TRAFFIC IMPACT STUDY

PINNACLE ATHLETIC CAMPUS

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Prepared for:
Pinnacle Athletic Campus

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1.0 INTRODUCTION

The Pinnacle Athletic Campus (PAC) includes the development of a 95 acre parcel into a mixed use development focused on the various aspects of health and wellness. The site is located at the Southwest corner of Main Street Fishers and Phillips Road in the Town of Victor. The Master Plan for the development includes a variety of land uses including an indoor sports and recreation facility, outdoor sports fields, a Town Parks and Recreation building, office space and two hotels. Currently, the majority of the uses, although planned, are speculative and being used for planning purposes to conduct a SEQRA review in conjunction with the rezoning of the parcel from Light Industrial to a Planned District Development (PDD). The indoor sports facility located at the southeast corner of the parcel is the first definitive use which will be constructed in the PDD. The first "Phase" includes a 90,000 sf portion of that building with subsequent parking and infrastructure.

The impact of the proposed development on the local transportation system will be analyzed with respect to existing conditions, projected background traffic volumes and both a Phased and Fully Developed PAC.

Data from field observations, a review of the *Lehigh Crossing Development Traffic Impact Study* prepared by SRF Associates in 2010, and a computer analysis using Synchro7 Traffic were all used to analyze existing, background and future conditions. The results of the analysis were then used to determine if any mitigation is required in order to account for the increase in traffic resulting from the proposed developments. Additionally, the *Town and Village of Victor, New York, Comprehensive Plan, Transportation Overview* was examined to determine the regional transportation goals and policies of the community.

2.0 EXECUTIVE SUMMARY

In preparation of the PAC PDD Traffic Impact Study, we obtained and referenced several of the local and regional traffic studies recently completed. Acquiring knowledge from these studies gave us a broader understanding of the traffic patterns, capacities, and problem areas within the vicinity of the PAC PDD. The PAC PDD confirms some of the traffic problems found in the previous reports under current conditions. While the traffic impacts associated with Phase 1 of the PAC project are immeasurable, the full build out scenario will certainly contribute to existing traffic problem areas, just as other neighboring developments will as they develop.

As it relates to traffic impact, the amount of traffic that the PAC PDD generates is significantly less than what is allowed by the current zoning. Based on the parcel size, useable area and maximum zoning limits (40% building coverage) an industrial facility generating over 1,000 trips during the PM peak hour could conceivably be constructed on the site. The current proposal is, in comparison, projected to generate a maximum of 385 trips during the PM peak hour.

The marginal levels of service at several of the studied intersections and roadways warrant future investigation and study as the project develops. For Phase 1 of the project, several minor improvements are recommended.

During the first Phase of the PAC (90,000 sf of indoor recreation), signal timing adjustments are recommended at the intersection of Main Street Fishers and Route 96 and at the intersection of Main Street Fishers and Phillips Road. Additionally, a two way left turn lane is recommended to be striped in place of the existing southbound left turn lanes on Phillips Road north of the former rail road tracks and adjacent to the project entrance.

After Phase 1 of the development is complete, an update to the Traffic Impact Study (TIS) will be required in order to access the actual trips generated by Lehigh Crossing and the PAC development to better project future traffic volumes generated by the proposal. The update will assess those areas identified in this study as potentially requiring improvements once neighboring developments and PAC are complete.

3.0 EXISTING CONDITIONS

The site is a ±95 acre parcel that is undeveloped. It is surrounded by single family homes to the north and west, undeveloped land to the south and industrial land to the north and east. Major points of attraction in the area include Downtown Rochester, the Village of Victor, the Finger Lakes, Eastview Mall and other commercial uses along State Route 96.

3.1 Existing Roadways

NYS Route 96 (Pittsford-Victor Road) is generally oriented north-south in the vicinity of the project. From the commercial areas north of the NYS Thruway past Main Street Fishers Road, Route 96 is a four lane roadway. South of Main Street Fishers it transitions to single travel lane in each direction with a central two way left turn lane (TWLTL). The posted speed limit is 50 miles per hour with an ADT of 23,045[1] just south of Main Street Fishers. Route 96 is owned and maintained by the New York State Department of Transportation (NYSDOT). According to the Town and Village Comprehensive plan, Route 96 is classified as an Urban Minor Arterial and is the "backbone of the transportation network".

Main Street Fishers (Country Road 42) is classified as an Urban Collector and is oriented east-west. It runs between Mile Square Road and Route 96 with one lane in each direction and a posted speed limit of 45 miles per hour. Main Street Fishers is owned and maintained by Ontario County Public Works. The Town and Village comprehensive plan identified the stretch between Phillips Road and Route 96 as operating near capacity. The stretch of road between Wagnum Road and Phillips Road has an ADT of 3,592 and the stretch between Phillips and 96 has an ADT of 12,600.

NYS Route 251 is also oriented east-west and runs between Route 96 and the Village of Scottsville. In the project area it is one lane in each direction with a posted speed limit of 50 miles per hour and an ADT of 8,347 between Wagnum Road and Phillips Road. Route 251 is owned and maintained by the New York State Department of Transportation (NYSDOT).

Phillips Road is a Town Road that is oriented north-south with one lane in each direction. It connects Main Street Fishers to NYS Route 251. The posted speed limit is 50 mph and the ADT is 7,150. Phillips Road provides access to several moderate to large industrial complexes between the project site and route 96.

Wagnum Road is also a Town Road that is oriented north-south with one lane in each direction. It also connects Main Street Fishers to NYS Route 251. The posted speed limit is 45 mph with an ADT of 2,040. The Lehigh Crossing industrial park is situated off of Wagnum Road on the west side.

3.2 Existing Intersections

Route 96 at Main Street Fishers/ – Four-way signalized intersection. Route 96 Southbound has four lanes at the intersection, a dedicated right turn lane, dedicated left turn lane and two thru lanes. Route 96 northbound has a dedicated left turn lane, a thru lane and a shared thru/right lane. The westbound approach (Rowley Road) has a dedicated left turn lane and a shared thru/right lane. Lastly, the Main Street Fishers approach has a dedicated left turn lane, shared left/thru lane and a dedicated right turn lane. The signal is actuated.

Main Street Fishers at Phillips Road – Four-way signalized intersection. The southbound approach has a dedicated left turn lane and a shared thru/right lane. The northbound has a dedicated left turn lane, a thru lane and a dedicated right lane which is protected with a right turn arrow. Both the westbound and eastbound approaches have a dedicated left turn lane and a shared thru/right lane.

Main Street Fishers at Wagnum Road – Three-way intersection with a stop sign at the northbound approach. All three approaches are single lane.

Route 251 at Wagnum Road – Three-way intersection with a stop sign at the southbound approach. All three approaches are single lane.

Route 251 at Phillips Road –Three-way intersection with a stop sign at the southbound approach. The southbound approach has dedicated left and right turn lanes, and the eastbound approach has a dedicated left turn lane.

1 ADT based on the NYS Traffic Viewer, http://gis.dot.ny.gov/tdv

4.0 METHODOLOGY

A. The Saturday peak hour for the intersections studied was determined by performing traffic counts during a 1 1/2 hour period on February 16, 2013. The PM Peak Hour was determined based on the Lehigh Crossing TIS prepared by SRF Associates.

SAT Peak – 12:30pm-1:30pm

PM Peak – 4:30pm-5:30pm

Traffic counts were not taken during the AM peak hour since the PAC primary hours of operation will be during the afternoon on weekdays and during Saturdays. This approach was reviewed with the Town's Traffic consultant.

B. Traffic volumes for the PM peak hour from the Lehigh Crossing TIS were used for the following intersections:
   - Wagnum Road at Main Street Fishers
   - Wagnum Road at Route 251
   - Route 96 at Main Street Fishers

The turning movement counts from the Lehigh Crossing TIS were performed in 2010. In order to account for regional growth in development since 2010, a 2.5% growth rate factor (GRF) was applied to those counts to determine existing (baseline) conditions. Passero Associates then performed counts on February 19th, 2013 for the following intersections:
   - Main Street Fishers and Phillips Road
   - Route 251 and Phillips Road

C. PAC is a phased development with the first phase (90,000 sf of indoor recreation) expected to be operational in 2014. The total buildout of the project is expected to be completed by 2018. Therefore, two background traffic conditions were studied, 2014 & 2018. In order to determine the background traffic volumes for each year, a 2.5% GRF was applied to existing conditions. Additionally, the background volumes accounted for the buildout of the Lehigh Crossing Industrial development on Wagnum Road. The 2014 condition assumed 50% build out of Lehigh Crossing and the 2018 condition assumed 100% buildout. Trip generations from that development were determined from the Lehigh Crossing TIS.

D. The Town of Victor has indicated that there is a second development in the vicinity of the project by the name of Fishers Ridge. As of the date of this study no data from the Fishers Ridge development was available. It is anticipated that when that study is prepared, the Pinnacle Athletic Center study will be available for their consultant to consider in the preparation of that study. The 2.5% GRF used for this study considers a fairly rapid rate of regional growth. For example the 2018 PM background condition for the northbound approach at Route 96 and Main Street Fishers increases from 858 vehicles to 971 vehicles as a result of the GRF. This increase of 113 vehicles for a single movement likely accounts for the future traffic generated by Fishers Ridge.

E. The Institute of Traffic Engineers Trip Generation Manual, 8th Edition, was used to determine the projected number of trips associated with the development. The following land uses were examined as part of the study.

- Recreational Community Center (Land use 495)
- Soccer Complex (Land Use 488)
- Medical Office (Land Use 720)
- Hotel (Land Use 310)

F. The trip distribution patterns are based on the traffic count data and a regional understanding of destination points. There are three main destinations for motorists traveling in the vicinity of the project site:

1. North via Route 96 to the NYS Thruway and commercial areas along Route 96.
2. South to the Village of Victor, Finger Lakes and Victor Central Schools.
3. West to Route 390, Mendon and Scottsville.

A detailed evaluation of the percentage of generated trips from the development and the subsequent destinations is provided in the appendices of this report.

G. The existing traffic volumes were modeled using Synchro7 to determine the current Levels of Service (LOS) for the studied intersections. LOS is an engineering standard gauge used to measure the operation of functionality of an intersection. A LOS of "A" represents a "best case" scenario with little to no traffic delays. A LOS of "F" represents a failure or unacceptable scenario.

H. A comparison of the intersection Levels of Service is provided to demonstrate any difference in the operation of the studied intersections under five different scenarios during both the Saturday and PM peak hour.

1. Existing Conditions (2013).
2. Background traffic (2014) → No build scenario with 2.5% GRF & 50% buildout of Lehigh Crossing.
3. Phase 1 Developed Conditions (2014) → Includes 2014 background conditions plus 90,000 sf of proposed Indoor Recreation Center.
4. Background traffic (2018) → No build scenario with 2.5% GRF & 100% buildout of Lehigh Crossing.
5. Fully Developed Conditions (2018) → Includes 2018 background conditions plus full development of PAC.

I. Under fully developed conditions a Mixed Use Credit (MUC) was applied to the trip generations of the proposed Medical Offices and Hotels. This credit assumes people will utilize multiple facilities within the development, as pedestrians, moving from one use (hotel or medical office) to a second use (i.e. Sports Fields or Indoor Center) without exiting onto the local traffic system. The MUC is especially applicable to the PAC because the project is intentionally designed to be an athletic destination point. Appendix E provides trip generations detailing the reduction in trip generations resulting from Multiple Use facilities.

J. Traffic Accident reports were evaluated for the studied intersections to determine if any safety improvements are warranted.

K. A left turn lane warrant analysis was conducted at both of the proposed project entrances.

L. Due to the small sample size of "Regional Community Centers" provided in the ITE trip generation manual, traffic counts were taken during the peak hour at Total Sports Experience (TSE) in the Town of Gates for a basis of comparison.

5.0 DEVELOPMENT PROPOSAL

The project includes the development of a mixed use Athletic and Recreational Complex. It is anticipated that the first phase of the development will be constructed over the course of the next year and opened in 2014. The project is expected to be fully developed in 2018. An inventory of the projected land uses is illustrated below:

Phase 1:

Land Use	Size
Recreational Community Center	90,000 sf

Fully Developed

Land Use	Size
Recreational Community Center	135,000 sf
Soccer Complex	6 Fields
Medical Office	75,000 sf
Hotel	140 Rooms

As shown in Appendix B, the first phase of the development will include a new curb cut off of Phillips Road. As the subsequent phases of the project develop, a dedicated roadway will be extended through the development ultimately connecting at Main Street Fishers which will provide the second access point. All of the internal land uses within the PAC will connect the proposed dedicated roadway in order to limit curb cuts on the existing roadways.

6.0 CAPACITY ANALYSIS RESULTS

The following is a compilation of the levels of service for all existing and proposed intersections. Each table contains the LOS for each approach of the intersections under each of the five scenarios mentioned above.

Table 6-1
Route 96 at Main Street Fishers

Approach	Existing (2013) Level of Service		Lehigh Crossing @ 50% and Background (2014) Level of Service		PAC Phase 1 (2014) Level of Service		Lehigh Crossing @ 100% & Background (2018) Level of Service		PAC Developed (2018) Level of Service*	
	SAT	PM	SAT	PM	SAT	PM	SAT	PM	SAT	PM
Eastbound	D	D	D	D	D	D	D	F	D	F
Left	D	D	D	E	D	E	D	F	D	F
Thru	D	D	D	D	D	E	D	F	D	F
Right	B	A	B	A	A	A	A	A	A	A
Westbound	C	C	C	D	C	D	C	D	D	D
Left	D	D	D	D	D	D	D	D	D	D
Thru/Right	C	C	C	C	C	C	C	C	C	C
Northbound	C	C	C	D	C	D	C	D	C	D
Left	C	D	C	D	C	D	C	F	C	F
Thru/Right	C	C	C	D	C	D	C	D	C	D
Southbound	A	B	A	B	A	B	B	B	B	C
Left	B	C	B	D	B	D	B	D	C	F
Thru	B	C	B	C	B	C	B	C	B	C
Right	A	A	A	A	A	A	A	A	A	A
Intersection LOS	**B**	**C**	**B**	**C**	**C**	**C**	**C**	**D**	**C**	**D**

*Includes signal timing adjustments.

Table 6-2
Phillips Road at Main Street Fishers

Approach	Existing (2013) Level of Service		Lehigh Crossing @ 50% & Background (2014) Level of Service		PAC Phase 1 (2014) Level of Service		Lehigh Crossing at 100% & Background (2018) Level of Service		PAC Developed (2018) Level of Service*	
	SAT	PM	SAT	PM	SAT	PM	SAT	PM	SAT	PM
Eastbound	B	C	B	C	B	C	B	C	C	D
Left	B	B	B	B	B	B	B	B	B	B
Thru/Right	B	C	B	C	B	C	B	C	C	D
Westbound	B	B	B	B	B	C	B	C	C	D
Left	B	C	B	C	B	D	B	D	D	C
Thru/Right	A	B	A	A	A	A	B	A	B	C
Northbound	A	A	A	A	A	A	A	A	A	A
Left	A	B	A	B	A	B	A	B	A	B
Thru	A	B	A	B	A	B	A	B	A	B
Right	A	A	A	A	A	A	A	A	A	A
Southbound	A	B	A	B	A	B	A	B	A	B
Left	A	B	A	B	A	B	A	C	A	C
Thru/Right	A	A	A	B	A	B	A	B	A	B
Intersection LOS	**A**	**B**	**A**	**B**	**A**	**B**	**B**	**C**	**B**	**C**

Table 6-3
Main Street Fishers at Wagnum Road

Approach	Existing (2013) Level of Service		Lehigh Crossing at 50% & Background (2014) Level of Service		PAC Phase 1 (2014) Level of Service		Lehigh Crossing @ 100% & Background (2018) Level of Service		PAC Developed (2018) Level of Service	
	SAT	PM	SAT	PM	SAT	PM	SAT	PM	SAT	PM
Eastbound										
Thru	A	A	A	A	A	A	A	A	A	A
Right	A	A	A	A	A	A	A	A	A	A
Westbound										
Left	A	A	A	A	A	A	A	A	A	A
Thru	A	A	A	A	A	A	A	A	A	A
Northbound										
Left	A	A	A	B	A	B	A	B	A	B
Right	A	A	A	B	A	B	A	B	A	B
ICU LOS	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**

Table 6-4
Route 251 at Wagnum Road

Approach	Existing (2013) Level of Service		Lehigh Crossing @ 50% & Background (2014) Level of Service		PAC Phase 1 (2014) Level of Service		Lehigh Crossing at 100% & Background (2018) Level of		PAC Developed (2018) Level of Service	
	SAT	PM	SAT	PM	SAT	PM	SAT	PM	SAT	PM
Eastbound										
Thru	A	A	A	A	A	A	A	A	A	A
Right	A	A	A	A	A	A	A	A	A	A
Westbound										
Left	A	A	A	A	A	A	A	A	A	A
Thru	A	A	A	A	A	A	A	A	A	A
Southbound										
Left	B	B	B	C	B	C	B	C	B	D
Right	B	B	B	C	B	C	B	C	B	D
ICU LOS	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**B**	**A**	**B**

Table 6-5
Route 251 at Phillips Road

Approach	Existing (2013) Level of Service		Lehigh Crossing @ 50% & Background (2014) Level of Service		PAC Phase 1 (2014) Level of Service		Lehigh Crossing @ 100% & Background (2018) Level of Service		Developed (2018) Level of Service	
	SAT	PM	SAT	PM	SAT	PM	SAT	PM	SAT	PM
Eastbound										
Left	A	A	A	A	A	A	A	A	A	A
Thru	A	A	A	A	A	A	A	A	A	A
Westbound										
Thru	A	A	A	A	A	A	A	A	A	A
Right	A	A	A	A	A	A	A	A	A	A
Southbound										
Left	B	C	B	C	B	D	C	D	C	F*
Right	A	B	A	B	A	B	A	B	A	B
ICU LOS	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**	**A**

**Signal warrant analysis conducted, see Section 7.*

Table 6-6
Project Entrance at Phillips Road

Approach	Phase 1 (2014) Level of Service		Fully Developed (2018) Level of Service	
	SAT	PM	SAT	PM
Eastbound				
Left	B	C	C	D
Right	A	B	A	B
Northbound				
Left	A	A	A	A
Thru	A	A	A	A
Southbound				
Thru	A	A	A	A
Right	A	A	A	A
ICU LOS	**A**	**B**	**A**	**B**

Table 6-7
Project Entrance at Main Street Fishers

Approach	Fully Developed (2018) Level of Service	
	SAT	PM
Eastbound		
Thru	A	A
Right	A	A
Westbound		
Left	A	A
Thru	A	A
Northbound		
Left	B	B
Right	B	B
ICU LOS	**A**	**A**

7.0 FINDINGS & OBSERVATIONS

7.1 Intersection Capacity

Route 96 at Main Street Fishers

The intersection current operates at a level of service of C during the PM peak hour and B during the Saturday Peak Hour. Under both the 2014 background condition and the Phase 1 buildout condition the intersection maintains an LOS of at least a C for both the Saturday and PM peak hours. Minor signal timing adjustments will improve the intersections operation ensuring that it will continue to operate at an acceptable LOS.

Under both the 2018 background conditions and the 2018 full build out conditions the intersection LOS deteriorates to a D or worse during the PM peak hour. This condition is primarily a result of the increase in eastbound left turns resulting from the full build out of Lehigh Crossing and the PAC. The eastbound approach under both the background and full build conditions operates at a LOS of F. Minor signal timing adjustments will allow the PAC full build conditions to maintain an overall intersection LOS equal to background conditions. As observed in a Simtraffic simulation, during a 15 minute interval during the peak hour, the eastbound volume had a queue of over 700 feet which exceeded the dedicated left turn lane by 200 feet. As a result the queue extended into the single eastbound lane temporarily blocking several existing curb cuts. This situation did not exist in the 2014 Phase 1 and background analysis.

Due to the northbound lane restrictions associated with the I-90 overpass, it is not feasible to install a third eastbound left turn lane. Additionally, the overall capacity of the intersection will not allow for the eastbound green time to be increased without having a detrimental impact on northbound and southbound traffic on Route 96. Route 96 is the primary roadway in the Town of Victor serving commuters and visitors alike. Sacrificing Route 96 greentime to improve the eastbound approach at the intersection is not feasible from both a traffic safety and capacity standpoint.

Main Street Fishers at Phillips Road

Under all conditions studied, the intersection operates at an LOS of C or better with all individual approaches operating at an LOS of D or better. No improvements are required to adjust for future traffic volumes. However, potential future sidewalk crossings will warrant the installation of upgrades including pavement striping, signage and new signal controls with pedestrian crossing buttons.

Main Street Fishers at Wagnum Road.

The intersection operates at a level of service of A for all studied conditions. No improvements are required.

Route 251 at Wagnum Road.

The intersection operates at a level of service of A or B for all studied conditions. No improvements are required. However, the Lehigh Crossing TIS recommends the intersection be again studied by the developers at 50% build out of Lehigh Crossing to investigate the signal warrants.

Route 251 at Phillips Road

Under all studied conditions the intersection operatives at a minimum ICU LOS of A. However, during the 2018 Fully Developed conditions the southbound left turn LOS deteriorates to an F. As a result, a signal warrant analysis was conducted and concluded that the eight and four hour warrants are met during the PM peak hour for 2018. However, only the four hour warrant is met in 2014. The four hour warrant is being driven by the volume of westbound left turn lane. Since the westbound turn lane is an unimpeded and does not create a conflict movement, the installation of a signal is not justified at this time.

7.2 Main Street Fishers

The Town and Village of Victor Comprehensive plan identifies the stretch of Main Street Fishers Road between Phillips Road and Route 96 as being one of three roadways in the Town that is currently at or near its capacity. The capacity is nearly reached during the PM peak hour primarily as a result of eastbound commuter traffic from points west of the development area. As previously mentioned, one of the three main destination points from the development area is the commercial section of Victor, including Eastview Mall and the NYS Thruway. Based on the variation in volumes from the PM peak hour to the Saturday peak hour, it is evident that the base volume is commuter traffic and that the critical time for the roadway is the weekday PM peak hour. When observing the local traffic flow it is clear that commuters traveling eastbound use Phillips Road as somewhat of a bypass to travel from Route 251 to Route 96. This condition is further verified when reviewing the results of the Synchro capacity analysis for eastbound vehicles at the intersection of Main Street Fishers and Route 96. The development of both Lehigh Crossing and the PAC will generate additional traffic volume on both Phillips Road and Main Street Fishers justifying a future review of potential mitigation measures. However, the impact of the PAC during the PM peak hour on eastbound traffic is minimal since most people are entering the facility for evening activities and not traveling eastbound.
This is especially the case during phase 1 of the development when the vehicles will be traveling westbound on Main Street Fishers and northbound on Phillips Road to use the indoor athletic center.

7.3 Accident Analysis

An accident analysis was conducted for the studied intersection. The data was obtained through a review of the Town and Village of Victor Comprehensive Plan:

Table 7-1 Intersection Accident Rates

Intersection	Total # of Accidents	Main Street AADT	Cross Street AADT	Accident Rate per MEV***	Regional Accident Rate
NYS Route 96 & Main Street Fishers (CR 42)	17	32,574	3,592	0.44	0.94
NYS Route 251 and Wangum Road (CR 42)	2	8,347	2,040	0.24	0.44
NYS Route 251 and Phillips Road	2	8,347	7,150	0.2	0.44
CR 42 (Main St Fishers) and Wangum Road	1	3,860	2,040	0	0.39
CR 42 and Phillips Road	5	12,600	7,150	0.34	0.94
Total	**27**	**65728**	**21972**	**1.22**	**3.15**

*** MEV=Million Entering Vehicles

As shown above, the intersections in the study area have a lower than average rate of accidents when compared to the regional average. The Town and Village Comprehensive Plan also identify the roadways in the project area as generally having a higher rate of accidents then the DOT average. As mentioned in that study, this is attributed to an abnormal rate of accidents involving collisions with animals due to the rural setting of the study area.

7.4 Comparison to Total Sports Experience

Total Sports Experience (TSE) in the Town of Gates is a 105,000 sf indoor sports and recreation facility. It offers similar facilities and amenities to the project proposal, most notably Phase 1 of the development. We studied trip generations and the traffic flow of TSE to verify and better model our study. During the PM peak hour (4:30pm-5:30 pm) the total number of trips entering and exiting TSE was 146. This yields an average rate of 1.39 trips per 1,000 sf of floor area which is near identical to the rate of 1.38 used for the projections of the PAC indoor facility. Of those trips approximately 75% were entering the facility while 25% were exiting. The majority of the trips exiting had dropped off children at the main door of the complex. This comparison validates the vehicle projections and distribution used for the indoor recreation center at PAC.

7.5 Comparison to Light Industrial

The 95 acre parcel is currently zoned Light Industrial. The Town of Victor Zoning Ordinance permits a maximum building coverage of 40% in Light Industrial districts. Assuming that 75% of the available 95 acres is developable, then the maximum building(s) size for the subject parcel is approximately 1,000,000 sf. (95 acres * 0.75 * 0.4 * 43,560 sf/acre). Using the ITE Trip Generation manual a 1,000,000 sf facility is project to yield 1,273 trips during the PM peak hour (T=1.43x-157 where x=1,000). Under fully developed conditions, the PAC is projected to yield a maximum of 385 trips during the PM peak hour

which is less 1/3rd the potential trips generated by a project if developed under the current zoning district.

The rezoning of the parcel from light industrial to Planned Development results in a significant decrease in the potential for the subject site to develop excessive traffic volumes, especially during the PM peak hour.

7.6 Site Distance

A site distance evaluation was conducted at both project entrances with the results shown below:

Table 7-2 Site Distance Evaluation

Main Street Fishers Entrance (50 mph)			
Dr required	700'	Dr provided	Unlimited to intersection
Dl required	740'	Dl provided	760'
Phillips Road Entrance (50 mph)			
Dr required	700'	Dr provided	>1000'
Dl required	740'	Dl provided	750'

As shown both entrances meet or exceed the required sight distances.

7.7 Left Turn Lane Warrant Analysis

A left turn lane warrant analysis was conduction at both proposed project entrance, see Appendix L. As shown, a left turn lane is not warranted for westbound vehicles entering the site off of Main Street Fishers during fully developed conditions.

