Multi-modal Transportation Impact Assessment

for the proposed

Colgate Divinity Re-Development

City of Rochester
Monroe County, New York

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EXECUTIVE SUMMARY

OVERVIEW

The purpose of this report is to evaluate the potential traffic impacts associated with the proposed re-development of Colgate Divinity Campus in the City of Rochester, Monroe County, New York. Within this report, the operating characteristics of the existing access drive and impacts to the adjacent roadway network are identified and mitigating measures, if needed, are provided to minimize capacity or safety concerns.

In an effort to define traffic impact, this analysis establishes existing traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

The project site is located at 1100 S. Goodman St opposite Pinetum Drive in the City of Rochester, New York. Surrounding the site is residential development to the north and east, Highland Avenue to the south, and Highland Park to the west. Land uses nearby the site are primarily residential and recreational. The project site was previously occupied by the Colgate Rochester Crozer Divinity School. Hope Lodge continues operate on the Campus with 28 guest rooms. The study area includes the following existing intersections:

1. Elmwood Avenue/S Goodman Street
2. Highland Avenue/S Goodman Street
3. S Goodman Street/Pinetum Drive/Campus Drive

The project sponsor proposes to rezone the property from IPD to PD with a Development Concept Plan that will accommodate the use and reuse of the existing historic buildings, Strong Hall, Montgomery House and Trevor Hall; and, maintain and continue the use of Saunders House and Andrew Hall as apartment buildings. Two new apartment buildings will be constructed each providing 52 units. The site will continue to have access to S. Goodman St via the existing Colgate Divinity driveway.

Construction of the proposed project is expected to be completed over the next three (3) years depending on market conditions. The City of Rochester and Town of Brighton were contacted to discuss any other specific developments that are currently approved or under construction that would generate additional traffic in the study area. Two projects were identified:

- 1201 Elmwood Avenue re-development
- 1925 S. Clinton Avenue development

A review of historical NYSDOT traffic volume data compared to 2019 data collected by SRF indicated that traffic has varied significantly throughout the study area. To account for normal increases in background traffic growth, including any unforeseen developments in the project study area aside from the previously mentioned projects, a growth rate of 1.5% per year (consistent with MCDOT guidelines for growth rates in the City of Rochester) has been applied to the existing traffic volumes for the three-year build-out timeframe. Traffic specific to the approved developments identified above has also been added to the background traffic volumes.

CONCLUSIONS & RECOMMENDATIONS

This Traffic Impact Study identifies and evaluates the potential traffic impacts that can be expected from the proposed Colgate Divinity Re-development project in the City of Rochester, Monroe County, New York, as described in this study. The results of this study determine that the existing transportation network can adequately accommodate the projected traffic volumes and resulting impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

1. The proposed development is expected to generate 97 entering/65 exiting vehicle trips during the AM peak hour and 113 entering/95 exiting vehicle trips during the PM peak hour.

2. Based upon current conditions and measured speeds, the available sight distances along S. Goodman St to the left and right do not meet the required SSD and desirable ISD at the Campus Drive intersection with the exception of the southbound SSD which exceeds the required SSD. Sight distance to the north is obstructed by the vertical curvature of the roadway; to the south obstructions include the horizontal curvature of the roadway as well as roadside trees. There is currently a northbound intersection warning sign. Recommended mitigation includes maintaining any brush and foliage along the sight lines to ensure maximum visibility.

3. The warrants for a southbound left-turn treatment at Campus Drive are not satisfied during the either peak hour. No left turn treatments are warranted or recommended.

4. The Elmwood Avenue approaches are projected to operate at a highly acceptable LOS "C" or better during both peak hours under all conditions. The southbound left turn movement currently operates at LOS "F" with moderate to long delays during both peak hours. The southbound right turn movement is projected to operate at LOS "E" under background conditions and LOS "F" under full development conditions. The development is projected to add 33(25) southbound right turns and 8(20) southbound left turns during the AM(PM) peak hours.

   Based on the field observations, gap study, and projected site generated traffic volumes, it is anticipated that adequate gaps exist to accommodate the projected demand of southbound left turns onto Elmwood Avenue during the PM peak hour. It is anticipated that motorists will choose to turn left at the signalized S. Goodman St/Highland Ave intersection if they encounter long delays at the Elmwood Ave intersection. This "diversion" of southbound left turns was considered and included in the distribution of site traffic and is analyzed as the full development condition.

5. The minor projected traffic impacts resulting from full development of the proposed project during both peak hours can be adequately accommodated by the existing transportation network.

I. INTRODUCTION

The purpose of this report is to evaluate the potential traffic impacts associated with the proposed re-development of Colgate Divinity Campus in the City of Rochester, Monroe County, New York. Within this report, the operating characteristics of the existing access drive and impacts to the adjacent roadway network are identified and mitigating measures, if needed, are provided to minimize capacity or safety concerns.

In an effort to define traffic impact, this analysis establishes existing traffic conditions, projects background traffic flow including area growth, and determines the traffic operations that would result from the proposed project.

II. LOCATION

The project site is located at 1100 S. Goodman St opposite Pinetum Drive in the City of Rochester, New York. Surrounding the site is residential development to the north and east, Highland Avenue to the south, and Highland Park to the west. Land uses nearby the site are primarily residential and recreational. The project site was previously occupied by the Colgate Rochester Crozer Divinity School. Hope Lodge continues operate on the Campus with 28 guest rooms. The study area includes the following existing intersections:

4. Elmwood Avenue/S Goodman Street
5. Highland Avenue/S Goodman Street
6. S Goodman Street/Pinetum Drive/Campus Drive

The site location and study area are illustrated in **Figure 1** (all Figures are included at the end of this report).

III. EXISTING HIGHWAY SYSTEM

The following information outlined in **Table 1** provides a description of the existing roadway network within project study area. **Figure 2** illustrates the lane geometry at each of the study intersections and the Annual Average Daily Traffic (AADT/ADT) volumes on the study roadways.

TABLE 1
EXISTING HIGHWAY SYSTEM

ROADWAY/ ROUTE[1]	FUNC. CLASS[2]	JURIS.[3]	SPEED LIMIT[4]	# OF TRAVEL LANES[5]	TRAVEL PATTERN/ DIRECTION	EST. AADT[6]/ SOURCE[7]
Elmwood Avenue *South Avenue to South Goodman Street*	Local	City	30	4	Two-way/ East-West	22,034 NYSDOT (2010)
Elmwood Avenue *South Goodman Street to Clover Street*	U Minor Arterial	County	30	4	Two-way/ East-West	9,294 NYSDOT (2014)

ROADWAY/ ROUTE[1]	FUNC. CLASS[2]	JURIS.[3]	SPEED LIMIT[4]	# OF TRAVEL LANES[5]	TRAVEL PATTERN/ DIRECTION	EST. AADT[6]/ SOURCE[7]
South Goodman Street *Elmwood Avenue to Highland Avenue*	U Minor Arterial	City	30	2	Two-way/ North-South	6,573 NYSDOT (2013)
South Goodman Street *Highland Avenue to South Clinton Avenue*	Minor Arterial	County	30	2	Two-way/ North-South	12,513 NYSDOT (2015)
Highland Avenue *South Avenue to David Avenue*	Major Collector	City	30	2	Two-way/ East-West	6,642 MCDOT (2010)

Notes:
1. "NYS" = New York State; "CR" = County Road.
2. State Functional Classification of Roadway. All are Urban.
3. Jurisdiction: "NYSDOT" = New York State Department of Transportation; "ECDPW" = Erie County Department of Public Works; "MCDOT" = Monroe County of Department of Transportation.
4. Posted or Statewide Limit in Miles per Hour (MPH).
5. Excludes turning/auxiliary lanes developed at intersections.
6. Estimated Annual Average Daily Traffic (AADT) in Vehicles per Day (vpd).
7. Source (Year). Obtained volumes represent the most recent available data.

PEDESTRIAN FACILITIES

There is sidewalk along the westerly side of S. Goodman St from just south of Highland Avenue to the north throughout the study area. Along the west side of S. Goodman St, there are small sections of sidewalk at the Highland Avenue intersection and on both sides of Campus Drive, however, there is no sidewalk connection between Campus Drive and Highland Avenue.

BICYCLE FACILITIES

There are no dedicated bicycle lanes within the study area. There are "sharrows" on S. Goodman St within the study area to the north of Highland Avenue.

TRANSIT FACILITIES

Colgate Rochester Divinity School Campus is currently served by Rochester Transit Service (RTS) routes 51 and 53.

IV. EXISTING TRAFFIC CONDITIONS

A. Peak Intervals for Analysis

Given the functional characteristics of the corridors, adjacent land uses, and the potential land uses for the project site (residential, office, hotel, and banquet facility), the peak hours selected for analysis are the weekday commuter AM and PM peak periods. The combination of site traffic and adjacent through traffic produces the greatest demand during these time periods.

