Prot	NA		Perm	NA	pm+ov	Perm	NA		Prot	NA	pm+ov
Protected Phases	7	4			8	1		2		1	6	7
Permitted Phases				8		8	2					6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	11.6
Total Split (s)	11.8	27.8		16.0	16.0	33.0	37.2	37.2		33.0	70.2	11.8
Total Split (%)	12.0%	28.4%		16.3%	16.3%	33.7%	38.0%	38.0%		33.7%	71.6%	12.0%
Maximum Green (s)	8.2	22.7		10.9	10.9	27.9	32.1	32.1		27.9	63.6	8.2
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		1.5	1.5	0.0	0.0	0.0		0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		5.1	5.1	5.1	5.1	5.1		5.1	6.6	3.6
Lead/Lag	Lead			Lag	Lag	Lead	Lag	Lag		Lead		Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	C-Min	C-Min		None	C-Min	None
Act Effct Green (s)	7.6	21.8		10.6	10.6	43.0	33.6	33.6		27.3	64.5	78.7
Actuated g/C Ratio	0.08	0.22		0.11	0.11	0.44	0.34	0.34		0.28	0.66	0.80
v/c Ratio	0.40	0.34		0.31	0.80	0.37	0.11	0.85		0.90	0.28	0.16
Control Delay	48.3	30.0		47.4	74.1	14.3	25.3	36.2		41.3	3.8	0.4
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.3	30.0		47.4	74.1	14.3	25.3	36.2		41.3	3.8	0.4
LOS	D	C		D	E	B	C	D		D	A	A
Approach Delay		38.0			30.5			36.0			19.6	
Approach LOS		D			C			D			B	

Intersection Summary	
Cycle Length: 98	
Actuated Cycle Length: 98	
Offset: 39 (40%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 27.7	Intersection LOS: C
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Phasings
9: Rohr Rd & SR 317

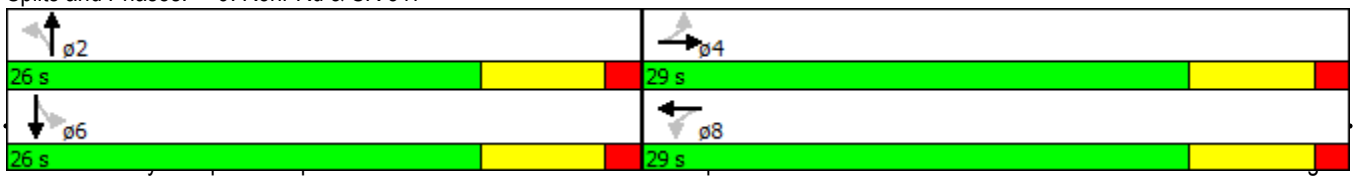
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	143	4	161	142	3	11	169	52	1	160	89
Future Volume (vph)	44	143	4	161	142	3	11	169	52	1	160	89
Satd. Flow (prot)	0	1703	0	0	1681	0	0	1672	0	0	1644	0
Flt Permitted		0.843			0.728			0.970			0.998	
Satd. Flow (perm)	0	1452	0	0	1256	0	0	1625	0	0	1641	0
Satd. Flow (RTOR)		2			1			29			56	
Lane Group Flow (vph)	0	207	0	0	332	0	0	253	0	0	272	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	29.0	29.0		29.0	29.0		26.0	26.0		26.0	26.0	
Total Split (%)	52.7%	52.7%		52.7%	52.7%		47.3%	47.3%		47.3%	47.3%	
Maximum Green (s)	22.4	22.4		22.4	22.4		19.4	19.4		19.4	19.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.0			15.0			11.2			11.2	
Actuated g/C Ratio		0.37			0.37			0.28			0.28	
v/c Ratio		0.38			0.71			0.53			0.55	
Control Delay		11.8			20.4			16.2			15.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.8			20.4			16.2			15.0	
LOS		B			C			B			B	
Approach Delay		11.8			20.4			16.2			15.0	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 55
Actuated Cycle Length: 40.1
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.71
Intersection Signal Delay: 16.4 — Intersection LOS: B
Intersection Capacity Utilization 63.6% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd & SR 317



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	0	1	14	0	96	4	1076	36	249	1270	15
Future Volume (vph)	6	0	1	14	0	96	4	1076	36	249	1270	15
Satd. Flow (prot)	1641	1468	0	1641	1395	1395	1504	4301	0	2824	4175	0
Flt Permitted	0.721			0.757			0.141			0.950		
Satd. Flow (perm)	1245	1468	0	1308	1395	1395	223	4301	0	2824	4175	0
Satd. Flow (RTOR)		154			258	40		9			5	
Lane Group Flow (vph)	7	1	0	15	52	52	6	1506	0	286	1631	0
Turn Type	Perm	NA		Perm	NA	pm+ov	pm+pt	NA		Prot	NA	
Protected Phases		4			8	1	5	2		1	6	
Permitted Phases	4			8		8	2					
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	12.0	12.0		12.0	12.0	25.0	12.0	61.0		25.0	74.0	
Total Split (%)	12.2%	12.2%		12.2%	12.2%	25.5%	12.2%	62.2%		25.5%	75.5%	
Maximum Green (s)	8.4	8.4		8.4	8.4	19.9	6.9	54.4		19.9	67.4	
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	
All-Red Time (s)	0.0	0.0		0.0	0.0	0.0	0.0	1.5		0.0	1.5	
Total Lost Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	6.6		5.1	6.6	
Lead/Lag						Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	6.7	6.7		6.7	6.7	23.6	69.2	62.7		15.1	82.2	
Actuated g/C Ratio	0.07	0.07		0.07	0.07	0.24	0.71	0.64		0.15	0.84	
v/c Ratio	0.08	0.00		0.17	0.16	0.14	0.03	0.55		0.66	0.47	
Control Delay	44.2	0.0		46.7	1.0	11.6	1.8	6.4		41.1	2.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.2	0.0		46.7	1.0	11.6	1.8	6.4		41.1	2.5	
LOS	D	A		D	A	B	A	A		D	A	
Approach Delay		38.6			11.4			6.4			8.3	
Approach LOS		D			B			A			A	

Intersection Summary	
Cycle Length: 98	
Actuated Cycle Length: 98	
Offset: 2 (2%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 7.7	Intersection LOS: A
Intersection Capacity Utilization 49.6%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 32: Alum Creek Dr

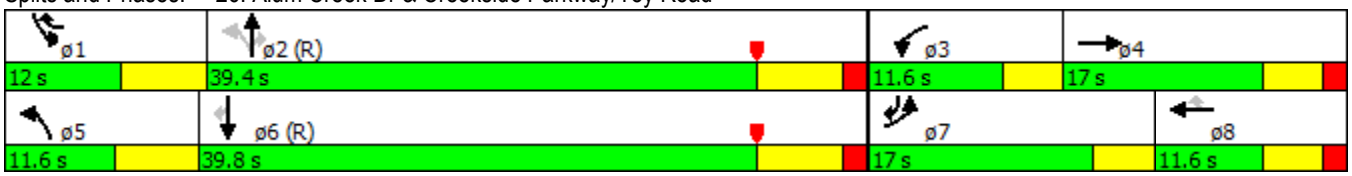
Phasings
26: Alum Creek Dr & Creekside Parkway/Toy Road

3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	434	85	62	104	19	271	25	1539	86	172	933	260
Future Volume (vph)	434	85	62	104	19	271	25	1539	86	172	933	260
Satd. Flow (prot)	3303	1701	0	2943	1597	2389	1504	4322	1346	2824	4183	1302
Flt Permitted	0.950			0.950			0.221			0.950		
Satd. Flow (perm)	3303	1701	0	2943	1597	2389	350	4322	1346	2824	4183	1302
Satd. Flow (RTOR)		27				147			196			406
Lane Group Flow (vph)	586	274	0	132	32	493	36	1854	143	269	1111	406
Turn Type	Prot	NA		Prot	NA	pm+ov	pm+pt	NA	Perm	Prot	NA	pm+ov
Protected Phases	7	4		3	8	1	5	2		1	6	7
Permitted Phases						8	2		2			6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6	11.6
Total Split (s)	17.0	17.0		11.6	11.6	12.0	11.6	39.4	39.4	12.0	39.8	17.0
Total Split (%)	21.3%	21.3%		14.5%	14.5%	15.0%	14.5%	49.3%	49.3%	15.0%	49.8%	21.3%
Maximum Green (s)	13.4	11.9		8.0	6.5	6.9	6.5	32.8	32.8	6.9	33.2	13.4
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1	5.1	5.1	5.1	3.6
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5	1.5	0.0	1.5	0.0
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6	6.6	5.1	6.6	3.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min	C-Min	None	C-Min	None
Act Effct Green (s)	18.0	11.9		7.6	6.2	11.5	42.3	35.1	35.1	6.9	40.4	66.5
Actuated g/C Ratio	0.22	0.15		0.10	0.08	0.14	0.53	0.44	0.44	0.09	0.50	0.83
v/c Ratio	0.79	0.99		0.47	0.26	1.05	0.14	0.98	0.20	1.11	0.53	0.35
Control Delay	40.6	86.3		40.0	40.2	79.2	7.9	31.4	2.4	126.6	16.3	1.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.6	86.3		40.0	40.2	79.2	7.9	31.4	2.4	126.6	16.3	1.5
LOS	D	F		D	D	E	A	C	A	F	B	A
Approach Delay		55.2			69.4			28.9			29.6	
Approach LOS		E			E			C			C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 2 (3%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 38.4	Intersection LOS: D
Intersection Capacity Utilization 68.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 26: Alum Creek Dr & Creekside Parkway/Toy Road



Phasings
6: Alum Creek Dr & Rohr Rd

3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	109	93	11	174	99	510	22	752	91	376	618	55
Future Volume (vph)	109	93	11	174	99	510	22	752	91	376	618	55
Satd. Flow (prot)	3303	1764	0	1504	1583	2369	1517	4289	0	2779	4117	1282
Flt Permitted	0.950			0.513			0.376			0.950		
Satd. Flow (perm)	3303	1764	0	812	1583	2369	600	4289	0	2779	4117	1282
Satd. Flow (RTOR)		6				98		26				147
Lane Group Flow (vph)	195	179	0	196	183	699	31	1134	0	427	694	70
Turn Type	Prot	NA		pm+pt	NA	pm+ov	pm+pt	NA		Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases				8		8	2					6
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	11.6	11.6		9.6	11.6	11.6	11.1	11.6		11.6	11.6	11.6
Total Split (s)	11.6	17.4		11.2	17.0	20.0	11.1	31.4		20.0	40.3	40.3
Total Split (%)	14.5%	21.8%		14.0%	21.3%	25.0%	13.9%	39.3%		25.0%	50.4%	50.4%
Maximum Green (s)	8.0	12.3		7.6	11.9	14.9	6.0	24.8		14.9	33.7	33.7
Yellow Time (s)	3.6	3.6		3.6	3.6	5.1	5.1	5.1		5.1	5.1	5.1
All-Red Time (s)	0.0	1.5		0.0	1.5	0.0	0.0	1.5		0.0	1.5	1.5
Total Lost Time (s)	3.6	5.1		3.6	5.1	5.1	5.1	6.6		5.1	6.6	6.6
Lead/Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	C-Min
Act Effct Green (s)	7.8	11.6		20.7	11.5	31.0	32.9	25.9		14.4	41.0	41.0
Actuated g/C Ratio	0.10	0.14		0.26	0.14	0.39	0.41	0.32		0.18	0.51	0.51
v/c Ratio	0.60	0.69		0.71	0.81	0.72	0.10	0.81		0.85	0.33	0.10
Control Delay	43.0	45.9		39.5	61.0	22.3	9.4	30.2		45.5	10.1	1.5
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	43.0	45.9		39.5	61.0	22.3	9.4	30.2		45.5	10.1	1.5
LOS	D	D		D	E	C	A	C		D	B	A
Approach Delay		44.4			32.0			29.6			22.3	
Approach LOS		D			C			C			C	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 50 (63%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 29.5	Intersection LOS: C
Intersection Capacity Utilization 57.6%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 6: Alum Creek Dr & Rohr Rd

Phasings
9: Rohr Rd & SR 317

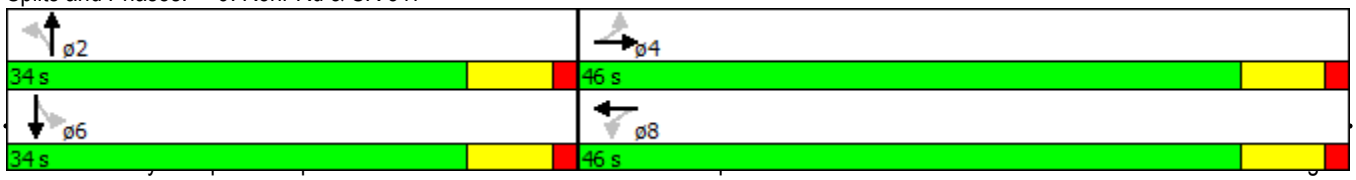
3/23/2016

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	142	429	22	61	197	12	7	245	194	14	237	55
Future Volume (vph)	142	429	22	61	197	12	7	245	194	14	237	55
Satd. Flow (prot)	0	1698	0	0	1698	0	0	1624	0	0	1682	0
Flt Permitted		0.836			0.789			0.992			0.972	
Satd. Flow (perm)	0	1437	0	0	1355	0	0	1612	0	0	1639	0
Satd. Flow (RTOR)		3			4			53			15	
Lane Group Flow (vph)	0	644	0	0	293	0	0	485	0	0	333	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	24.6	24.6		24.6	24.6		24.6	24.6		24.6	24.6	
Total Split (s)	46.0	46.0		46.0	46.0		34.0	34.0		34.0	34.0	
Total Split (%)	57.5%	57.5%		57.5%	57.5%		42.5%	42.5%		42.5%	42.5%	
Maximum Green (s)	39.4	39.4		39.4	39.4		27.4	27.4		27.4	27.4	
Yellow Time (s)	5.1	5.1		5.1	5.1		5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5		1.5	1.5		1.5	1.5	
Total Lost Time (s)		6.6			6.6			6.6			6.6	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		35.4			35.4			23.7			23.7	
Actuated g/C Ratio		0.49			0.49			0.33			0.33	
v/c Ratio		0.92			0.44			0.86			0.61	
Control Delay		38.9			15.2			38.6			25.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		38.9			15.2			38.6			25.8	
LOS		D			B			D			C	
Approach Delay		38.9			15.2			38.6			25.8	
Approach LOS		D			B			D			C	