A northbound left turn lane from Phillips Road into the development is marginally warranted during Phase I buildout and warranted at fully developed conditions during the PM peak hour. The turn lane is not warranted during the AM peak hour in 201 4 or 2018. Currently there several southbound left turn lanes along Phillips Road in front of the project entrance. These turn lanes service existing industrial complexes on the east side of Phillips Road. The turn lanes and tapers can be restriped without additional pavement widening to provide a two way left turn lane (TWLTL) in front of the project entrance. The TWLTL is appropriate for Phillips Road when considering peak volumes for the industrial uses and the PAC are off peak from each other. The majority of southbound left turns into the existing complexes occur in the AM peak hour when workers are traveling to those facilities from the NYS Thruway and other destination points to the north. Conversely, the majority of vehicles entering the PAC do so during the PM peak hour which reduces the potential for conflicts between north and southbound left turns.

7.8 Pedestrians

The PAC proposal includes an integrated system of internal sidewalks throughout the project area. Additionally, future phases of the project include a connection to the existing Auburn trail which travels along the former rail road bed. Once PAC is developed into the

destination it is modeled to be, a new sidewalk connection to the Town sidewalk at Main Street Fishers and Phillips Road will allow patrons to walk from PAC to destination points along Route 96.

8.0 RECOMMENDATIONS

1. Adjust signal timings at the intersections of Route 96 and Main Street Fishers and at the intersection of Main Street Fishers and Phillips Road to account for the commuter traffic volume on Phillips Road and Main Street Fishers.

2. As part of Phase 1 of the development, restripe Phillips Road north of the former rail road tracks to provide a two way left turn lane. The restriping will continue to provide a turn lane for the industrial uses east of Phillips Road while additionally providing a turn lane for vehicles entering PAC.

3. Perform an update to the Traffic Impact Study upon completion of Phase 1 of the development. The update will determine the actual impact of the PAC proposal and that information can be used to more accurately project future traffic generated from subsequent phases.

4. Upon 50% completion of the PAC and the completion of the connection of the proposed internal dedicated roadway to Main Street Fishers, install a sidewalk along Main Street Fishers from the project entrance to the existing sidewalk at the corner of Phillips Road and Main Street Fishers including the required intersection and signal upgrades. During the first phase of development the facility will operate similar to Total Sports Experience in the Town of Gates. It will service patrons in various athletic leagues for short durations during the evenings and weekends. However, when PAC is further developed it will become a destination for people to come an stay for longer periods of time. During that time, a sidewalk connection to the existing Town sidewalks will allow those people using the facility to walk to destinations along Route 96. A sidewalk along Main Street Fishers is more appropriate than a sidewalk along Phillips Road due to the single-family homes west of the project and the potential for those homeowners to use the extended sidewalk system.

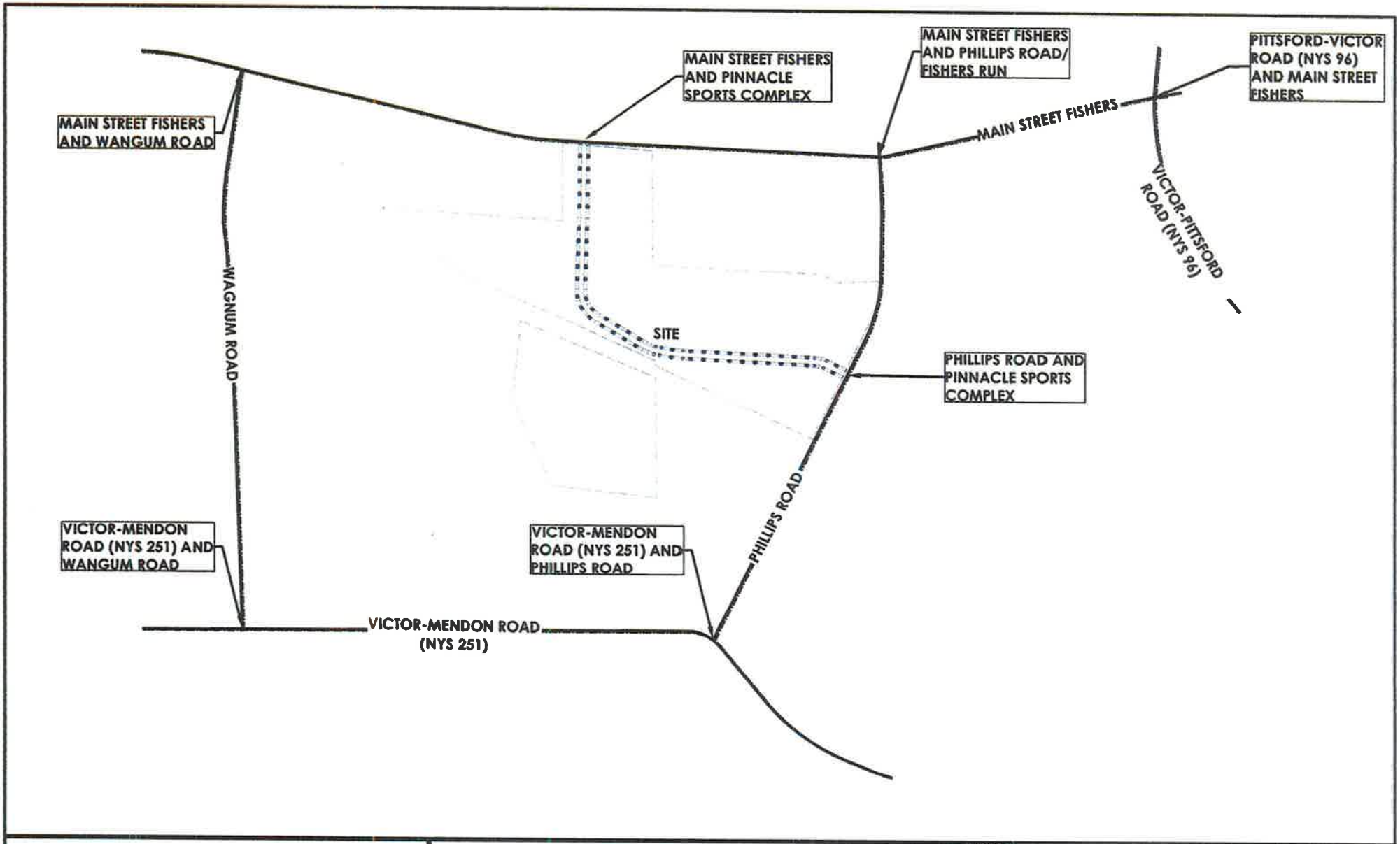
9.0 CONLCUSIONS

Phase 1 of the Pinnacle Athletic Campus will not generate traffic levels that are significantly above current levels experienced in the project area. Several minor improvements are recommended during the first phase of the development primarily to account for the new curb cut off of Phillips Road. The eventual build out of Lehigh Crossing and PAC will ultimately result in additional impact to current problem areas identified by previous studies. After Phase 1 and prior to the completion of the PAC, this Traffic Impact Study should be revisited and reevaluated to examine the potential need for more significant traffic improvements.

APPENDIX

APPENDIX A

STUDY AREA MAP



Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES
engineering architecture
224 West Main Street, Suite 100
Rochester, NY 14614

Client:
Pinnacle Athletic Campus
85 High Tech Drive
Rush, NY 14543
(585)359-9242

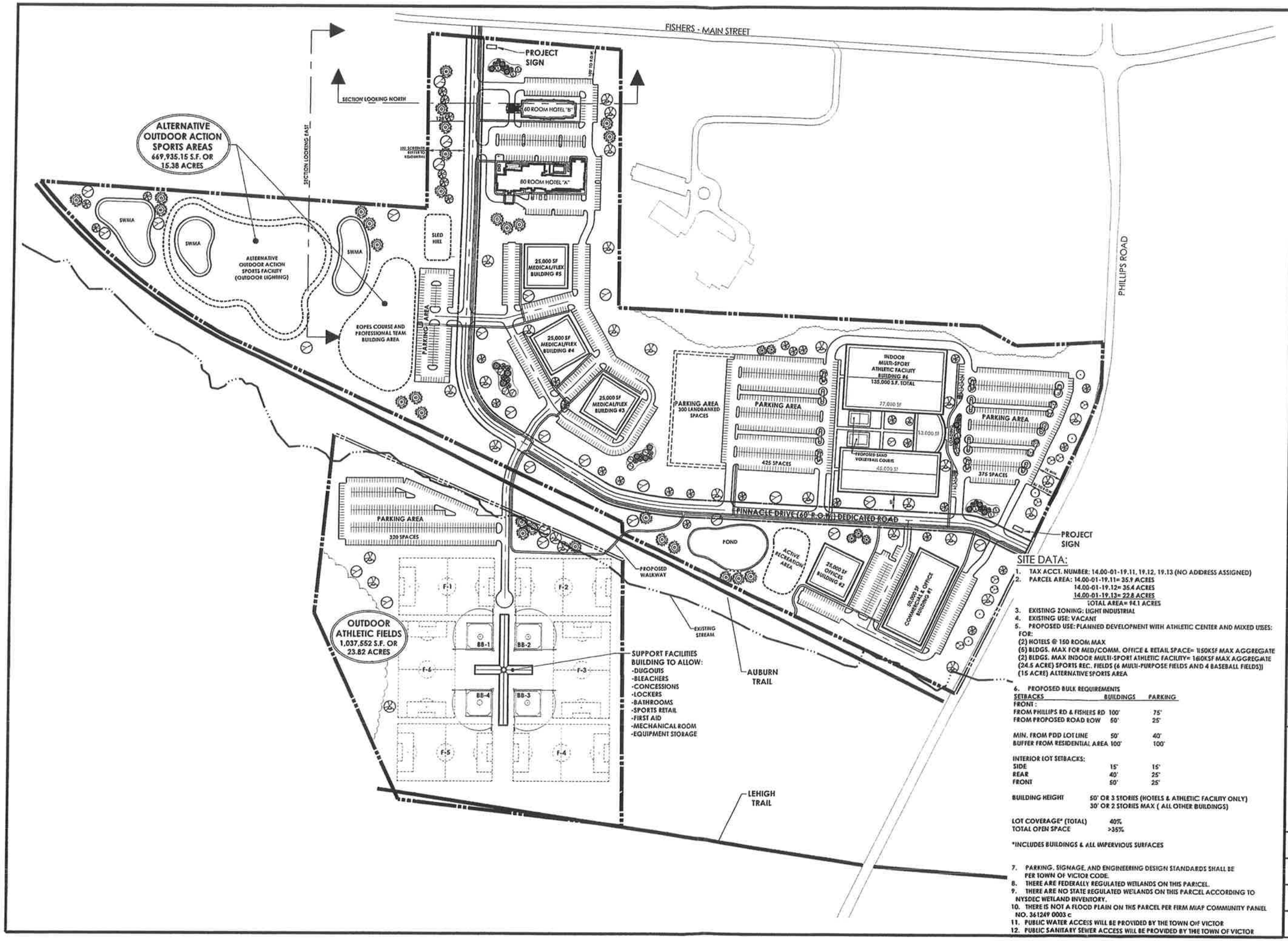
FIGURE 1: SITE LOCATION AND STUDY AREA

Scale: 1"=1000'

Sheet No: 1 of 11

APPENDIX B

SITE PLAN



SITE DATA:

1. TAX ACCT. NUMBER: 14.00-01-19.11, 19.12, 19.13 (NO ADDRESS ASSIGNED)
2. PARCEL AREA: 14.00-01-19.11= 35.9 ACRES
   14.00-01-19.12= 35.4 ACRES
   14.00-01-19.13= 22.8 ACRES
   TOTAL AREA= 94.1 ACRES
3. EXISTING ZONING: LIGHT INDUSTRIAL
4. EXISTING USE: VACANT
5. PROPOSED USE: PLANNED DEVELOPMENT WITH ATHLETIC CENTER AND MIXED USES: FOR:
   (2) HOTELS @ 150 ROOM MAX
   (5) BLDGS. MAX FOR MED/COMM. OFFICE & RETAIL SPACE= 1150KSF MAX AGGREGATE
   (2) BLDGS. MAX INDOOR MULTI-SPORT ATHLETIC FACILITY= 160KSF MAX AGGREGATE
   (24.5 ACRE) SPORTS REC. FIELDS (6 MULTI-PURPOSE FIELDS AND 4 BASEBALL FIELDS))
   (15 ACRE) ALTERNATIVE SPORTS AREA
6. PROPOSED BULK REQUIREMENTS

SETBACKS	BUILDINGS	PARKING
FRONT :		
FROM PHILLIPS RD & FISHERS RD	100'	75'
FROM PROPOSED ROAD ROW	50'	25'
MIN. FROM PDD LOT LINE	50'	40'
BUFFER FROM RESIDENTIAL AREA	100'	100'
INTERIOR LOT SETBACKS:		
SIDE	15'	15'
REAR	40'	25'
FRONT	50'	25'

BUILDING HEIGHT 50' OR 3 STORIES (HOTELS & ATHLETIC FACILITY ONLY)
30' OR 2 STORIES MAX (ALL OTHER BUILDINGS)

LOT COVERAGE* (TOTAL) 40%
TOTAL OPEN SPACE >35%

*INCLUDES BUILDINGS & ALL IMPERVIOUS SURFACES

7. PARKING, SIGNAGE, AND ENGINEERING DESIGN STANDARDS SHALL BE PER TOWN OF VICTOR CODE.
8. THERE ARE FEDERALLY REGULATED WETLANDS ON THIS PARCEL.
9. THERE ARE NO STATE REGULATED WETLANDS ON THIS PARCEL ACCORDING TO NYSDEC WETLAND INVENTORY.
10. THERE IS NOT A FLOOD PLAIN ON THIS PARCEL PER FIRM MAP COMMUNITY PANEL NO. 361249 0003 c
11. PUBLIC WATER ACCESS WILL BE PROVIDED BY THE TOWN OF VICTOR
12. PUBLIC SANITARY SEWER ACCESS WILL BE PROVIDED BY THE TOWN OF VICTOR

Passero Associates
Engineering • Architecture
www.passero.com

Client:
Pinnacle Athletic Campus
85 High Tech Drive
Rush, NY 14543
Attn: Dan Bree
(585) 359-9242

Passero Associates
420 Liberty Pint Way (585) 325-1000
Rochester, New York 14615 Fax: (585) 325-1691
Principal-in-Charge John F. Caruso, P.E.
Project Manager Jess D. Sudol, P.E.
Designed by Carole G. Harvey

Revisions

No.	Date	By	Description
1	12-4-12	JLM	REVISED PER PLANNING BOARD COMMENTS

UNAUTHORIZED ALTERATION OR ADDITION TO THIS DRAWING IS A VIOLATION OF STATE EDUCATION LAW ARTICLE 145 SECT. 7209 (2) AND ARTICLE 147 SECTION 7307. THESE PLANS ARE OWNED BY PASSERO

PRELIMINARY DEVELOPMENT PLAN

PINNACLE ATHLETIC CAMPUS

BEING PART OF LOT X, XIII RANGE OF LOTS, TOWNSHIP XX, RANGE X, PHELPS & GORHAM'S PURCHASE
Town of Victor, Ontario County, New York

Project No. 20121584.01

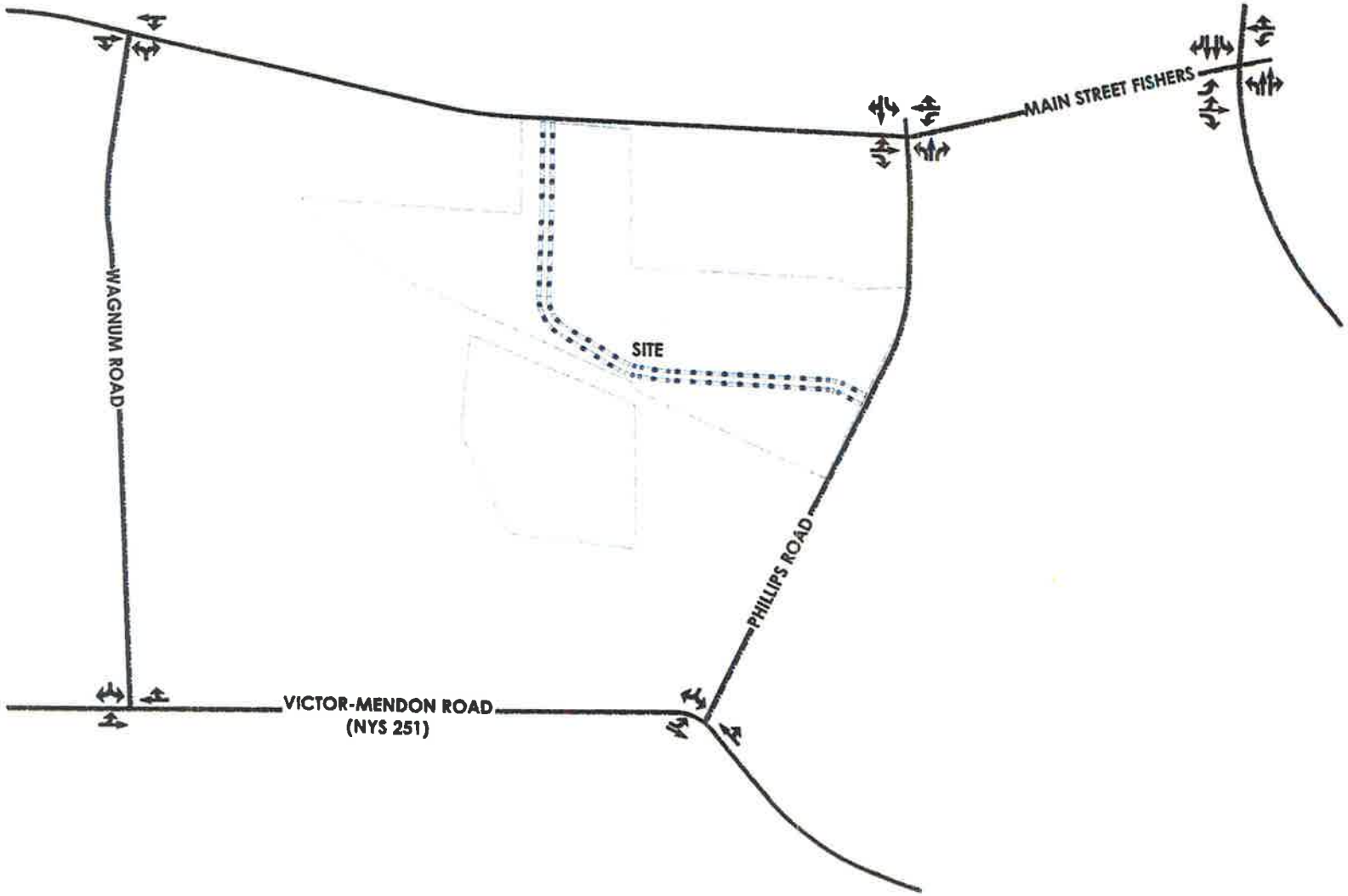
Drawing No. C 001 | Sheet No. 1 OF 1

Scale: 1"=150'

Date DECEMBER 2012

APPENDIX C

EXISTING TRAFFIC VOLUMES



Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES
engineering architecture
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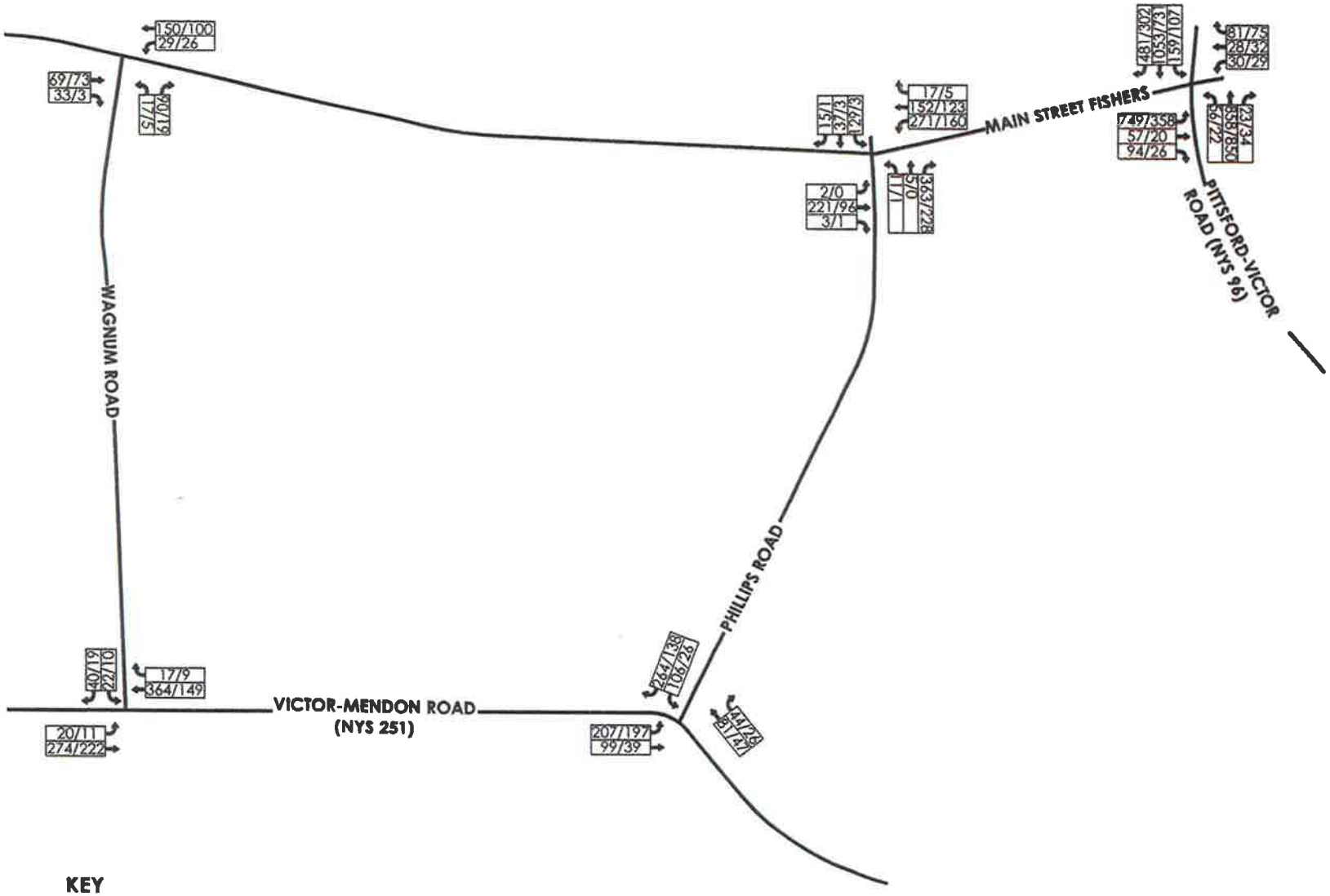
FIGURE 2: EXISTING LANE GEOMETRY

Scale: N.T.S.

Sheet No: 2 of 11



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

Traffic Study

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FIGURE 3: PEAK HOUR VOLUMES EXISTING CONDITIONS

Scale: N.T.S.