B. Existing Traffic Volume Data

Turning movement traffic counts were collected on Thursday, May 2, 2019 by SRF Associates at the study area intersections. Traffic counts were conducted between 7:00-9:00 AM and 4:00-6:00

PM for the weekday commuter AM and PM peak hours. The peak hour traffic periods generally occurred between 7:15-8:15 AM and 4:45-5:45 PM.

All turning movement count data was collected on a typical weekday. No adverse weather conditions impacted the traffic counts and all schools in the vicinity of the study area were in session. The traffic volumes were reviewed to confirm the accuracy and relative balance of the collective traffic counts. The actual differences in traffic volumes can be attributed to temporal variations in traffic volumes as well as activity related to driveways located in the segments between the study intersections.

The 2019 existing weekday AM and PM peak hour volumes are reflected in **Figure 3**.

C. Field Observations

The study intersections were observed during both peak intervals to assess current traffic operations. Signal timing information was obtained from MCDOT Synchro files for the S. Goodman St/Highland Ave intersection and were utilized to determine peak hour phasing plans and phase durations during each interval. This information was used to support and/or calibrate capacity analysis models described in detail later in this report.

D. Sight Distance Evaluation

Sight distance was investigated at the existing Campus Drive intersection along S. Goodman St. Sight distance is provided at intersections to allow drivers to perceive the presence of potentially conflicting vehicles. This should occur in sufficient time for a motorist to stop or adjust their speed, as appropriate, to avoid a collision at the intersection.

Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to anticipate and avoid potential incidents. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate Stopping Sight Distance (SSD) for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. To enhance traffic operations, Intersection Sight Distances (ISD) that exceed stopping sight distances are desirable along the major road.

A Policy on Geometric Design of Highways and Streets 6th Edition (2011), published by the American Association of State Highway and Transportation Officials (AASHTO), was used as a reference to establish the required SSD and desirable ISD for the proposed access driveway location.

Required SSD and desirable ISD are based on the design speed for a given section of roadway; generally, the design speed is the posted speed limit plus 5 MPH. In this case, the posted speed limit at the proposed access driveway location is 30 MPH. Hence a design speed of 35 MPH was used. A speed conducted at the existing S. Goodman St/Campus Drive intersection found that 85th percentile speeds are 30 MPH northbound and 32 MPH southbound which supports using a design speed of 35 MPH or less. The required SSD and desirable ISD based on the design speeds are shown in **Table II**.

Based upon current conditions, the available sight distances along S. Goodman St to the left and right do not meet the required SSD and desirable ISD at the Campus Drive intersection with the exception of the southbound SSD which exceeds the required SSD. Sight distance to the north is obstructed by the vertical curvature of the roadway; to the south obstructions include the horizontal curvature of the roadway as well as roadside trees. There is currently a northbound

intersection warning sign. Recommended mitigation includes maintaining any brush and foliage along the sight lines to ensure maximum visibility.

TABLE II:
SIGHT DISTANCE EVALUATION

DIRECTION OF STUDY	POSTED SPEED LIMIT[1]	DESIGN SPEED[1]	REQUIRED SSD[2]	DESIRABLE ISD[2]	AVAILABLE SIGHT DISTANCE[2]
Looking Left	30	35	250	390	236± SSD 295± ISD
Looking Right	30	35	250	390	300± SSD 343± ISD

Notes:
1. Speeds in MPH.
2. Distances in feet.

V. FUTURE AREA DEVELOPMENT AND LOCAL GROWTH

Construction of the proposed project is expected to be completed over the next three (3) years depending on market conditions. The City of Rochester and Town of Brighton were contacted to discuss any other specific developments that are currently approved or under construction that would generate additional traffic in the study area. Two projects were identified:

- 1201 Elmwood Avenue re-development
- 1925 S. Clinton Avenue development

A review of historical NYSDOT traffic volume data compared to 2019 data collected by SRF indicated that traffic has varied significantly throughout the study area. To account for normal increases in background traffic growth, including any unforeseen developments in the project study area aside from the previously mentioned projects, a growth rate of 1.5% per year (consistent with MCDOT guidelines for growth rates in the City of Rochester) has been applied to the existing traffic volumes for the three-year build-out timeframe. Traffic specific to the approved developments identified above has also been added to the background traffic volumes. Future background traffic volumes at the time of full development are shown in **Figure 4**.

VI. PROPOSED DEVELOPMENT

A. Description

The project location is the Colgate Crozer Rochester Divinity Campus which is located at 1100-1120 South Goodman Street, at the northeast corner of the intersection of South Goodman Street and Highland Avenue. The main entrance to the campus is from South Goodman Street.

The project sponsor proposes to rezone the property from IPD to PD with a Development Concept Plan that will accommodate the use and reuse of the existing historic buildings, Strong Hall, Montgomery House and Trevor Hall; and, maintain and continue the use of Saunders House and Andrew Hall as apartment buildings. Two new apartment buildings will be constructed each

providing 52 units. The site will continue to have access to S. Goodman St via the existing Colgate Divinity driveway.

The following list summarizes the permitted uses that are proposed under the re-zoning:

Montgomery House (7,916 sf)-This facility is currently being used as the primary residence for the president of the school.

Proposed Permitted Uses:
1. Bed and Breakfast
2. Office
3. Residential

Trevor Hall (31,776 sf)-This facility is currently leased to the American cancer society. It has 29 hotel rooms that vary in size, and the number of beds. It has a central kitchen, dining room, and laundry facilities which are available to occupants.

Proposed Permitted Uses:
1. Hotel
2. Independent Living

Strong Hall (76,123 sf)-This facility was being used as a banquet facility with outdoor seating south of the structure occupying the kitchen, refractory, and the chapel. The balance of the building has been used for the Divinity school for classroom, and offices. There are also a couple of small tenants.

Proposed Permitted Uses:
1. Banquet (Kitchen/ Refractory/ Chapel -Upper/Lower/ Outdoor Seating)
   The balance being office
2. Worship (Chapel -Upper/Lower)
   Banquet (Kitchen/Refractory/ Outdoor Seating)
   The balance being office
3. Worship (Chapel -Upper/Lower)
   The balance being office
4. Independent Living
5. Apartments
6. Charter School K-6

Saunders (16,348 sf)

1. 16 apartments (4 2 bedroom and 12 1 bedroom)

Andrews (8,500 sf)
1. 12 apartments (all 1 bedroom)

B. Site Traffic

The permitted uses listed above were evaluated to determine the highest traffic generators for each building. Based upon this evaluation, the following uses are assigned to each building for analysis purposes:

1. Montgomery House – 7,916 SF Office

2. Trevor Hall – 29 room Hotel
3. Strong Hall – 32,000 SF Office and 190 seat Banquet Facility
4. Saunders House – 16 units Apartments
5. Andrews House – 12 units Apartments
6. Two new buildings – 104 units Apartments total

The combination of these uses generates the highest volume of peak hour traffic compared to all of the uses permitted under the proposed zoning.

Data contained in Trip Generation, 10th Edition, published by the Institute of Transportation Engineers (ITE) in 2017 was used to project the volume of traffic generated by the proposed development. Data published by the ITE is the nationally accepted standard for generating trips for new uses.

According to the ITE, the following steps are recommended when determining trip generation for proposed land uses:

1. *Check for the availability of local trip generation rates for comparable uses.*

2. *If local trip data for similar developments are not available and time and funding permit, conduct trip generation studies at sites with characteristics similar to those of the proposed development.*

Banquet Facility trip generation is based on local data for similar sized banquet facilities. Trips for all other uses on site were generated based upon published ITE data. **Table III** summarizes the total site generated trips for the weekday AM and PM peak hours for the proposed project. All trip generation information has been included in the Appendices.

TABLE III
PROJECTED TRIP GENERATION

DESCRIPTION	ITE LUC[1]	SIZE	AM PEAK HOUR		PM PEAK HOUR	
			ENTER	EXIT	ENTER	EXIT
Banquet/Convention Space	n/a[2]	190 SEATS	0	0	45	18
Hotel	310	29 ROOMS	5	4	12	8
Multifamily Housing (Low-Rise)	220	132 UNITS	14	48	48	28
General Office Building	710	40,000 SF	78	13	8	41
Total Site Generated Trips			***97***	***65***	***113***	***95***

Note:
1. "LUC" = Land Use Code
2. n/a – ITE does not have data for Banquet/Convention Space – data is based upon local data collected by SRF

The proposed development is expected to generate 97 entering/65 exiting vehicle trips during the AM peak hour and 113 entering/95 exiting vehicle trips during the PM peak hour.