Intersection Summary

Cycle Length: 80
Actuated Cycle Length: 72.7
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 32.4 — Intersection LOS: C
Intersection Capacity Utilization 81.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 9: Rohr Rd & SR 317



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	0	5	40	0	275	3	1356	12	82	1004	13
Future Volume (vph)	19	0	5	40	0	275	3	1356	12	82	1004	13
Satd. Flow (prot)	1641	1468	0	1641	1395	1395	1504	4314	0	2943	4350	0
Flt Permitted	0.515			0.754			0.219			0.950		
Satd. Flow (perm)	890	1468	0	1302	1395	1395	347	4314	0	2943	4350	0
Satd. Flow (RTOR)		200			163	163		3			5	
Lane Group Flow (vph)	21	5	0	43	150	149	4	1654	0	128	1215	0
Turn Type	Perm	NA		Perm	NA	Perm	pm+pt	NA		Prot	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8		8	2					
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	11.6	11.6		11.6	11.6	11.6	11.6	11.6		11.6	11.6	
Total Split (s)	17.6	17.6		17.6	17.6	17.6	11.8	49.2		13.2	50.6	
Total Split (%)	22.0%	22.0%		22.0%	22.0%	22.0%	14.8%	61.5%		16.5%	63.3%	
Maximum Green (s)	12.5	12.5		12.5	12.5	12.5	6.7	42.6		8.1	44.0	
Yellow Time (s)	3.6	3.6		3.6	3.6	3.6	5.1	5.1		5.1	5.1	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	0.0	1.5		0.0	1.5	
Total Lost Time (s)	5.1	5.1		5.1	5.1	5.1	5.1	6.6		5.1	6.6	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Act Effct Green (s)	8.3	8.3		8.3	8.3	8.3	55.1	49.6		7.4	57.9	
Actuated g/C Ratio	0.10	0.10		0.10	0.10	0.10	0.69	0.62		0.09	0.72	
v/c Ratio	0.23	0.02		0.32	0.52	0.51	0.01	0.62		0.47	0.39	
Control Delay	37.5	0.0		38.4	11.5	11.4	2.3	8.8		37.0	3.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	37.5	0.0		38.4	11.5	11.4	2.3	8.8		37.0	3.4	
LOS	D	A		D	B	B	A	A		D	A	
Approach Delay		30.3			14.8			8.8			6.6	
Approach LOS		C			B			A			A	

Intersection Summary	
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 8 (10%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 56.0%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 32: Alum Creek Dr

Unsignalized

HCM Unsignalized Intersection Capacity Analysis
5: Toy Road

1/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	209	293	1	98	1	131	0	9	1	0	0
Future Volume (Veh/h)	1	209	293	1	98	1	131	0	9	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	227	318	1	107	1	142	0	10	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	108			545			497	498	386	348	656	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	108			545			497	498	386	348	656	108
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			71	100	98	100	100	100
cM capacity (veh/h)	1483			1024			483	473	662	596	384	946

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	1	545	1	108	142	10	1
Volume Left	1	0	1	0	142	0	1
Volume Right	0	318	0	1	0	10	0
cSH	1483	1700	1024	1700	483	662	596
Volume to Capacity	0.00	0.32	0.00	0.06	0.29	0.02	0.00
Queue Length 95th (ft)	0	0	0	0	30	1	0
Control Delay (s)	7.4	0.0	8.5	0.0	15.5	10.5	11.0
Lane LOS	A		A		C	B	B
Approach Delay (s)	0.0		0.1		15.2		11.0
Approach LOS					C		B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	549	50	26	413	15	11	0	5	6	0	18
Future Volume (Veh/h)	44	549	50	26	413	15	11	0	5	6	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	597	54	28	449	16	12	0	5	7	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	465			651			1245	1241	326	912	1260	457
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	465			651			1245	1241	326	912	1260	457
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			97			90	100	99	97	100	96
cM capacity (veh/h)	1093			931			119	161	670	214	157	551

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	48	398	253	28	465	17	27
Volume Left	48	0	0	28	0	12	7
Volume Right	0	0	54	0	16	5	20
cSH	1093	1700	1700	931	1700	157	391
Volume to Capacity	0.04	0.23	0.15	0.03	0.27	0.11	0.07
Queue Length 95th (ft)	3	0	0	2	0	9	6
Control Delay (s)	8.4	0.0	0.0	9.0	0.0	30.8	14.9
Lane LOS	A			A		D	B
Approach Delay (s)	0.6			0.5		30.8	14.9
Approach LOS						D	B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Toy Road

1/13/2016

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	79	161	19	163	3	377	0	37	0	0	2
Future Volume (Veh/h)	0	79	161	19	163	3	377	0	37	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	86	175	21	177	3	410	0	40	0	0	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	180			261			394	396	174	346	482	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	180			261			394	396	174	346	482	178
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			26	100	95	100	100	100
cM capacity (veh/h)	1396			1303			557	533	870	573	476	864

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	0	261	21	180	410	40	2
Volume Left	0	0	21	0	410	0	0
Volume Right	0	175	0	3	0	40	2
cSH	1700	1700	1303	1700	557	870	864
Volume to Capacity	0.00	0.15	0.02	0.11	0.74	0.05	0.00
Queue Length 95th (ft)	0	0	1	0	156	4	0
Control Delay (s)	0.0	0.0	7.8	0.0	27.4	9.3	9.2
Lane LOS			A		D	A	A
Approach Delay (s)	0.0		0.8		25.8		9.2
Approach LOS					D		A

Intersection Summary			
Average Delay	12.9		
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	536	16	5	698	3	67	0	29	16	0	47
Future Volume (Veh/h)	10	536	16	5	698	3	67	0	29	16	0	47
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	583	17	5	759	3	73	0	32	17	0	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	762			600			1434	1386	592	1408	1392	760
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762			600			1434	1386	592	1408	1392	760
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	99			99			21	100	93	83	100	87
cM capacity (veh/h)	815			939			92	135	492	103	134	393

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	600	5	762	105	68
Volume Left	11	0	5	0	73	17
Volume Right	0	17	0	3	32	51
cSH	815	1700	939	1700	122	231
Volume to Capacity	0.01	0.35	0.01	0.45	0.86	0.29
Queue Length 95th (ft)	1	0	0	0	132	30
Control Delay (s)	9.5	0.0	8.9	0.0	114.1	27.0
Lane LOS	A		A		F	D
Approach Delay (s)	0.2		0.1		114.1	27.0
Approach LOS					F	D

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	44	549	50	26	413	15	11	0	5	6	0	18
Future Volume (Veh/h)	44	549	50	26	413	15	11	0	5	6	0	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	597	54	28	449	16	12	0	5	7	0	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	465			651			1245	1241	326	912	1260	457
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	465			651			1245	1241	326	912	1260	457
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			97			90	100	99	97	100	96
cM capacity (veh/h)	1093			931			119	161	670	214	157	551

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	48	398	253	28	465	17	27
Volume Left	48	0	0	28	0	12	7
Volume Right	0	0	54	0	16	5	20
cSH	1093	1700	1700	931	1700	157	391
Volume to Capacity	0.04	0.23	0.15	0.03	0.27	0.11	0.07
Queue Length 95th (ft)	3	0	0	2	0	9	6
Control Delay (s)	8.4	0.0	0.0	9.0	0.0	30.8	14.9
Lane LOS	A			A		D	B
Approach Delay (s)	0.6			0.5		30.8	14.9
Approach LOS						D	B

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	536	16	5	698	3	67	0	29	16	0	47
Future Volume (Veh/h)	10	536	16	5	698	3	67	0	29	16	0	47
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	583	17	5	759	3	73	0	32	17	0	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	762			600			1434	1386	592	1408	1392	760
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	762			600			1434	1386	592	1408	1392	760
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	99			99			21	100	93	83	100	87
cM capacity (veh/h)	815			939			92	135	492	103	134	393

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	11	600	5	762	105	68
Volume Left	11	0	5	0	73	17
Volume Right	0	17	0	3	32	51
cSH	815	1700	939	1700	122	231
Volume to Capacity	0.01	0.35	0.01	0.45	0.86	0.29
Queue Length 95th (ft)	1	0	0	0	132	30
Control Delay (s)	9.5	0.0	8.9	0.0	114.1	27.0
Lane LOS	A		A		F	D
Approach Delay (s)	0.2		0.1		114.1	27.0
Approach LOS					F	D

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	587	22	0	242	10	8	0	0	44	0	37
Future Volume (Veh/h)	10	587	22	0	242	10	8	0	0	44	0	37
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	11	638	24	0	263	11	9	0	0	48	0	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	274			662			975	946	331	610	952	268
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274			662			975	946	331	610	952	268
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	99			100			95	100	100	87	100	94
cM capacity (veh/h)	1230			871			182	244	642	360	242	706

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	11	425	237	0	274	9	88
Volume Left	11	0	0	0	0	9	48
Volume Right	0	0	24	0	11	0	40
cSH	1230	1700	1700	1700	1700	182	463
Volume to Capacity	0.01	0.25	0.14	0.00	0.16	0.05	0.19
Queue Length 95th (ft)	1	0	0	0	0	4	17
Control Delay (s)	8.0	0.0	0.0	0.0	0.0	25.8	14.6
Lane LOS	A					D	B
Approach Delay (s)	0.1			0.0		25.8	14.6
Approach LOS						D	B

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	27.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	619	25	0	287	9	0
Future Volume (Veh/h)	619	25	0	287	9	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	673	27	0	312	10	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			700		998	350
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			700		998	350
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		96	100
cM capacity (veh/h)			841		227	624

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	449	251	0	312	10
Volume Left	0	0	0	0	10
Volume Right	0	27	0	0	0
cSH	1700	1700	1700	1700	227
Volume to Capacity	0.26	0.15	0.00	0.18	0.04
Queue Length 95th (ft)	0	0	0	0	3
Control Delay (s)	0.0	0.0	0.0	0.0	21.6
Lane LOS					C
Approach Delay (s)	0.0		0.0		21.6
Approach LOS					C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	644	12	0	296	5	0
Future Volume (Veh/h)	644	12	0	296	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	700	13	0	322	5	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1163					
pX, platoon unblocked						
vC, conflicting volume			713		1028	356
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			713		1028	356
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		98	100
cM capacity (veh/h)			832		217	617

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	467	246	0	322	5
Volume Left	0	0	0	0	5
Volume Right	0	13	0	0	0
cSH	1700	1700	1700	1700	217
Volume to Capacity	0.27	0.14	0.00	0.19	0.02
Queue Length 95th (ft)	0	0	0	0	2
Control Delay (s)	0.0	0.0	0.0	0.0	22.0
Lane LOS					C
Approach Delay (s)	0.0		0.0		22.0
Approach LOS					C

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	28.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	349	282	13	164	1	88	0	9	1	0	0
Future Volume (Veh/h)	0	349	282	13	164	1	88	0	9	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	379	307	14	178	1	96	0	10	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	179			686			585	586	190	406	892	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	179			686			585	586	190	406	892	178
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			98			74	100	99	100	100	100
cM capacity (veh/h)	1338			852			373	398	796	498	261	809

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	126	253	307	14	179	106	1
Volume Left	0	0	0	14	0	96	1
Volume Right	0	0	307	0	1	10	0
cSH	1338	1700	1700	852	1700	393	498
Volume to Capacity	0.00	0.15	0.18	0.02	0.11	0.27	0.00
Queue Length 95th (ft)	0	0	0	1	0	27	0
Control Delay (s)	0.0	0.0	0.0	9.3	0.0	17.5	12.2
Lane LOS				A		C	B
Approach Delay (s)	0.0			0.7		17.5	12.2
Approach LOS						C	B

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	392	50	26	477	23	11	0	5	11	0	34
Future Volume (Veh/h)	68	392	50	26	477	23	11	0	5	11	0	34
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	426	54	28	518	25	12	0	5	12	0	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	543			480			1185	1173	426	1153	1202	518
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	543			480			1185	1173	426	1153	1202	518
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	93			97			91	100	99	92	100	93
cM capacity (veh/h)	987			1042			138	167	612	154	160	542

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	74	426	54	28	518	25	17	49
Volume Left	74	0	0	28	0	0	12	12
Volume Right	0	0	54	0	0	25	5	37
cSH	987	1700	1700	1042	1700	1700	178	335
Volume to Capacity	0.07	0.25	0.03	0.03	0.30	0.01	0.10	0.15
Queue Length 95th (ft)	6	0	0	2	0	0	8	13
Control Delay (s)	8.9	0.0	0.0	8.6	0.0	0.0	27.3	17.6
Lane LOS	A			A			D	C
Approach Delay (s)	1.2			0.4			27.3	17.6
Approach LOS							D	C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	656	132	0	301	123	0
Future Volume (Veh/h)	656	132	0	301	123	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	713	143	0	327	134	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	665					
pX, platoon unblocked						
vC, conflicting volume			856		1040	356
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			856		1040	356
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		37	100
cM capacity (veh/h)			731		213	617

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	NB 1
Volume Total	356	356	143	327	134
Volume Left	0	0	0	0	134
Volume Right	0	0	143	0	0
cSH	1700	1700	1700	731	213
Volume to Capacity	0.21	0.21	0.08	0.00	0.63
Queue Length 95th (ft)	0	0	0	0	93
Control Delay (s)	0.0	0.0	0.0	0.0	46.9
Lane LOS					E
Approach Delay (s)	0.0			0.0	46.9
Approach LOS					E

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	31.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	234	19	0	489	153	27	0	0	48	0	0
Future Volume (Veh/h)	0	234	19	0	489	153	27	0	0	48	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	254	21	0	532	166	29	0	0	52	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	698			275			796	962	138	742	890	615
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	698			275			796	962	138	742	890	615
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			100			89	100	100	82	100	100
cM capacity (veh/h)	843			1229			264	241	861	290	267	415

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	127	148	0	698	29	52
Volume Left	0	0	0	0	29	52
Volume Right	0	21	0	166	0	0
cSH	843	1700	1700	1700	264	290
Volume to Capacity	0.00	0.09	0.00	0.41	0.11	0.18
Queue Length 95th (ft)	0	0	0	0	9	16
Control Delay (s)	0.0	0.0	0.0	0.0	20.3	20.1
Lane LOS					C	C
Approach Delay (s)	0.0		0.0		20.3	20.1
Approach LOS					C	C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	253	22	0	516	31	0
Future Volume (Veh/h)	253	22	0	516	31	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	275	24	0	561	34	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			299		848	150
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			299		848	150
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		88	100
cM capacity (veh/h)			1203		285	845