Sheet No: 3 of 11

APPENDIX D

PEAK HOUR DETERMINATION

Pinnacle Athletic Campus
March 1013

Totals of All Approaches Shown

TIME	Main and Wangum	NYS 251 and Wangum	NYS 251 and Phillips	Main and Phillips	NYS 96 and Main				TOTAL FOR 15 MIN. INTERVAL
4:00-4:15	93	154	125	242	728				1342
4:15-4:30	73	135	123	208	665				1204
4:30-4:45	97	195	148	258	834				1532
4:45-5:00	83	141	121	254	771				1370
5:00-5:15	96	190	224	414	941				1865
5:15-5:30	94	175	183	300	945				1697
5:30-5:45	61	168	150	265	842				1486
5:45-6:00	75	123	145	218	715				1276
12:30-12:45	64	110	143	173	610				1100
12:45-1:00	58	118	109	152	711				1148
1:00-1:15	53	99	112	158	649				1071
1:15-1:30	51	93	109	138	615				1006
1:30-1:45	49	103	129	159	564				1004
1:45-2:00	41	100	128	135	570				974
	0	0	0	0	0				0
	0	0	0	0	0				0

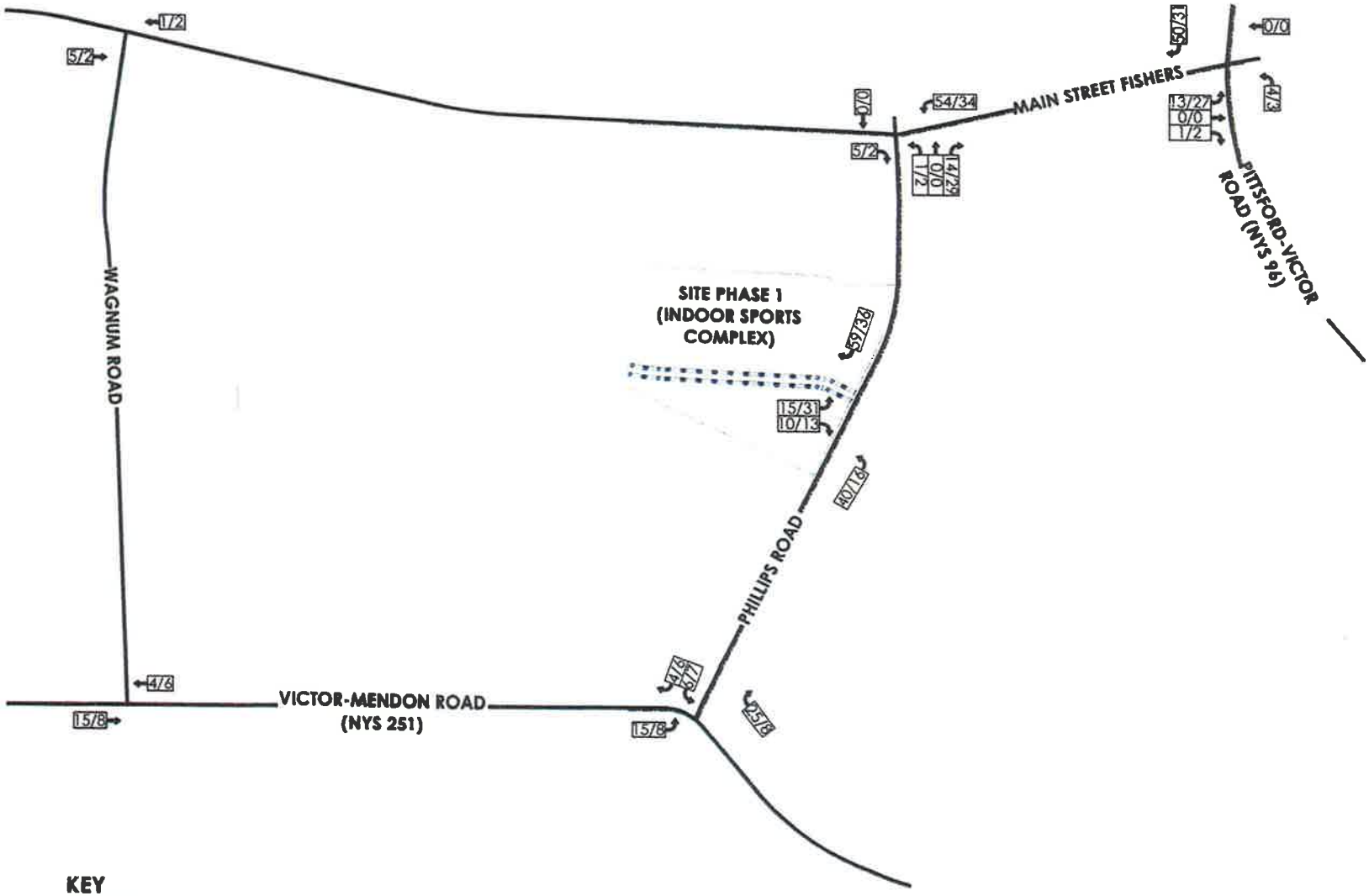
Peak Hour Determination				
Total	Time		Time	Time
5448	4:00-5:00		4325	12:30-1:30
5971	4:15-5:15		4229	12:45-1:45
6464	4:30-5:30		4055	1:00-2:00
6418	4:45-5:45		2984	1:15-2:15
6324	5:00-6:00		1978	1:30-2:30
Peak Hour Determination				
6464	**4:30-5:30**		**4325**	**12:30-1:30**

Background Growth

Rate of Growth 2.50%

APPENDIX E

TRIP GENERATION



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

Traffic Study

Pinnacle Athletic Campus

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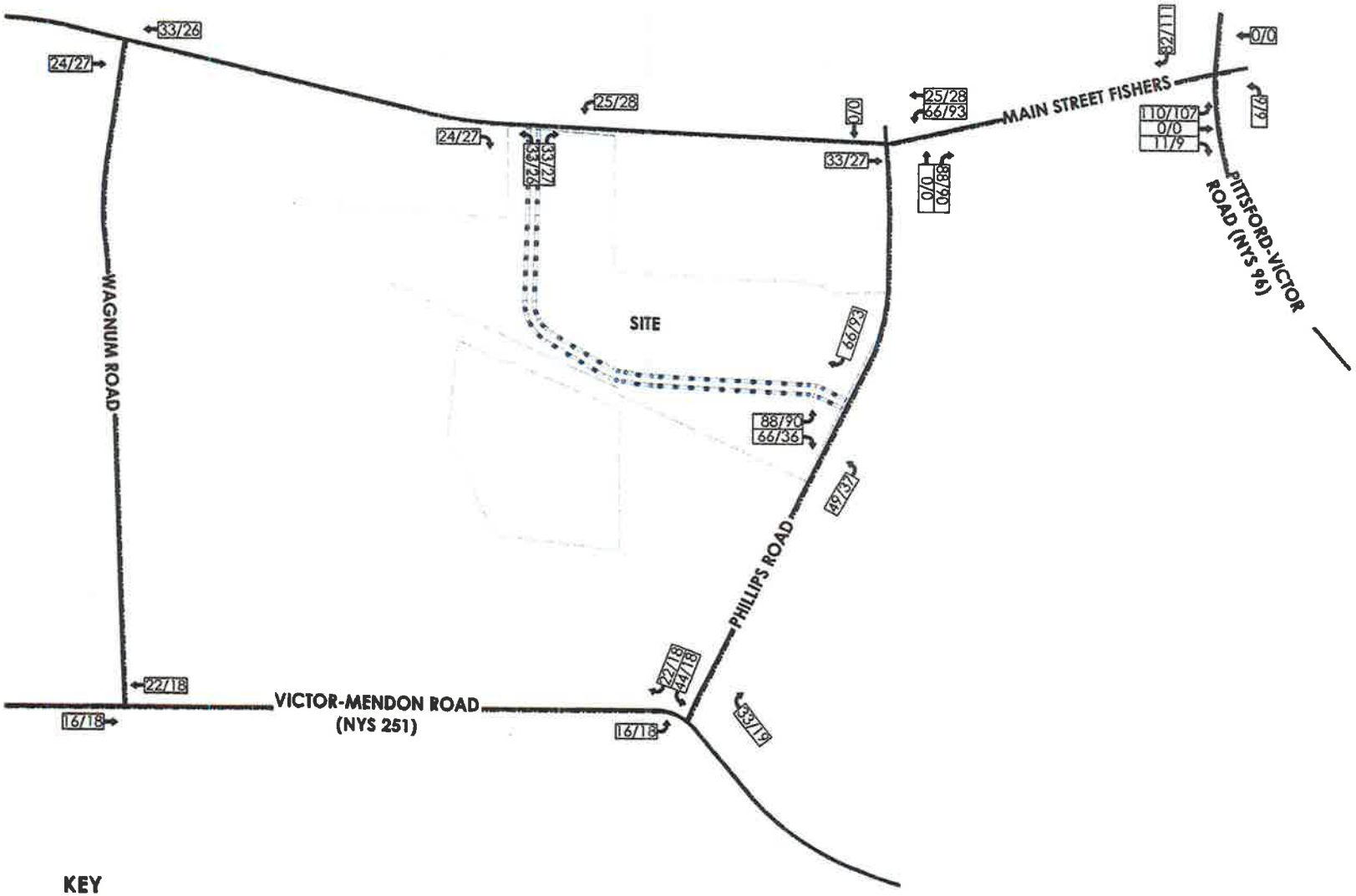
FIGURE 8: SITE GENERATED TRIPS 2014

Scale: N.T.S.

Sheet No: 8 of 11



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

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FIGURE 9: SITE GENERATED TRIPS 2018

Scale: N.T.S.

Sheet No: 9 of 11

Trip Generations									
Phase 1	ITE Land Use		PM Peak Hour			SAT Peak Hour			Mixed Use Credit (MUC) adjustment
Use		Size	Total Trips	Exiting	Entering	Total Trips	Exiting	Entering	
Recreational Community Center	495	90,000 sf	124	25	99	96	44	52	
Overall									
Recreational Community Center	495	135,000 sf	157	110	47	144	66	78	
Soccer Complex	488	6 fields	124	38	86	172	89	83	
[illegible]									
Medical Office (MUC Adjusted)	720	75,000 sf	88	64	24	20	10	10	60%
[illegible]									
Hotel (MUC Adjusted)	310	140 Rooms	16	8.2	7.8	28	14	14	80%
Total			385	220	164	364	179	185	

Land Use: 495
Recreational Community Center

Description

Recreational community centers are stand-alone public facilities similar to and including YMCAs. These facilities often include classes and clubs for adults and children; a day care or nursery school; meeting rooms; swimming pools and whirlpools; saunas; tennis, racquetball, handball, basketball and volleyball courts; outdoor athletic fields/courts; exercise classes; weightlifting and gymnastics equipment; locker rooms; and a restaurant or snack bar. Public access is typically allowed, but a fee may be charged. Racquet/tennis club (Land Use 491), health/fitness club (Land Use 492) and athletic club (Land Use 493) are related uses.

Additional Data

One surveyed site recorded significant pedestrian trips.

The sites were surveyed in the 1990s and 2000s throughout the United States.

Source Numbers

281, 410, 443, 571, 618

Land Use: 495
Recreational Community Center
Independent Variables with One Observation

The following trip generation data are for independent variables with only one observation. This information is shown in this table only; there are no related plots for these data.

Users are cautioned to use data with care because of the small sample size.

Independent Variable	Trip Generation Rate	Size of Independent Variable	Number of Studies	Directional Distribution
Members				
Weekday a.m. Peak Hour of Adjacent Street Traffic	0.01	14,000	1	62% entering, 38% exiting
Weekday p.m. Peak Hour of Adjacent Street Traffic	0.01	14,000	1	28% entering, 72% exiting
Weekday a.m. Peak Hour of Generator	0.03	14,000	1	58% entering, 42% exiting
Weekday p.m. Peak Hour of Generator	0.02	14,000	1	39% entering, 61% exiting
Saturday	0.07	14,000	1	50% entering, 50% exiting
Saturday Peak Hour of Generator	0.01	14,000	1	47% entering, 53% exiting
Sunday	0.15	14,000	1	50% entering, 50% exiting
Sunday Peak Hour of Generator	0.02	14,000	1	60% entering, 40% exiting
Employees				
Weekday	27.25	32	1	50% entering, 50% exiting
Weekday a.m. Peak Hour of Adjacent Street Traffic	2.66	32	1	72% entering, 28% exiting
Weekday p.m. Peak Hour of Adjacent Street Traffic	2.44	32	1	27% entering, 73% exiting
Weekday a.m. Peak Hour of Generator	3.50	32	1	38% entering, 62% exiting
Weekday p.m. Peak Hour of Generator	3.16	32	1	44% entering, 56% exiting
Saturday	18.34	32	1	50% entering, 50% exiting
Saturday Peak Hour of Generator	2.59	32	1	53% entering, 47% exiting
Sunday	12.03	32	1	50% entering, 50% exiting
Sunday Peak Hour of Generator	1.66	32	1	43% entering, 57% exiting
1,000 Square Feet Gross Floor Area				
Weekday	22.88	38	1	50% entering, 50% exiting

Recreational Community Center
(495)

Average Vehicle Trip Ends vs: **1000 Sq. Feet Gross Floor Area**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

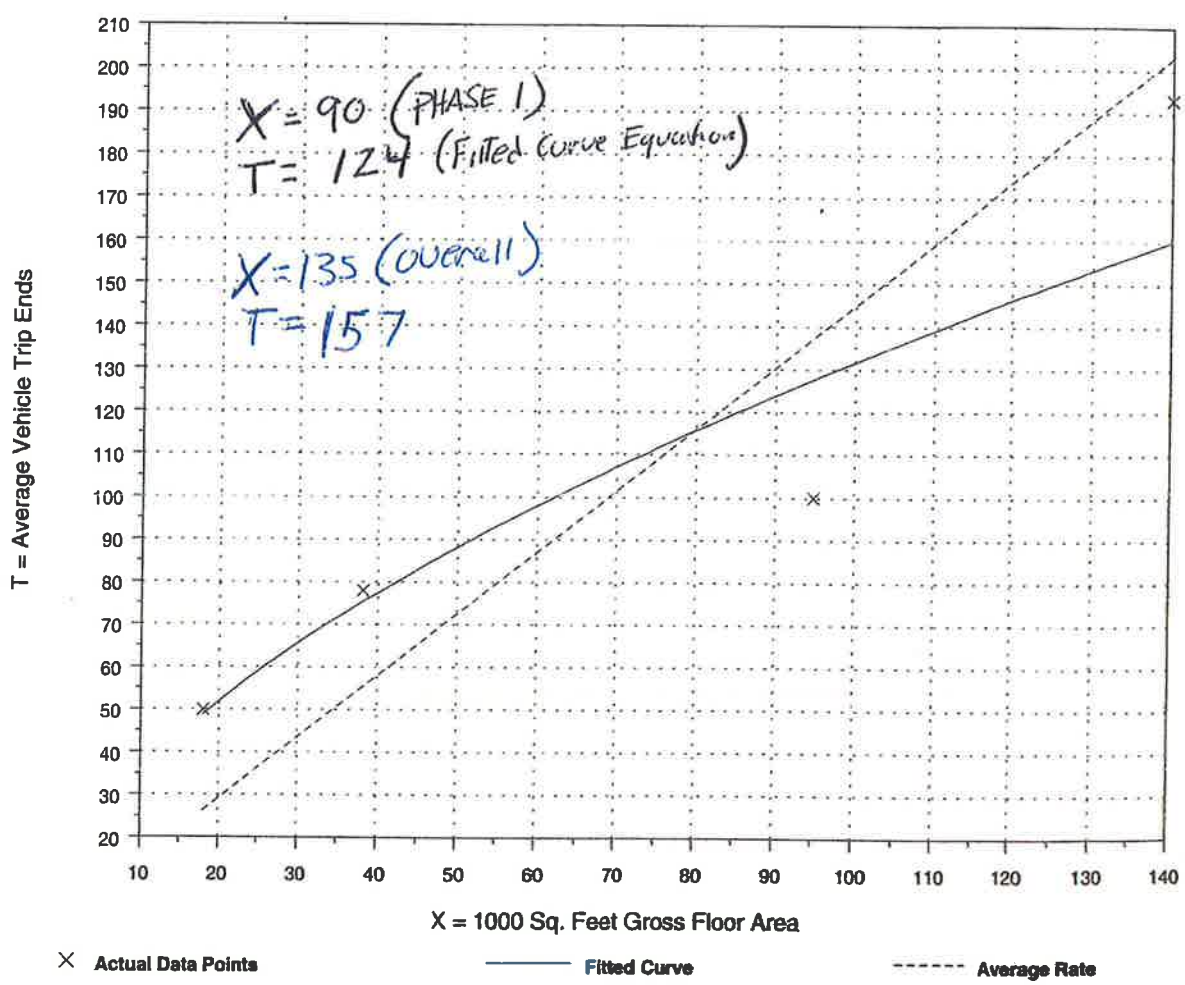
Number of Studies: 4
Average 1000 Sq. Feet GFA: 73
Directional Distribution: 37% entering, 63% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.45	1.05 - 2.78	1.28

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



× **Actual Data Points** ——— **Fitted Curve** ------ **Average Rate**

Fitted Curve Equation: Ln(T) = 0.58 Ln(X) + 2.21 **R^2 = 0.90**

Recreational Community Center
(495)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
P.M. Peak Hour of Generator

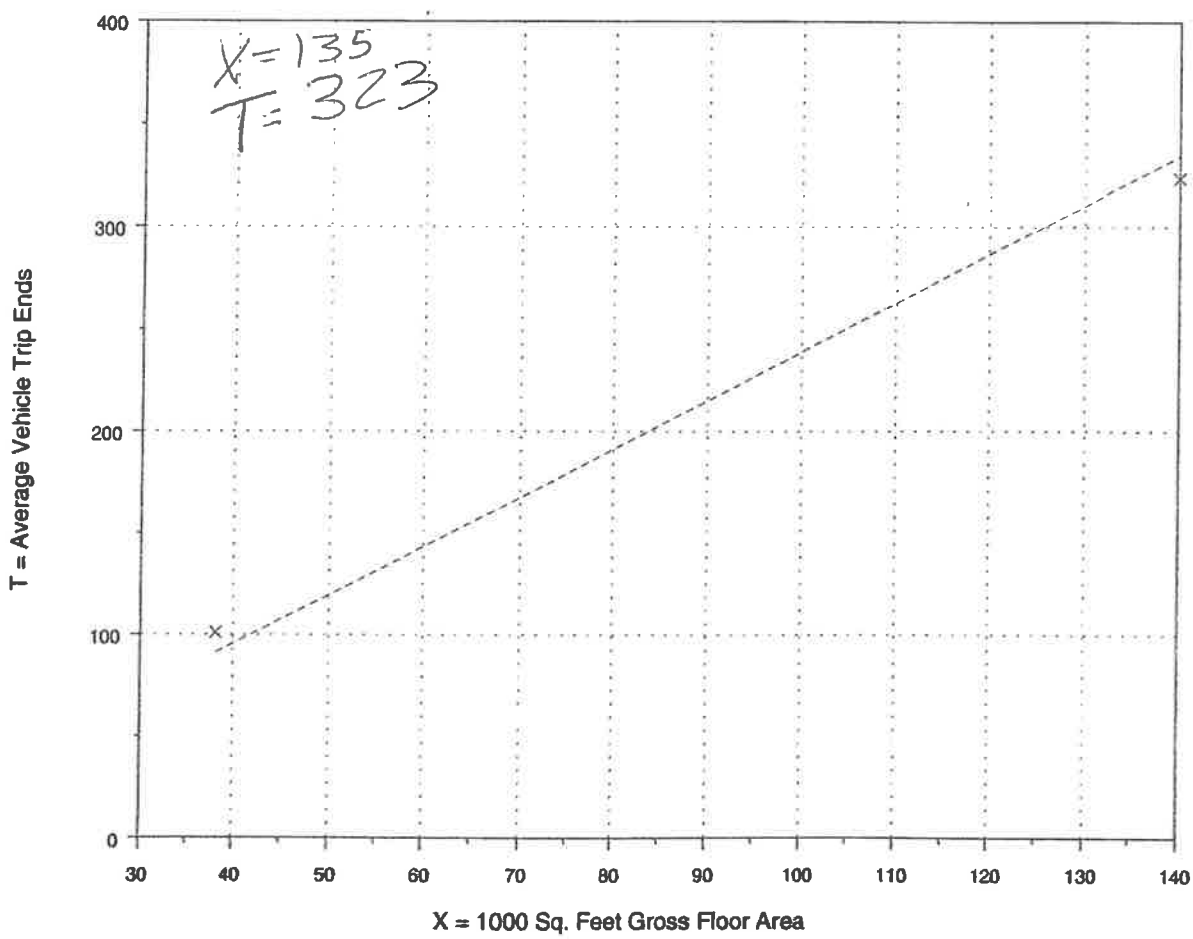
Number of Studies: 2
Average 1000 Sq. Feet GFA: 89
Directional Distribution: 40% entering, 60% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.39	2.31 - 2.65	*

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



× **Actual Data Points** ------ **Average Rate**

Fitted Curve Equation: Not given R^2 = ****

Recreational Community Center
(495)

Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Saturday,
Peak Hour of Generator

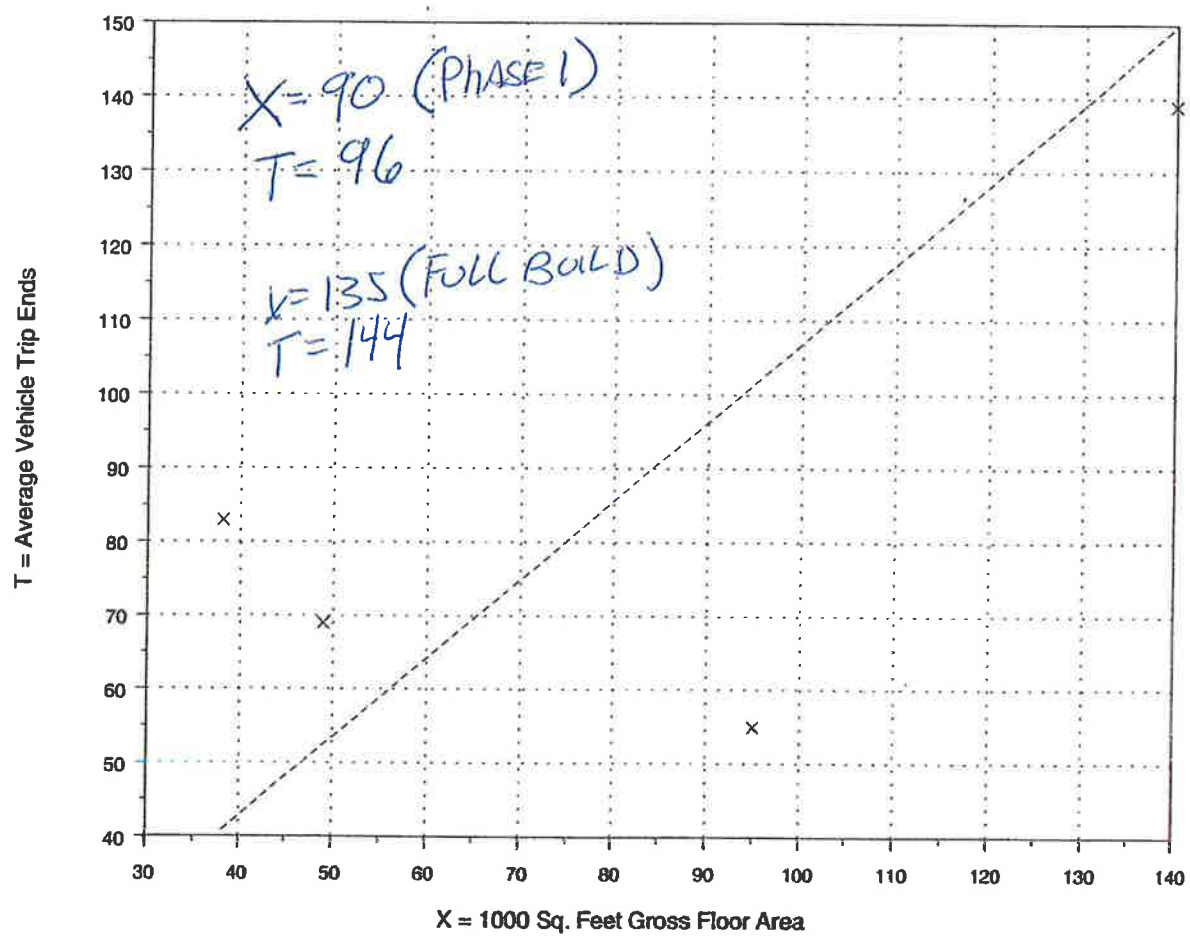
Number of Studies: 4
Average 1000 Sq. Feet GFA: 81
Directional Distribution: 54% entering, 46% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.07	0.58 - 2.18	1.14

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



× **Actual Data Points** ------ **Average Rate**

Fitted Curve Equation: Not given R^2 = ****

Land Use: 488
Soccer Complex

Description

Soccer complexes are outdoor parks that are used for non-professional soccer games. They may consist of one or more fields, and the size of each field within the land use may vary to accommodate games for different age groups. Ancillary amenities may include a fitness trail, activities shelter, aquatic center, picnic grounds, basketball and tennis courts and a playground.

Additional Data

Caution should be used when applying these data. Peaking at soccer complexes typically occurred in time periods shorter than one hour. These peaking periods may have durations of 10 to 15 minutes.

One study noted that ridesharing was common for teams traveling to out-of-town matches.

The sites were surveyed in the 1990s in Indiana and Washington.

To assist in the future analysis of this land use, it is important to collect driveway counts in 10-minute intervals.

Source Numbers

377, 519, 565

Soccer Complex
(488)

Average Vehicle Trip Ends vs: Fields
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

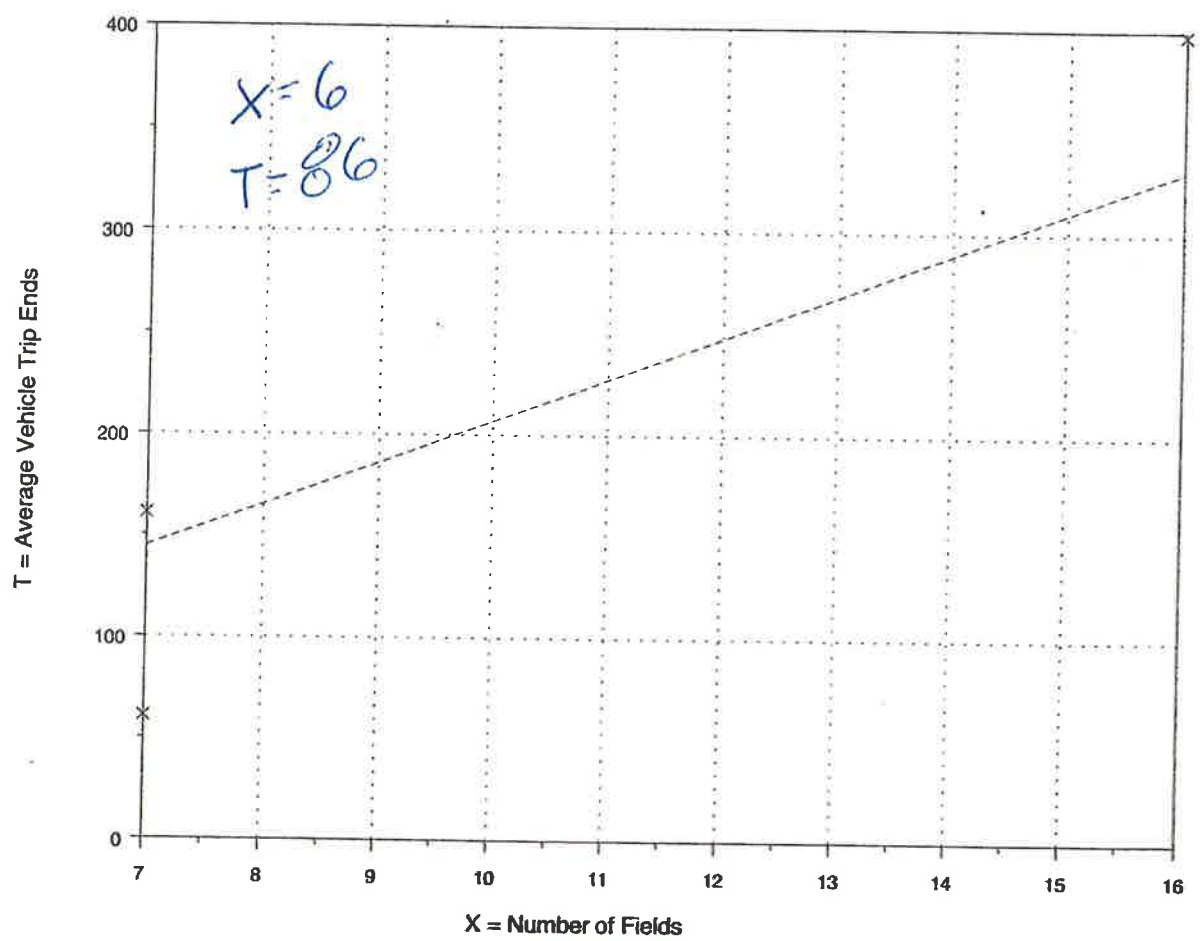
Number of Studies: 3
Average Number of Fields: 10
Directional Distribution: 69% entering, 31% exiting

Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
20.67	8.71 - 24.88	8.06

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



× **Actual Data Points**

------ **Average Rate**

Fitted Curve Equation: Not given

R^2 = ****

Soccer Complex
(488)