C. *Site Traffic Distribution*

The cumulative effect of site-generated traffic on the transportation network is dependent on the origins and destinations of that traffic and the location of the access drives serving the site. The proposed arrival/departure distribution of traffic generated by the proposed project is considered a function of several parameters, including:

- Employment centers;
- Commercial centers in the area;
- Location the existing site driveway;
- Existing traffic patterns; and
- Existing traffic conditions and controls

The anticipated trip distribution pattern has been revised from the May 2019 MTIA based upon new data and analysis of the study intersections. Specifically, the southbound left turn movement from S. Goodman St to Elmwood Ave experiences long delays particularly during the PM peak hour. A gap analysis was conducted using the May 2019 traffic data to determine the availability and duration of gaps during the peak hours. Based upion the results of this analysis, it is likely that motorists will choose alternate routes during peak hours to avoid the potential delays. Therefore the fewer trips were added to the southbound left turn movement at Elmwood Avenue and were instead added to the left turn movement at Highland Ave.

Figure 6 shows the revised trip distribution pattern percentages for the traffic from the proposed project. **Figure 7** illustrates the peak hour site generated traffic based on those percentages using the updated trip generation projections.

VII. FULL DEVELOPMENT VOLUMES

Proposed design hour traffic volumes are developed for the AM and PM peak hours by combining the background traffic conditions (Figure 4) and the new site-generated traffic volumes (Figure 7) to yield the traffic volumes under full development conditions. The resulting design hour volumes for the proposed project are illustrated in **Figure 8** under full build-out conditions.

VIII. CAPACITY ANALYSIS

Capacity analysis is a technique used for determining a measure of effectiveness for a section of roadway and/or intersection based on the number of vehicles during a specific time period. The measure of effectiveness used for the capacity analysis is referred to as a Level of Service (LOS). Levels of Service are calculated to provide an indication of the amount of delay that a motorist experiences while traveling along a roadway or through an intersection. Since the most amount of delay to motorists usually occurs at intersections, capacity analysis typically focuses on intersections, as opposed to highway segments.

Six Levels of Service are defined for analysis purposes. They are assigned letter designations, from "A" to "F", with LOS "A" representing the best conditions and LOS "F" the worst. Suggested ranges of service capacity and an explanation of Levels of Service are included in the Appendices.

The standard procedure for capacity analysis of signalized and un-signalized intersections is outlined in the Highway Capacity Manual (HCM) 6th Edition (2016) published by the Transportation Research Board (TRB). Traffic analysis software, SYNCHRO 10, which is based

on procedures and methodologies contained in the HCM, was used to analyze operating conditions at study area intersections. The procedure yields a LOS based on the HCM 6th Edition as an indicator of how well intersections operate.

Existing and background operating conditions during the peak study periods are evaluated to determine a basis for comparison with the projected future conditions. The future traffic conditions generated by the project were analyzed to assess the operation of the study area intersections. Capacity results for existing, background, and full development conditions are listed in **Table IV**. The discussion following the table summarizes capacity conditions. All capacity analysis calculations are included in the Appendices.

TABLE IV
CAPACITY ANALYSIS RESULTS

INTERSECTION	2019 EXISTING CONDITIONS		2022 BACKGROUND CONDITIONS		2022 FULL DEVELOPMENT CONDITIONS	
	AM	PM	AM	PM	AM	PM
Elmwood Ave/S Goodman St						
EB left – Elmwood Avenue	B 11.7	B 13.4	B 12.7	C 15.7	B 12.8	C 16.7
SB left – S Goodman Street	F 53.5	F *	F 75.2	F *	F 86.9	F *
SB right – S Goodman Street	D 30.7	B 13.2	E 43.2	B 14.6	F 52.9	B 14.6
S Goodman St/Highland Ave						
EB – Highland Avenue	B 14.6	B 17.5	B 15.3	B 18.4	B 15.9	C 22.2
WB – Highland Avenue	C 20.8	B 10.2	C 22.5	B 10.8	C 24.6	B 11.9
NB – S Goodman Street	A 9.8	B 15.9	B 10.4	B 17.5	B 10.9	B 18.4
SB – S Goodman Street	C 20.8	B 13.7	C 23.0	B 15.4	C 26.2	B 19.7
Overall LOS:	***B 18.6***	***B 15.0***	***C 20.3***	***B 16.3***	***C 22.3***	***B 18.8***
S Goodman St/Pinetum Dr & Campus Dr						
EB – Pinetum Drive	C 17.4	C 17.0	C 18.5	C 18.7	C 24.3	C 20.7
WB – Campus Drive	C 22.1	C 17.8	C 24.3	C 9.3	E 48.2	F 51.7
SB left -S Goodman Street	A 7.8	A 8.6	A 7.9	A 8.7	A 8.1	A 9.0
NB left – S Goodman Street	A 9.0	A 8.0	A 9.1	A 8.1	A 9.1	A 8.1

Notes:

1. EB = Eastbound; WB = Westbound; NB = Northbound; SB = Southbound
2. C (18.1) = Level of Service (Delay in seconds per vehicle)
3. (U) = Unsignalized
4. Green shaded cells indicate low delays, yellow shaded cells indicate moderate delays, red shaded cells indicate longer delays.

Elmwood Avenue/S Goodman Street

The Elmwood Avenue approaches are projected to operate at a highly acceptable LOS "C" or better during both peak hours under all conditions. The southbound left turn movement currently operates at LOS "F" with moderate to long delays during both peak hours. The southbound right turn movement is projected to operate at LOS "E" under background conditions and LOS "F" under full development conditions. The development is projected to add 33(25) southbound right turns and 8(20) southbound left turns during the AM(PM) peak hours. It is anticipated that motorists will choose to turn left at the signalized S. Goodman St/Highland Ave intersection if

they encounter long delays at the Elmwood Ave intersection. This "diversion" of southbound left turns was considered and included in the distribution of site traffic and is analyzed as the full development condition.

The TIS for the 1201 Elmwood Avenue Project evaluated this intersection in greater detail. The following excerpt from the 1201 Elmwood avenue TIS also applies to the results identified herein.

"Although the LOS results depict delays over two minutes for the southbound left turns during both peak hours under existing conditions, as well as a LOS "F" for the southbound right-turn traffic during the AM peak hour under existing conditions, the results from the SimTraffic simulation and the actual Stop Sign Delay Study represent a LOS of "C" or better for both movements during the AM peak hour. An average delay of 33± seconds per vehicle was recorded for the southbound left approach during the PM peak hour. As well, it was observed that most southbound right-turn motorists roll slowly through the stop sign control, instead of coming to a complete stop. Currently during the AM and PM peak hours, 98% and 92% of the southbound drivers are turning right onto Elmwood Avenue, respectively."

No mitigation is warranted or recommended at this intersection as a result of the proposed development.

S Goodman Street/Highland Avenue
All approaches are projected to operate at LOS "C" or better during both peak hours under all conditions. One change in LOS is projected, the eastbound Highland Ave approach changes from LOS "B" to "C" during the PM peak hour with a corresponding increase in delay of 3.8 seconds per vehicle, as a result of the proposed project. No mitigation is warranted or recommended as a result of the proposed development.

S Goodman Street/Pinetum Drive & Campus Drive
All approaches are projected to operate at LOS "C" or better during both peak hours under full development conditions with the exception of Campus Drive exiting the site which is projected to operate at LOS "E" during the AM peak hour and LOS "F" during the PM peak hour. Campus Drive was modeled with one exiting lane, however, it is noted that the curbing flares such that a single vehicle turning right could turn while a left turn vehicle is stopped waiting. This type of operation is characteristic of side roads on higher volume through roads such as S. Goodman St. This intersection is not expected to meet warrants for signalization. Considering the projected levels of service and delays, no mitigation is warranted or recommended.

IX. GAP ANALYSIS

A Gap Analysis was performed along Elmwood Avenue at its intersection with South Goodman Street to determine the availability of gaps for traffic to make a southbound left turn onto Elmwood Avenue during the PM peak hour. For unsignalized intersections such as this, gap availability can be used as a surrogate methodology for evaluating the ability of side road traffic to enter and exit the fronting traffic stream.

The availability of gaps within the traffic stream primarily determines the side road driver behavior and delay for both entering and exiting motorists. A gap study counts the actual gaps in existing traffic available for a vehicle to enter or exit the side road. The difference between the actual number of gaps and the projected demand for a particular traffic movement can then be calculated as a reserve or deficit capacity.

The 2016 Highway Capacity Manual provides data relative to gap sizes that motorists find acceptable to execute the required maneuver. SRF Associates performed a gap analysis at the intersection of Elmwood Avenue and South Goodman Street utilizing video data collected on Wednesday, January 6th, 2016 during the PM peak hour (4:30 – 5:30 PM) to evaluate potential future operating conditions. **Table V** indicates the acceptable gap duration, the theoretical number of gaps based on the duration, the projected traffic volume for the southbound left movement, and the resulting theoretical reserve (or deficit) capacity during the PM peak hour.

TABLE V
PEAK HOUR GAP ANALYSIS RESULTS

INTERSECTION	*MOVEMENT*	*ACCEPTABLE GAP DURATION*	*THEORETICAL EXISTING GAPS BASED ON COLLECTED DATA*	*PROJECTED VOLUME*	*THEORETICAL RESERVE CAPACITY*
Elmwood Avenue/ S. Goodman Street	SB Left	7.5 sec	35	35	0

The availability of existing gaps is representative of the actual gaps documented in the Elmwood Avenue traffic steams. During the data collection, it was observed that the vehicles arrived in platoons in both directions due to traffic signals at South Avenue and South Clinton Avenue.