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	183	116	0	561	34
Volume Left	0	0	0	0	34
Volume Right	0	24	0	0	0
cSH	1700	1700	1700	1700	285
Volume to Capacity	0.11	0.07	0.00	0.33	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	0.0	0.0	19.3
Lane LOS					C
Approach Delay (s)	0.0		0.0		19.3
Approach LOS					C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	275	10	0	547	15	0
Future Volume (Veh/h)	275	10	0	547	15	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	299	11	0	595	16	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1163					
pX, platoon unblocked						
vC, conflicting volume			310		900	155
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			310		900	155
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		94	100
cM capacity (veh/h)			1191		264	838

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	199	111	0	595	16
Volume Left	0	0	0	0	16
Volume Right	0	11	0	0	0
cSH	1700	1700	1700	1700	264
Volume to Capacity	0.12	0.07	0.00	0.35	0.06
Queue Length 95th (ft)	0	0	0	0	5
Control Delay (s)	0.0	0.0	0.0	0.0	19.5
Lane LOS					C
Approach Delay (s)	0.0		0.0		19.5
Approach LOS					C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	132	150	19	272	1	370	0	37	1	0	0
Future Volume (Veh/h)	0	132	150	19	272	1	370	0	37	1	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	143	163	21	296	1	402	0	40	1	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	297			306			562	564	153	450	644	296
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	297			306			562	564	153	450	644	296
tC, single (s)	4.3			4.3			7.7	6.7	7.1	7.7	6.7	7.1
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			98			0	100	95	100	100	100
cM capacity (veh/h)	1205			1196			387	410	841	446	367	676

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	72	234	21	297	442	1
Volume Left	0	0	21	0	402	1
Volume Right	0	163	0	1	40	0
cSH	1205	1700	1196	1700	407	446
Volume to Capacity	0.00	0.14	0.02	0.17	1.09	0.00
Queue Length 95th (ft)	0	0	1	0	381	0
Control Delay (s)	0.0	0.0	8.1	0.0	101.5	13.1
Lane LOS			A		F	B
Approach Delay (s)	0.0		0.5		101.5	13.1
Approach LOS					F	B

Intersection Summary			
Average Delay	42.2		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	526	16	5	595	11	67	0	29	25	0	72
Future Volume (Veh/h)	32	526	16	5	595	11	67	0	29	25	0	72
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	572	17	5	647	12	73	0	32	27	0	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	659			589			1377	1311	572	1337	1322	653
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	659			589			1377	1311	572	1337	1322	653
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	96			99			22	100	94	76	100	83
cM capacity (veh/h)	892			948			94	146	505	113	144	453

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	35	572	17	5	659	105	105
Volume Left	35	0	0	5	0	73	27
Volume Right	0	0	17	0	12	32	78
cSH	892	1700	1700	948	1700	125	256
Volume to Capacity	0.04	0.34	0.01	0.01	0.39	0.84	0.41
Queue Length 95th (ft)	3	0	0	0	0	129	47
Control Delay (s)	9.2	0.0	0.0	8.8	0.0	108.3	28.5
Lane LOS	A			A		F	D
Approach Delay (s)	0.5			0.1		108.3	28.5
Approach LOS						F	D

Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	285	152	0	562	147	0
Future Volume (Veh/h)	285	152	0	562	147	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	310	165	0	611	160	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	665					
pX, platoon unblocked						
vC, conflicting volume			475		921	155
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			475		921	155
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		37	100
cM capacity (veh/h)			1029		255	838

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	NB 1
Volume Total	155	155	165	611	160
Volume Left	0	0	0	0	160
Volume Right	0	0	165	0	0
cSH	1700	1700	1700	1029	255
Volume to Capacity	0.09	0.09	0.10	0.00	0.63
Queue Length 95th (ft)	0	0	0	0	95
Control Delay (s)	0.0	0.0	0.0	0.0	40.1
Lane LOS					E
Approach Delay (s)	0.0			0.0	40.1
Approach LOS					E

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	392	50	26	477	23	11	0	5	11	0	34
Future Volume (Veh/h)	68	392	50	26	477	23	11	0	5	11	0	34
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	426	54	28	518	25	12	0	5	12	0	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	543			480			1185	1173	426	1166	1214	530
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	543			480			1185	1173	426	1166	1214	530
tC, single (s)	4.2			4.2			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	93			97			91	100	99	92	100	93
cM capacity (veh/h)	987			1042			137	167	612	151	158	533

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	74	426	54	28	543	17	49
Volume Left	74	0	0	28	0	12	12
Volume Right	0	0	54	0	25	5	37
cSH	987	1700	1700	1042	1700	178	329
Volume to Capacity	0.07	0.25	0.03	0.03	0.32	0.10	0.15
Queue Length 95th (ft)	6	0	0	2	0	8	13
Control Delay (s)	8.9	0.0	0.0	8.6	0.0	27.4	17.8
Lane LOS	A			A		D	C
Approach Delay (s)	1.2			0.4		27.4	17.8
Approach LOS						D	C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	371	132	0	191	123	0
Future Volume (Veh/h)	371	132	0	191	123	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	403	143	0	208	134	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	665					
pX, platoon unblocked						
vC, conflicting volume			546		611	202
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			546		611	202
tC, single (s)			4.3		7.0	7.1
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		67	100
cM capacity (veh/h)			966		407	781

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	NB 1
Volume Total	202	202	143	208	134
Volume Left	0	0	0	0	134
Volume Right	0	0	143	0	0
cSH	1700	1700	1700	966	407
Volume to Capacity	0.12	0.12	0.08	0.00	0.33
Queue Length 95th (ft)	0	0	0	0	35
Control Delay (s)	0.0	0.0	0.0	0.0	18.1
Lane LOS					C
Approach Delay (s)	0.0			0.0	18.1
Approach LOS					C

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
3: Toy Road & Drive B

12/1/2015

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	191	152	0	247	147	0
Future Volume (Veh/h)	191	152	0	247	147	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	208	165	0	268	160	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			373		476	104
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			373		476	104
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		69	100
cM capacity (veh/h)			1182		518	931

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	NB 1
Volume Total	104	104	165	268	160
Volume Left	0	0	0	0	160
Volume Right	0	0	165	0	0
cSH	1700	1700	1700	1182	518
Volume to Capacity	0.06	0.06	0.10	0.00	0.31
Queue Length 95th (ft)	0	0	0	0	33
Control Delay (s)	0.0	0.0	0.0	0.0	15.0
Lane LOS					C
Approach Delay (s)	0.0			0.0	15.0
Approach LOS					C

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	526	16	5	595	11	67	0	29	25	0	72
Future Volume (Veh/h)	32	526	16	5	595	11	67	0	29	25	0	72
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	572	17	5	647	12	73	0	32	27	0	78
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	659			589			1377	1311	572	1337	1322	653
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	659			589			1377	1311	572	1337	1322	653
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			26	100	94	77	100	83
cM capacity (veh/h)	929			986			99	152	520	118	150	467

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	35	572	17	5	659	105	105
Volume Left	35	0	0	5	0	73	27
Volume Right	0	0	17	0	12	32	78
cSH	929	1700	1700	986	1700	131	266
Volume to Capacity	0.04	0.34	0.01	0.01	0.39	0.80	0.40
Queue Length 95th (ft)	3	0	0	0	0	122	45
Control Delay (s)	9.0	0.0	0.0	8.7	0.0	97.2	27.1
Lane LOS	A			A		F	D
Approach Delay (s)	0.5			0.1		97.2	27.1
Approach LOS						F	D

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix D

Signal Warrants

Warrants Summary

Information			
Analyst	Doug Iles	Intersection	Toy & Drive B
Agency/Co		Jurisdiction	
Date Performed	9/18/2015	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM, 56% for 8th highest
East/West Street	Toy Rd	North/South Street	Drive B/outlot
File Name	DriveB_Toy_2025.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

General				Roadway Network	
Major Street Speed (mph)	55	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	0	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☑	Adequate Trials of Alternatives	5-yr Growth Factor	0

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	1	0	1	0	0	0	0	0	0	0
Lane usage		T	R		LT			LR				
Vehicle Volume Averages (vph)	0	158	66	0	229	0	63	0	0	0	0	0
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (56%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☑
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☑
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. (56%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☑
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

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Warrants Volume

Information

Analyst	Doug Iles	Intersection	Toy & Drive B
Agency/Co		Jurisdiction	
Date Performed	9/18/2015	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM, 56% for 8th highest
East/West Street	Toy Rd	North/South Street	Drive B/outlot
File Name	DriveB_Toy_2025.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

Warrant 1

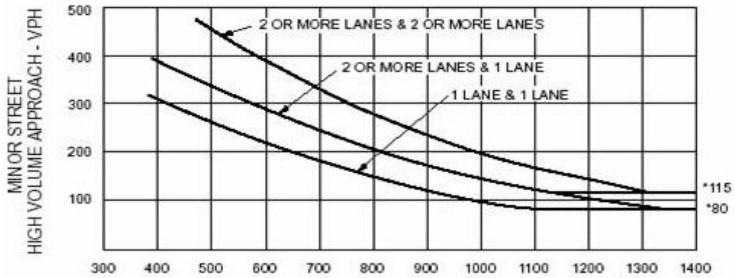
Condition A—Minimum Vehicular Volume

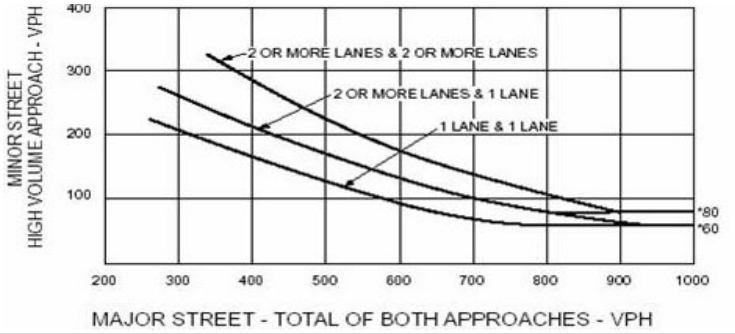
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

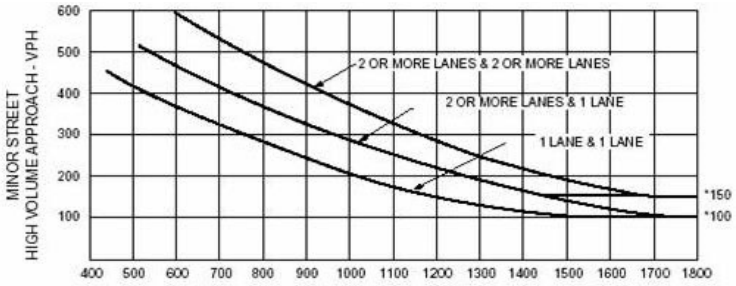
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2





Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 55 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	1089	123	1212	Yes	Yes	Yes	Yes	Yes	No	Yes
08-09	0	0	0	No	No	No	No	No	No	No
09-10	0	0	0	No	No	No	No	No	No	No
10-11	0	0	0	No	No	No	No	No	No	No
11-12	560	82	642	No	No	No	Yes	No	No	No
12-13	560	82	642	No	No	No	Yes	No	No	No
13-14	560	82	642	No	No	No	Yes	No	No	No
14-15	560	82	642	No	No	No	Yes	No	No	No
15-16	560	82	642	No	No	No	Yes	No	No	No
16-17	560	82	642	No	No	No	Yes	No	No	No
17-18	999	147	1146	Yes	Yes	Yes	Yes	Yes	No	Yes
18-19	0	0	0	No	No	No	No	No	No	No
Totals	5448	762	6210	2	2	2	8	2	0	2

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Warrants Summary

Information			
Analyst	Doug Iles	Intersection	Toy & Drive F
Agency/Co		Jurisdiction	
Date Performed	9/18/2015	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM, 56% for 8th highest
East/West Street	Toy Rd	North/South Street	Drive F/Gateway
File Name	DriveF_Toy_2025.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

General				Roadway Network	
Major Street Speed (mph)	55	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	0	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☑	Adequate Trials of Alternatives	5-yr Growth Factor	0

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	1	1	1	0	0	0	0	0	0	0
Lane usage		LT	R	L	TR			LR			LR	
Vehicle Volume Averages (vph)	0	77	78	8	112	0	141	0	14	0	0	0
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (56%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☑
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☑
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. (56%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

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Warrants Volume

Information

Analyst	Doug Iles	Intersection	Toy & Drive F
Agency/Co		Jurisdiction	
Date Performed	9/18/2015	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM, 56% for 8th highest
East/West Street	Toy Rd	North/South Street	Drive F/Gateway
File Name	DriveF_Toy_2025.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

Warrant 1

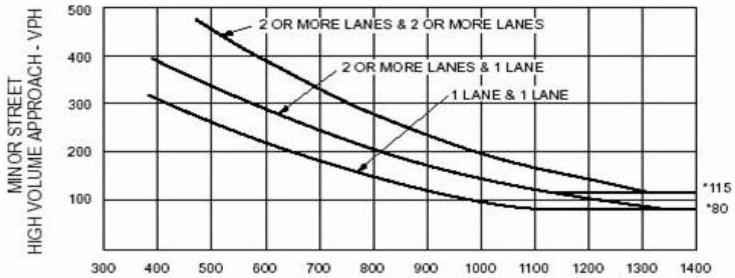
Condition A—Minimum Vehicular Volume

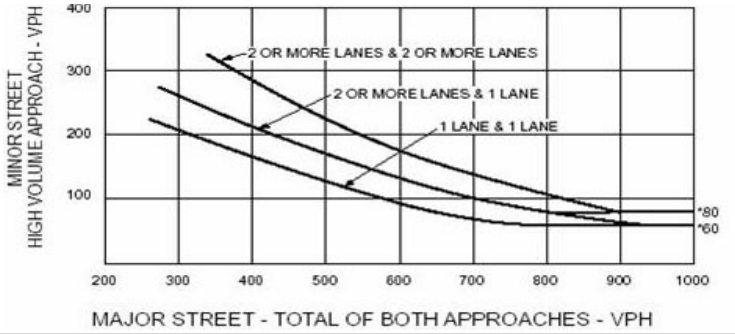
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

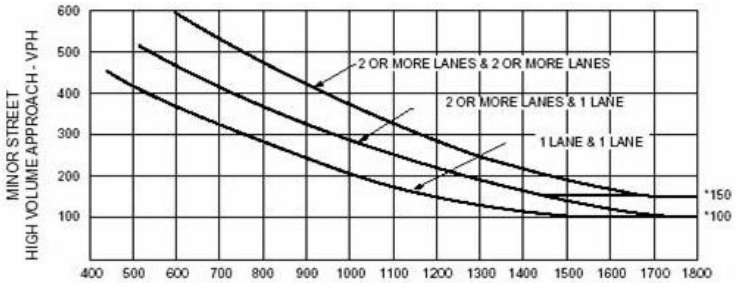
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2





Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 55 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	809	97	907	No	Yes	Yes	Yes	Yes	No	No
08-09	0	0	0	No	No	No	No	No	No	No
09-10	0	0	0	No	No	No	No	No	No	No
10-11	0	0	0	No	No	No	No	No	No	No
11-12	322	228	551	No	No	No	No	No	No	No
12-13	322	228	551	No	No	No	No	No	No	No
13-14	322	228	551	No	No	No	No	No	No	No
14-15	322	228	551	No	No	No	No	No	No	No
15-16	322	228	551	No	No	No	No	No	No	No
16-17	322	228	551	No	No	No	No	No	No	No
17-18	574	407	982	Yes	Yes	No	Yes	Yes	No	Yes
18-19	0	0	0	No	No	No	No	No	No	No
Totals	3315	1872	5195	1	2	1	2	2	0	1

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Warrants Summary

Information			
Analyst	PJM	Intersection	Rohr & Excel Driveway
Agency/Co		Jurisdiction	
Date Performed	12/8/2015	Units	U.S. Customary
Project ID	173608885 - RGLP Gateway Campu	Time Period Analyzed	2016 Background
East/West Street	Rohr Road	North/South Street	Excel Drive (Existing)
File Name	Warrants1	Major Street	East-West

Project Description *173608885 - RGLP Gateway Campu*

General				Roadway Network	
Major Street Speed (mph)	55	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	0	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	0

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	1	1	1	0	0	1	0	0	0	0
Lane usage		T	R	L	T			LTR				
Vehicle Volume Averages (vph)	0	76	5	2	72	1	6	0	2	5	0	2
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. 80% Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

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Warrants Volume

Information

Analyst	PJM	Intersection	Rohr & Excel Driveway
Agency/Co		Jurisdiction	
Date Performed	12/8/2015	Units	U.S. Customary
Project ID	173608885 - RGLP Gateway Campu	Time Period Analyzed	2016 Background
East/West Street	Rohr Road	North/South Street	Excel Drive (Existing)
File Name	Warrants1	Major Street	East-West

Project Description *173608885 - RGLP Gateway Campu*

Warrant 1

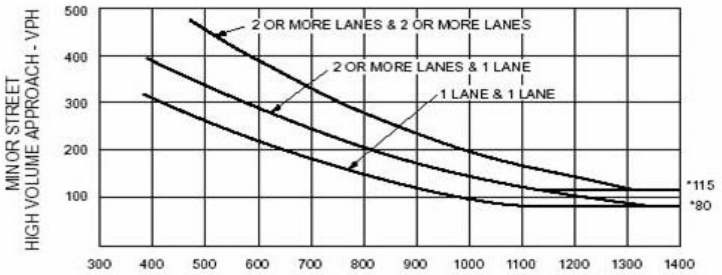
Condition A - Minimum Vehicular Volume

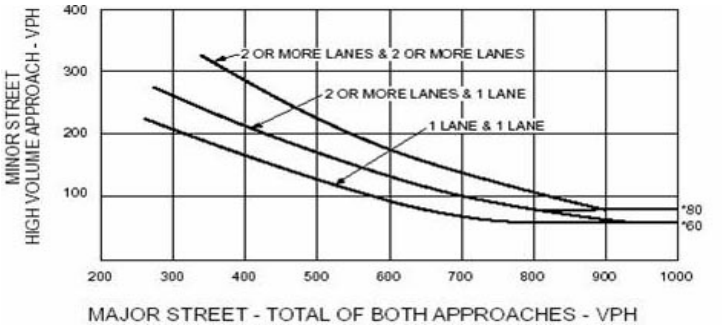
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

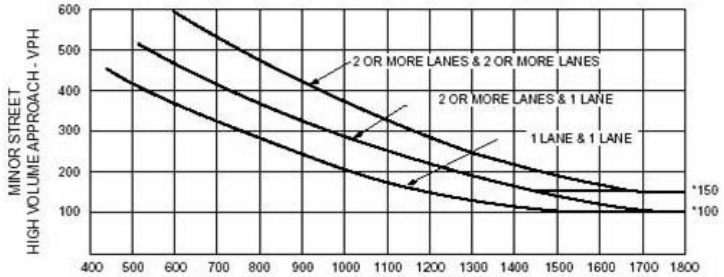
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

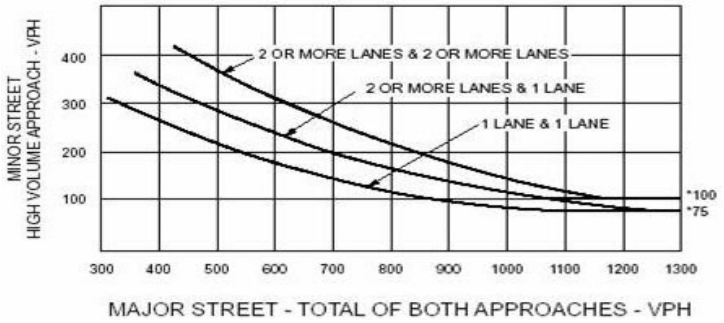
Warrant 2





Warrant 3





Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 55 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	1031	16	1047	No	No	No	No	No	No	No
08-09	0	0	0	No	No	No	No	No	No	No
09-10	0	0	0	No	No	No	No	No	No	No
10-11	0	0	0	No	No	No	No	No	No	No
11-12	0	0	0	No	No	No	No	No	No	No
12-13	0	0	0	No	No	No	No	No	No	No
13-14	0	0	0	No	No	No	No	No	No	No
14-15	0	0	0	No	No	No	No	No	No	No
15-16	0	0	0	No	No	No	No	No	No	No
16-17	0	0	0	No	No	No	No	No	No	No
17-18	847	92	939	No	Yes	Yes	Yes	Yes	No	No
18-19	0	0	0	No	No	No	No	No	No	No
Totals	1878	108	1986	0	1	1	1	1	0	0

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Warrants Summary

Information			
Analyst	Doug Iles	Intersection	Rohr & Excel
Agency/Co	RT reduction applied	Jurisdiction	
Date Performed	12/8/15	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM
East/West Street	Rohr Road	North/South Street	Excel, existing drive
File Name	DriveG_Rohr_2025background.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

General				Roadway Network	
Major Street Speed (mph)	55	☑	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	0	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☑	Adequate Trials of Alternatives	5-yr Growth Factor	0

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	1	1	1	0	0	0	0	0	0	0
Lane usage		T	R	L	T			LR				
Vehicle Volume Averages (vph)	0	76	5	2	89	0	6	0	2	0	0	0
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 (56%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☑
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☑
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☑
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. (56%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

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Warrants Volume

Information

Analyst	Doug Iles	Intersection	Rohr & Excel
Agency/Co	RT reduction applied	Jurisdiction	
Date Performed	12/8/15	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM
East/West Street	Rohr Road	North/South Street	Excel, existing drive
File Name	DriveG_Rohr_2025background.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

Warrant 1

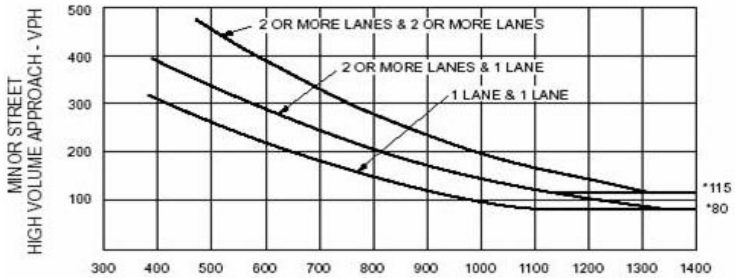
Condition A—Minimum Vehicular Volume

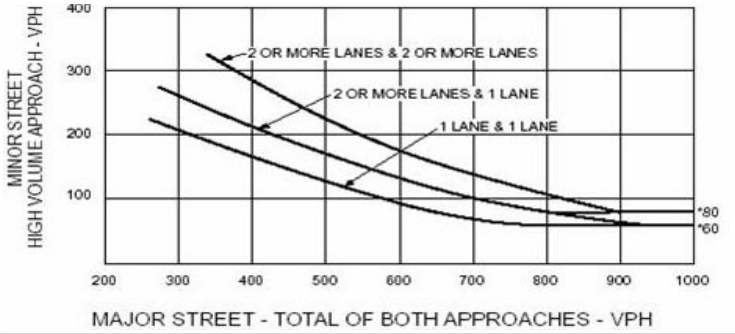
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

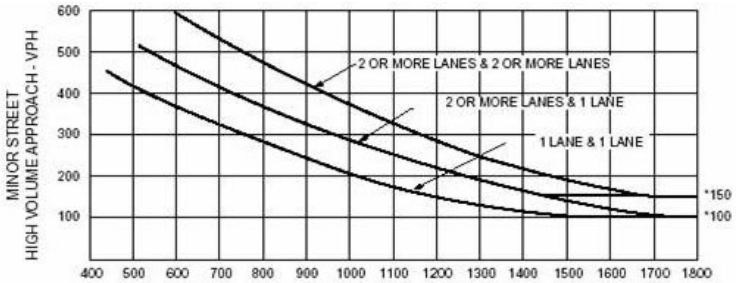
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2





Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 1 **Speed** 55 **Population** <10000

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	945	16	961	No	No	No	No	No	No	No
08-09	0	0	0	No	No	No	No	No	No	No
09-10	0	0	0	No	No	No	No	No	No	No
10-11	0	0	0	No	No	No	No	No	No	No
11-12	0	0	0	No	No	No	No	No	No	No
12-13	0	0	0	No	No	No	No	No	No	No
13-14	0	0	0	No	No	No	No	No	No	No
14-15	0	0	0	No	No	No	No	No	No	No
15-16	0	0	0	No	No	No	No	No	No	No
16-17	0	0	0	No	No	No	No	No	No	No
17-18	1142	92	1234	No	Yes	Yes	Yes	Yes	No	Yes
18-19	0	0	0	No	No	No	No	No	No	No
Totals	2087	108	2195	0	1	1	1	1	0	1

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Warrants Summary

Information			
Analyst	Doug Iles	Intersection	Rohr & Excel
Agency/Co	RT reduction applied	Jurisdiction	
Date Performed	12/8/15	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM
East/West Street	Rohr Road	North/South Street	Excel Dr - With 2 Lanes
File Name	DriveG_Rohr_2025background_With 2 Lanes.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

General				Roadway Network	
Major Street Speed (mph)	55	☑	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	0	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☐	Adequate Trials of Alternatives	5-yr Growth Factor	0

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	0	1	1	1	1	0	1	1	0	0	0	0
Lane usage		T	R	L	T		L	TR				
Vehicle Volume Averages (vph)	0	76	5	2	89	0	6	0	2	0	0	0
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☐
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. 80% Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

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Warrants Volume

Information

Analyst	Doug Iles	Intersection	Rohr & Excel
Agency/Co	RT reduction applied	Jurisdiction	
Date Performed	12/8/15	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM
East/West Street	Rohr Road	North/South Street	Excel Dr - With 2 Lanes
File Name	DriveG_Rohr_2025background_With 2 Lanes.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

Warrant 1

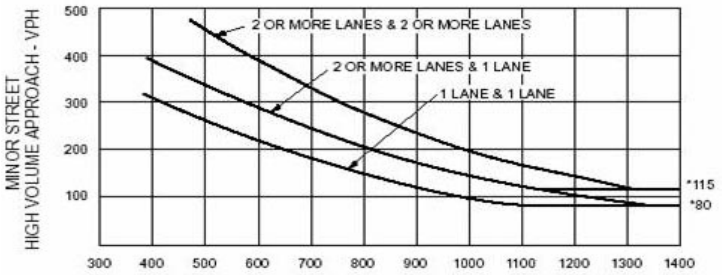
Condition A - Minimum Vehicular Volume

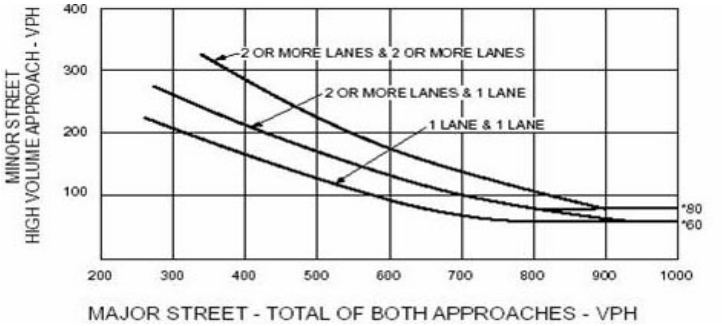
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

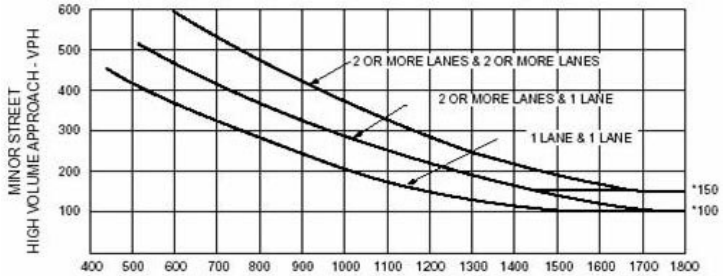
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

Warrant 2





Warrant 3



Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 2+ **Speed** 55 **Population** <10000

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	945	16	961	No	No	No	No	No	No	No
08-09	0	0	0	No	No	No	No	No	No	No
09-10	0	0	0	No	No	No	No	No	No	No
10-11	0	0	0	No	No	No	No	No	No	No
11-12	0	0	0	No	No	No	No	No	No	No
12-13	0	0	0	No	No	No	No	No	No	No
13-14	0	0	0	No	No	No	No	No	No	No
14-15	0	0	0	No	No	No	No	No	No	No
15-16	0	0	0	No	No	No	No	No	No	No
16-17	0	0	0	No	No	No	No	No	No	No
17-18	1142	92	1234	No	No	Yes	Yes	Yes	No	No
18-19	0	0	0	No	No	No	No	No	No	No
Totals	2087	108	2195	0	0	1	1	1	0	0

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Warrants Summary

Information			
Analyst	Doug Iles	Intersection	Rohr & Drive G
Agency/Co	RT reduction to PM only (SBRT)	Jurisdiction	
Date Performed	11/21/2015	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM, 56% for 8th highest
East/West Street	Rohr Road	North/South Street	Drive G/Excel Driveway
File Name	DriveG_Rohr_2025.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