Average Vehicle Trip Ends vs: Fields
On a: Saturday,
Peak Hour of Generator

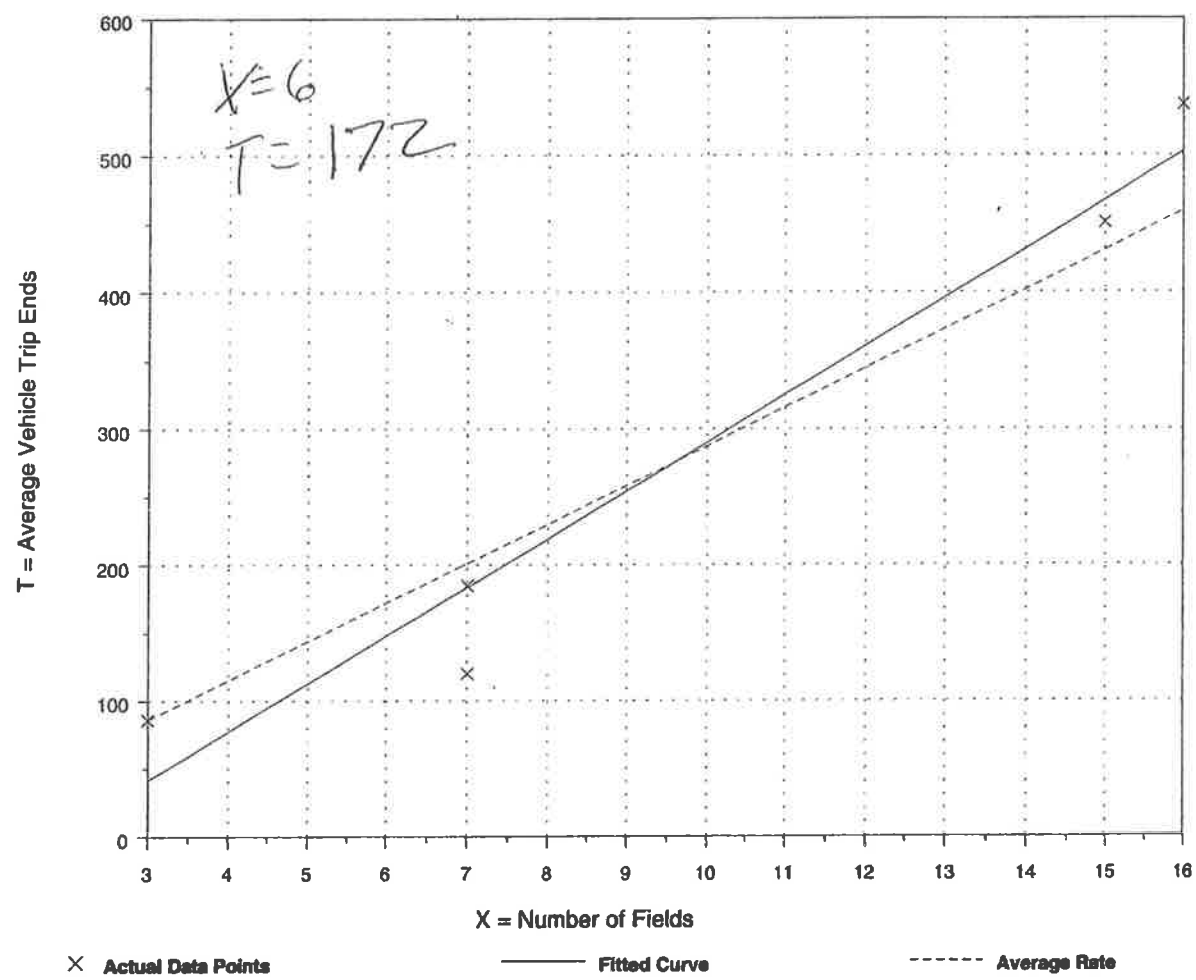
Number of Studies: 5
Average Number of Fields: 10
Directional Distribution: 48% entering, 52% exiting

Trip Generation per Field

Average Rate	Range of Rates	Standard Deviation
28.73	17.14 - 33.56	7.47

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: T = 35.47(X) - 64.70

R^2 = 0.96

Medical-Dental Office Building
(720)

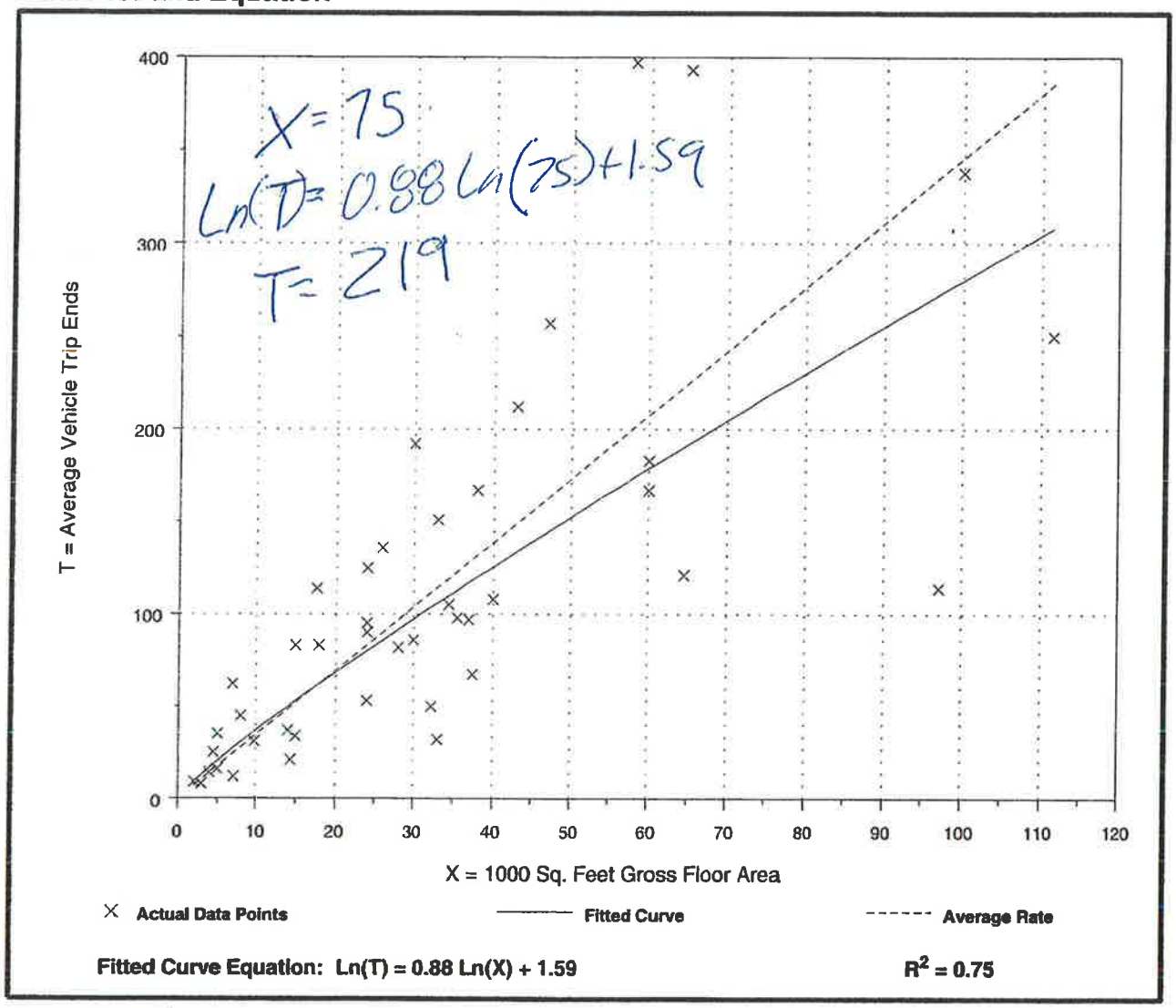
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 43
Average 1000 Sq. Feet GFA: 32
Directional Distribution: 27% entering, 73% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.46	0.97 - 8.86	2.50

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.88 Ln(X) + 1.59 $R^2 = 0.75$

Hotel
(310)

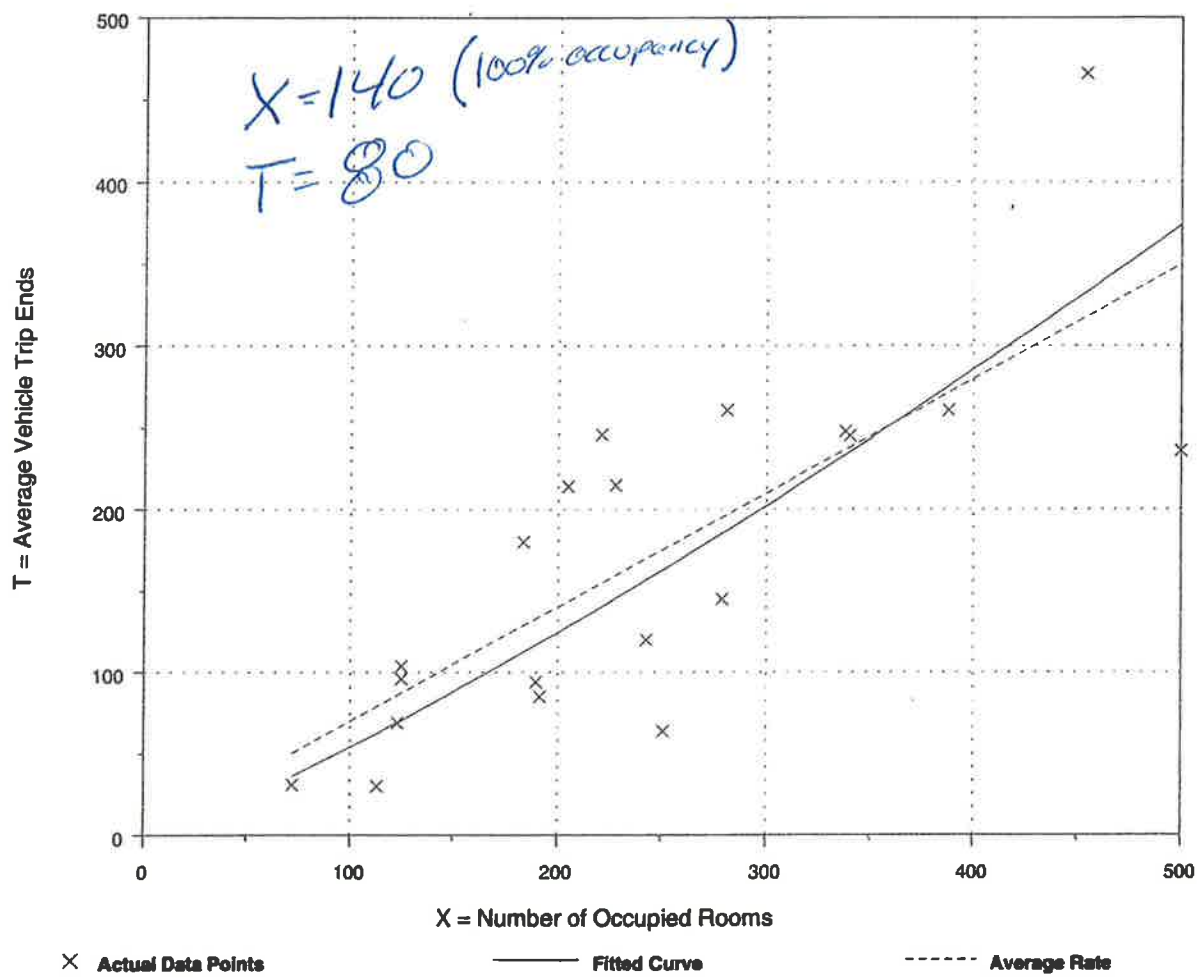
Average Vehicle Trip Ends vs: Occupied Rooms
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 20
Average Number of Occupied Rooms: 243
Directional Distribution: 49% entering, 51% exiting

Trip Generation per Occupied Room

Average Rate	Range of Rates	Standard Deviation
0.70	0.25 - 1.11	0.87

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 1.20 Ln(X) - 1.55 $R^2 = 0.67$

Hotel
(310)

Average Vehicle Trip Ends vs: Occupied Rooms
On a: Saturday,
Peak Hour of Generator

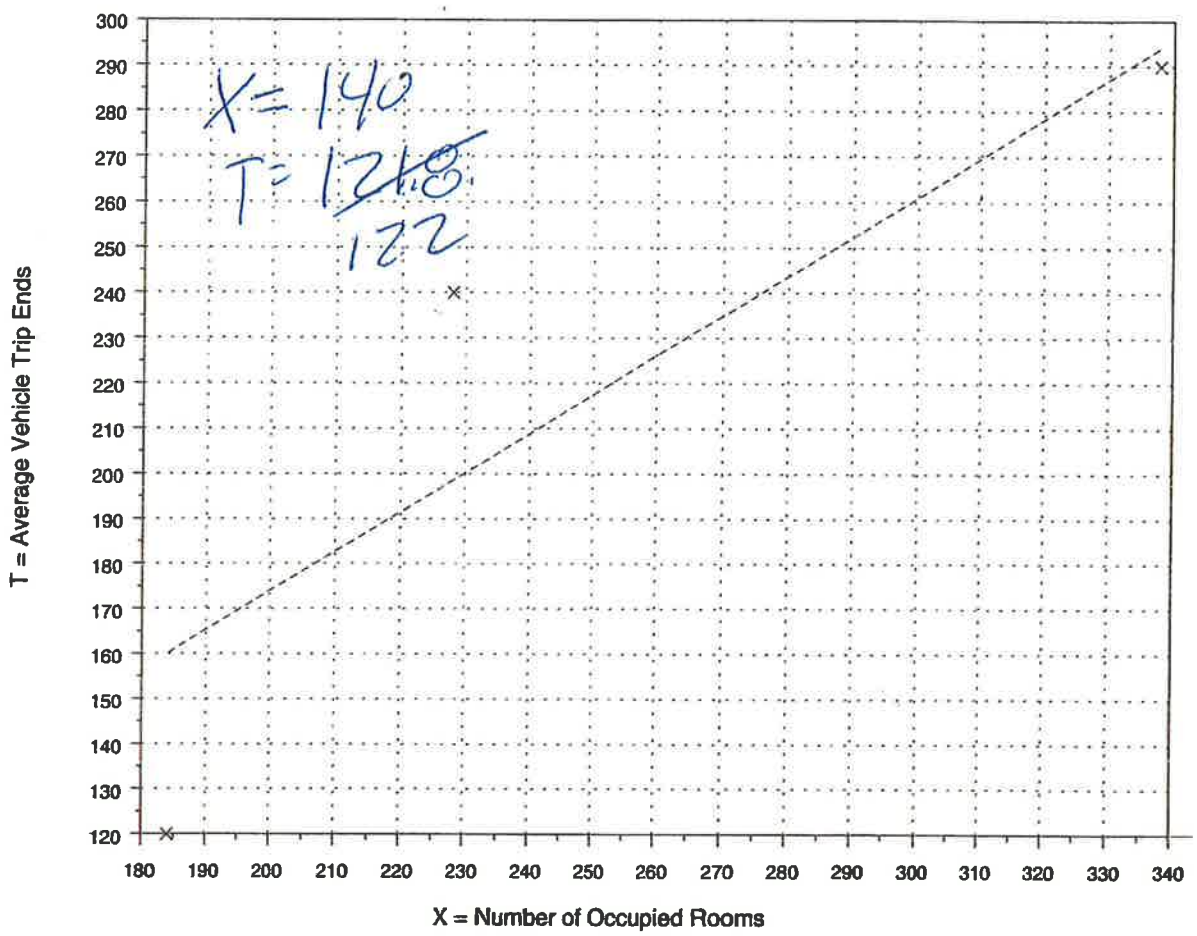
Number of Studies: 3
Average Number of Occupied Rooms: 250
Directional Distribution: Not available

Trip Generation per Occupied Room

Average Rate	Range of Rates	Standard Deviation
0.87	0.65 - 1.05	0.94

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



× **Actual Data Points** ------ **Average Rate**

Fitted Curve Equation: Not given R^2 = ****

General Light Industrial
(110)

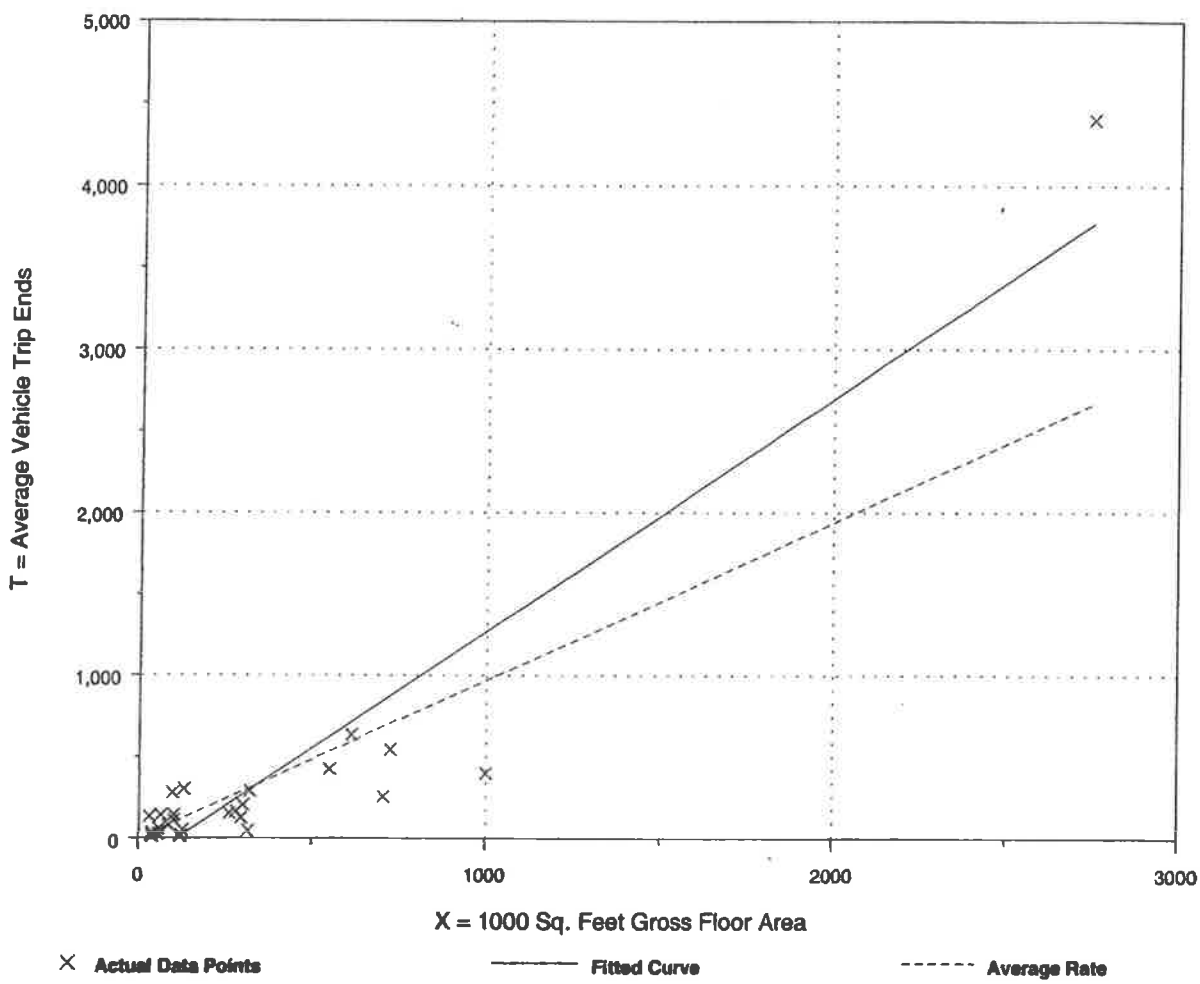
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 27
Average 1000 Sq. Feet GFA: 345
Directional Distribution: 12% entering, 88% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
0.97	0.08 - 4.50	1.16

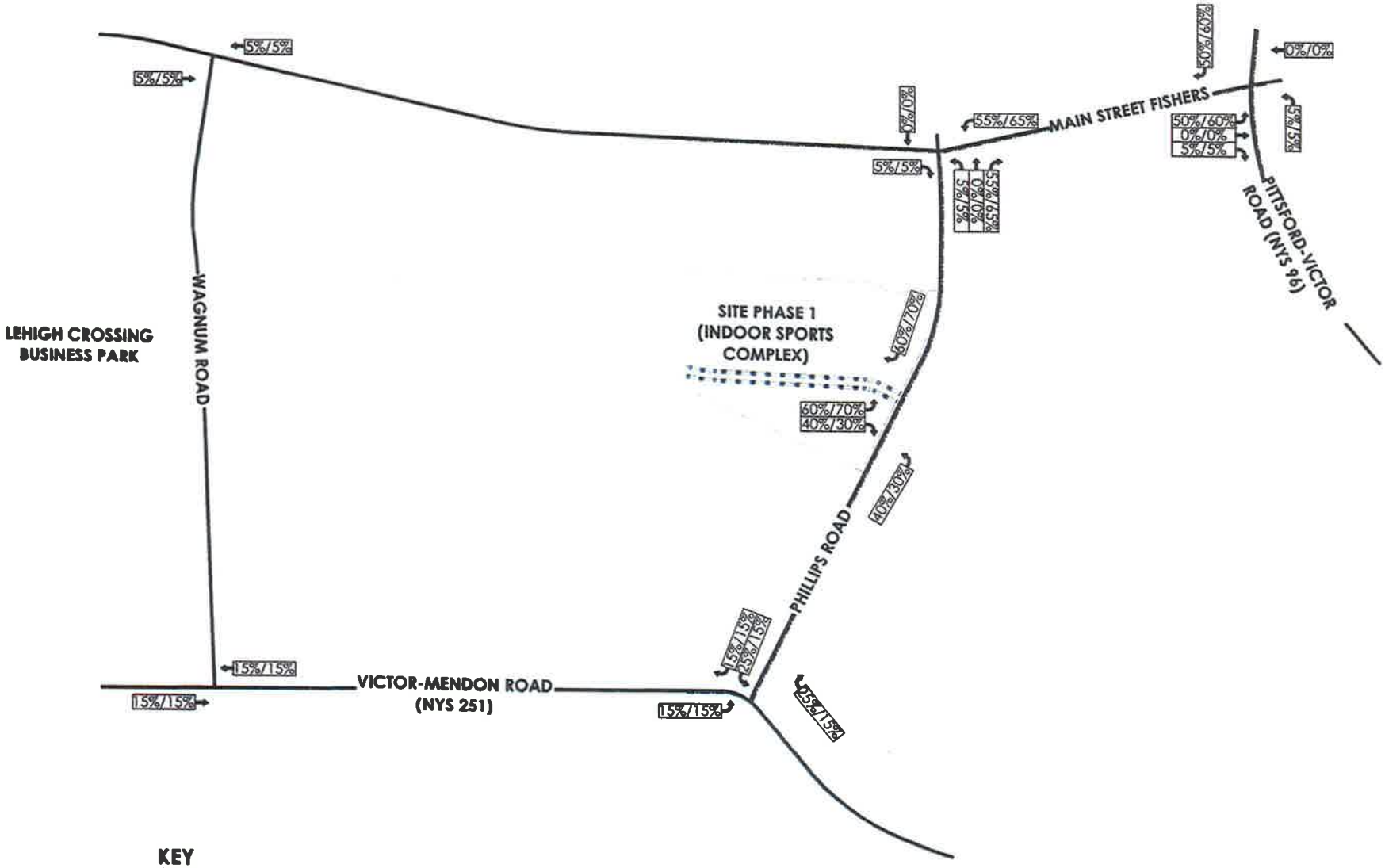
Data Plot and Equation



Fitted Curve Equation: T = 1.43(X) - 157.36 **R^2 = 0.88**

APPENDIX F

TRIP DISTRIBUTION



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

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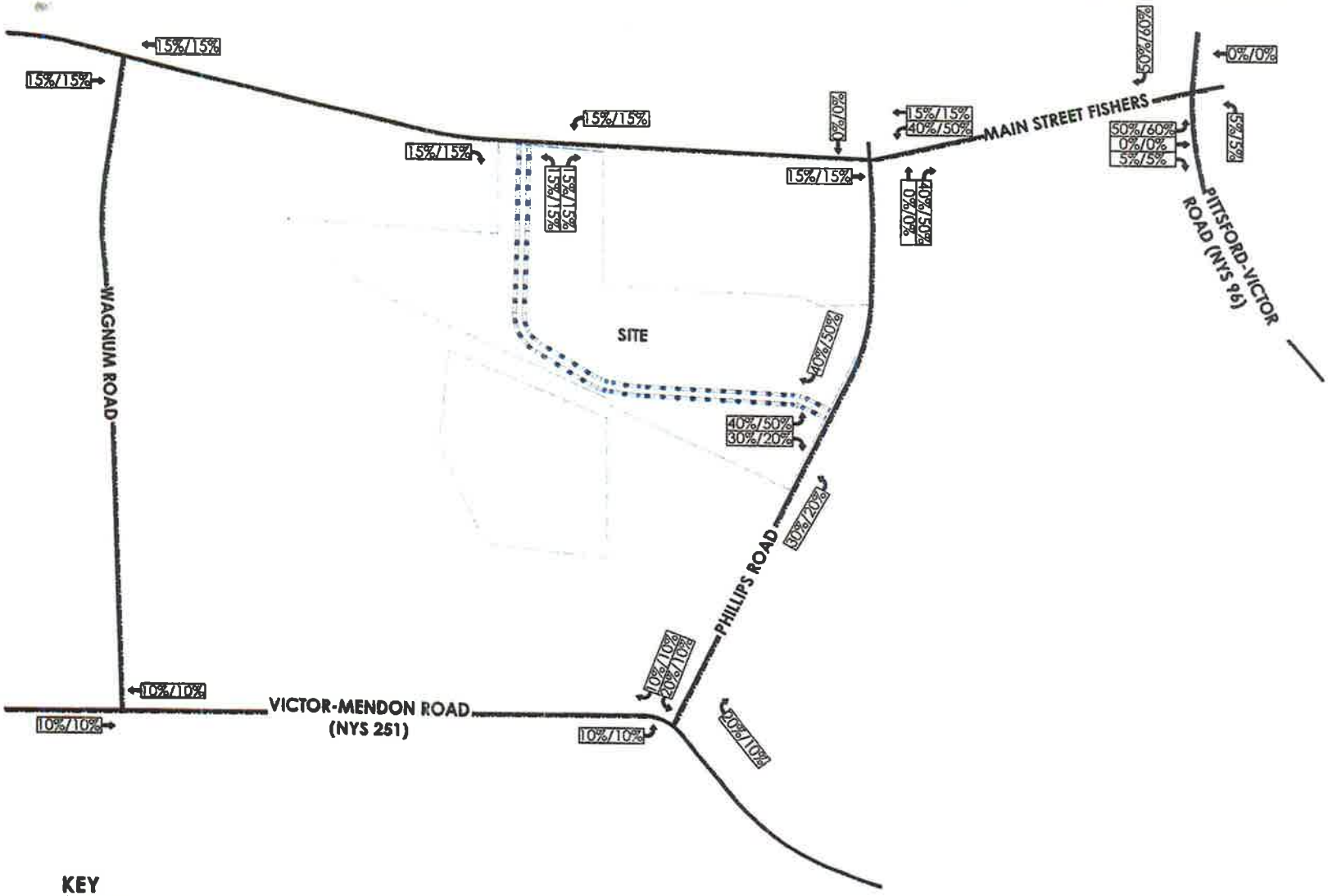
FIGURE 6: PROPOSED PEAK HOUR TRAFFIC DISTRIBUTION 2014

Scale: N.T.S.