Based on the field observations, gap study, and projected site generated traffic volumes, it is anticipated that adequate gaps exist to accommodate the projected demand of southbound left turns onto Elmwood Avenue during the PM peak hour. Motorists that experience long delays will opt for alternative routes.

X. LEFT-TURN TREATMENT WARRANT INVESTIGATION

Volume warrants for a left-turn treatment along S. Goodman St at Campus Drive were investigated using the TRB's NCHRP Report 279: Intersection Channelization Design Guide (1985). Provisions for left-turn lane facilities should be established where traffic volumes are high enough and safety considerations are sufficient to warrant the additional lane. This investigation analyzes warrants during the peak hours of study. **Table VI** depicts the results of the analysis. All supporting calculations are included in the Appendices.

TABLE VI
LEFT-TURN TREATMENT WARRANT INVESTIGATION

INTERSECTION	APPROACH	WARRANT SATISFIED
S. Goodman St/Campus Drive	Southbound	AM: No PM: No

The warrants for a southbound left-turn treatment at Campus Drive are not satisfied during the either peak hour. No left turn treatments are warranted or recommended.

XI. CONCLUSIONS & RECOMMENDATIONS

This Traffic Impact Study identifies and evaluates the potential traffic impacts that can be expected from the proposed Colgate Divinity Re-development project in the City of Rochester, Monroe County, New York, as described in this study. The results of this study determine that the existing transportation network can adequately accommodate the projected traffic volumes and resulting impacts to study area intersections. The following sets forth the conclusions and recommendations based upon the results of the analyses:

1. The proposed development is expected to generate 97 entering/65 exiting vehicle trips during the AM peak hour and 113 entering/95 exiting vehicle trips during the PM peak hour.

2. Based upon current conditions and measured speeds, the available sight distances along S. Goodman St to the left and right do not meet the required SSD and desirable ISD at the Campus Drive intersection with the exception of the southbound SSD which exceeds the required SSD. Sight distance to the north is obstructed by the vertical curvature of the roadway; to the south obstructions include the horizontal curvature of the roadway as well as roadside trees. There is currently a northbound intersection warning sign. Recommended mitigation includes maintaining any brush and foliage along the sight lines to ensure maximum visibility.

3. The warrants for a southbound left-turn treatment at Campus Drive are not satisfied during the either peak hour. No left turn treatments are warranted or recommended.

4. The Elmwood Avenue approaches are projected to operate at a highly acceptable LOS "C" or better during both peak hours under all conditions. The southbound left turn movement currently operates at LOS "F" with moderate to long delays during both peak hours. The southbound right turn movement is projected to operate at LOS "E" under background conditions and LOS "F" under full development conditions. The development is projected to add 33(25) southbound right turns and 8(20) southbound left turns during the AM(PM) peak hours.

   Based on the field observations, gap study, and projected site generated traffic volumes, it is anticipated that adequate gaps exist to accommodate the projected demand of southbound left turns onto Elmwood Avenue during the PM peak hour. It is anticipated that motorists will choose to turn left at the signalized S. Goodman St/Highland Ave intersection if they encounter long delays at the Elmwood Ave intersection. This "diversion" of southbound left turns was considered and included in the distribution of site traffic and is analyzed as the full development condition.

5. The minor projected traffic impacts resulting from full development of the proposed project during both peak hours can be adequately accommodated by the existing transportation network.

XII. FIGURES

Figures 1 through 8 are included on the following pages.

FIGURE 1 - SITE LOCATION AND STUDY AREA

Legend

- Study Intersection
- Study Area
- Site Location

PROPOSED COLGATE DIVINITY DEVELOPMENT

CITY OF ROCHESTER, NY

Feet

0 250 500 1,000

N

SRF ASSOCIATES

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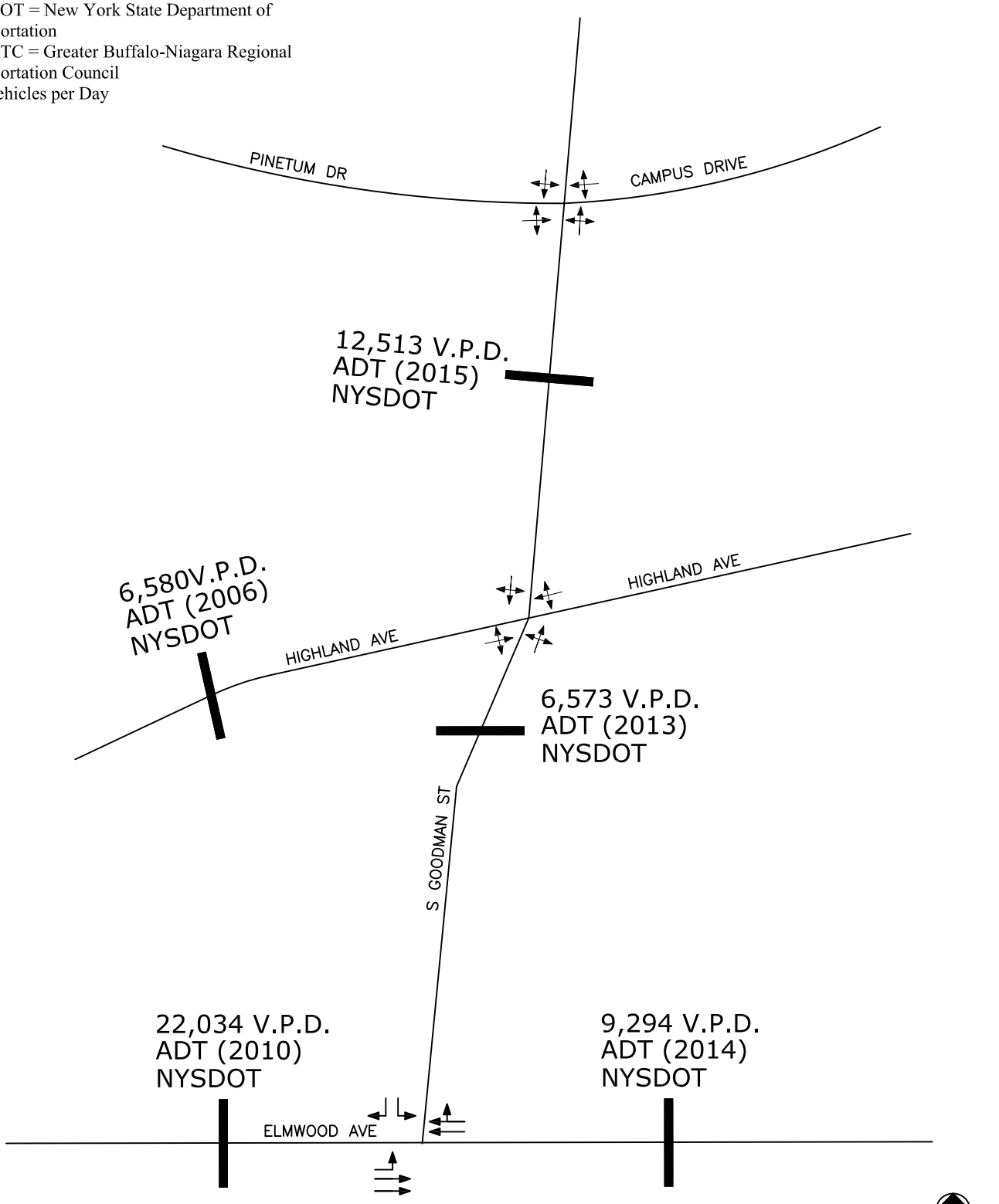
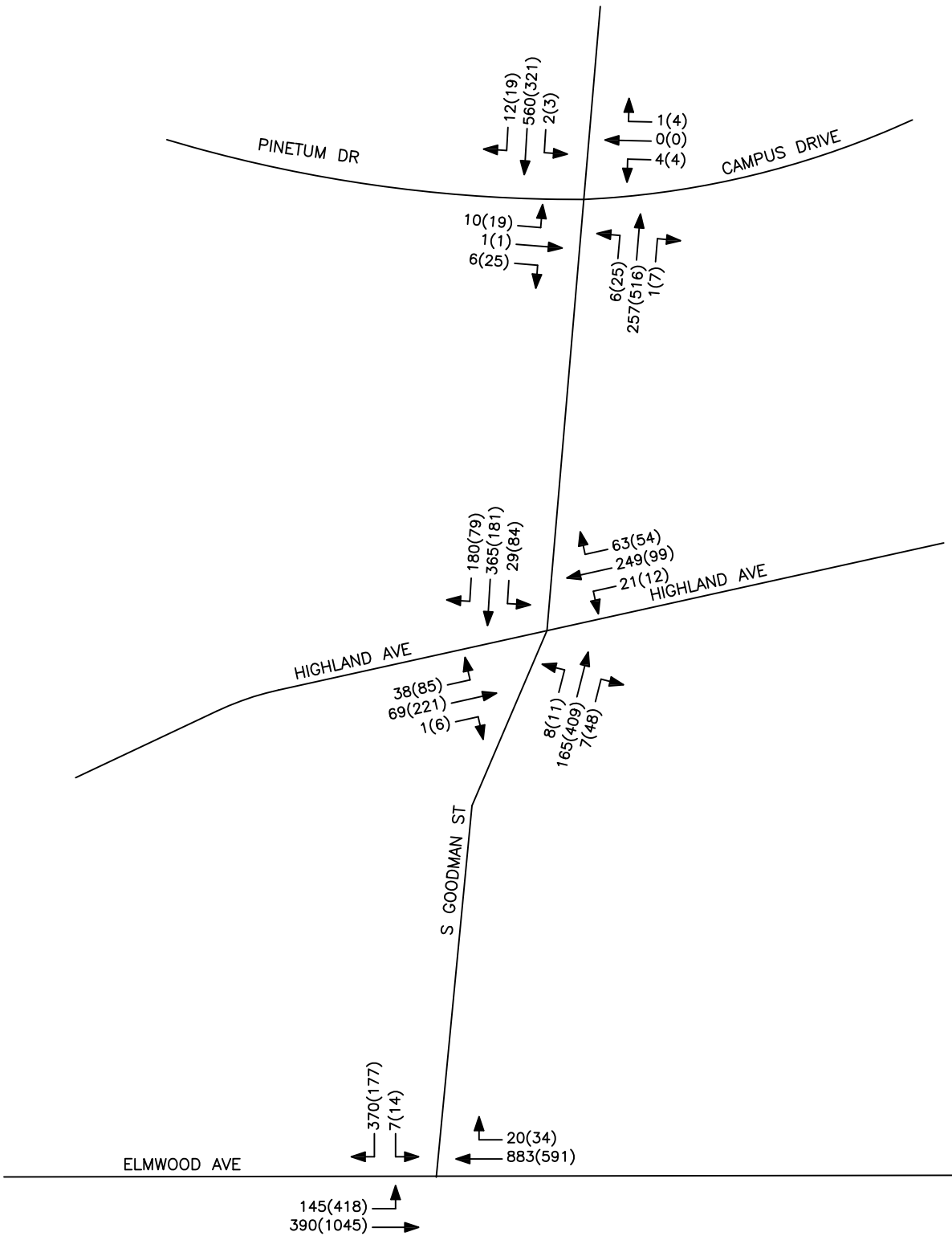
Transportation Planning / Engineering / Design