General				Roadway Network	
Major Street Speed (mph)	55	☐	Population < 10,000	Two Major Routes	☐
Nearest Signal (ft)	0	☐	Coordinated Signal System	Weekend Count	☐
Crashes (per year)	0	☑	Adequate Trials of Alternatives	5-yr Growth Factor	0

Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	1	1	1	1	1	1	1	1	0	1	1	0
Lane usage	L	T	R	L	T	R	L	TR		L	TR	
Vehicle Volume Averages (vph)	17	224	10	4	255	5	25	0	10	10	0	25
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--

Warrant 1: Eight-Hour Vehicular Volume	☐
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	☐
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	☐
1 80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 2: Four-Hour Vehicular Volume	☐
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 3: Peak Hour	☐
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--	☐
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	☐
Warrant 4: Pedestrian Volume	☐
4 A. Four Hour Volumes --or--	☐
4 B. One-Hour Volumes	☐
Warrant 5: School Crossing	☐
5. Student Volumes --and--	☐
5. Gaps Same Period	☐
Warrant 6: Coordinated Signal System	☐
6. Degree of Platooning (Predominant direction or both directions)	☐
Warrant 7: Crash Experience	☐
7 A. Adequate trials of alternatives, observance and enforcement failed --and--	☑
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--	☐
7 C. 80% Volumes for Warrants 1A, 1B --or-- 4 are satisfied	☐
Warrant 8: Roadway Network	☐
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	☐
8 B. Weekend Volume (Five hours total)	☐
Warrant 9: Grade Crossing	☐
9 A. Grade Crossing within 140 ft --and--	☐
9 B. Peak-Hour Vehicular Volumes	☐

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Warrants Volume

Information

Analyst	Doug Iles	Intersection	Rohr & Drive G
Agency/Co	RT reduction to PM only (SBRT)	Jurisdiction	
Date Performed	11/21/2015	Units	U.S. Customary
Project ID	173608885 Project Eddie	Time Period Analyzed	AM, PM, 56% for 8th highest
East/West Street	Rohr Road	North/South Street	Drive G/Excel Driveway
File Name	DriveG_Rohr_2025.xhy	Major Street	East-West

Project Description *173608885 Project Eddie*

Warrant 1

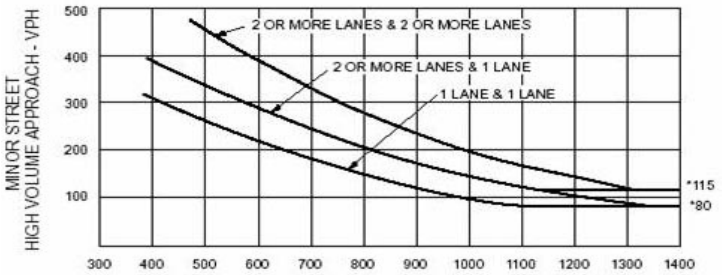
Condition A - Minimum Vehicular Volume

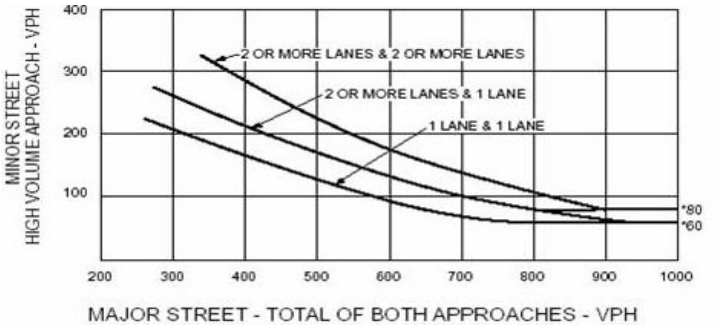
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	500	400	350	150	120	105
2 or more	1	600	480	420	150	120	105
2 or more	2 or more	600	480	420	200	160	140
1	2 or more	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic

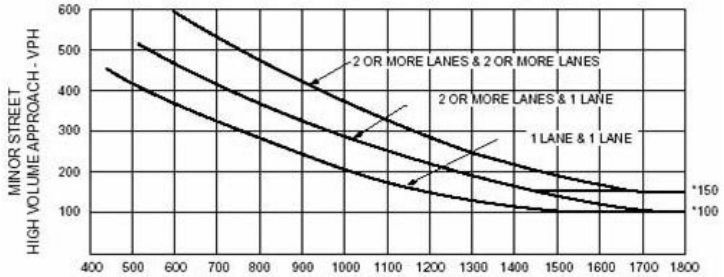
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1	1	750	600	525	75	60	53
2 or more	1	900	720	630	75	60	53
2 or more	2 or more	900	720	630	100	80	70
1	2 or more	750	600	525	100	80	70

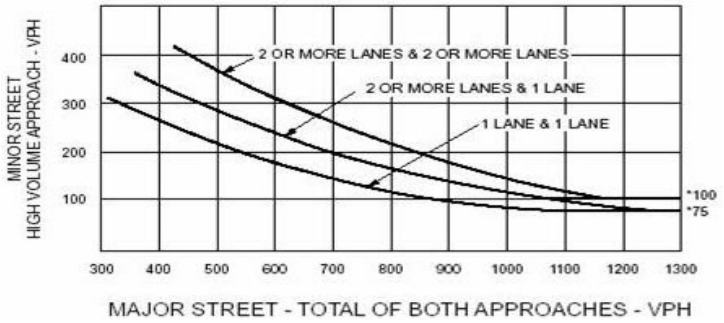
Warrant 2





Warrant 3





Volume Summary

Major Street Lanes 2+ **Minor Street Lanes** 2+ **Speed** 55 **Population** 10000+

Hours	Major Volume	Minor Volume	Total Volume	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (70%)
07-08	1036	45	1097	No	No	No	No	No	No	No
08-09	0	0	0	No	No	No	No	No	No	No
09-10	0	0	0	No	No	No	No	No	No	No
10-11	0	0	0	No	No	No	No	No	No	No
11-12	664	54	772	No	No	No	No	No	No	No
12-13	664	54	772	No	No	No	No	No	No	No
13-14	664	54	772	No	No	No	No	No	No	No
14-15	664	54	772	No	No	No	No	No	No	No
15-16	664	54	772	No	No	No	No	No	No	No
16-17	664	54	772	No	No	No	No	No	No	No
17-18	1185	96	1338	No	No	Yes	Yes	Yes	No	No
18-19	0	0	0	No	No	No	No	No	No	No
Totals	6205	465	7067	0	0	1	1	1	0	0

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Form 496-12. Right Turn Factorization Sheet

1736-08885

Route 4 Drive 6
R.T. Reduction, Applied to PM Peak Only

RIGHT TURN FACTORIZATION SHEET

Intersection: _____

Municipality: _____ County: _____

DAY	HOUR BEGIN	MINOR STREET Approach: EB Config: 3 Volumes LEFT	THROUGH	RIGHT	TOTAL	MAINLINE APPROACH VOLUME PER LANE	BASE RIGHT TURN REDUCTION %	MAINLINE CONGESTION FACTOR %	ADJUSTED RIGHT TURN REDUCTION %	ADJUSTED RIGHT TURNS	ADJUSTED MINOR STREET VOLUMES	LEFT	THRU	RIGHT	TOTAL	7A	8SA	9T	T3	(T+3)	(T+3)	3R	3L	T2	T4	BASE REDUCTION
	6:00																									
	7:00																									
	8:00																									
	9:00																									
	10:00																									
	11:00																									
	12:00				29		20	5	15	25																
	13:00																									
	14:00																									
	15:00																									
	16:00																									
	17:00	28	0	12	97	477	60	5	55	32																
	18:00																									
	19:00																									
	20:00																									
	21:00																									

EXCEL
DRIVE 6

Mainline Congestion Factors	
VOLUME	FACTOR (%)
0-399	0
400-499	5
500-599	10
600-699	15
700-799	20
800-899	25
900-999	30
1000-1099	35
1100-1199	40
1200-1299	45
1300-1399	50
1400-1499	55

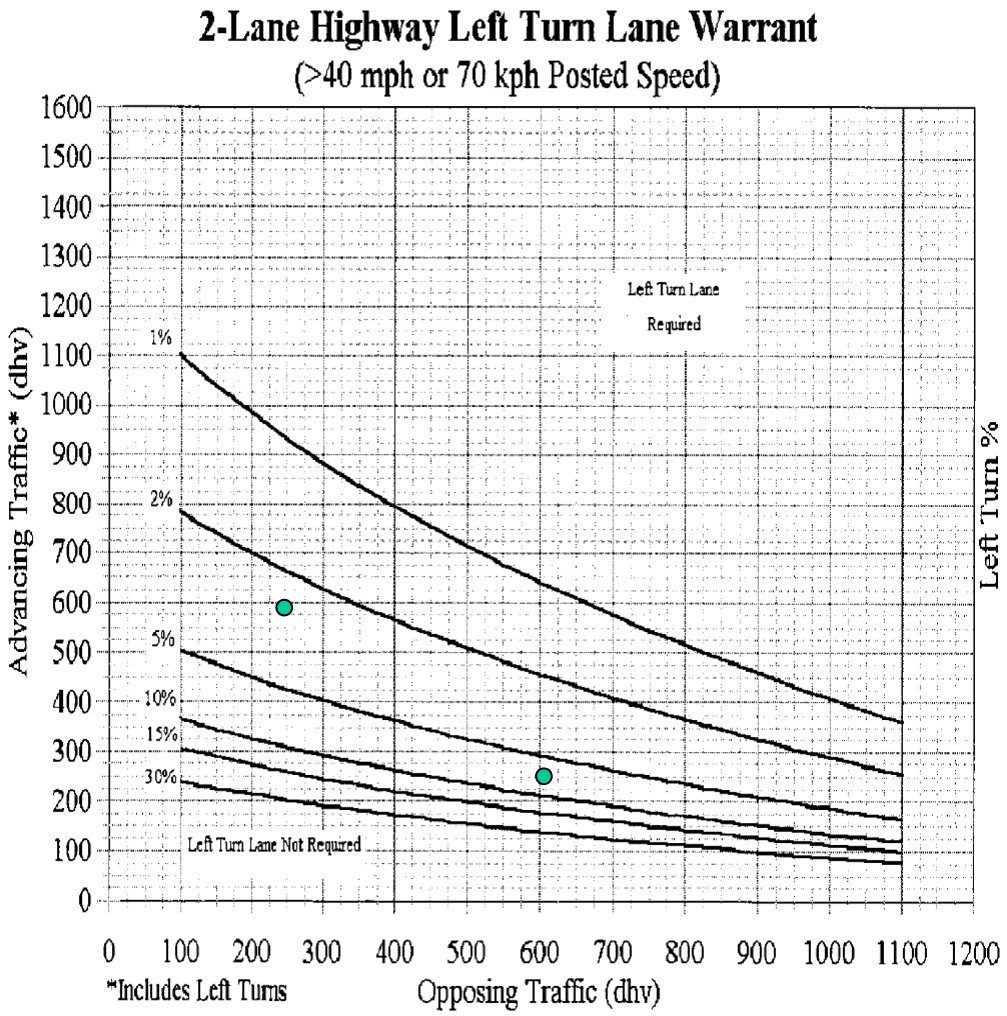
REVIEW INFORMATION
Counts Used:
Count Dated:
Date Reviewed:
Reviewed By:

EXCEL PM
DRIVE 6 PM

Appendix E

Turn Lane Warrants

APPROACH:	Eastbound
OPPOSING TRAFFIC:	AM- 247, PM-614
ADVANCING TRAFFIC:	AM-592, PM-269
LEFT-TURN TRAFFIC:	AM-10, PM- 0
LEFT TURN %:	AM-2%, PM-7%
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-NO, PM- NO**



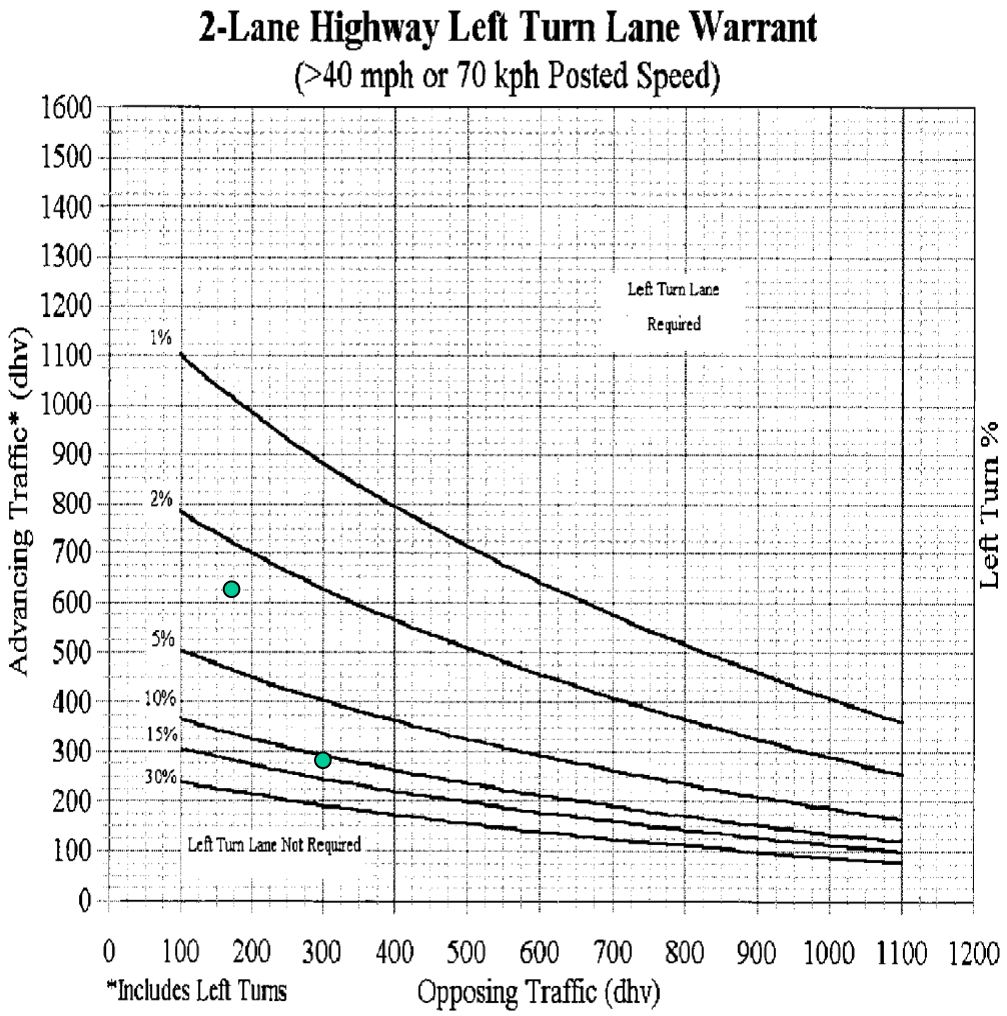
October 2004

PROJECT EDDIE

Toy Road & Drive E

Stantec

APPROACH:	Eastbound
OPPOSING TRAFFIC:	AM- 178, PM-298
ADVANCING TRAFFIC:	AM-604, PM-292
LEFT-TURN TRAFFIC:	AM-0, PM- 19
LEFT TURN %:	AM-0%, PM-7%
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-NO, PM- NO**