Sheet No: 6 of 11



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES
engineering architecture
224 West Main Street, Suite 100
Rochester, NY 14614

Client: Pinnacle Athletic Campus
85 High Tech Drive
Rush, NY 14543
(585)359-9242

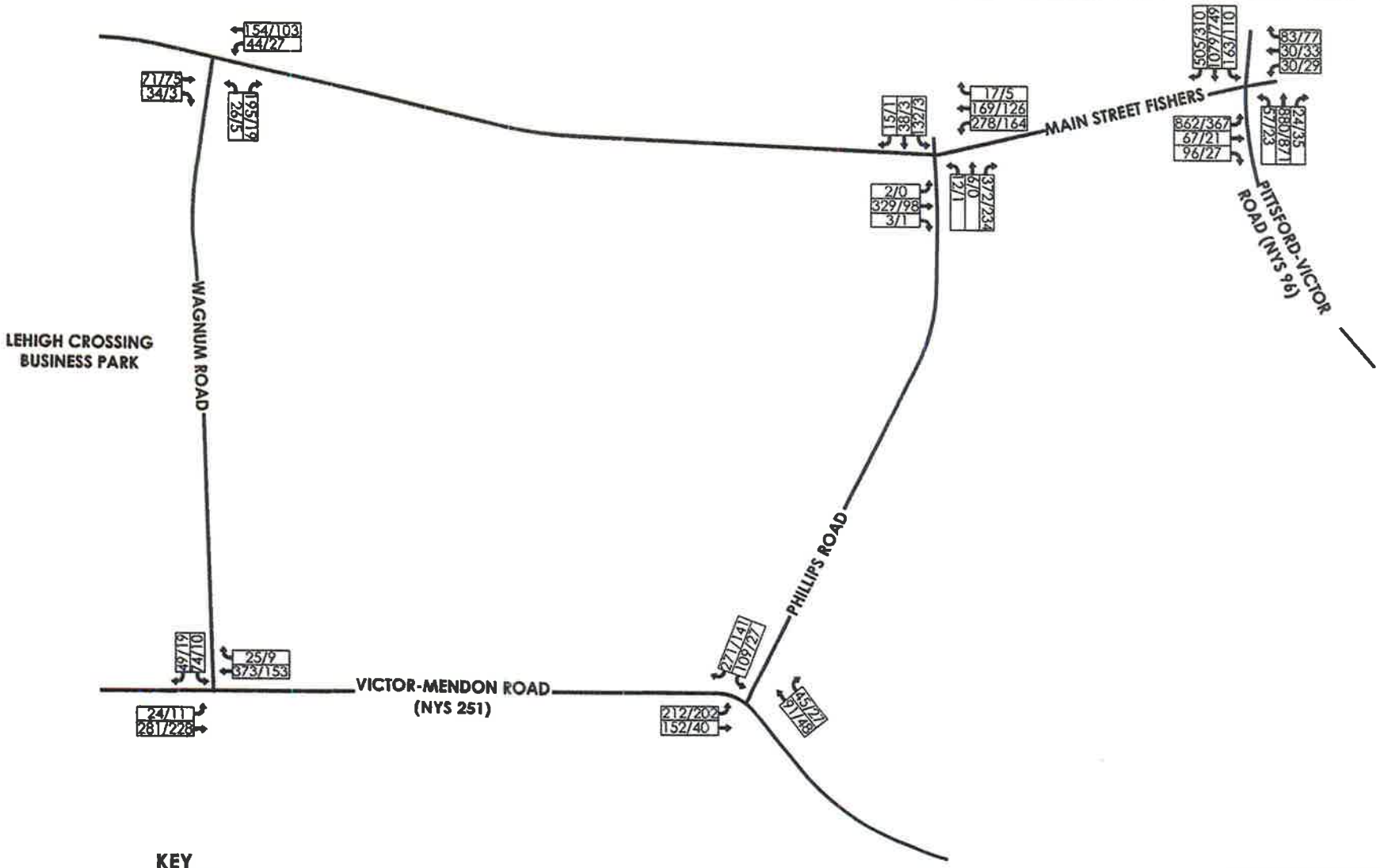
FIGURE 7: PROPOSED PEAK HOUR TRAFFIC DISTRIBUTION 2018

Scale: N.T.S.

Sheet No: 7 of 11

APPENDIX G

2014 BACKGROUND TRAFFIC VOLUMES



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

NOTE: ASSUMES 50% BUILD OF LEHIGH CROSSING

Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES
engineering architecture
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Rochester, NY 14614

Client: Pinnacle Athletic Campus
85 High Tech Drive
Rush, NY 14543
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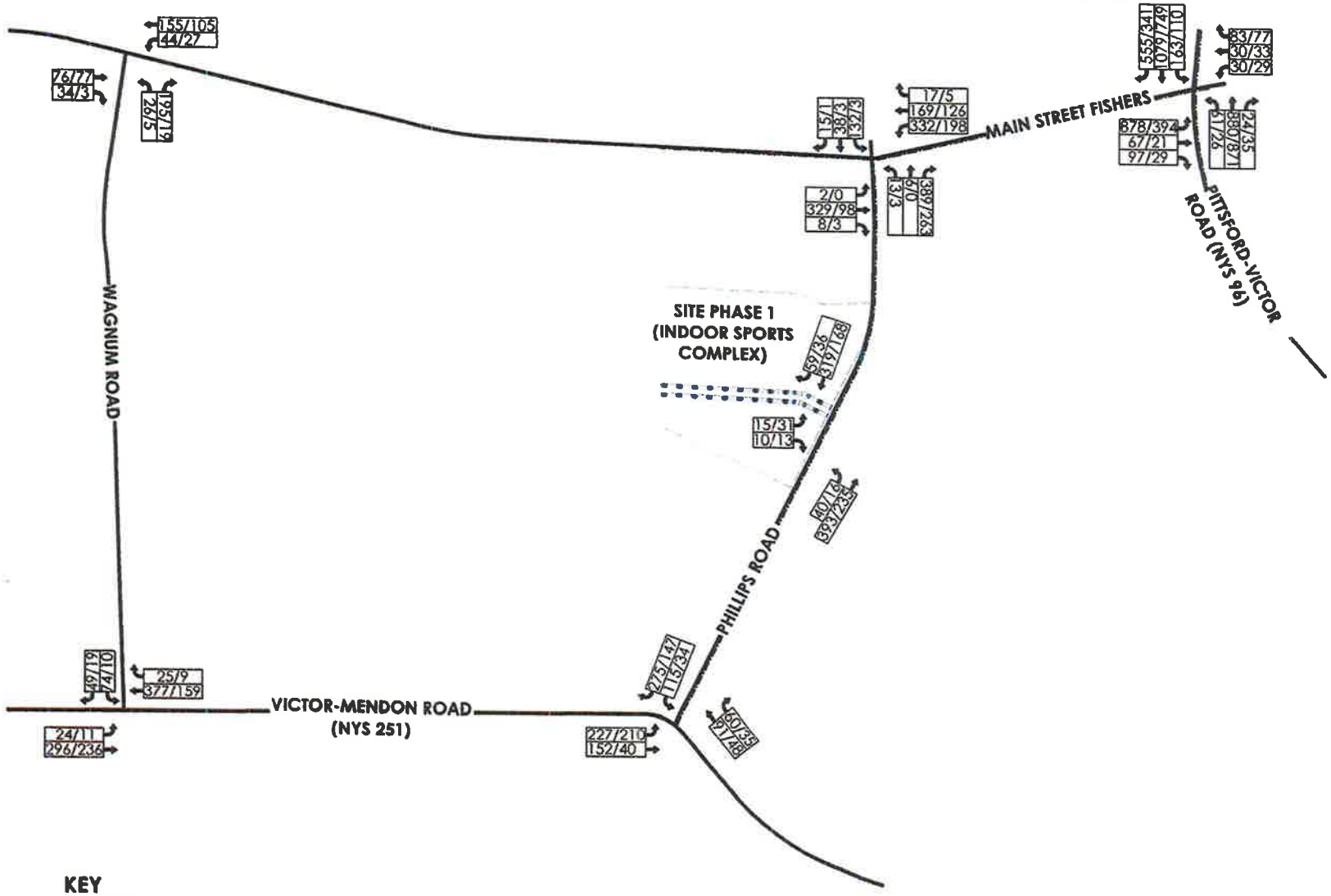
FIGURE 4: BACKGROUND PEAK HOUR VOLUMES 2014 CONDITIONS AT 2.5% YEAR ANNUAL GROWTH

Scale: N.T.S.

Sheet No: 4 of 11

APPENDIX H

2014 PHASE 1 TRAFFIC VOLUMES



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES

engineering architecture

224 West Main Street, Suite 100

Rochester, NY 14614

Client: Pinnacle Athletic Campus
85 High Tech Drive
Rush, NY 14543
(585)359-9242

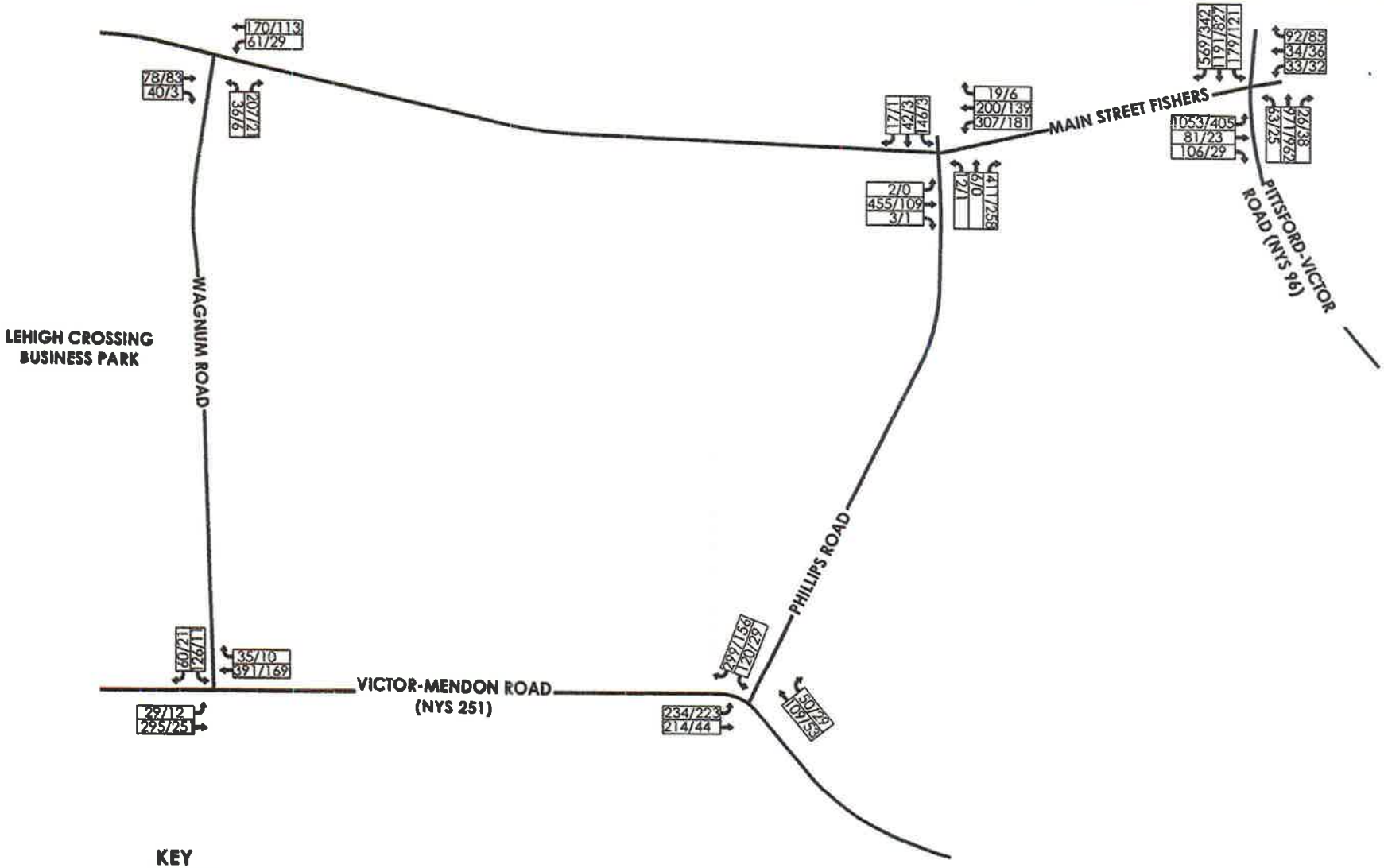
FIGURE 10: DEVELOPED VOLUMES 2014 CONDITIONS AT 2.5% ANNUAL GROWTH RATE

Scale: N.T.S.

Sheet No: 10 of 11

APPENDIX I

2018 BACKGROUND TRAFFIC VOLUMES



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

NOTE: ASSUMES FULL BUILD OF LEHIGH CROSSING

Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES
engineering architecture
224 West Main Street, Suite 100
Rochester, NY 14614

Client:
Pinnacle Athletic Campus
85 High Tech Drive
Rush, NY 14543
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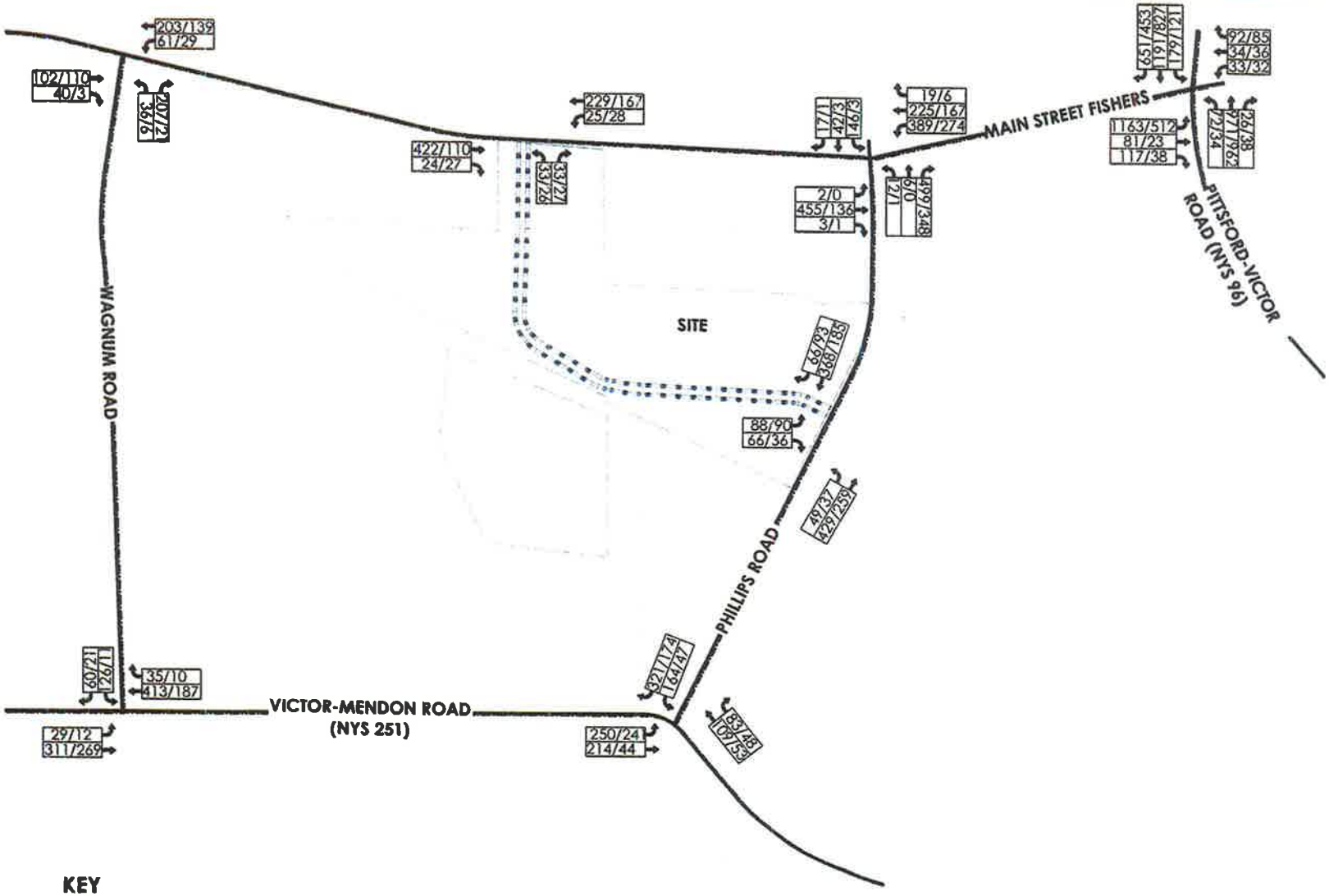
FIGURE 5: BACKGROUND PEAK HOUR VOLUMES 2018 CONDITIONS AT 2.5% YEAR ANNUAL GROWTH

Scale: N.T.S.

Sheet No: 5 of 11

APPENDIX J

2018 FULLY DEVELOPED TRAFFIC VOLUMES



KEY

PM/SAT

PM PEAK HOUR: 4:30 TO 5:30

SATURDAY PEAK HOUR: 12:30-1:30

NOTE: ASSUMES FULL BUILD OF LEHIGH CROSSING

Traffic Study

Pinnacle Athletic Campus

Drawn By: K. Waelder

Date: February 2013

PASSERO ASSOCIATES

engineering architecture

224 West Main Street, Suite 100

Rochester, NY 14614

Client: Pinnacle Athletic Campus

85 High Tech Drive

Rush, NY 14543

(585)359-9242

FIGURE 11: PEAK HOUR VOLUMES 2018 CONDITIONS AT 2.5% YEAR ANNUAL GROWTH RATE

Scale: N.T.S.

Sheet No: 11 of 11

APPENDIX K

CAPACITY ANALYSIS

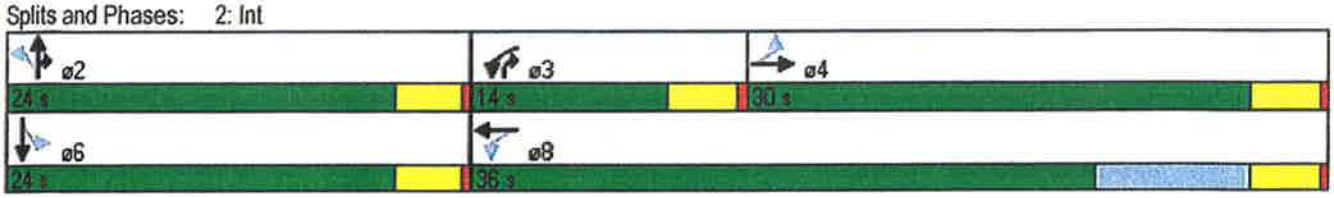
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	221	3	271	152	17	11	5	363	129	37	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.998			0.985				0.850		0.957	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1859	0	1770	1835	0	1770	1863	1583	1770	1783	0
Flt Permitted	0.642			0.327			0.720			0.754		
Satd. Flow (perm)	1196	1859	0	609	1835	0	1341	1863	1583	1405	1783	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			14				395		16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			3971			403	
Travel Time (s)		109.0			47.5			90.3			9.2	
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
Adj. Flow (vph)	2	240	3	295	165	18	12	5	395	140	40	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	243	0	295	183	0	12	5	395	140	56	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pt+ov	Perm		
Protected Phases		4		3	8			2	2 3		6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		2	2	2 3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	30.0	30.0	0.0	14.0	36.0	0.0	24.0	24.0	38.0	24.0	24.0	0.0
Total Split (%)	44.1%	44.1%	0.0%	20.6%	52.9%	0.0%	35.3%	35.3%	55.9%	35.3%	35.3%	0.0%
Maximum Green (s)	26.0	26.0		10.0	32.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5		0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	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		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	14.2	14.2		28.1	28.1		31.9	31.9	45.8	31.9	31.9	
Actuated g/C Ratio	0.21	0.21		0.41	0.41		0.47	0.47	0.67	0.47	0.47	
v/c Ratio	0.01	0.62		0.70	0.24		0.02	0.01	0.33	0.21	0.07	
Control Delay	18.5	31.0		23.1	11.8		12.0	11.8	1.5	13.2	9.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	18.5	31.0		23.1	11.8		12.0	11.8	1.5	13.2	9.5	
LOS	B	C		C	B		B	B	A	B	A	
Approach Delay		30.9			18.8			2.0			12.1	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 68
Actuated Cycle Length: 68
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 14.8 — Intersection LOS: B
Intersection Capacity Utilization 51.4% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	749	57	94	30	28	81	56	858	23	2	159	1053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.888			0.996				
Flt Protected	0.950	0.959		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1697	1583	1770	1654	0	1770	3525	0	0	1770	3539
Flt Permitted	0.950	0.959		0.950			0.194				0.114	
Satd. Flow (perm)	1681	1697	1583	1770	1654	0	361	3525	0	0	212	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			102		88			3				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	814	62	102	33	30	88	61	933	25	2	173	1145
Shared Lane Traffic (%)	46%											
Lane Group Flow (vph)	440	436	102	33	118	0	61	958	0	0	175	1145
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	↱
Volume (vph)	481
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	523
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	523
Shared Lane Traffic (%)	
Lane Group Flow (vph)	523
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	31.6	31.6	31.6	6.7	6.7		36.2	36.2			49.8	49.8
Actuated g/C Ratio	0.32	0.32	0.32	0.07	0.07		0.36	0.36			0.50	0.50
v/c Ratio	0.83	0.81	0.18	0.28	0.61		0.47	0.75			0.69	0.65
Control Delay	46.1	44.7	5.7	50.5	29.9		40.6	33.0			31.7	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	46.1	44.7	5.7	50.5	29.9		40.6	33.0			31.7	21.3
LOS	D	D	A	D	C		D	C			C	C
Approach Delay		41.3			34.4			33.4				16.5
Approach LOS		D			C			C				B

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 27.6 Intersection LOS: C
Intersection Capacity Utilization 73.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	85.3
Actuated g/C Ratio	0.85
v/c Ratio	0.37
Control Delay	0.9
Queue Delay	0.0
Total Delay	0.9
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	69	33	29	150	17	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956				0.886	
Flt Protected				0.992	0.992	
Satd. Flow (prot)	1781	0	0	1848	1637	0
Flt Permitted				0.992	0.992	
Satd. Flow (perm)	1781	0	0	1848	1637	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	75	36	32	163	18	98
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	0	195	116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 29.3% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	207	99	81	44	106	264
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1773	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1773	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	685		3971	
Travel Time (s)		79.9	15.6		90.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	225	108	88	48	115	287
Shared Lane Traffic (%)						
Lane Group Flow (vph)	225	108	136	0	115	287
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 34.3% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	20	274	364	17	22	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.994		0.913	
Flt Protected		0.997			0.982	
Satd. Flow (prot)	0	1857	1852	0	1670	0
Flt Permitted		0.997			0.982	
Satd. Flow (perm)	0	1857	1852	0	1670	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	298	396	18	24	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	320	414	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 41.2% ICU Level of Service A
Analysis Period (min) 15

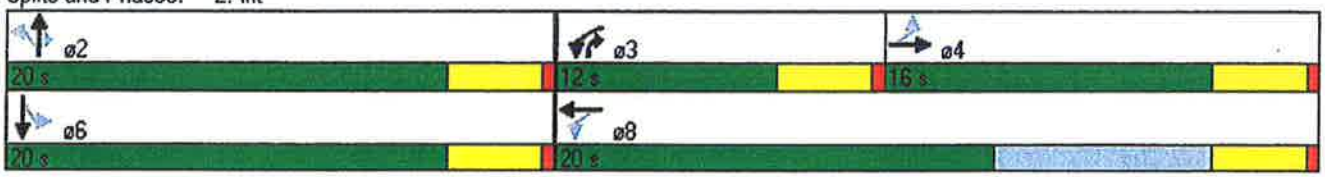
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	96	1	160	123	5	1	1	228	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.995				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1853	0	1770	1863	1583	1770	1792	0
Flt Permitted	0.668			0.436			0.755			0.757		
Satd. Flow (perm)	1244	1861	0	812	1853	0	1406	1863	1583	1410	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5				248		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			3966			403	
Travel Time (s)		109.0			47.5			90.1			9.2	
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
Adj. Flow (vph)	1	104	1	174	134	5	1	1	248	3	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	105	0	174	139	0	1	1	248	3	4	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	16.0	16.0	0.0	12.0	20.0	0.0	20.0	20.0	12.0	20.0	20.0	0.0
Total Split (%)	33.3%	33.3%	0.0%	25.0%	41.7%	0.0%	41.7%	41.7%	25.0%	41.7%	41.7%	0.0%
Maximum Green (s)	12.0	12.0		8.0	16.0		16.0	16.0	8.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	8.0	8.0		17.7	17.7		22.3	22.3	34.7	22.3	22.3	
Actuated g/C Ratio	0.17	0.17		0.37	0.37		0.46	0.46	0.72	0.46	0.46	
v/c Ratio	0.00	0.34		0.38	0.20		0.00	0.00	0.20	0.00	0.00	
Control Delay	15.0	19.8		11.4	8.7		9.0	9.0	1.2	9.3	8.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.0	19.8		11.4	8.7		9.0	9.0	1.2	9.3	8.8	
LOS	B	B		B	A		A	A	A	A	A	
Approach Delay		19.8			10.2			1.2			9.0	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 48
Actuated Cycle Length: 48
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.38
Intersection Signal Delay: 8.4 Intersection LOS: A
Intersection Capacity Utilization 32.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	358	20	26	28	32	75	22	850	34	1	107	731
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.895			0.994				
Flt Protected	0.950	0.957		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1694	1583	1770	1667	0	1770	3518	0	0	1770	3539
Flt Permitted	0.950	0.957		0.950			0.351				0.181	
Satd. Flow (perm)	1681	1694	1583	1770	1667	0	654	3518	0	0	337	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			28		82			4				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	389	22	28	30	35	82	24	924	37	1	116	795
Shared Lane Traffic (%)	47%											
Lane Group Flow (vph)	206	205	28	30	117	0	24	961	0	0	117	795
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