Notes:

1. All counts by those noted:
   - 1.1. NYSDOT = New York State Department of Transportation
   - 1.2. GBNRTC = Greater Buffalo-Niagara Regional Transportation Council
2. V.P.D. = Vehicles per Day



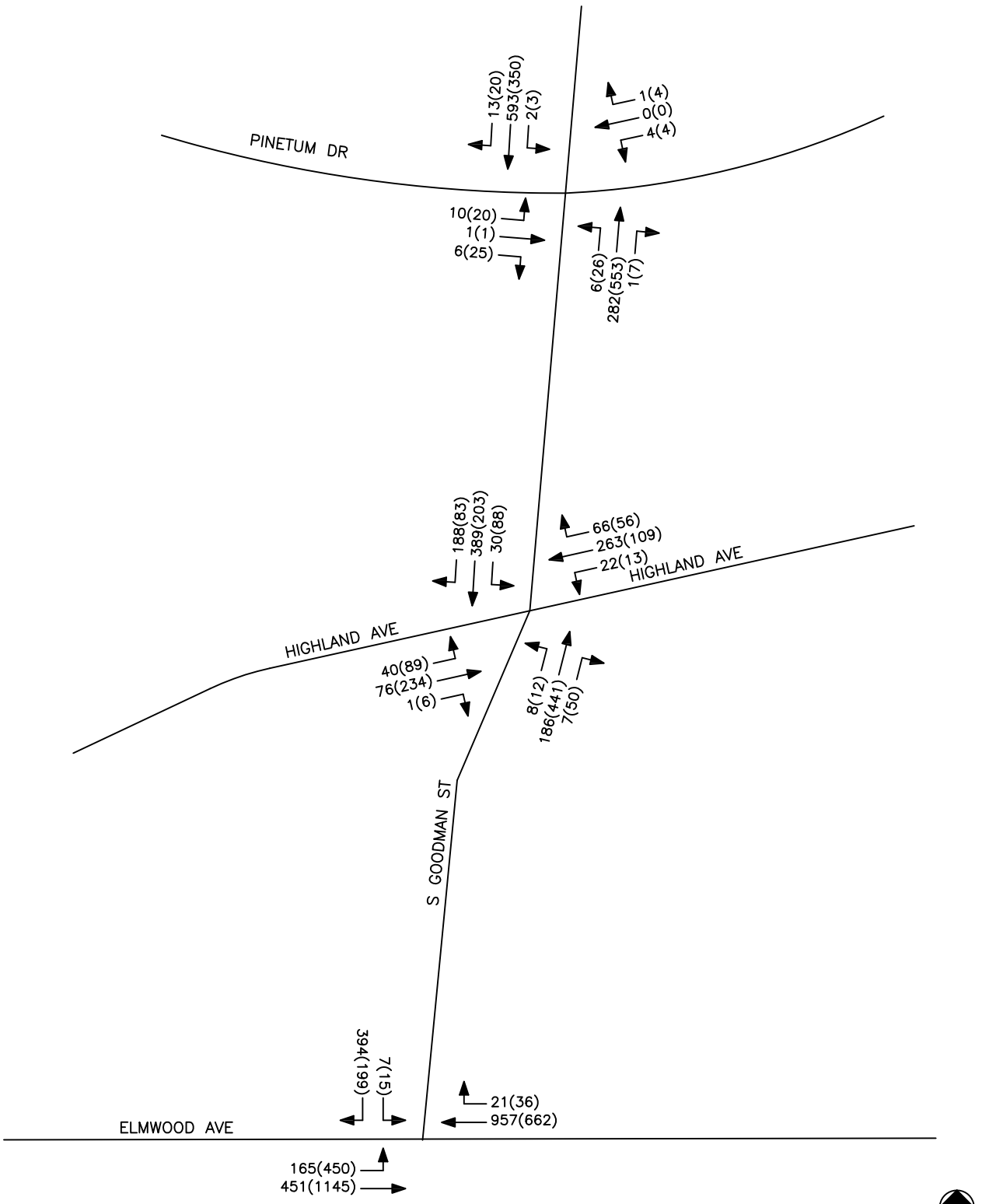
KEY	FIGURE 2	
	LANE GEOMETRY & AVERAGE DAILY TRAFFIC	SRF ASSOCIATES Transportation Planning / Engineering / Design www.srfa.net / (585) 272-4660
PROJECT NO: 39011	PROPOSED COLGATE DIVINITY DEVELOPMENT CITY OF ROCHESTER, N.Y.	



AM PEAK: 7:15–8:15AM
PM PEAK: 4:45–5:45PM

N
NOT TO SCALE

KEY	FIGURE 3	
00(00) = AM(PM)	PEAK HOUR VOLUMES 2019 EXISTING CONDITIONS	SRF ASSOCIATES Transportation Planning / Engineering / Design www.srfa.net / (585) 272-4660
PROJECT NO: 39011	PROPOSED COLGATE DIVINITY DEVELOPMENT CITY OF ROCHESTER, N.Y.	



KEY	FIGURE 4	SRF ASSOCIATES
00(00) = AM(PM)	PEAK HOUR VOLUMES 2021 BACKGROUND CONDITIONS	Transportation Planning / Engineering / Design www.srfa.net / (585) 272-4660
PROJECT NO: 39011	PROPOSED COLGATE DIVINITY DEVELOPMENT CITY OF ROCHESTER, N.Y.	

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

SITE LEGEND

- PARCEL BOUNDARY
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING ADJACENT PROPERTY LINE
- EXISTING CONCRETE CURB
- EXISTING EDGE OF PAVEMENT
- EXISTING EDGE OF GRAVEL
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE CURBING
- PROPOSED EDGE OF PAVEMENT

PAVEMENT LEGEND

- NEW STANDARD ASPHALT PAVEMENT SECTION
- NEW CONCRETE SIDEWALK

HIGHLAND PARKWAY (60' R.O.W.)

HIGHLAND PARKWAY TRACTMAP LIBER 55 PAGE 19

GREENVIEW DRIVE (50' R.O.W.)

SUMMIT DRIVE (60' R.O.W.)

HOWLAND AVENUE (60' R.O.W.)

GOODMAN STREET (66' R.O.W.)

SOUTH CAMPUS DRIVE

LILAC AVENUE (49.5' R.O.W.)