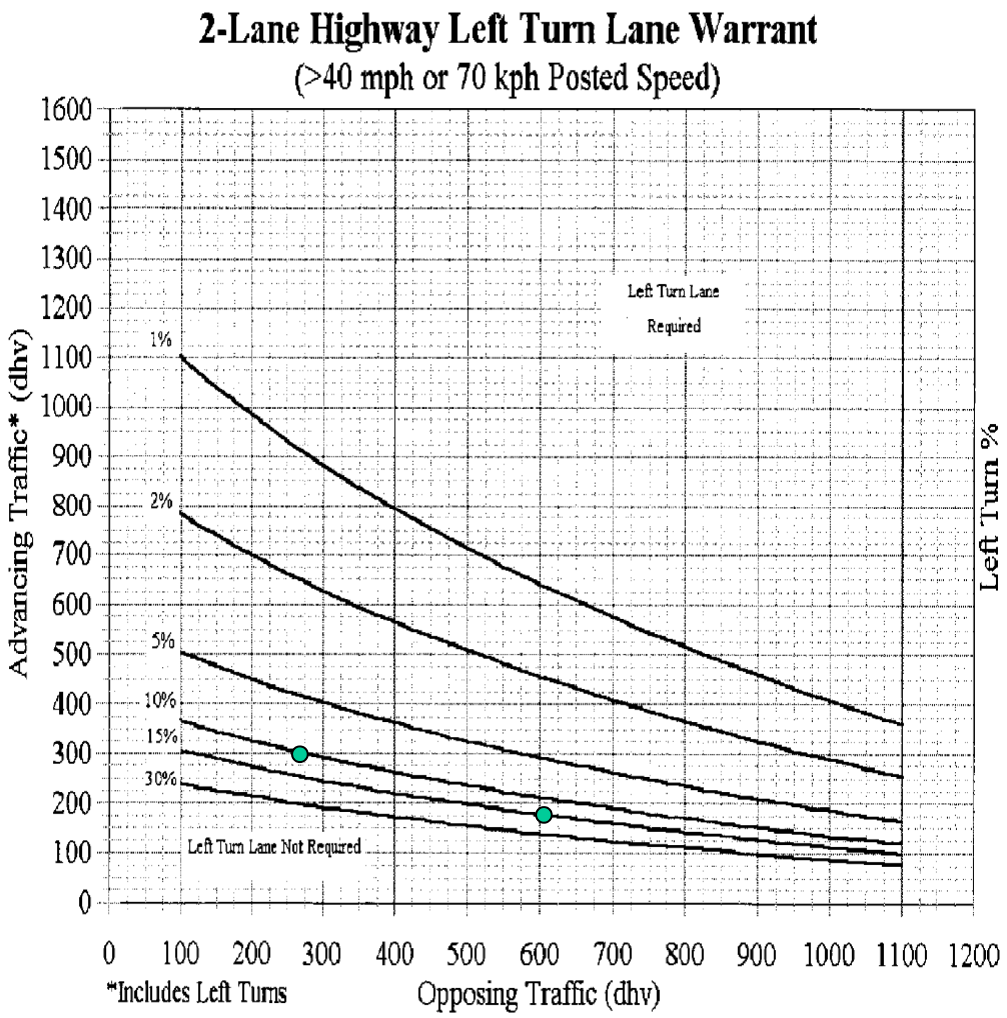
October 2004

PROJECT EDDIE

Toy Road & Drive F/Gateway

Stantec

APPROACH:	Westbound
OPPOSING TRAFFIC:	AM- 604, PM-269
ADVANCING TRAFFIC:	AM-178, PM-292
LEFT-TURN TRAFFIC:	AM-13, PM- 0
LEFT TURN %:	AM-7%, PM-0%
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-NO, PM- NO**



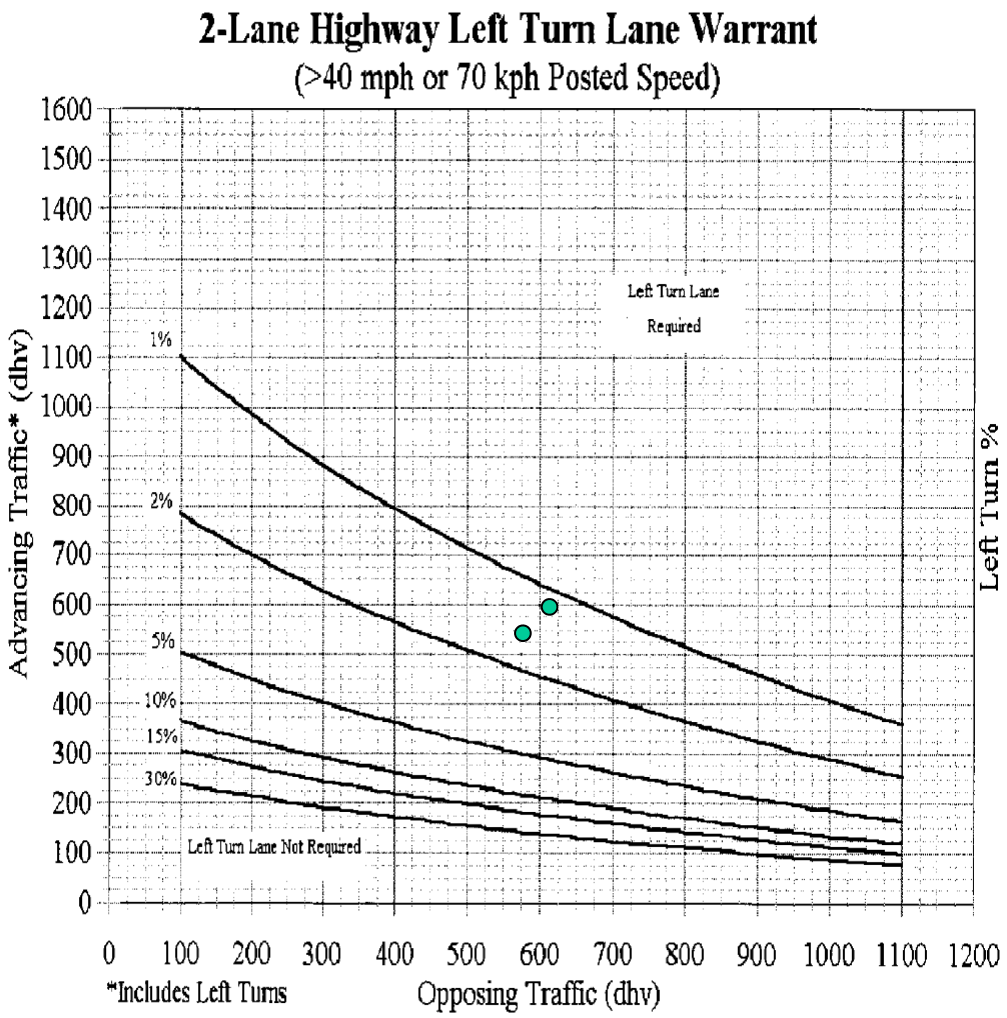
October 2004

PROJECT EDDIE

Toy Road & Drive F/Gateway

Stantec

APPROACH:	Eastbound
OPPOSING TRAFFIC:	AM- 572, PM-636
ADVANCING TRAFFIC:	AM-530, PM-590
LEFT-TURN TRAFFIC:	AM-74, PM- 17
LEFT TURN %:	AM-14%, PM-3%
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-Yes, PM- Yes**



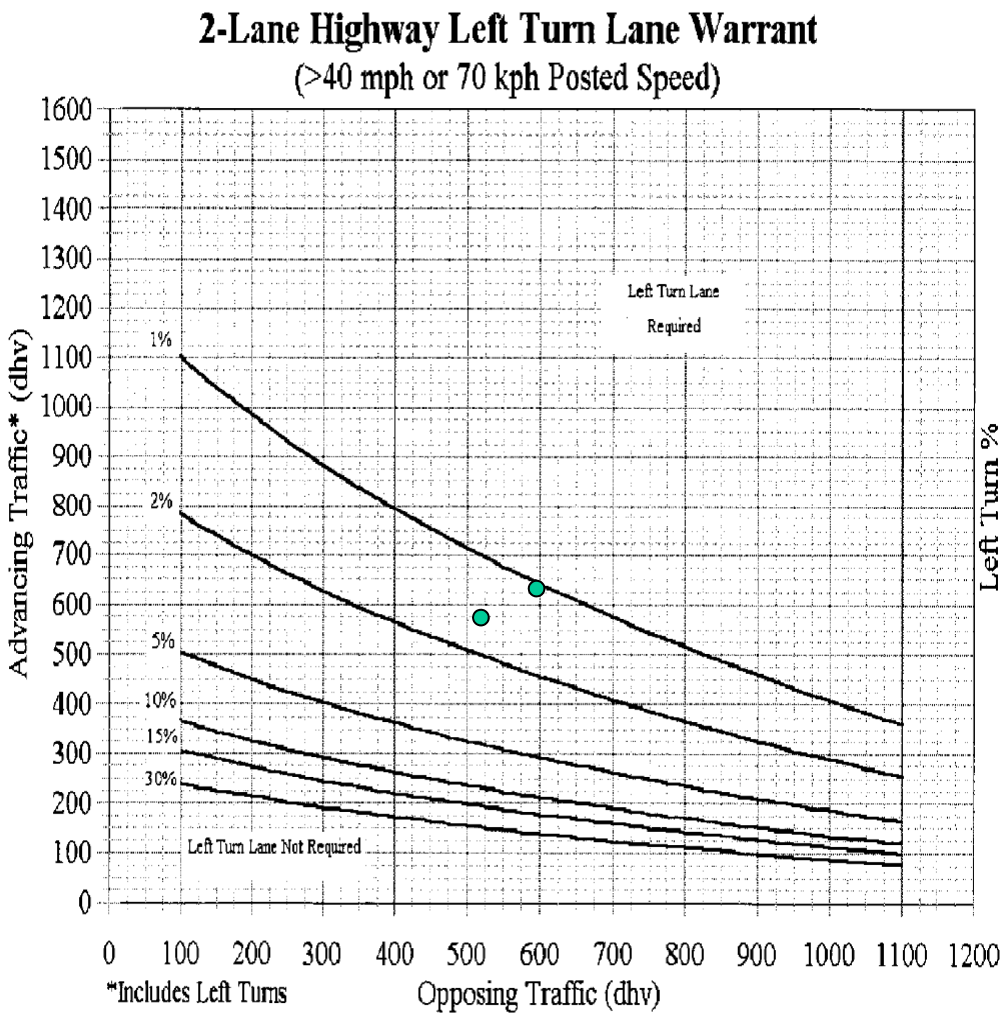
October 2004

PROJECT EDDIE

Rohr Road & Drive G

Stantec

APPROACH:	Westbound
OPPOSING TRAFFIC:	AM- 530, PM-590
ADVANCING TRAFFIC:	AM-572, PM-636
LEFT-TURN TRAFFIC:	AM-26, PM- 5
LEFT TURN %:	AM-5%, PM-1%
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-Yes, PM- Yes**