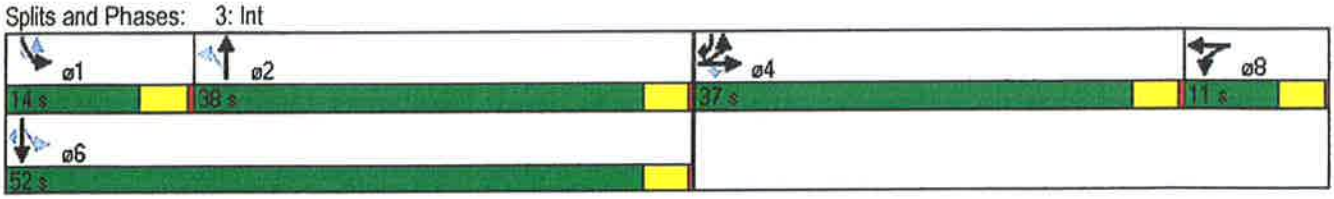
Lane Group	SBR
Lane Configurations	
Volume (vph)	302
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	328
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	328
Shared Lane Traffic (%)	
Lane Group Flow (vph)	328
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	19.7	19.7	19.7	8.2	8.2		47.9	47.9			60.1	60.1
Actuated g/C Ratio	0.20	0.20	0.20	0.08	0.08		0.48	0.48			0.60	0.60
v/c Ratio	0.62	0.61	0.08	0.21	0.55		0.08	0.57			0.37	0.37
Control Delay	43.8	43.4	10.7	45.2	26.3		20.1	22.5			14.1	12.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	43.8	43.4	10.7	45.2	26.3		20.1	22.5			14.1	12.4
LOS	D	D	B	D	C		C	C			B	B
Approach Delay		41.5			30.2			22.5				9.4
Approach LOS		D			C			C				A

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 20.1 — Intersection LOS: C
Intersection Capacity Utilization 57.7% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Int



Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	83.8
Actuated g/C Ratio	0.84
v/c Ratio	0.24
Control Delay	0.6
Queue Delay	0.0
Total Delay	0.6
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	75	3	26	100	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.891	
Flt Protected				0.990	0.990	
Satd. Flow (prot)	1853	0	0	1844	1643	0
Flt Permitted				0.990	0.990	
Satd. Flow (perm)	1853	0	0	1844	1643	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	3	28	109	5	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	137	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	197	39	47	26	26	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1773	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1773	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	672		3966	
Travel Time (s)		79.9	15.3		90.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	214	42	51	28	28	150
Shared Lane Traffic (%)						
Lane Group Flow (vph)	214	42	79	0	28	150
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 27.6% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	222	149	9	10	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.911	
Flt Protected		0.998			0.983	
Satd. Flow (prot)	0	1859	1848	0	1668	0
Flt Permitted		0.998			0.983	
Satd. Flow (perm)	0	1859	1848	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	241	162	10	11	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	253	172	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 30.6% ICU Level of Service A
Analysis Period (min) 15

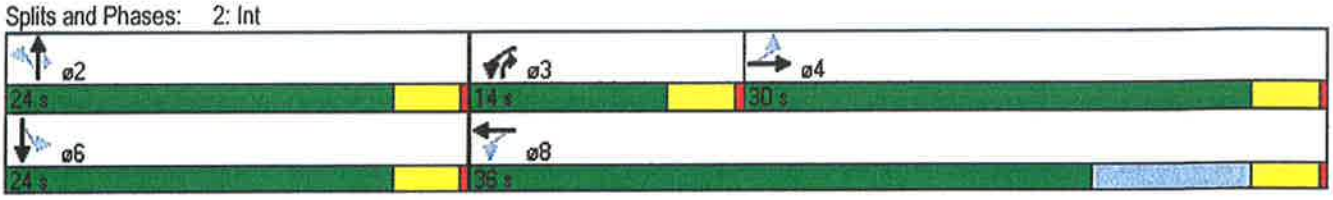
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	329	3	278	169	17	12	6	372	132	38	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.987				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1839	0	1770	1863	1583	1770	1785	0
Flt Permitted	0.631			0.245			0.720			0.753		
Satd. Flow (perm)	1175	1861	0	456	1839	0	1341	1863	1583	1403	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			13				324		16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			3971			403	
Travel Time (s)		109.0			47.5			90.3			9.2	
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
Adj. Flow (vph)	2	358	3	302	184	18	13	7	404	143	41	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	361	0	302	202	0	13	7	404	143	57	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	30.0	30.0	0.0	14.0	36.0	0.0	24.0	24.0	14.0	24.0	24.0	0.0
Total Split (%)	44.1%	44.1%	0.0%	20.6%	52.9%	0.0%	35.3%	35.3%	20.6%	35.3%	35.3%	0.0%
Maximum Green (s)	26.0	26.0		10.0	32.0		20.0	20.0	10.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	18.5	18.5		32.4	32.4		27.6	27.6	41.5	27.6	27.6	
Actuated g/C Ratio	0.27	0.27		0.48	0.48		0.41	0.41	0.61	0.41	0.41	
v/c Ratio	0.01	0.71		0.74	0.23		0.02	0.01	0.37	0.25	0.08	
Control Delay	15.0	29.8		22.2	9.4		15.3	15.2	3.1	16.9	12.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.0	29.8		22.2	9.4		15.3	15.2	3.1	16.9	12.1	
LOS	B	C		C	A		B	B	A	B	B	
Approach Delay		29.7			17.1			3.7			15.5	
Approach LOS		C			B			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 68
Actuated Cycle Length: 68
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.1 Intersection LOS: B
Intersection Capacity Utilization 57.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	862	67	96	30	30	83	57	880	24	2	163	1079
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.890			0.996				
Flt Protected	0.950	0.959		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1697	1583	1770	1658	0	1770	3525	0	0	1770	3539
Flt Permitted	0.950	0.959		0.950			0.178				0.103	
Satd. Flow (perm)	1681	1697	1583	1770	1658	0	332	3525	0	0	192	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			104		90			3				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	937	73	104	33	33	90	62	957	26	2	177	1173
Shared Lane Traffic (%)	46%											
Lane Group Flow (vph)	506	504	104	33	123	0	62	983	0	0	179	1173
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	↱
Volume (vph)	505
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	549
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	549
Shared Lane Traffic (%)	
Lane Group Flow (vph)	549
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	32.7	32.7	32.7	6.7	6.7		34.9	34.9			48.6	48.6
Actuated g/C Ratio	0.33	0.33	0.33	0.07	0.07		0.35	0.35			0.49	0.49
v/c Ratio	0.92	0.91	0.18	0.28	0.63		0.53	0.80			0.73	0.68
Control Delay	56.4	54.4	5.6	50.5	31.1		47.0	35.4			36.8	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	56.4	54.4	5.6	50.5	31.1		47.0	35.4			36.8	22.4
LOS	E	D	A	D	C		D	D			D	C
Approach Delay		50.8			35.2			36.1				17.6
Approach LOS		D			D			D				B

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 31.6 Intersection LOS: C
Intersection Capacity Utilization 77.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	85.3
Actuated g/C Ratio	0.85
v/c Ratio	0.38
Control Delay	0.9
Queue Delay	0.0
Total Delay	0.9
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	71	34	44	154	26	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.956				0.881	
Flt Protected				0.989	0.994	
Satd. Flow (prot)	1781	0	0	1842	1631	0
Flt Permitted				0.989	0.994	
Satd. Flow (perm)	1781	0	0	1842	1631	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	77	37	48	167	28	212
Shared Lane Traffic (%)						
Lane Group Flow (vph)	114	0	0	215	240	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 37.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	212	152	91	45	109	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.955			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1779	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1779	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	684		3971	
Travel Time (s)		79.9	15.5		90.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	230	165	99	49	118	295
Shared Lane Traffic (%)						
Lane Group Flow (vph)	230	165	148	0	118	295
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.3% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	24	281	373	25	74	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.946	
Flt Protected		0.996			0.971	
Satd. Flow (prot)	0	1855	1848	0	1711	0
Flt Permitted		0.996			0.971	
Satd. Flow (perm)	0	1855	1848	0	1711	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	305	405	27	80	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	331	432	0	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 48.4% ICU Level of Service A
Analysis Period (min) 15

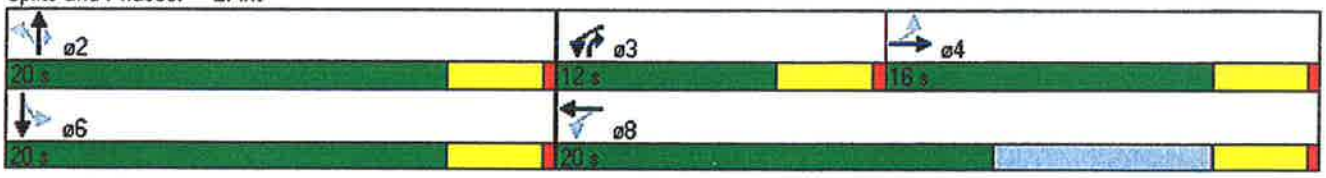
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	98	1	164	126	5	1	0	234	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.995				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1853	0	1770	1863	1583	1770	1792	0
Flt Permitted	0.666			0.437			0.755			0.757		
Satd. Flow (perm)	1241	1861	0	814	1853	0	1406	1863	1583	1410	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			5				631		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			3966			403	
Travel Time (s)		109.0			47.5			90.1			9.2	
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
Adj. Flow (vph)	1	107	1	178	137	5	1	0	254	3	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	108	0	178	142	0	1	0	254	3	4	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	16.0	16.0	0.0	12.0	20.0	0.0	20.0	20.0	12.0	20.0	20.0	0.0
Total Split (%)	33.3%	33.3%	0.0%	25.0%	41.7%	0.0%	41.7%	41.7%	25.0%	41.7%	41.7%	0.0%
Maximum Green (s)	12.0	12.0		8.0	16.0		16.0	16.0	8.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	8.1	8.1		17.8	17.8		22.2		34.6	22.2	22.2	
Actuated g/C Ratio	0.17	0.17		0.37	0.37		0.46		0.72	0.46	0.46	
v/c Ratio	0.00	0.34		0.39	0.21		0.00		0.19	0.00	0.00	
Control Delay	15.0	19.8		11.5	8.7		9.0		0.3	9.7	9.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	15.0	19.8		11.5	8.7		9.0		0.3	9.7	9.0	
LOS	B	B		B	A		A		A	A	A	
Approach Delay		19.8			10.2						9.3	
Approach LOS		B			B						A	

Intersection Summary

Area Type: Other
Cycle Length: 48
Actuated Cycle Length: 48
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.39
Intersection Signal Delay: 8.1 Intersection LOS: A
Intersection Capacity Utilization 33.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	367	21	27	29	33	77	23	871	35	1	110	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.895			0.994				
Flt Protected	0.950	0.957		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1694	1583	1770	1667	0	1770	3518	0	0	1770	3539
Flt Permitted	0.950	0.957		0.950			0.345				0.170	
Satd. Flow (perm)	1681	1694	1583	1770	1667	0	643	3518	0	0	317	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			29		84			4				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	399	23	29	32	36	84	25	947	38	1	120	814
Shared Lane Traffic (%)	47%											
Lane Group Flow (vph)	211	211	29	32	120	0	25	985	0	0	121	814
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	↱
Volume (vph)	310
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	337
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	337
Shared Lane Traffic (%)	
Lane Group Flow (vph)	337
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	20.4	20.4	20.4	8.0	8.0		47.3	47.3			59.6	59.6
Actuated g/C Ratio	0.20	0.20	0.20	0.08	0.08		0.47	0.47			0.60	0.60
v/c Ratio	0.62	0.61	0.08	0.23	0.57		0.08	0.59			0.39	0.39
Control Delay	42.9	42.7	10.2	46.1	27.2		20.5	23.3			14.7	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	42.9	42.7	10.2	46.1	27.2		20.5	23.3			14.7	12.7
LOS	D	D	B	D	C		C	C			B	B
Approach Delay		40.7			31.2			23.3				9.7
Approach LOS		D			C			C				A

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 20.4 — Intersection LOS: C
Intersection Capacity Utilization 58.7% — ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	84.0
Actuated g/C Ratio	0.84
v/c Ratio	0.24
Control Delay	0.6
Queue Delay	0.0
Total Delay	0.6
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	75	3	27	103	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.891	
Flt Protected				0.990	0.990	
Satd. Flow (prot)	1853	0	0	1844	1643	0
Flt Permitted				0.990	0.990	
Satd. Flow (perm)	1853	0	0	1844	1643	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	82	3	29	112	5	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	0	141	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.6% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	202	40	48	27	27	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1773	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1773	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	718		3966	
Travel Time (s)		79.9	16.3		90.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	43	52	29	29	153
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	43	81	0	29	153
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 27.9% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	228	153	9	10	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.911	
Flt Protected		0.998			0.983	
Satd. Flow (prot)	0	1859	1848	0	1668	0
Flt Permitted		0.998			0.983	
Satd. Flow (perm)	0	1859	1848	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	248	166	10	11	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	260	176	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 31.0% ICU Level of Service A
Analysis Period (min) 15

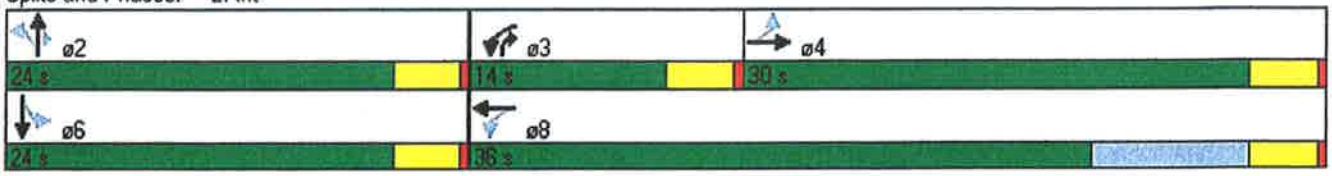
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	329	8	332	169	17	13	6	389	132	38	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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			0.987				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1839	0	1770	1863	1583	1770	1785	0
Flt Permitted	0.631			0.241			0.720			0.753		
Satd. Flow (perm)	1175	1855	0	449	1839	0	1341	1863	1583	1403	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			13				324		16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			1908			403	
Travel Time (s)		109.0			47.5			43.4			9.2	
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
Adj. Flow (vph)	2	358	9	361	184	18	14	7	423	143	41	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	367	0	361	202	0	14	7	423	143	57	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	30.0	30.0	0.0	14.0	36.0	0.0	24.0	24.0	14.0	24.0	24.0	0.0
Total Split (%)	44.1%	44.1%	0.0%	20.6%	52.9%	0.0%	35.3%	35.3%	20.6%	35.3%	35.3%	0.0%
Maximum Green (s)	26.0	26.0		10.0	32.0		20.0	20.0	10.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	18.7	18.7		32.7	32.7		27.3	27.3	41.3	27.3	27.3	
Actuated g/C Ratio	0.28	0.28		0.48	0.48		0.40	0.40	0.61	0.40	0.40	
v/c Ratio	0.01	0.72		0.88	0.23		0.03	0.01	0.39	0.25	0.08	
Control Delay	14.5	29.7		36.1	9.3		15.5	15.3	3.4	17.1	12.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.5	29.7		36.1	9.3		15.5	15.3	3.4	17.1	12.3	
LOS	B	C		D	A		B	B	A	B	B	
Approach Delay		29.6			26.4			4.0			15.7	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 68
Actuated Cycle Length: 68
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 60.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	878	67	97	30	30	83	61	880	24	2	163	1079
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.890			0.996				
Flt Protected	0.950	0.959		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1697	1583	1770	1658	0	1770	3525	0	0	1770	3539
Flt Permitted	0.950	0.959		0.950			0.176				0.104	
Satd. Flow (perm)	1681	1697	1583	1770	1658	0	328	3525	0	0	194	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			105		90			3				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	954	73	105	33	33	90	66	957	26	2	177	1173
Shared Lane Traffic (%)	46%											
Lane Group Flow (vph)	515	512	105	33	123	0	66	983	0	0	179	1173
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	↱
Volume (vph)	555
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	596
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	603
Shared Lane Traffic (%)	
Lane Group Flow (vph)	603
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	33.0	33.0	33.0	6.7	6.7		34.7	34.7			48.3	48.3
Actuated g/C Ratio	0.33	0.33	0.33	0.07	0.07		0.35	0.35			0.48	0.48
v/c Ratio	0.93	0.91	0.18	0.28	0.63		0.58	0.80			0.73	0.69
Control Delay	57.7	55.4	5.6	50.5	31.1		50.9	35.8			36.5	22.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	57.7	55.4	5.6	50.5	31.1		50.9	35.8			36.5	22.6
LOS	E	E	A	D	C		D	D			D	C
Approach Delay		51.8			35.2			36.7				17.2
Approach LOS		D			D			D				B

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 31.8 — Intersection LOS: C
Intersection Capacity Utilization 77.6% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	85.3
Actuated g/C Ratio	0.85
v/c Ratio	0.42
Control Delay	1.0
Queue Delay	0.0
Total Delay	1.0
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	76	34	44	155	26	195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.958				0.881	
Flt Protected				0.989	0.994	
Satd. Flow (prot)	1785	0	0	1842	1631	0
Flt Permitted				0.989	0.994	
Satd. Flow (perm)	1785	0	0	1842	1631	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	37	48	168	28	212
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	0	216	240	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 37.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	227	152	91	60	115	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.946			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1762	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1762	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	752		1949	
Travel Time (s)		79.9	17.1		44.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	247	165	99	65	125	299
Shared Lane Traffic (%)						
Lane Group Flow (vph)	247	165	164	0	125	299
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 37.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	24	296	377	25	74	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.946	
Flt Protected		0.996			0.971	
Satd. Flow (prot)	0	1855	1848	0	1711	0
Flt Permitted		0.996			0.971	
Satd. Flow (perm)	0	1855	1848	0	1711	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	26	322	410	27	80	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	348	437	0	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 49.2% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	15	10	40	393	319	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.979	
Flt Protected	0.950			0.995		
Satd. Flow (prot)	1770	1583	0	1853	1824	0
Flt Permitted	0.950			0.995		
Satd. Flow (perm)	1770	1583	0	1853	1824	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	945			1949	1908	
Travel Time (s)	21.5			44.3	43.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	11	43	427	347	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	11	0	470	411	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 56.6% ICU Level of Service B
Analysis Period (min) 15

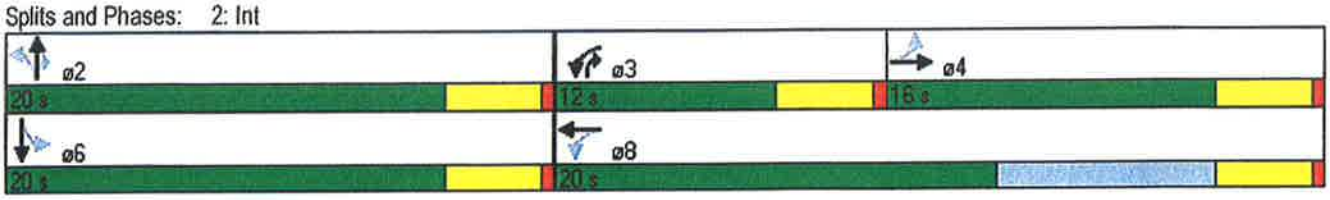
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	98	3	198	126	5	3	0	263	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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			0.995				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1855	0	1770	1853	0	1770	1863	1583	1770	1792	0
Flt Permitted	0.666			0.437			0.755			0.757		
Satd. Flow (perm)	1241	1855	0	814	1853	0	1406	1863	1583	1410	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5				631		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			1529			403	
Travel Time (s)		109.0			47.5			34.8			9.2	
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
Adj. Flow (vph)	1	107	3	215	137	5	3	0	286	3	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	110	0	215	142	0	3	0	286	3	4	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	16.0	16.0	0.0	12.0	20.0	0.0	20.0	20.0	12.0	20.0	20.0	0.0
Total Split (%)	33.3%	33.3%	0.0%	25.0%	41.7%	0.0%	41.7%	41.7%	25.0%	41.7%	41.7%	0.0%
Maximum Green (s)	12.0	12.0		8.0	16.0		16.0	16.0	8.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	8.1	8.1		18.0	18.0		22.0		34.6	22.0	22.0	
Actuated g/C Ratio	0.17	0.17		0.38	0.38		0.46		0.72	0.46	0.46	
v/c Ratio	0.00	0.35		0.47	0.20		0.00		0.22	0.00	0.00	
Control Delay	15.0	19.6		12.7	8.7		9.7		0.4	9.7	9.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	15.0	19.6		12.7	8.7		9.7		0.4	9.7	9.0	
LOS	B	B		B	A		A		A	A	A	
Approach Delay		19.6			11.1						9.3	
Approach LOS		B			B						A	

Intersection Summary

Area Type: Other
Cycle Length: 48
Actuated Cycle Length: 48
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.47
Intersection Signal Delay: 8.3 — Intersection LOS: A
Intersection Capacity Utilization 35.0% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	394	21	29	29	33	77	26	871	35	1	110	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.895			0.994				
Flt Protected	0.950	0.957		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1694	1583	1770	1667	0	1770	3518	0	0	1770	3539
Flt Permitted	0.950	0.957		0.950			0.345				0.165	
Satd. Flow (perm)	1681	1694	1583	1770	1667	0	643	3518	0	0	307	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			32		84			4				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	428	23	32	32	36	84	28	947	38	1	120	814
Shared Lane Traffic (%)	47%											
Lane Group Flow (vph)	227	224	32	32	120	0	28	985	0	0	121	814
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	
Volume (vph)	341
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	371
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	371
Shared Lane Traffic (%)	
Lane Group Flow (vph)	371
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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	21.7	7.6	7.6		46.2	46.2			58.6	58.6
Actuated g/C Ratio	0.22	0.22	0.22	0.08	0.08		0.46	0.46			0.59	0.59
v/c Ratio	0.62	0.61	0.09	0.24	0.59		0.09	0.60			0.40	0.39
Control Delay	41.7	41.2	9.5	47.3	28.5		21.2	24.2			15.4	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	41.7	41.2	9.5	47.3	28.5		21.2	24.2			15.4	13.2
LOS	D	D	A	D	C		C	C			B	B
Approach Delay		39.3			32.5			24.1				9.8
Approach LOS		D			C			C				A

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.62
Intersection Signal Delay: 20.7 Intersection LOS: C
Intersection Capacity Utilization 59.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	84.4
Actuated g/C Ratio	0.84
v/c Ratio	0.27
Control Delay	0.6
Queue Delay	0.0
Total Delay	0.6
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	77	3	27	105	5	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995				0.891	
Flt Protected				0.990	0.990	
Satd. Flow (prot)	1853	0	0	1844	1643	0
Flt Permitted				0.990	0.990	
Satd. Flow (perm)	1853	0	0	1844	1643	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	84	3	29	114	5	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	87	0	0	143	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 23.7% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	210	40	48	35	34	147
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.943			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1757	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1757	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	667		2329	
Travel Time (s)		79.9	15.2		52.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	228	43	52	38	37	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	228	43	90	0	37	160
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 28.3% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	11	236	159	9	10	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.911	
Flt Protected		0.998			0.983	
Satd. Flow (prot)	0	1859	1850	0	1668	0
Flt Permitted		0.998			0.983	
Satd. Flow (perm)	0	1859	1850	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	12	257	173	10	11	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	269	183	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 31.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	31	13	16	235	168	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.976	
Flt Protected	0.950			0.997		
Satd. Flow (prot)	1770	1583	0	1857	1818	0
Flt Permitted	0.950			0.997		
Satd. Flow (perm)	1770	1583	0	1857	1818	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	372			2329	1529	
Travel Time (s)	8.5			52.9	34.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	34	14	17	255	183	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	14	0	272	222	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 35.5% ICU Level of Service A
Analysis Period (min) 15

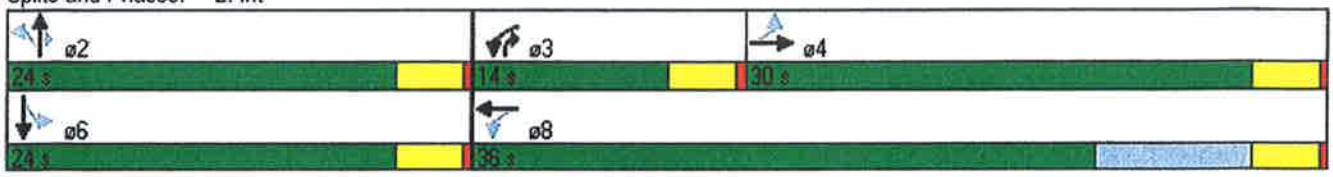
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	455	3	307	200	19	12	6	411	146	42	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.987				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1839	0	1770	1863	1583	1770	1785	0
Flt Permitted	0.611			0.163			0.715			0.753		
Satd. Flow (perm)	1138	1861	0	304	1839	0	1332	1863	1583	1403	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			12				201		18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			3971			403	
Travel Time (s)		109.0			47.5			90.3			9.2	
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
Adj. Flow (vph)	2	495	3	334	217	21	13	7	447	159	46	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	498	0	334	238	0	13	7	447	159	64	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	30.0	30.0	0.0	14.0	36.0	0.0	24.0	24.0	14.0	24.0	24.0	0.0
Total Split (%)	44.1%	44.1%	0.0%	20.6%	52.9%	0.0%	35.3%	35.3%	20.6%	35.3%	35.3%	0.0%
Maximum Green (s)	26.0	26.0		10.0	32.0		20.0	20.0	10.0	20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	22.4	22.4		36.4	36.4		23.6	23.6	37.6	23.6	23.6	
Actuated g/C Ratio	0.33	0.33		0.54	0.54		0.35	0.35	0.55	0.35	0.35	
v/c Ratio	0.01	0.81		0.88	0.24		0.03	0.01	0.46	0.33	0.10	
Control Delay	13.0	31.5		39.5	7.9		17.2	17.0	7.3	20.4	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	13.0	31.5		39.5	7.9		17.2	17.0	7.3	20.4	13.9	
LOS	B	C		D	A		B	B	A	C	B	
Approach Delay		31.5			26.4			7.7			18.5	
Approach LOS		C			C			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 68
Actuated Cycle Length: 68
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 21.9 Intersection LOS: C
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	1053	81	106	33	34	92	63	971	26	2	179	1191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.891			0.996				
Flt Protected	0.950	0.959		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1697	1583	1770	1660	0	1770	3525	0	0	1770	3539
Flt Permitted	0.950	0.959		0.950			0.129				0.104	
Satd. Flow (perm)	1681	1697	1583	1770	1660	0	240	3525	0	0	194	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			102		100			3				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	1145	88	115	36	37	100	68	1055	28	2	195	1295
Shared Lane Traffic (%)	46%											
Lane Group Flow (vph)	618	615	115	36	137	0	68	1083	0	0	197	1295
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	↱
Volume (vph)	569
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	554
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	618
Shared Lane Traffic (%)	
Lane Group Flow (vph)	618
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	33.0	33.0	33.0	6.7	6.7		34.4	34.4			48.3	48.3
Actuated g/C Ratio	0.33	0.33	0.33	0.07	0.07		0.34	0.34			0.48	0.48
v/c Ratio	1.11	1.10	0.19	0.31	0.67		0.82	0.89			0.79	0.76
Control Delay	106.4	101.0	7.1	51.3	32.5		94.4	41.9			42.7	24.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	106.4	101.0	7.1	51.3	32.5		94.4	41.9			42.7	24.7
LOS	F	F	A	D	C		F	D			D	C
Approach Delay		95.5			36.4			45.0				19.5
Approach LOS		F			D			D				B