DAVID ROAD (60' R.O.W.)

HIGHLAND PARK

CITY OF ROCHESTER
TOWN OF BRIGHTON

LICENSE AGREEMENT BETWEEN COLGATE ROCHESTER DIVINITY SCHOOL AND ESTHER C. HEITZ PERTAINING TO GARAGE ENCROACHMENT LIBER 9055 PAGE 312

RCS MONUMENT #136250302 MEDINA W/DRILL HOLE 0.2' BELOW GRADE

RCS MONUMENT #136250303 MEDINA W/DRILL HOLE 0.7' BELOW GRADE

RTS MONUMENT #136250105 572.832 (1999)

RTS MONUMENT #136330102 545.402 (1936)

RCS MONUMENT #136330101 GRANITE W/DRILL HOLE 0.6' BELOW GRADE

RCS MEDINA NO DRILL HOLE 0.2' BELOW GRADE

1" SQ. PIN 0.3' BELOW GRADE

1" SQ. PIN 0.3' BELOW GRADE

5/8" REBAR 0.2' BELOW GRADE

3/4" IRON PIPE

1/2" REBAR

1/2" REBAR @ GRADE

1 1/4" IRON PIPE 0.3' BELOW GRADE

3/4" IRON PIPE 0.2' BELOW GRAD

5/8" REBAR 0.3' BELOW GRADE

1 1/2" IRON PIPE 0.5' ABOVE GRADE

3/4" IRON PIPE WITH TEE FITTING

N/F BARBARA A. NINO T.A.#136.25-3-42 7 HIGHLAND PARKWAY

N/F LAURA WILDER COWLES T.A.#136.25-3-41 1068 S. GOODMAN STREET

N/F E.J. SEARS SWEENY T.A.#136.25-3-43 17 HIGHLAND PARKWAY

N/F MELISSA CARMEN T.A.#136.25-3-44 25 HIGHLAND PARKWAY

N/F JACOB H. & EMILY SMITH T.A.#136.25-3-45 31 HIGHLAND PARKWAY

N/F WILLIAM BASILE T.A.#136.25-3-46 37 HIGHLAND PARKWAY

N/F ROBIN FISHER T.A.#136.25-3-47 45 HIGHLAND PARKWAY

N/F RAJESH NITIN SIGNARAVELU T.A.#136.25-3-48 55 HIGHLAND PARKWAY

N/F MARGARET & COLIN DOODY T.A.#136.25-3-49 65 HIGHLAND PARKWAY

N/F JOANNE VOTSIS T.A.#136.25-3-50 69 HIGHLAND PARKWAY

N/F THOMAS & MARY RUTKOWSKI T.A.#136.25-3-51 77 HIGHLAND PARKWAY 5/8" REBAR 0.2' ABOVE GRADE

N/F MATHEW TURNER T.A.#136.25-3-52 83 HIGHLAND PARKWAY

N/F JONATHAN HORN T.A.#136.25-3-53 89 HIGHLAND PARKWAY

N/F CARLA PROVENZANO T.A.#136.25-3-54 95 HIGHLAND PARKWAY

N/F WILLIAM A. LANG T.A.#136.25-3-55 103 HIGHLAND PARKWAY

N/F JOHN & BRITTANY HOFFMAN T.A.#136.25-3-56.001 109 HIGHLAND PARKWAY

SEWER EASEMENT LIBER 11069 PAGE 162

N/F SHEILA MURPHY T.A.#136.25-3-59 125 HIGHLAND PARKWAY

N/F THOMAS & CHRISTINE KELLY T.A.#136.25-1-87 135 HIGHLAND PARKWAY

N/F DAVID & KATHLEEN MARR T.A.#136.26-1-86 3 GREENVIEW DRIVE

N/F MAISON PROPERTIES INC. T.A.#136.25-3-58.001 LOT 2 FILED MAP 341 PAGE 52

WATER LINE EASEMENT LIBER 11069 PAGE 153

N/F PAMELA FRAME T.A.#136.07-1-87 27 HOWLAND AVENUE

N/F PAMELA FRAME T.A.#136.07-1-57.1 HOWLAND AVENUE

N/F JOANN & ROBERT DALE T.A.#136.07-1-52.1 SUMMIT DRIVE

N/F RACHEL HALL T.A.#136.07-1-44 7 SUMMIT DRIVE

N/F GARRY VERNON T.A.#136.07-1-43 HIGHLAND AVENUE

N/F COLGATE ROCHESTER DIVINITY SCHOOL T.A.#136.33-1-1.002 LIBER 1454 PAGE139 LOT 1 FILED MAP 341 PAGE 52 22.422 ACRES

BLDG. 100
4 STORY - 52 UNITS
APARTMENT
BUILDING FOOTPRINT
15,600± Sq. Ft./Floor

BUILDING 200
4 STORY - 52 UNITS
APARTMENT
BUILDING FOOTPRINT
15,600± Sq. Ft./Floor

PROPOSED RETAINING WALL

PROPOSED CONCRETE SIDEWALK (TYP.)

PROPOSED ASPHALT WALK

9.0 x 18.0 PARKING STALL (TYP.)

UNDERGROUND PARKING

FIRE LANE

ASPHALT WALK

HAMILTON HOUSE FOUR STORY BRICK BUILDING

LANDSCAPED TWO STORY BRICK BUILDING

ONE STORY BRICK BUILDING

STRONG HALL THREE STORY BRICK BUILDING

TREVOR-LETCH HALL TWO STORY BRICK BUILDING

PRESIDENT'S HOUSE THREE STORY BRICK BUILDING

BRICK & CONC. WALL WITH BRICK COLUMNS

BRICK WALL PLANTER

ELEVATED EQUIPMENT FRAME CONC. WALL

CONCRETE RETAINING WALL

CONCRETE STEPS & WALK

LANDSCAPED BLOCK WALL

GRAVEL AREA

NO PARKING SIGN 2-HANDICAP SIGNS

STAMPED ASPH. WALK

STONE STEPS

STONE STEPS AND ASPHALT WALK

BRICK STEPS

STONE GRILL

GRANITE CURB

CONCRETE CURB

CONC. GUTTER

BRICK LINED GUTTER

STOP SIGN

SWING GATE

4' CHAIN LINK FENCE

6' WOOD FENCE

3' HIGH WIRE FENCE

5' WROUGHT IRON FENCE

PEDESTRIAN CROSSING

DIRECTORY SIGN

BUS STOP

SPEED LIMIT 30 M.P.H.

CURVE AHEAD

COLGATE SIGN

INTERSECTION AHEAD

CONC. WATER VAULT BELOW GRADE

T-BAR

RTC O

RTC P

RTC N

RTC 1B

SUMMIT VIEW MAP LIBER 98 PAGE 35

PROPOSED STORMWATER MANAGEMENT FACILITY

APPROXIMATE LOCATION OF "OPTION PARCEL" REFERENCED IN LEASE MADE WITH AMERICAN CANCER SOCIETY DATED 5/1/2009

POSSIBLE LOCATION OF EASEMENT GRANTED TO ROCHESTER TELEPHONE CORPORATION AND ROCHESTER GAS & ELECTRIC CORPORATION (OVER 341710 DEPARTMENT OF ASSESSMENT AND TAXATION RECORDS KNOWN AS LOT 1 HIGHLAND VIEW SUBDIVISION) LIBER 2453 PAGE 214

CORRECTION EASEMENT GRANTED TO CITY OF ROCHESTER LIBER 8703 PAGE 606

APPROXIMATE LOCATION WATERMAIN EASEMENT TO CITY OF ROCHESTER LIBER 546 PAGE 217

Dig Safely. New York
Underground Facilities Protective Organization
- Call Before You Dig
- Walt The Required Time
- Confirm Utility Response
- Respect The Marks
- Dig With Care

800-962-7962
www.digsafelynewyork.com

EXISTING UTILITIES (LOCATION, SIZES AND INVERTS) SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT CERTIFIED AS TO THE ACCURACY OF THEIR LOCATION OR COMPLETENESS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND DEPTHS OF ALL UTILITIES AND STRUCTURES IN THE PATH OF, OR CLOSELY PARALLEL TO, OR UNDER, THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS OR DAMAGES OCCURRING AS A RESULT OF INCORRECTLY LOCATED UTILITIES. IT IS THE CONTRACTORS RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITY OWNERS IN AMPLE TIME FOR THEM TO LOCATE AND MARK THEIR FACILITIES. THE CONTRACTOR SHALL ALSO NOTIFY UNDERGROUND UTILITY LOCATION SERVICE AT LEAST 48 HOURS IN ADVANCE OF COMMENCING ANY WORK.

NO.	DATE	REVISION	BY	CHKD.	APVLS.
2	06/27/2019	REVISED SITE DESIGN LAYOUT - REDUCED BUILDING SQUARE FOOTAGE	D.J.L.	M.P.M.	
1	06/14/2019	SCHEMATIC PLAN ADVANCEMENT - ADDED ADDITIONAL RETAINING WALLS	D.J.L.	M.P.M.	