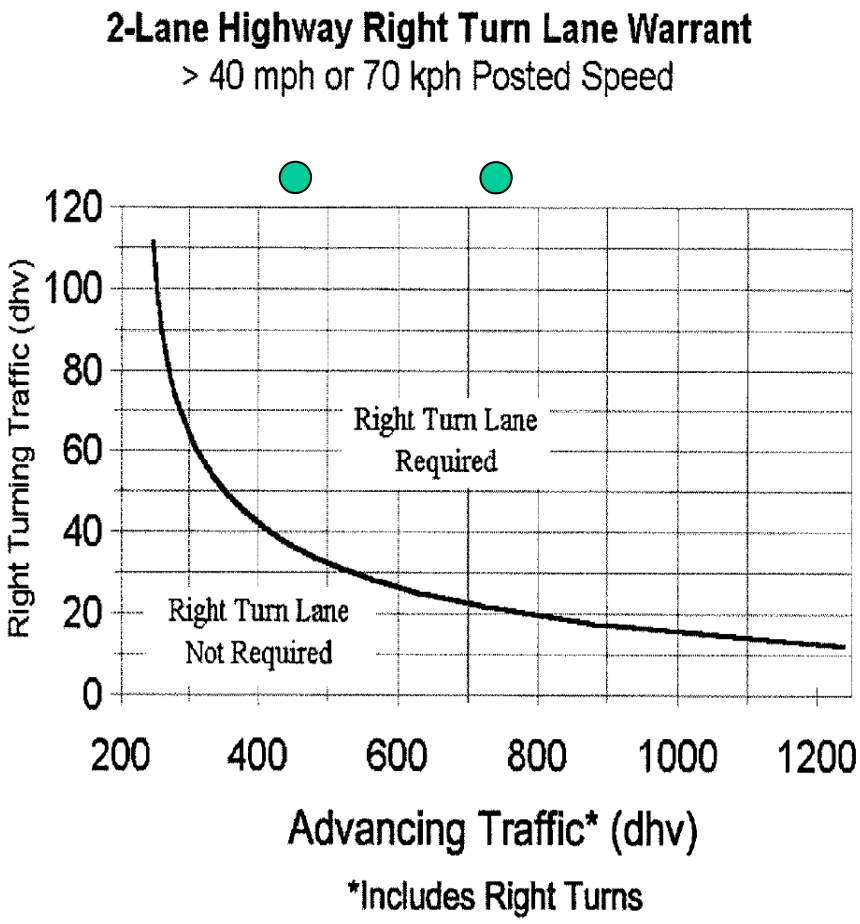
October 2004

PROJECT EDDIE

Rohr Road & Drive G

Stantec

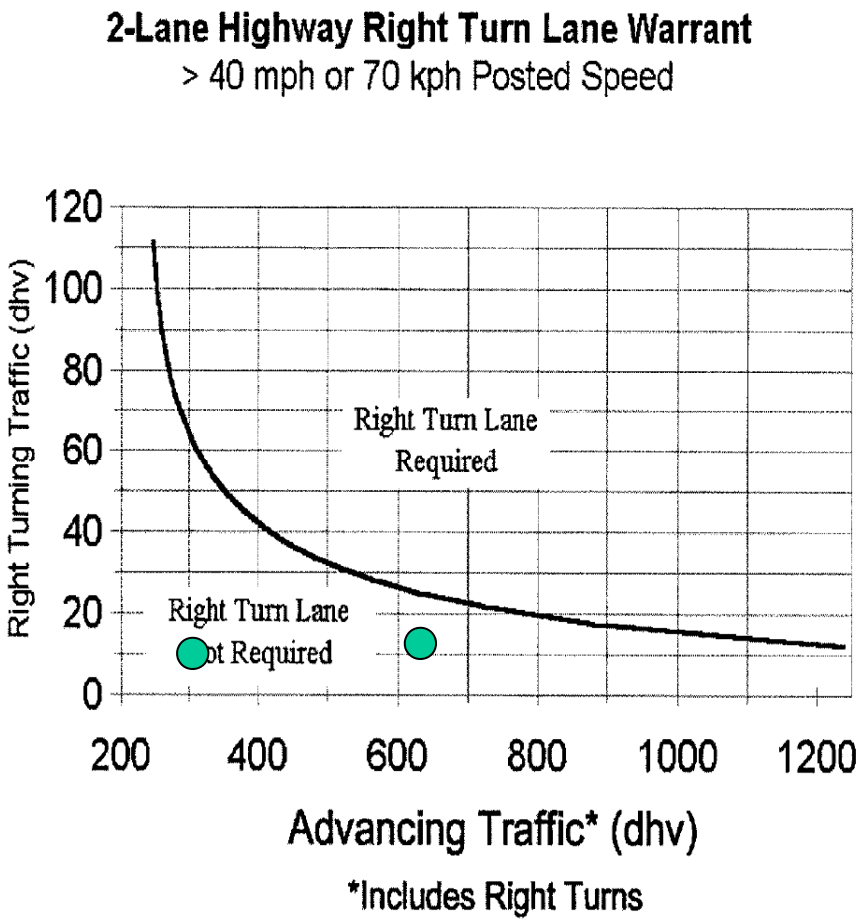
INTERSECTION:	Toy Road & Drive B
APPROACH:	Eastbound
ADVANCING TRAFFIC:	AM- 761, PM-453
RIGHT TURN TRAFFIC:	AM- 132, PM-152
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-Yes PM- Yes**



October 2004

Stantec

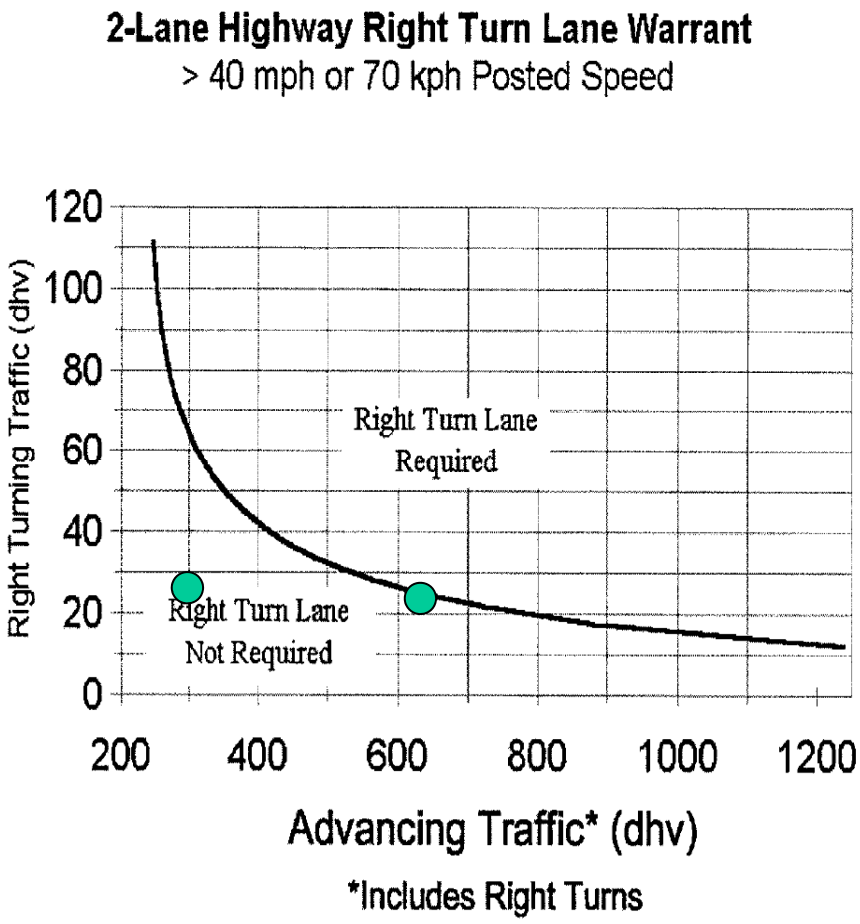
INTERSECTION:	Toy Road & Drive C
APPROACH:	Eastbound
ADVANCING TRAFFIC:	AM- 629, PM-301
RIGHT TURN TRAFFIC:	AM- 12, PM-10
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-No PM- No**



October 2004

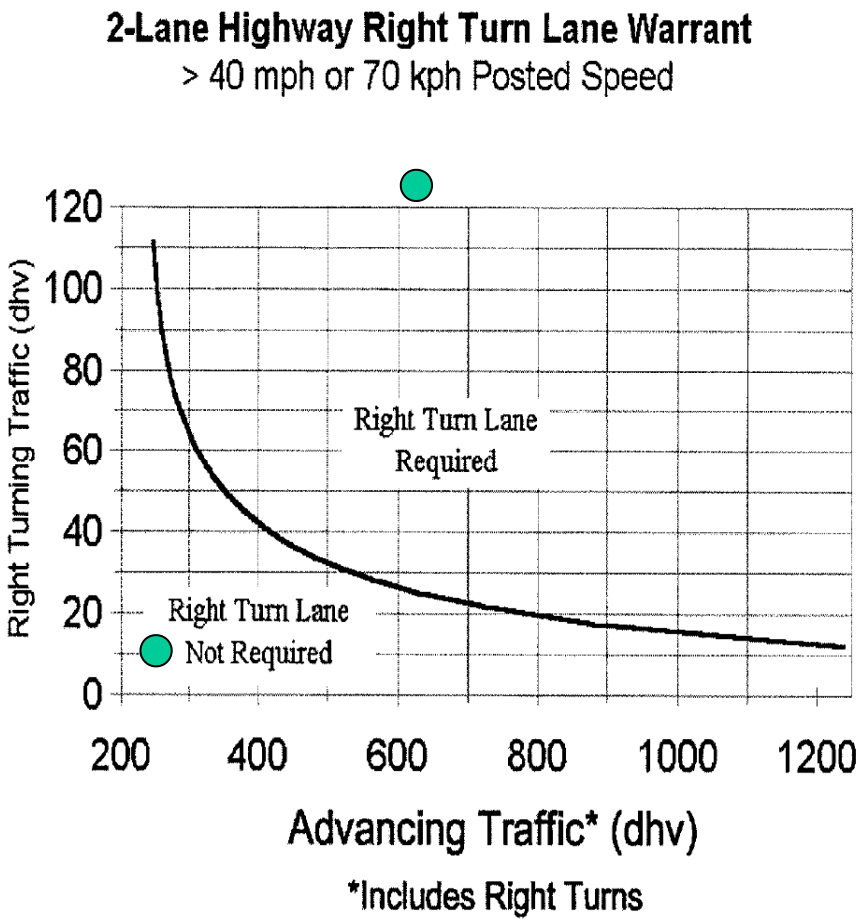
Stantec

INTERSECTION:	Toy Road & Drive D
APPROACH:	Eastbound
ADVANCING TRAFFIC:	AM- 617, PM-291
RIGHT TURN TRAFFIC:	AM- 25, PM-22
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-No PM- No**



October 2004

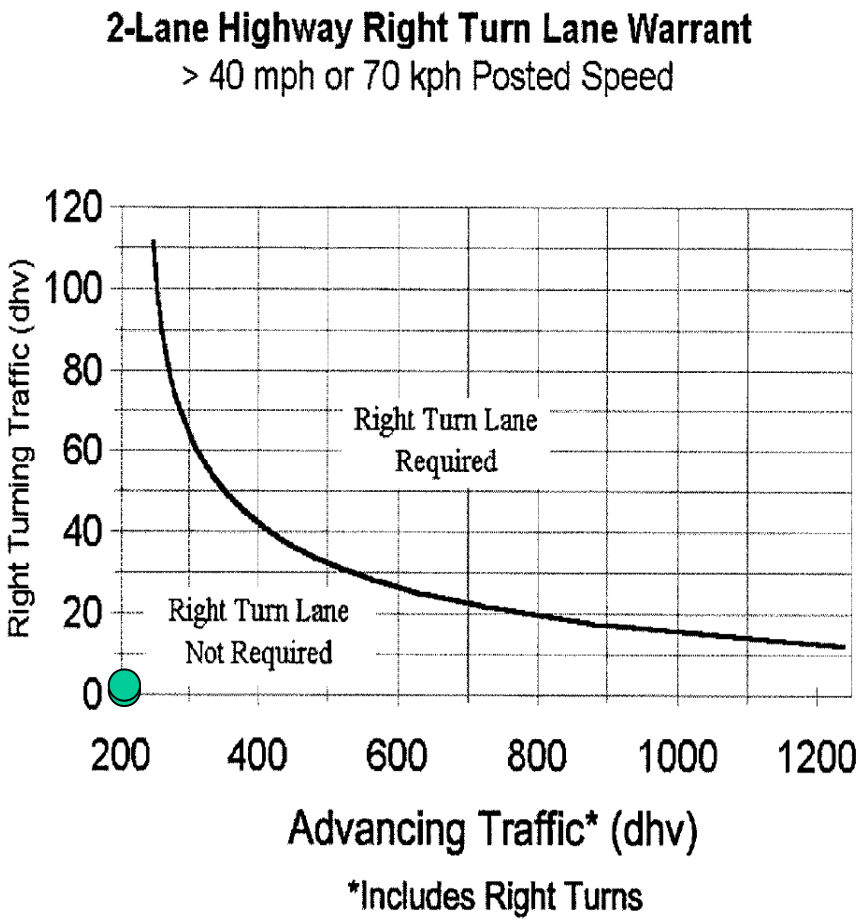
INTERSECTION:	Toy Road & Drive E
APPROACH:	Westbound
ADVANCING TRAFFIC:	AM- 247, PM-614
RIGHT TURN TRAFFIC:	AM- 10, PM-153
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-No PM- Yes**



October 2004

Stantec

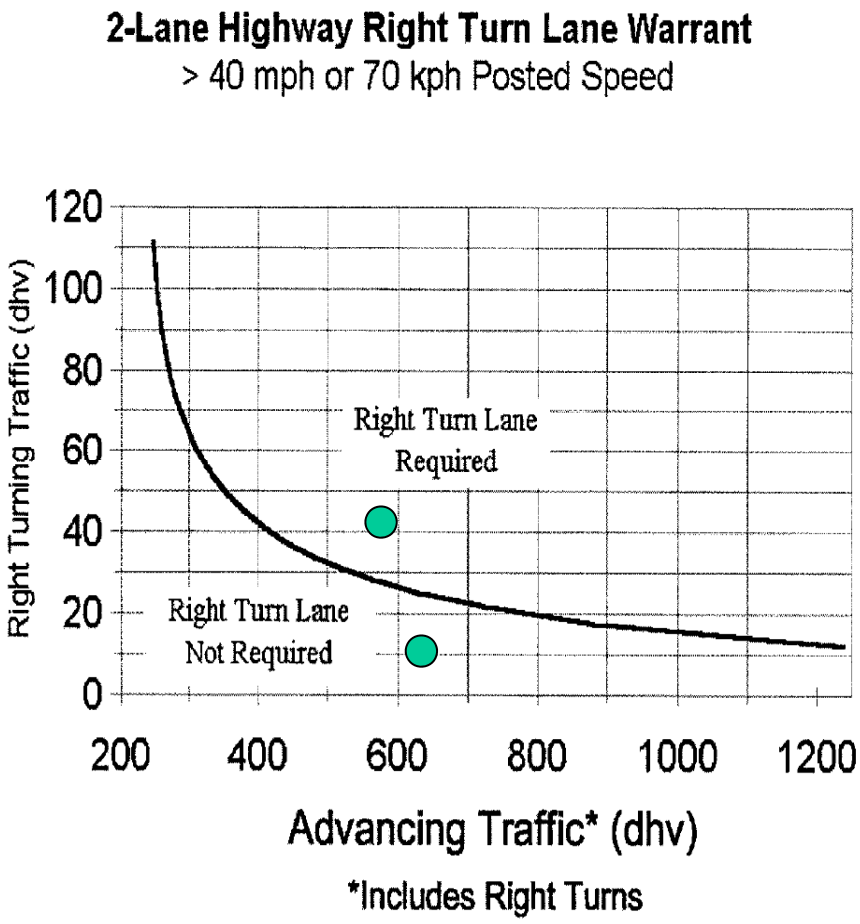
INTERSECTION:	Toy Road & Drive F
APPROACH:	Westbound
ADVANCING TRAFFIC:	AM- 178, PM-292
RIGHT TURN TRAFFIC:	AM- 1, PM-1
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-No PM- No**