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.11
Intersection Signal Delay: 47.7 Intersection LOS: D
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	85.3
Actuated g/C Ratio	0.85
v/c Ratio	0.43
Control Delay	1.2
Queue Delay	0.0
Total Delay	1.2
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	78	40	61	170	36	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.955				0.885	
Flt Protected				0.987	0.993	
Satd. Flow (prot)	1779	0	0	1839	1637	0
Flt Permitted				0.987	0.993	
Satd. Flow (perm)	1779	0	0	1839	1637	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	85	43	66	185	39	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	0	251	264	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 40.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	234	214	109	50	120	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.958			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1785	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1785	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	618		3971	
Travel Time (s)		79.9	14.0		90.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	254	233	118	54	130	325
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	233	172	0	130	325
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 38.4% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	29	295	391	35	126	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989		0.957	
Flt Protected		0.995			0.967	
Satd. Flow (prot)	0	1853	1842	0	1724	0
Flt Permitted		0.995			0.967	
Satd. Flow (perm)	0	1853	1842	0	1724	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	321	425	38	137	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	353	463	0	202	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 56.9% ICU Level of Service B
Analysis Period (min) 15

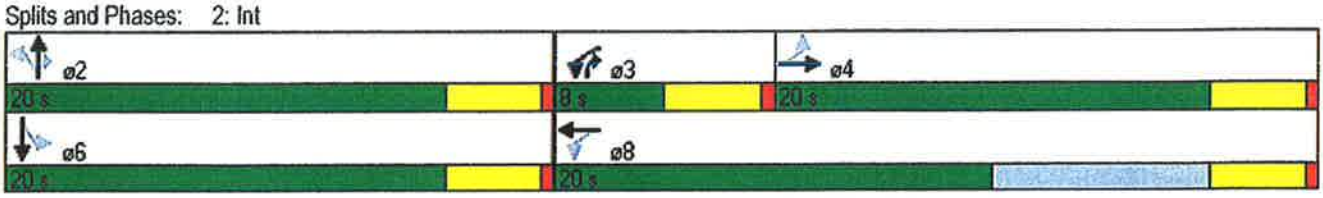
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	109	1	181	139	6	1	1	258	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.993				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1850	0	1770	1863	1583	1770	1792	0
Flt Permitted	0.657			0.440			0.755			0.757		
Satd. Flow (perm)	1224	1861	0	820	1850	0	1406	1863	1583	1410	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			7				280		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		4795			2089			3966			403	
Travel Time (s)		109.0			47.5			90.1			9.2	
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
Adj. Flow (vph)	1	118	1	197	151	7	1	1	280	3	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	119	0	197	158	0	1	1	280	3	4	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	20.0	20.0	0.0	8.0	20.0	0.0	20.0	20.0	8.0	20.0	20.0	0.0
Total Split (%)	41.7%	41.7%	0.0%	16.7%	41.7%	0.0%	41.7%	41.7%	16.7%	41.7%	41.7%	0.0%
Maximum Green (s)	16.0	16.0		4.0	16.0		16.0	16.0	4.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	8.4	8.4		14.8	14.8		25.2	25.2	34.3	25.2	25.2	
Actuated g/C Ratio	0.18	0.18		0.31	0.31		0.52	0.52	0.71	0.52	0.52	
v/c Ratio	0.00	0.37		0.58	0.27		0.00	0.00	0.23	0.00	0.00	
Control Delay	15.0	19.9		19.1	11.6		7.0	7.0	1.2	7.3	7.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	15.0	19.9		19.1	11.6		7.0	7.0	1.2	7.3	7.0	
LOS	B	B		B	B		A	A	A	A	A	
Approach Delay		19.8			15.8			1.3			7.1	
Approach LOS		B			B			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 48
Actuated Cycle Length: 48
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.58
Intersection Signal Delay: 11.0 Intersection LOS: B
Intersection Capacity Utilization 35.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	405	23	29	32	36	85	25	962	38	1	121	827
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.895			0.994				
Flt Protected	0.950	0.957		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1694	1583	1770	1667	0	1770	3518	0	0	1770	3539
Flt Permitted	0.950	0.957		0.950			0.317				0.127	
Satd. Flow (perm)	1681	1694	1583	1770	1667	0	590	3518	0	0	237	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			32		91			4				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	440	25	32	35	39	92	27	1046	41	1	132	899
Shared Lane Traffic (%)	47%											
Lane Group Flow (vph)	233	232	32	35	131	0	27	1087	0	0	133	899
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

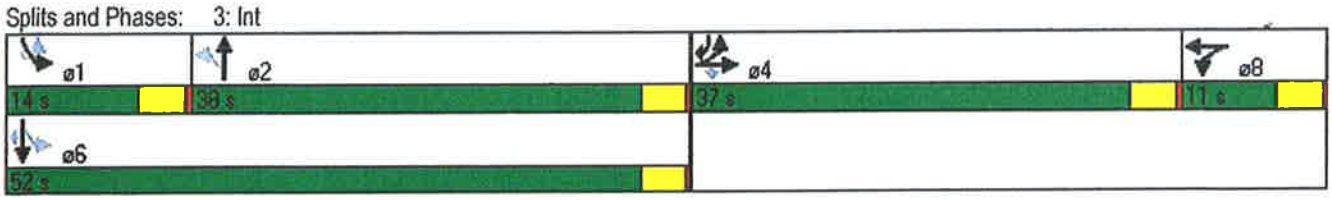
Lane Group	SBR
Lane Configurations	↱
Volume (vph)	342
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	372
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	372
Shared Lane Traffic (%)	
Lane Group Flow (vph)	372
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	22.1	22.1	22.1	7.8	7.8		45.5	45.5			58.2	58.2
Actuated g/C Ratio	0.22	0.22	0.22	0.08	0.08		0.46	0.46			0.58	0.58
v/c Ratio	0.63	0.62	0.09	0.26	0.62		0.10	0.68			0.49	0.44
Control Delay	41.6	41.3	9.4	47.7	29.4		21.8	26.6			18.0	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	41.6	41.3	9.4	47.7	29.4		21.8	26.6			18.0	14.0
LOS	D	D	A	D	C		C	C			B	B
Approach Delay		39.4			33.2			26.4				10.8
Approach LOS		D			C			C				B

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.68
Intersection Signal Delay: 21.9 Intersection LOS: C
Intersection Capacity Utilization 66.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Int



Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	84.2
Actuated g/C Ratio	0.84
v/c Ratio	0.27
Control Delay	0.6
Queue Delay	0.0
Total Delay	0.6
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	83	3	29	113	6	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.996				0.896	
Flt Protected				0.990	0.988	
Satd. Flow (prot)	1855	0	0	1844	1649	0
Flt Permitted				0.990	0.988	
Satd. Flow (perm)	1855	0	0	1844	1649	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			4795	4217	
Travel Time (s)	13.0			109.0	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	90	3	32	123	7	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	0	155	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 24.2% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	223	44	53	29	29	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.952			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1773	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1773	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	883		3966	
Travel Time (s)		79.9	20.1		90.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	242	48	58	32	32	170
Shared Lane Traffic (%)						
Lane Group Flow (vph)	242	48	90	0	32	170
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 29.0% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	12	251	169	10	11	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.992		0.911	
Flt Protected		0.998			0.983	
Satd. Flow (prot)	0	1859	1848	0	1668	0
Flt Permitted		0.998			0.983	
Satd. Flow (perm)	0	1859	1848	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	273	184	11	12	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	286	195	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.0% ICU Level of Service A
Analysis Period (min) 15

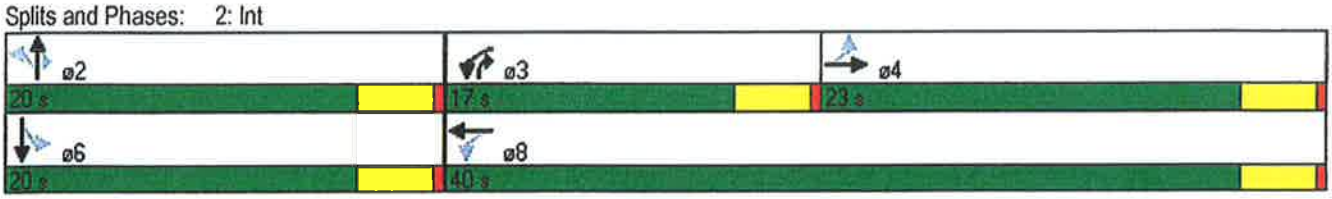
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	455	3	389	225	19	12	6	499	146	42	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.988				0.850		0.958	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1840	0	1770	1863	1583	1770	1785	0
Flt Permitted	0.595			0.179			0.715			0.753		
Satd. Flow (perm)	1108	1861	0	333	1840	0	1332	1863	1583	1403	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			13				139		18	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2535			2089			1773			403	
Travel Time (s)		57.6			47.5			40.3			9.2	
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
Adj. Flow (vph)	2	495	3	423	245	21	13	7	542	159	46	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	498	0	423	266	0	13	7	542	159	64	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	23.0	23.0	0.0	17.0	40.0	0.0	20.0	20.0	17.0	20.0	20.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	28.3%	66.7%	0.0%	33.3%	33.3%	28.3%	33.3%	33.3%	0.0%
Maximum Green (s)	19.0	19.0		13.0	36.0		16.0	16.0	13.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	18.3	18.3		34.9	34.9		17.1	17.1	33.7	17.1	17.1	
Actuated g/C Ratio	0.30	0.30		0.58	0.58		0.28	0.28	0.56	0.28	0.28	
v/c Ratio	0.01	0.88		0.85	0.25		0.03	0.01	0.57	0.40	0.12	
Control Delay	14.0	39.0		29.9	6.2		16.8	16.3	9.2	21.7	13.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.0	39.0		29.9	6.2		16.8	16.3	9.2	21.7	13.8	
LOS	B	D		C	A		B	B	A	C	B	
Approach Delay		38.9			20.8			9.4			19.5	
Approach LOS		D			C			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 22.0 — Intersection LOS: C
Intersection Capacity Utilization 73.1% — ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	1163	81	117	33	34	92	72	971	26	2	179	1191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.891			0.996				
Flt Protected	0.950	0.958		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1695	1583	1770	1660	0	1770	3525	0	0	1770	3539
Flt Permitted	0.950	0.958		0.950			0.118				0.105	
Satd. Flow (perm)	1681	1695	1583	1770	1660	0	220	3525	0	0	196	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			119		95			3				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	1264	88	127	36	37	100	78	1055	28	2	195	1295
Shared Lane Traffic (%)	47%											
Lane Group Flow (vph)	670	682	127	36	137	0	78	1083	0	0	197	1295
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

Lane Group	SBR
Lane Configurations	
Volume (vph)	651
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	604
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	708
Shared Lane Traffic (%)	
Lane Group Flow (vph)	708
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	40.0	40.0	40.0	12.0	12.0	0.0	38.0	38.0	0.0	10.0	10.0	48.0
Total Split (%)	40.0%	40.0%	40.0%	12.0%	12.0%	0.0%	38.0%	38.0%	0.0%	10.0%	10.0%	48.0%
Maximum Green (s)	36.0	36.0	36.0	8.0	8.0		34.0	34.0		6.0	6.0	44.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	36.0	36.0	36.0	7.3	7.3		34.0	34.0			44.7	44.7
Actuated g/C Ratio	0.36	0.36	0.36	0.07	0.07		0.34	0.34			0.45	0.45
v/c Ratio	1.11	1.12	0.20	0.28	0.66		1.04	0.90			1.02	0.82
Control Delay	101.6	105.1	5.6	49.2	32.1		153.3	43.1			94.9	29.6
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	101.6	105.1	5.6	49.2	32.1		153.3	43.1			94.9	29.6
LOS	F	F	A	D	C		F	D			F	C
Approach Delay		95.0			35.7			50.5				26.4
Approach LOS		F			D			D				C

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 52.5 Intersection LOS: D
Intersection Capacity Utilization 93.0% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 3: Int

Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	40.0
Total Split (%)	40.0%
Maximum Green (s)	36.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	84.7
Actuated g/C Ratio	0.85
v/c Ratio	0.49
Control Delay	1.5
Queue Delay	0.0
Total Delay	1.5
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	102	40	61	203	36	207
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.962				0.885	
Flt Protected				0.989	0.993	
Satd. Flow (prot)	1792	0	0	1842	1637	0
Flt Permitted				0.989	0.993	
Satd. Flow (perm)	1792	0	0	1842	1637	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			2239	4217	
Travel Time (s)	13.0			50.9	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	111	43	66	221	39	225
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	0	0	287	264	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 46.6% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	250	214	109	83	164	321
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.942			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1755	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1755	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	792		2085	
Travel Time (s)		79.9	18.0		47.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	233	118	90	178	349
Shared Lane Traffic (%)						
Lane Group Flow (vph)	272	233	208	0	178	349
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 43.7% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	29	311	413	35	126	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.989		0.957	
Flt Protected		0.996			0.967	
Satd. Flow (prot)	0	1855	1842	0	1724	0
Flt Permitted		0.996			0.967	
Satd. Flow (perm)	0	1855	1842	0	1724	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	338	449	38	137	65
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	370	487	0	202	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 57.7% ICU Level of Service B
Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	88	66	49	429	368	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.979	
Flt Protected	0.950			0.995		
Satd. Flow (prot)	1770	1583	0	1853	1824	0
Flt Permitted	0.950			0.995		
Satd. Flow (perm)	1770	1583	0	1853	1824	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	819			2085	1773	
Travel Time (s)	18.6			47.4	40.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	72	53	466	400	72
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	72	0	519	472	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	422	24	25	229	33	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.932	
Flt Protected				0.995	0.976	
Satd. Flow (prot)	1850	0	0	1853	1694	0
Flt Permitted				0.995	0.976	
Satd. Flow (perm)	1850	0	0	1853	1694	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2239			2535	743	
Travel Time (s)	50.9			57.6	16.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	459	26	27	249	36	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	485	0	0	276	72	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 43.4% ICU Level of Service A
Analysis Period (min) 15

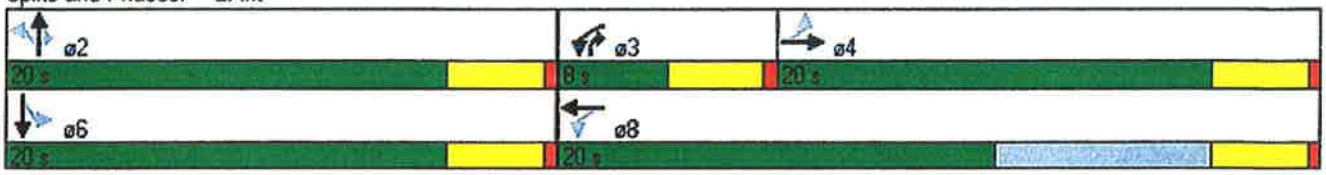
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	136	1	274	167	6	1	0	348	3	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	85		0	0		0	150		400	100		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50		25	25		25	100		200	200		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		0.999			0.994				0.850		0.962	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1861	0	1770	1852	0	1770	1863	1583	1770	1792	0
Flt Permitted	0.639			0.440			0.755			0.757		
Satd. Flow (perm)	1190	1861	0	820	1852	0	1406	1863	1583	1410	1792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			6				618		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2061			2089			1611			403	
Travel Time (s)		46.8			47.5			36.6			9.2	
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
Adj. Flow (vph)	1	148	1	298	182	7	1	0	378	3	3	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	149	0	298	189	0	1	0	378	3	4	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			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	2	1	1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6		20	6	20	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	Perm			pm+pt			Perm		pm+ov	Perm		
Protected Phases		4		3	8			2	3		6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	6	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	20.0	20.0		8.0	20.0		20.0	20.0	8.0	20.0	20.0	
Total Split (s)	20.0	20.0	0.0	8.0	20.0	0.0	20.0	20.0	8.0	20.0	20.0	0.0
Total Split (%)	41.7%	41.7%	0.0%	16.7%	41.7%	0.0%	41.7%	41.7%	16.7%	41.7%	41.7%	0.0%
Maximum Green (s)	16.0	16.0		4.0	16.0		16.0	16.0	4.0	16.0	16.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	0.5	0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	Lag	Lag		Lead					Lead			
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	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max	None	C-Max	C-Max	
Walk Time (s)	5.0	5.0			5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0			11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0			0		0	0		0	0	
Act Effct Green (s)	9.1	9.1		15.6	15.6		24.4		33.7	24.4	24.4	
Actuated g/C Ratio	0.19	0.19		0.32	0.32		0.51		0.70	0.51	0.51	
v/c Ratio	0.00	0.42		0.84	0.31		0.00		0.29	0.00	0.00	
Control Delay	14.0	20.1		36.0	11.7		8.0		0.6	8.0	7.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0	0.0	
Total Delay	14.0	20.1		36.0	11.7		8.0		0.6	8.0	7.5	
LOS	B	C		D	B		A		A	A	A	
Approach Delay		20.0			26.6						7.7	
Approach LOS		C			C						A	

Intersection Summary

Area Type: Other
Cycle Length: 48
Actuated Cycle Length: 48
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 42.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: Int



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Volume (vph)	512	23	38	32	36	85	34	962	38	1	121	827
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	100		0	350		0		335	
Storage Lanes	1		1	1		0	1		0		1	
Taper Length (ft)	100		100	25		25	100		25		100	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.95
Frt			0.850		0.895			0.994				
Flt Protected	0.950	0.956		0.950			0.950				0.950	
Satd. Flow (prot)	1681	1692	1583	1770	1667	0	1770	3518	0	0	1770	3539
Flt Permitted	0.950	0.956		0.950			0.317				0.107	
Satd. Flow (perm)	1681	1692	1583	1770	1667	0	590	3518	0	0	199	3539
Right Turn on Red			Yes			Yes			Yes			
Satd. Flow (RTOR)			41		91			4				
Link Speed (mph)		30			30			30				30
Link Distance (ft)		2089			533			1966				1119
Travel Time (s)		47.5			12.1			44.7				25.4
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
Adj. Flow (vph)	557	25	41	35	39	92	37	1046	41	1	132	899
Shared Lane Traffic (%)	48%											
Lane Group Flow (vph)	290	292	41	35	131	0	37	1087	0	0	133	899
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	R NA	Left	Left
Median Width(ft)		12			12			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	9	15	
Number of Detectors	1	2	1	1	2		1	2		1	1	2
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Left	Thru
Leading Detector (ft)	20	100	20	20	100		20	100		20	20	100
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	20	6
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	Split		Perm	Split			Perm			custom	pm+pt	
Protected Phases	4	4		8	8			2			1	6
Permitted Phases			4				2			1	6	
Detector Phase	4	4	4	8	8		2	2		1	1	6

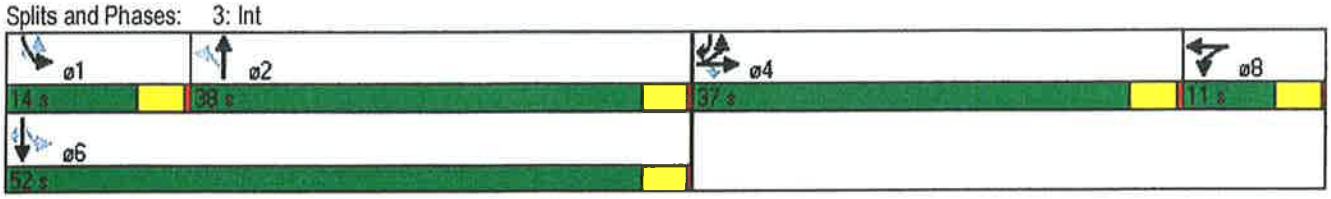
Lane Group	SBR
Lane Configurations	↱
Volume (vph)	453
Ideal Flow (vphpl)	1900
Storage Length (ft)	335
Storage Lanes	1
Taper Length (ft)	100
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	492
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	492
Shared Lane Traffic (%)	
Lane Group Flow (vph)	492
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	pm+ov
Protected Phases	4
Permitted Phases	6
Detector Phase	4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Switch Phase												
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		4.0	4.0	6.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0		20.0	20.0		8.0	8.0	20.0
Total Split (s)	37.0	37.0	37.0	11.0	11.0	0.0	38.0	38.0	0.0	14.0	14.0	52.0
Total Split (%)	37.0%	37.0%	37.0%	11.0%	11.0%	0.0%	38.0%	38.0%	0.0%	14.0%	14.0%	52.0%
Maximum Green (s)	33.0	33.0	33.0	7.0	7.0		34.0	34.0		10.0	10.0	48.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	0.5
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)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag							Lag	Lag		Lead	Lead	
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	3.0	3.0
Recall Mode	None	None	None	None	None		C-Max	C-Max		None	None	C-Max
Walk Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0				5.0
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)	26.5	26.5	26.5	7.0	7.0		41.8	41.8			54.5	54.5
Actuated g/C Ratio	0.26	0.26	0.26	0.07	0.07		0.42	0.42			0.54	0.54
v/c Ratio	0.65	0.65	0.09	0.28	0.65		0.15	0.74			0.54	0.47
Control Delay	38.9	38.9	7.9	50.0	32.8		24.2	30.2			22.5	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0
Total Delay	38.9	38.9	7.9	50.0	32.8		24.2	30.2			22.5	16.0
LOS	D	D	A	D	C		C	C			C	B
Approach Delay		36.9			36.4			30.0				11.7
Approach LOS		D			D			C				B

Intersection Summary

Area Type: Other
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 23.4 — Intersection LOS: C
Intersection Capacity Utilization 69.8% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Int



Lane Group	SBR
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	20.0
Total Split (s)	37.0
Total Split (%)	37.0%
Maximum Green (s)	33.0
Yellow Time (s)	3.5
All-Red Time (s)	0.5
Lost Time Adjust (s)	0.0
Total Lost Time (s)	4.0
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	85.0
Actuated g/C Ratio	0.85
v/c Ratio	0.35
Control Delay	0.8
Queue Delay	0.0
Total Delay	0.8
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	110	3	29	139	6	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.997				0.896	
Flt Protected				0.991	0.988	
Satd. Flow (prot)	1857	0	0	1846	1649	0
Flt Permitted				0.991	0.988	
Satd. Flow (perm)	1857	0	0	1846	1649	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	570			2713	4217	
Travel Time (s)	13.0			61.7	95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	3	32	151	7	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	0	0	183	30	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 25.6% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	241	44	53	48	47	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0	300	0
Storage Lanes	1			0	1	1
Taper Length (ft)	25			25	100	25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.936			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1744	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1863	1744	0	1770	1583
Link Speed (mph)		30	30		30	
Link Distance (ft)		3517	740		2246	
Travel Time (s)		79.9	16.8		51.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	262	48	58	52	51	189
Shared Lane Traffic (%)						
Lane Group Flow (vph)	262	48	110	0	51	189
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 30.0% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	12	269	187	10	11	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.993		0.911	
Flt Protected		0.998			0.983	
Satd. Flow (prot)	0	1859	1850	0	1668	0
Flt Permitted		0.998			0.983	
Satd. Flow (perm)	0	1859	1850	0	1668	0
Link Speed (mph)		30	30		30	
Link Distance (ft)		439	3517		4217	
Travel Time (s)		10.0	79.9		95.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	292	203	11	12	23
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	305	214	0	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 33.9% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	90	36	37	259	185	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.955	
Flt Protected	0.950			0.994		
Satd. Flow (prot)	1770	1583	0	1852	1779	0
Flt Permitted	0.950			0.994		
Satd. Flow (perm)	1770	1583	0	1852	1779	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	448			2246	1611	
Travel Time (s)	10.2			51.0	36.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	39	40	282	201	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	39	0	322	302	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 46.1% ICU Level of Service A
Analysis Period (min) 15

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	110	27	28	167	26	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.974				0.931	
Flt Protected				0.993	0.976	
Satd. Flow (prot)	1814	0	0	1850	1693	0
Flt Permitted				0.993	0.976	
Satd. Flow (perm)	1814	0	0	1850	1693	0
Link Speed (mph)	30			30	30	
Link Distance (ft)	2713			2061	452	
Travel Time (s)	61.7			46.8	10.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	120	29	30	182	28	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	0	0	212	57	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other
Control Type: Unsignalized
Intersection Capacity Utilization 31.1% ICU Level of Service A
Analysis Period (min) 15