STATE OF NEW YORK — MARK R. COSTICH — No. 075971 — Licensed Professional Engineer

PROJECT ENGINEER	M.P.M.
DRAWN BY	D.J.L.
BOUNDARY	J.S.F.
TOPO/BASE	G.L.R.
DATE	05/23/2019
SCALE	1"=60'

COSTICH ENGINEERING
• Civil Engineering
• Land Surveying
• Landscape Architecture
217 Lake Avenue
Rochester, NY 14608
(585) 458-3020

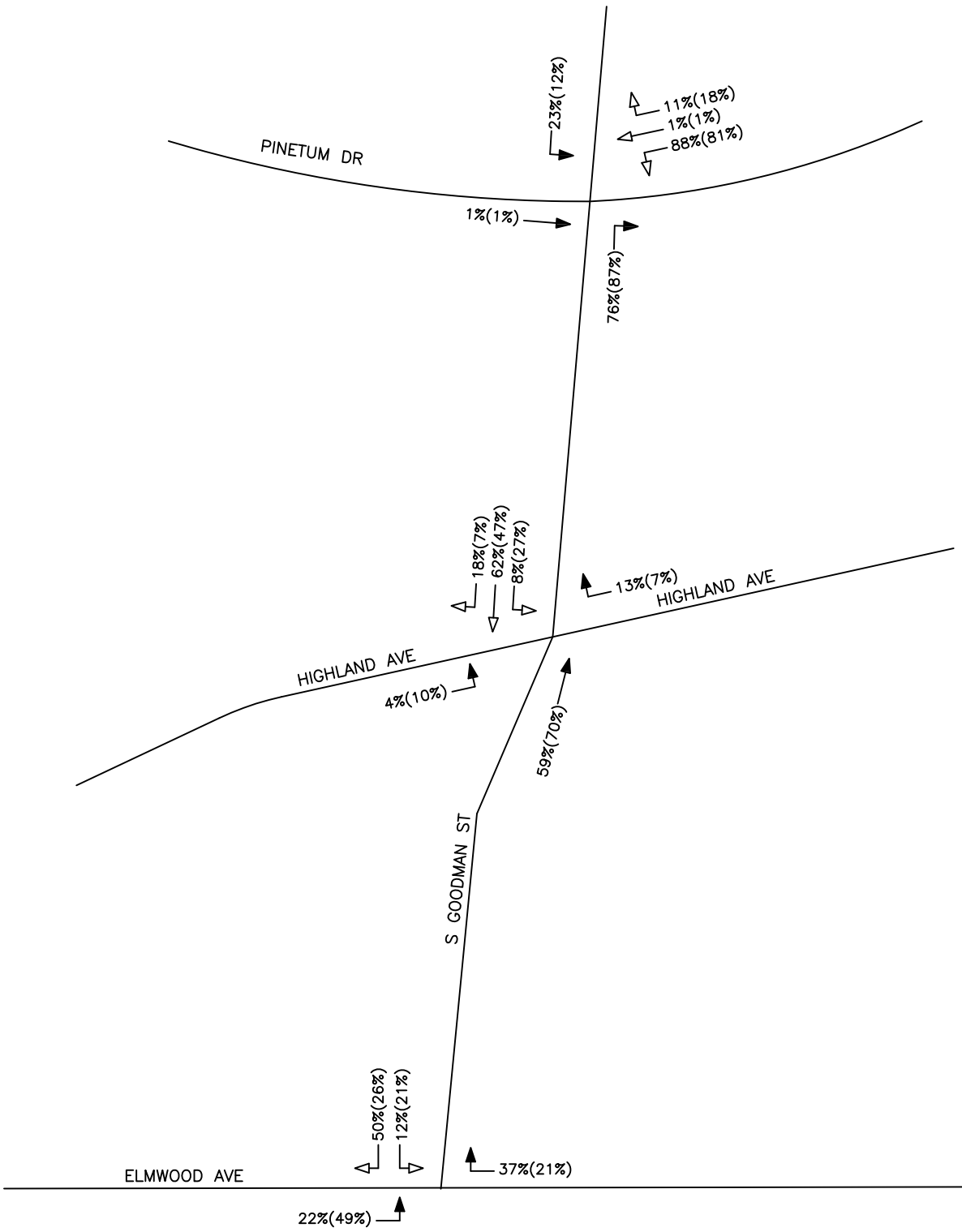
TITLE OF PROJECT: DIVINITY CAMPUS SCHEMATIC SITE REDEVELOPMENT

TITLE OF DRAWING: SITE PLAN

LOCATION OF PROJECT: TAX PARCEL NO. 136.33-1-1.002, CITY OF ROCHESTER COUNTY OF MONROE, STATE OF NEW YORK

CLIENT: ROC GOODMAN LLC
550 LATONA RD. BLD. E SUITE 501
ROCHESTER, NEW YORK 14626

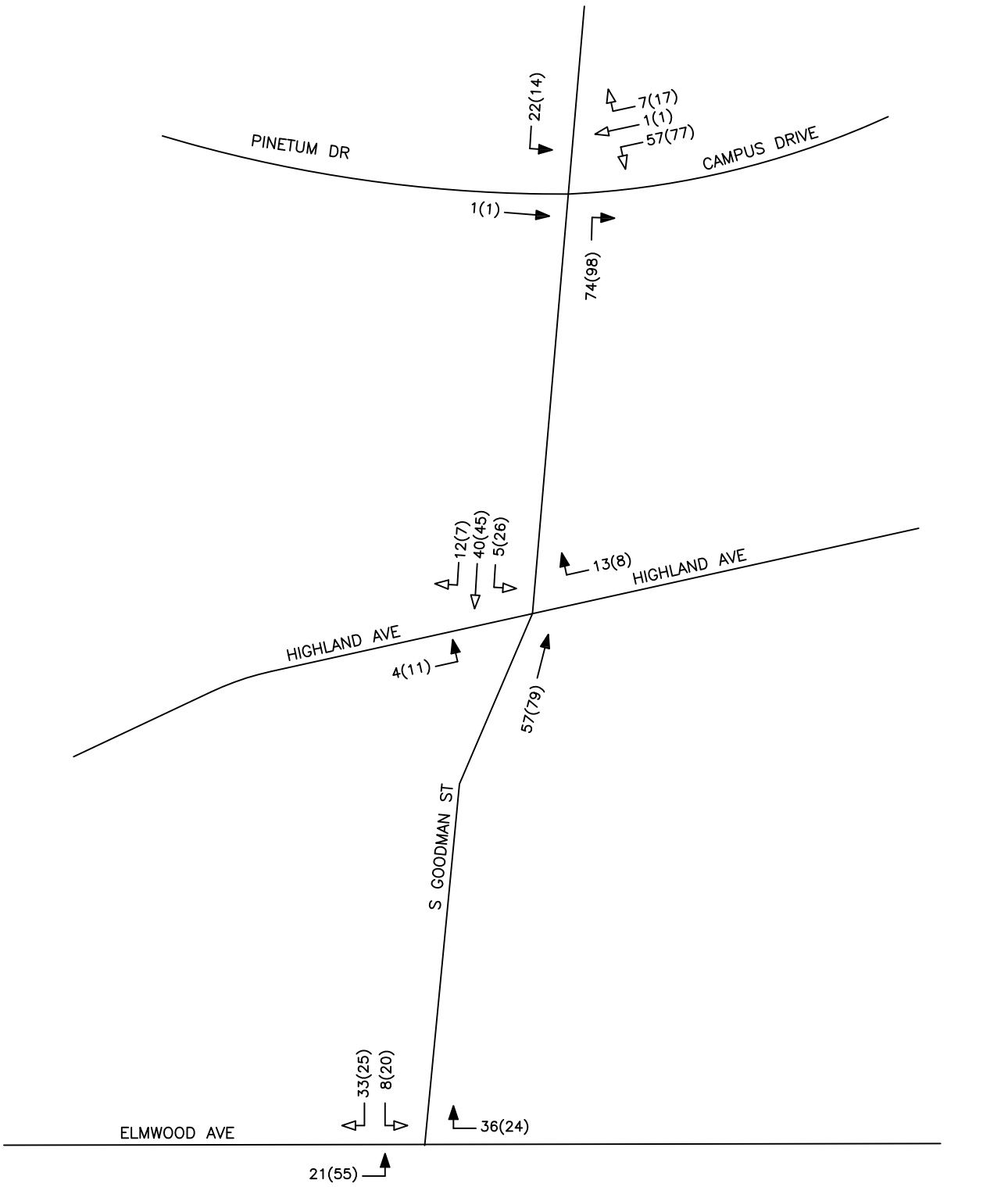
DWG. # 6702
CE101
SHEET 04 OF 08



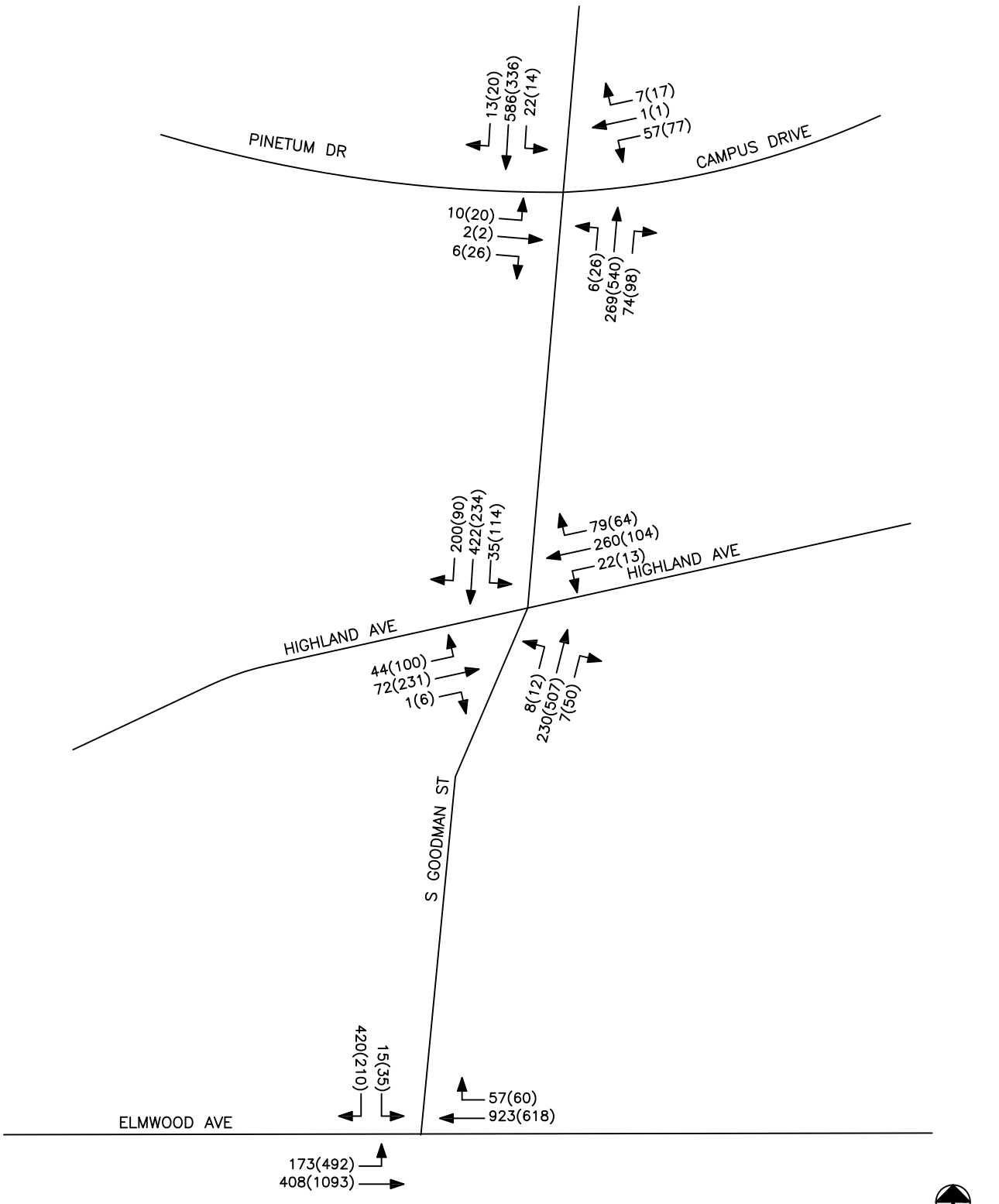
N

NOT TO SCALE

KEY	FIGURE 6	SRF ASSOCIATES
00(00) = AM(PM) ENTERING TRIPS EXITING TRIPS	TRIP DISTRIBUTION	Transportation Planning / Engineering / Design www.srfa.net / (585) 272-4660
PROJECT NO: 39011	PROPOSED COLGATE DIVINITY DEVELOPMENT CITY OF ROCHESTER, N.Y.	



KEY	FIGURE 7	