October 2004

Stantec

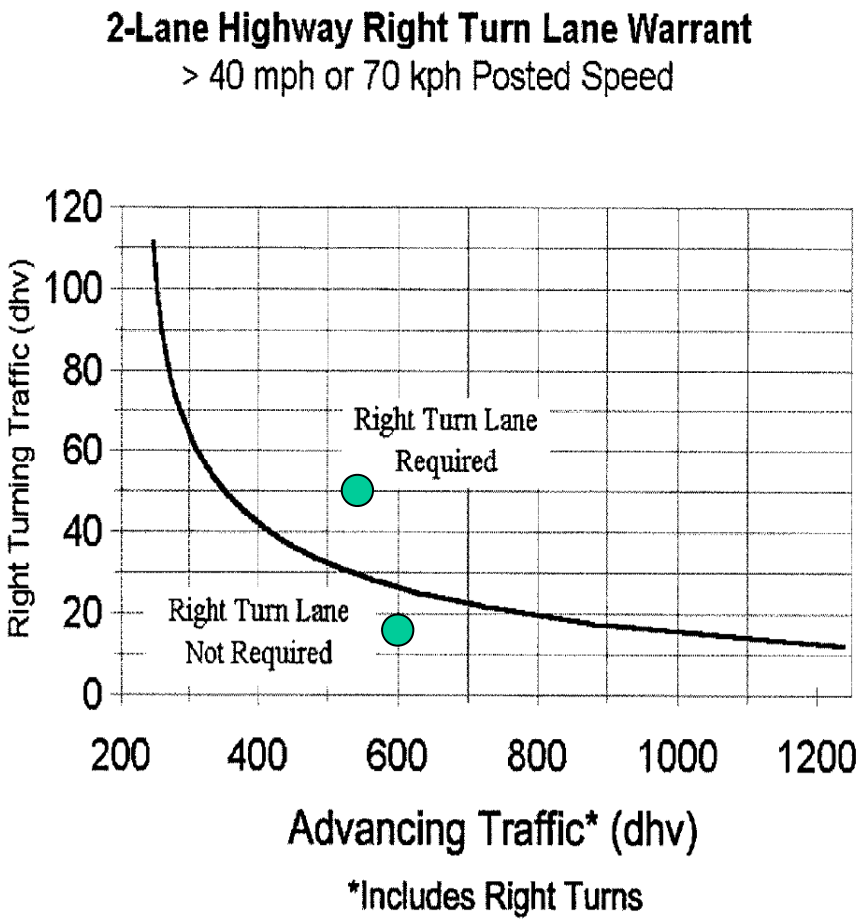
INTERSECTION:	Rohr Road & Drive G
APPROACH:	Westbound
ADVANCING TRAFFIC:	AM- 572, PM-636
RIGHT TURN TRAFFIC:	AM- 44, PM-10
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-Yes PM- No**



October 2004

Stantec

INTERSECTION:	Rohr Road & Drive G
APPROACH:	Eastbound
ADVANCING TRAFFIC:	AM- 530, PM-590
RIGHT TURN TRAFFIC:	AM- 50, PM-16
POSTED SPEED:	55 MPH
MEET WARRANT?	**AM-Yes PM- No**



October 2004

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Appendix F

Turn Lane Calculations

INTERSECTION - Rohr Road & Alum Creek Drive (Background)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	98	EBL	60	1	2	AM	79	48	395	200	NO	433
						PM	104	109	433	200	NO	
		EBR		1	0	AM	60	19	N/A	N/A	N/A	N/A
						PM	93	11	N/A	N/A	N/A	
		WBL	60	1	1	AM	97	11	345	200	NO	356
						PM	99	126	356	200	NO	
		WBR		1	2	AM	97	281	508	200	NO	595
						PM	99	486	595	200	NO	
		NBL	60	2	1	AM	726	11	345	388	YES	413
						PM	727	22	345	413	YES	
		NBR		2	1	AM	726	66	345	388	YES	413
						PM	727	69	345	413	YES	
		SBL	60	2	2	AM	659	449	583	363	NO	583
						PM	564	366	545	325	NO	
		SBR		2	1	AM	659	131	356	363	YES	363
						PM	564	55	345	325	NO	

INTERSECTION - Rohr Road & Alum Creek Drive (Option 1)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	94	EBL	60	1	2	AM	79	48	395	200	NO	420
						PM	104	109	420	200	NO	
		EBR		1	0	AM	60	19	N/A	N/A	N/A	N/A
						PM	93	11	N/A	N/A	N/A	
		WBL	60	1	1	AM	97	34	345	200	NO	381
						PM	99	174	381	200	NO	
		WBR		1	2	AM	97	292	508	200	NO	583
						PM	99	510	583	200	NO	
		NBL	60	3	1	AM	888	11	345	317	NO	345
						PM	843	22	345	300	NO	
		NBR		3	0	AM	776	112	N/A	N/A	N/A	N/A
						PM	752	91	N/A	N/A	N/A	
		SBL	60	3	2	AM	683	471	583	258	NO	583
						PM	618	376	533	233	NO	
		SBR		3	1	AM	683	131	356	258	NO	356
						PM	618	55	345	233	NO	

INTERSECTION - Rohr Road & Alum Creek Drive (Option 2)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	98	EBL	60	1	2	AM	79	48	395	200	NO	420
						PM	104	109	420	200	NO	
		EBR		1	0	AM	60	19	N/A	N/A	N/A	N/A
						PM	93	11	N/A	N/A	N/A	
		WBL	60	1	1	AM	97	34	345	200	NO	356
						PM	99	174	356	200	NO	
		WBR		1	2	AM	97	292	508	200	NO	570
						PM	99	510	570	200	NO	
		NBL	60	3	1	AM	888	11	345	325	NO	345
						PM	843	22	345	267	NO	
		NBR		3	0	AM	776	112	N/A	N/A	N/A	N/A
						PM	752	91	N/A	N/A	N/A	
		SBL	60	3	2	AM	683	471	583	267	NO	583
						PM	618	376	520	217	NO	
		SBR		3	1	AM	683	131	356	267	NO	356
						PM	618	55	345	217	NO	

INTERSECTION - Toy Road & Alum Creek Drive (Background)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	98	EBL	35	1	2	AM	21	71	150	100	NO	338
						PM	147	434	338	250	NO	
		EBR		1	0	AM	11	10	N/A	N/A	N/A	N/A
						PM	85	62	N/A	N/A	N/A	
		WBL	35	1	2	AM	45	39	150	150	YES	150
						PM	19	66	150	100	NO	
		WBR		1	2	AM	45	107	175	150	NO	200
						PM	19	162	200	100	NO	
		NBL	60	2	1	AM	923	51	345	475	YES	625
						PM	1264	25	345	625	YES	
		NBR		2	1	AM	923	81	345	475	YES	625
						PM	1264	33	345	625	YES	
		SBL	60	2	2	AM	1190	279	508	575	YES	575
						PM	857	73	420	463	YES	
		SBR		2	1	AM	1190	468	656	575	NO	650
						PM	857	260	506	463	NO	

INTERSECTION - Toy Road & Alum Creek Drive (Option 1)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	94	EBL	35	1	2	AM	11	77	150	100	NO	325
						PM	85	453	325	200	NO	
		EBR		1	1	AM	11	11	100	100	YES	200
						PM	85	67	150	200	YES	
		WBL	35	1	2	AM	45	91	175	150	NO	188
						PM	19	144	188	100	NO	
		WBR		1	2	AM	45	288	263	150	NO	350
						PM	19	546	350	100	NO	
		NBL	60	3	1	AM	911	55	345	317	NO	392
						PM	1245	28	345	392	YES	
		NBR		3	1	AM	911	150	356	317	NO	392
						PM	1245	98	345	392	YES	
		SBL	60	3	2	AM	1183	627	645	383	NO	645
						PM	838	254	483	292	NO	
		SBR		3	1	AM	1183	483	656	383	NO	650
						PM	838	273	456	292	NO	

INTERSECTION - Toy Road & Alum Creek Drive (Option 2)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	98	EBL	35	1	2	AM	21	71	150	100	NO	288
						PM	147	434	288	225	NO	
		EBR		1	0	AM	11	10	N/A	N/A	N/A	N/A
						PM	85	62	N/A	N/A	N/A	
		WBL	35	1	2	AM	45	77	175	150	NO	175
						PM	19	104	175	100	NO	
		WBR		1	2	AM	45	192	225	150	NO	225
						PM	19	271	225	100	NO	
		NBL	60	3	1	AM	1013	51	345	350	YES	425
						PM	1539	25	345	425	YES	
		NBR		3	1	AM	1013	114	356	350	NO	425
						PM	1539	86	345	425	YES	
		SBL	60	3	2	AM	1447	378	545	475	NO	545
						PM	933	172	433	292	NO	
		SBR		3	1	AM	1447	468	656	475	NO	650
						PM	933	260	431	292	NO	

INTERSECTION - Gateway Court & Alum Creek Drive (Option 2)

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	98	EBL	35	1	1	AM	1	6	100	100	YES	100
						PM	5	19	100	100	YES	
		EBR		1	0	AM	0	1	N/A	N/A	N/A	N/A
						PM	0	5	N/A	N/A	N/A	
		WBL	35	1	1	AM	0	14	100	100	YES	100
						PM	0	40	100	100	YES	
		WBR		1	1	AM	0	96	200	100	NO	325
						PM	0	275	325	100	NO	
		NBL	60	3	1	AM	1112	4	345	383	YES	383
						PM	1368	3	345	383	YES	
		NBR		3	0	AM	1076	36	N/A	N/A	N/A	N/A
						PM	1356	12	N/A	N/A	N/A	
		SBL	60	3	2	AM	1285	249	483	425	NO	483
						PM	1017	82	395	308	NO	
		SBR		3	0	AM	1270	15	N/A	N/A	N/A	N/A
						PM	1004	13	N/A	N/A	N/A	

INTERSECTION - Toy Road & Drive B - Option 1

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	60	EBL	35	1	0	AM	656	0	N/A	N/A	N/A	N/A
						PM	285	0	N/A	N/A	N/A	
		EBR		1	1	AM	656	132	200	450	N/A	200
						PM	285	152	200	250	N/A	
		WBL	35	1	0	AM	301	0	N/A	N/A	N/A	N/A
						PM	562	0	N/A	N/A	N/A	
		WBR		1	0	AM	301	0	N/A	N/A	N/A	N/A
						PM	562	0	N/A	N/A	N/A	
		NBL	60	0	1	AM	0	123	200	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	147	200	#DIV/0!	#DIV/0!	
		NBR		0	1	AM	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	0	#DIV/0!	#DIV/0!	#DIV/0!	
		SBL	60	0	0	AM	0	0	N/A	N/A	N/A	N/A
						PM	0	0	N/A	N/A	N/A	
		SBR		0	0	AM	0	0	N/A	N/A	N/A	N/A
						PM	0	0	N/A	N/A	N/A	

INTERSECTION - Toy Road & Drive B - Option 2

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	60	EBL	35	1	0	AM	371	0	N/A	N/A	N/A	N/A
						PM	191	0	N/A	N/A	N/A	
		EBR		1	1	AM	371	132	200	325	N/A	200
						PM	191	152	200	225	N/A	
		WBL	35	1	0	AM	191	0	N/A	N/A	N/A	N/A
						PM	247	0	N/A	N/A	N/A	
		WBR		1	0	AM	191	0	N/A	N/A	N/A	N/A
						PM	247	0	N/A	N/A	N/A	
		NBL	60	0	1	AM	0	123	200	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	147	200	#DIV/0!	#DIV/0!	
		NBR		0	1	AM	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	0	#DIV/0!	#DIV/0!	#DIV/0!	
		SBL	60	0	0	AM	0	0	N/A	N/A	N/A	N/A
						PM	0	0	N/A	N/A	N/A	
		SBR		0	0	AM	0	0	N/A	N/A	N/A	N/A
						PM	0	0	N/A	N/A	N/A	

INTERSECTION - Toy Road & Drive E/Westpoint - Option 1

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	60	EBL	60	1	0	AM	609	10	N/A	N/A	N/A	N/A
						PM	253	0	N/A	N/A	N/A	
		EBR		1	0	AM	597	22	N/A	N/A	N/A	N/A
						PM	234	19	N/A	N/A	N/A	
		WBL	60	1	0	AM	242	0	N/A	N/A	N/A	N/A
						PM	489	0	N/A	N/A	N/A	
		WBR		1	1	AM	242	10	345	250	N/A	345
						PM	489	153	345	400	N/A	
		NBL	30	0	1	AM	0	8	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	27	100	#DIV/0!	#DIV/0!	
		NBR		0	1	AM	0	0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	0	#DIV/0!	#DIV/0!	#DIV/0!	
		SBL	30	1	0	AM	37	44	N/A	N/A	N/A	N/A
						PM	0	48	N/A	N/A	N/A	
		SBR		1	0	AM	44	37	N/A	N/A	N/A	N/A
						PM	48	0	N/A	N/A	N/A	

INTERSECTION - Rohr Road & Drive G - Options 1 & 2

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	60	EBL	60	1	1	AM	392	68	345	325	N/A	345
						PM	526	32	345	425	N/A	
		EBR		1	1	AM	392	50	345	325	N/A	345
						PM	526	16	345	425	N/A	
		WBL	60	1	1	AM	477	26	345	400	N/A	345
						PM	595	5	345	450	N/A	
		WBR		1	1	AM	477	23	345	400	N/A	345
						PM	595	11	345	450	N/A	
		NBL	30	0	1	AM	0	11	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	67	150	#DIV/0!	#DIV/0!	
		NBR		0	1	AM	0	5	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	29	100	#DIV/0!	#DIV/0!	
		SBL	30	0	1	AM	0	19	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	25	100	#DIV/0!	#DIV/0!	
		SBR		0	1	AM	0	34	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	72	150	#DIV/0!	#DIV/0!	

INTERSECTION - Rohr Road & Drive G - Background

Analysis Year	Cycle Length (Secs.)	Movement	Design Speed (mph)	# of Lanes		Analysis Peak Period	Thru Lane DHV	Turn Lane DHV	Calculated Turn Lane (FT)	Thru Movement Backup (FT)	Blocked	Required Turn Lane (FT)
				Thru	Turn							
2025	60	EBL	60	1	1	AM	392	68	345	375	N/A	345
						PM	526	32	345	425	N/A	
		EBR		1	0	AM	392	50	N/A	N/A	N/A	N/A
						PM	526	16	N/A	N/A	N/A	
		WBL	60	1	0	AM	477	26	N/A	N/A	N/A	N/A
						PM	595	5	N/A	N/A	N/A	
		WBR		1	1	AM	477	23	345	400	N/A	345
						PM	595	11	345	425	N/A	
		NBL	30	0	1	AM	0	11	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	67	150	#DIV/0!	#DIV/0!	
		NBR		0	1	AM	0	5	100	#DIV/0!	#DIV/0!	#DIV/0!
						PM	0	29	100	#DIV/0!	#DIV/0!	
		SBL	30	0	0	AM	0	0	N/A	N/A	N/A	N/A
						PM	0	25	N/A	N/A	N/A	
		SBR		0	0	AM	0	34	N/A	N/A	N/A	N/A
						PM	0	72	N/A	N/A	N/A	