APPENDIX L

LEFT TURN LANE WARRANT ANALYSIS

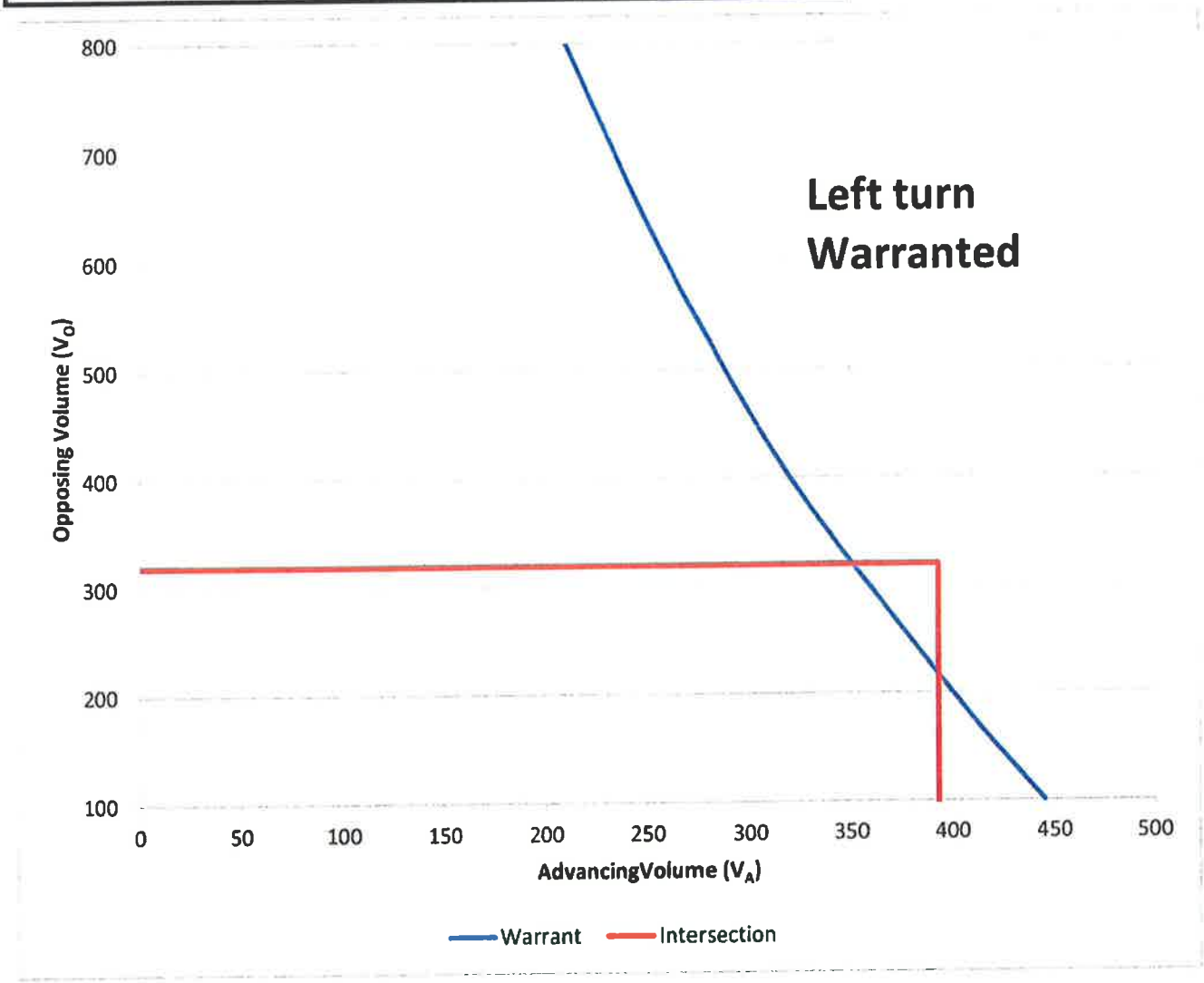
Phillips Road and Pinnacle Entrance (2014 PM Conditions)

Major Approach	Phillips Road
Approach	Northbound
Design Speed - MPH	50
Percent of left-turns in advancing volume (V_A), %	10%
Advancing Volume (V_A), veh/h:	393
Opposing Volume (V_O), veh/h:	319

Opposing Volume (Veh/Hr)	Advancing Volume			
	Left Turns 5%	Left Turns 10%	Left Turns 20%	Left Turns 30%
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295

Warrant Plot				
Line 1	0	393	319	319
Line 2	393	393	0	319

Left Turn Value Entered into Table	10%
Opposing Volume Entered into Table	400
Allowed Advancing Volume	320
Is a Left Turn Lane Warranted?	**Yes**



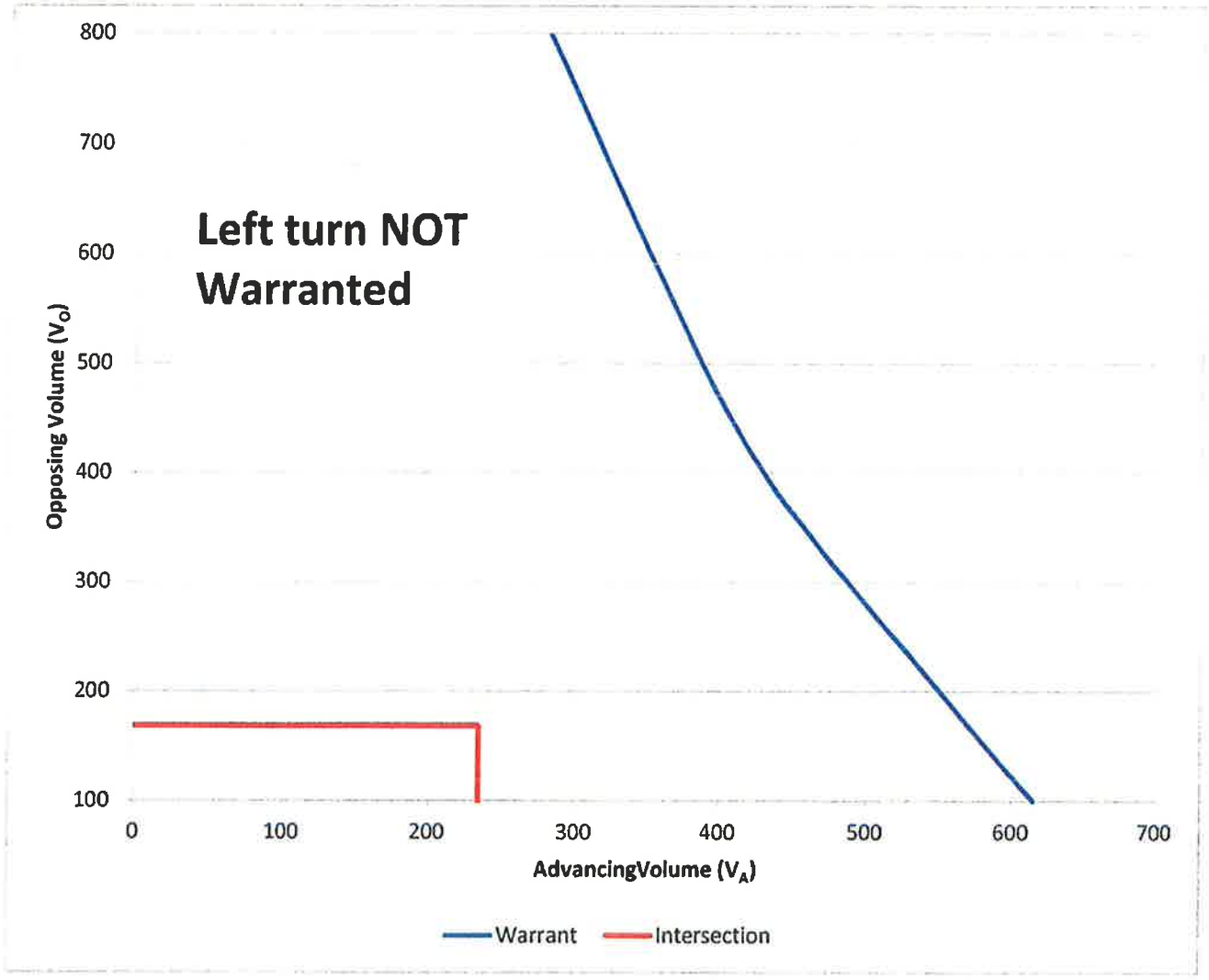
Phillips Road and Pinnacle Entrance (2014 Saturday Conditions)

Major Approach	Phillips Road
Approach	Northbound
Design Speed - MPH	50
Percent of left-turns in advancing volume (V_A), %	7%
Advancing Volume (V_A), veh/h:	235
Opposing Volume (V_O), veh/h:	168

Opposing Volume (Veh/Hr)	Advancing Volume			
	Left Turns 5%	Left Turns 10%	Left Turns 20%	Left Turns 30%
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295

Warrant Plot				
Line 1	0	235	168	168
Line 2	235	235	0	168

Left Turn Value Entered into Table	5%
Opposing Volume Entered into Table	200
Allowed Advancing Volume	550
Is a Left Turn Lane Warranted?	**No**



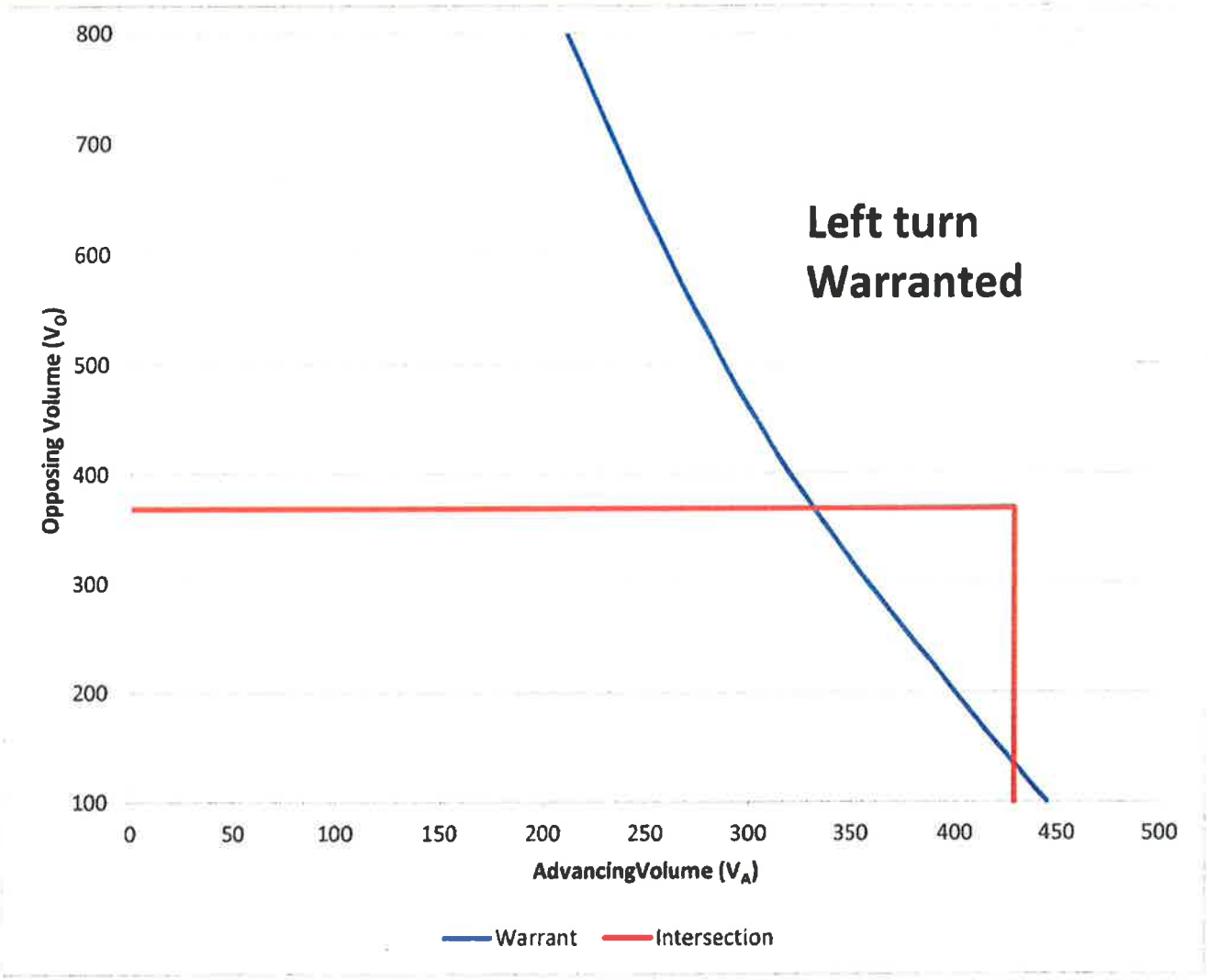
Phillips Road and Pinnacle Entrance (2018 PM Conditions)

Major Approach	Phillips Road
Approach	Northbound
Design Speed - MPH	50
Percent of left-turns in advancing volume (V_A), %	11%
Advancing Volume (V_A), veh/h:	429
Opposing Volume (V_O), veh/h:	368

Opposing Volume (Veh/Hr)	Advancing Volume			
	Left Turns 5%	Left Turns 10%	Left Turns 20%	Left Turns 30%
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295

Warrant Plot				
Line 1	0	429	368	368
Line 2	429	429	0	368

Left Turn Value Entered into Table	10%
Opposing Volume Entered into Table	400
Allowed Advancing Volume	320
Is a Left Turn Lane Warranted?	**Yes**



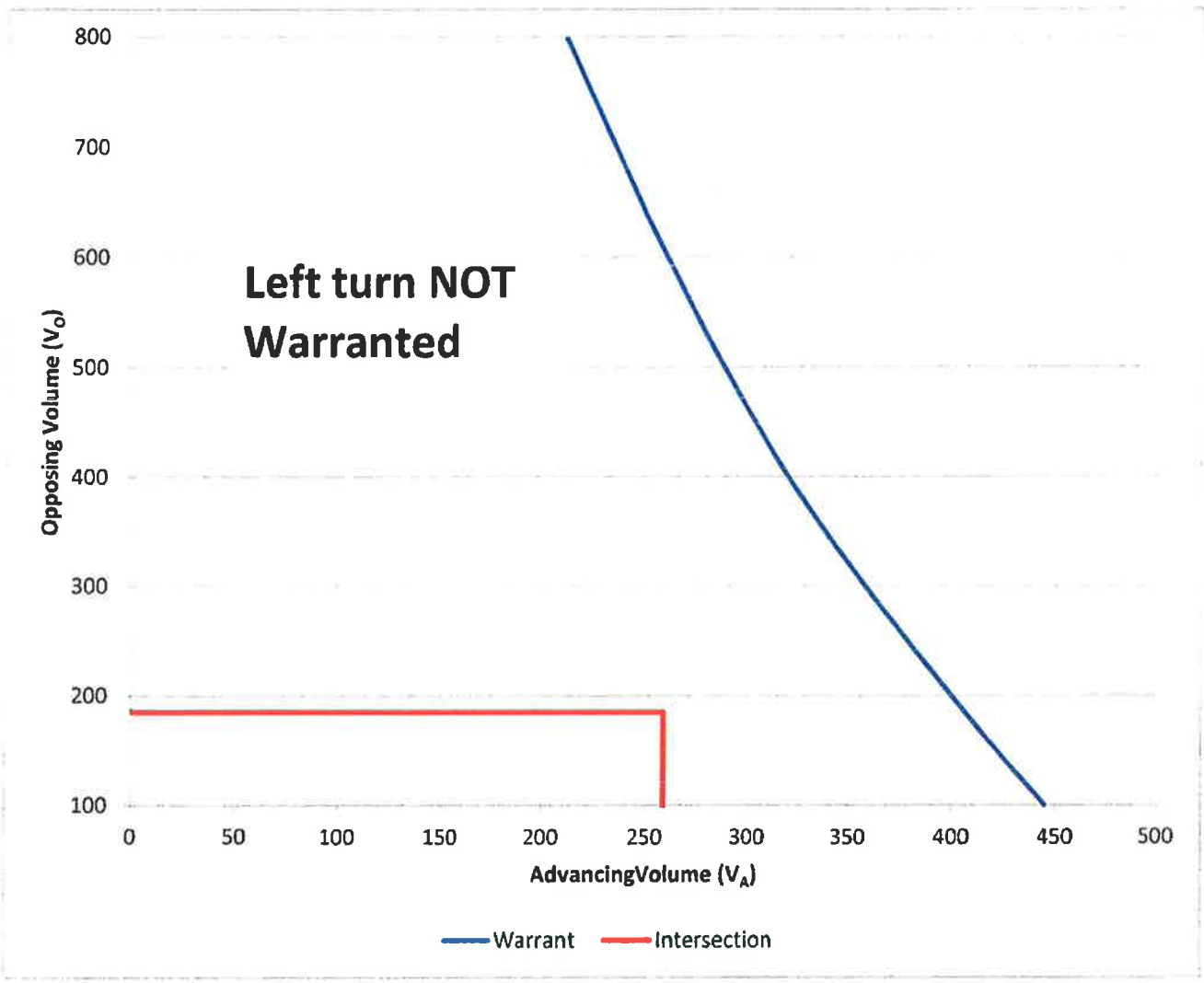
Phillips Road and Pinnacle Entrance (2018 Saturday Conditions)

Major Approach	Phillips Road
Approach	Northbound
Design Speed - MPH	50
Percent of left-turns in advancing volume (V_A), %	14%
Advancing Volume (V_A), veh/h:	259
Opposing Volume (V_O), veh/h:	185

Opposing Volume (Veh/Hr)	Advancing Volume			
	Left Turns 5%	Left Turns 10%	Left Turns 20%	Left Turns 30%
800	280	210	165	135
600	350	260	195	170
400	430	320	240	210
200	550	400	300	270
100	615	445	335	295

Warrant Plot				
Line 1	0	259	185	185
Line 2	259	259	0	185

Left Turn Value Entered into Table	10%
Opposing Volume Entered into Table	200
Allowed Advancing Volume	400
Is a Left Turn Lane Warranted?	**No**



APPENDIX M

SIGNAL WARRANT ANALYSIS

2014 NYS 251 and Phillips Road Signal Warrant

	Existing Fluctuation in Artery Volumes		Full Development Volume	Hourly Fluctuation traffic on Wangum Road (from Route 251 Data)	Hourly Volumes Exiting Phillips Road
	NYSDOT Count	Hourly Fluctuation			
Hour	Two-Way	Two-Way	Total	Exiting	Total
12:00AM	25	0.29%	28	0.29%	11
1:00AM	14	0.16%	16	0.16%	6
2:00AM	6	0.07%	7	0.07%	3
3:00AM	8	0.09%	9	0.09%	4
4:00AM	28	0.33%	32	0.33%	13
5:00AM	112	1.30%	127	1.30%	50
6:00AM	427	4.96%	484	4.96%	191
7:00AM	779	9.05%	883	9.05%	349
8:00AM	677	7.87%	767	7.87%	303
9:00AM	494	5.74%	560	5.74%	221
10:00AM	460	5.35%	521	5.35%	206
11:00AM	502	5.83%	569	5.83%	225
12:00PM	586	6.81%	664	6.81%	263
1:00PM	525	6.10%	595	6.10%	235
2:00PM	529	6.15%	599	6.15%	237
3:00PM	661	7.68%	749	7.68%	296
4:00PM	749	8.71%	849	8.71%	336
5:00PM	775	9.01%	878	9.01%	347
6:00PM	469	5.45%	531	5.45%	210
7:00PM	284	3.30%	322	3.30%	127
8:00PM	220	2.56%	249	2.56%	99
9:00PM	151	1.75%	171	1.75%	68
10:00PM	82	0.95%	93	0.95%	37
11:00PM	41	0.48%	46	0.48%	18
Totals	8604	100.00%	9747	100.00%	3856

Times meeting 8-hour Warrant Requirements - 6 Hours: Not warranted

Times meeting 4-hour Warrant Requirements - 4 Hours: Use engineering judgement

2018 NYS 251 and Phillips Road Signal Warrant

	Existing Fluctuation in Artery Volumes		Full Development Volume	Hourly Fluctuation traffic on Wangum Road (from Route 251 Data)	Hourly Volumes Exiting Phillips Road
	NYSDOT Count	Hourly Fluctuation			
Hour	Two-Way	Two-Way	Total	Exiting	Total
12:00AM	25	0.29%	31	0.29%	14
1:00AM	14	0.16%	18	0.16%	8
2:00AM	6	0.07%	8	0.07%	3
3:00AM	8	0.09%	10	0.09%	4
4:00AM	28	0.33%	35	0.33%	15
5:00AM	112	1.30%	140	1.30%	61
6:00AM	427	4.96%	535	4.96%	231
7:00AM	779	9.05%	976	9.05%	421
8:00AM	677	7.87%	848	7.87%	366
9:00AM	494	5.74%	619	5.74%	267
10:00AM	460	5.35%	577	5.35%	249
11:00AM	502	5.83%	629	5.83%	272
12:00PM	586	6.81%	734	6.81%	317
1:00PM	525	6.10%	658	6.10%	284
2:00PM	529	6.15%	663	6.15%	286
3:00PM	661	7.68%	828	7.68%	358
4:00PM	749	8.71%	939	8.71%	405
5:00PM	775	9.01%	971	9.01%	419
6:00PM	469	5.45%	588	5.45%	254
7:00PM	284	3.30%	356	3.30%	154
8:00PM	220	2.56%	276	2.56%	119
9:00PM	151	1.75%	189	1.75%	82
10:00PM	82	0.95%	103	0.95%	44
11:00PM	41	0.48%	51	0.48%	22
Totals	8604	100.00%	10783	100.00%	4655

Times meeting 8-hour Warrant Requirements - 10 Hours: Use engineering judgment

Times meeting 4-hour Warrant Requirements - 5 Hours: Use engineering judgement

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

Standard:

01 **An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.**

02 **The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:**

Warrant 1, Eight-Hour Vehicular Volume
Warrant 2, Four-Hour Vehicular Volume
Warrant 3, Peak Hour
Warrant 4, Pedestrian Volume
Warrant 5, School Crossing
Warrant 6, Coordinated Signal System
Warrant 7, Crash Experience
Warrant 8, Roadway Network
Warrant 9, Intersection Near a Grade Crossing

03 **The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.**

Support:

04 Sections 8C.09 and 8C.10 contain information regarding the use of traffic control signals instead of gates and/or flashing-light signals at highway-rail grade crossings and highway-light rail transit grade crossings, respectively.

Guidance:

05 *A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.*

06 *A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.*

07 *A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.*

08 *The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2.*

09 *Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.*

10 *Similar engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.*

11 *At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.*

12 *For signal warrant analysis, a location with a wide median, even if the median width is greater than 30 feet, should be considered as one intersection.*

APPENDIX N

MAIN STREET FISHERS LEVEL OF SERVICE ANALYSIS

TWO-WAY TWO-LANE HIGHWAY SEGMENT WORKSHEET

General Information		Site Information	
Analyst	Karl Waelder	Highway	Main Street Fishers
Agency or Company	Passero Associates	From/To	Phillips to NY 96
Date Performed	March 1, 2013	Jurisdiction	Ontario County
Analysis Time Period	4:30-5:30 PM	Analysis Year	2013

☐ Operational (LOS) ☐ Design (v_p) ☐ Planning (LOS) ☐ Planning (v_p)

Input Data

Shoulder width	8	ft
Lane width	12	ft
Lane width	12	ft
Shoulder width	9	ft
Segment length, L_t		mi

Show North Arrow

☒ Class I highway ☐ Class II highway

Terrain ☒ Level ☐ Rolling

Two-way hourly volume	1305	veh/h
Directional split	62 / 38	
Peak-hour factor, PHF	0.77	
% Trucks and buses, P_T	5	%
% Recreational vehicles, P_R	0	%
% No-passing zone	100	%
Access points/mi	18	/mi

Average Travel Speed

Grade adjustment factor, f_G (Exhibit 20-7)	1.00
Passenger-car equivalents for trucks, E_T (Exhibit 20-9)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-9)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV} = \frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.966
Two-way flow rate,[1] v_p (pc/h) $v_p = \frac{V}{PHF * f_G * f_{HV}}$	1754
v_p * highest directional split proportion[2] (pc/h)	1087

Free-Flow Speed from Field Measurement		Estimated Free-Flow Speed	
Field measured speed, S_{FM}	45 mi/h	Base free-flow speed, BFFS	mi/h
Observed volume, V_f	1305 veh/h	Adj. for lane width and shoulder width, f_{LS} (Exhibit 20-5)	mi/h
Free-flow speed, FFS $FFS = S_{FM} + 0.00776\left(\frac{V_f}{f_{HV}}\right)$	55 mi/h	Adj. for access points, f_A (Exhibit 20-6)	mi/h
		Free-flow speed, FFS $FFS = BFFS - f_{LS} - f_A$	mi/h

Adj. for no-passing zones, f_{np} (mi/h) (Exhibit 20-11)	1.4
Average travel speed, ATS (mi/h) $ATS = FFS - 0.00776v_p - f_{np}$	45

Percent Time-Spent-Following

Grade adjustment factor, f_G (Exhibit 20-8)	1
Passenger-car equivalents for trucks, E_T (Exhibit 20-10)	1.7
Passenger-car equivalents for RVs, E_R (Exhibit 20-10)	1.0
Heavy-vehicle adjustment factor, f_{HV} $f_{HV} = \frac{1}{1 + P_T(E_T - 1) + P_R(E_R - 1)}$	0.966
Two-way flow rate,[1] v_p (pc/h) $v_p = \frac{V}{PHF * f_G * f_{HV}}$	1754
v_p * highest directional split proportion[2] (pc/h)	1087
Base percent time-spent-following, BPTSF (%) $BPTSF = 100[1 - \exp(-0.000879v_p)]$	79%
Adj. for directional distribution and no-passing zone, $f_{d/np}$ (%) (Exhibit 20-12)	9%
Percent time-spent-following, PTSF (%) $PTSF = BPTSF + f_{d/np}$	88%

Level of Service and Other Performance Measures

Level of service, LOS (Exhibit 20-3 for Class I or 20-4 for Class II)	E
Volume to capacity ratio, v/c $v/c = \frac{v_p}{3{,}200}$	0.34
Peak 15-min vehicle-miles of travel, VMT_{15} (veh-mi) $VMT_{15} = 0.25L_t\left(\frac{V}{PHF}\right)$	161
Peak-hour vehicle-miles of travel, VMT_{60} (veh-mi) $VMT_{60} = V * L_t$	496
Peak 15-min total travel time, TT_{15} (veh-h) $TT_{15} = \frac{VMT_{15}}{ATS}$	3.6

Notes

1. If $v_p \geq 3{,}200$ pc/h, terminate analysis—the LOS is F.
2. If highest directional split $v_p \geq 1{,}700$ pc/h, terminate analysis—the LOS is F.