00(00) = AM(PM) ENTERING TRIPS EXITING TRIPS	SITE GENERATED TRIPS	SRF ASSOCIATES Transportation Planning / Engineering / Design www.srfa.net / (585) 272-4660
PROJECT NO: 39011	PROPOSED COLGATE DIVINITY DEVELOPMENT CITY OF ROCHESTER, N.Y.	



KEY	FIGURE 8	
00(00) = AM(PM)	PEAK HOUR VOLUMES FULL DEVELOPMENT CONDITIONS	SRF ASSOCIATES Transportation Planning / Engineering / Design www.srfa.net / (585) 272-4660
PROJECT NO: 39011	PROPOSED COLGATE DIVINITY DEVELOPMENT CITY OF ROCHESTER, N.Y.	

APPENDICES

A1

Collected Traffic Volume Data

SRF Associates

3495 Winton Pl
Rochester, NY, 14623

File Name : Elmwood Ave at S Goodman St WB - AM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 1

Groups Printed- Unshifted - Bank 1

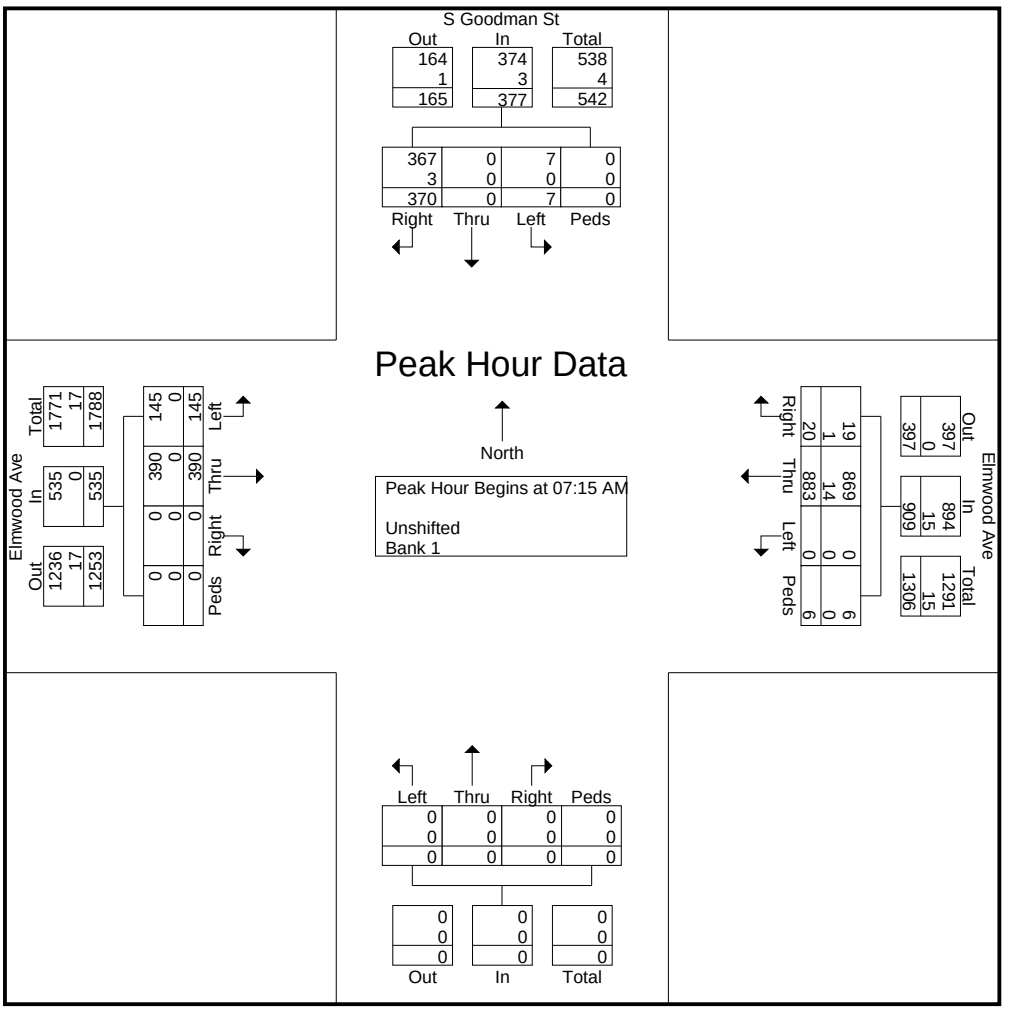
	S Goodman St From North					Elmwood Ave From East					From South					Elmwood Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	58	0	5	1	64	3	139	0	1	143	0	0	0	0	0	0	55	26	0	81	288
07:15 AM	88	0	0	0	88	5	190	0	0	195	0	0	0	0	0	0	71	31	0	102	385
07:30 AM	103	0	3	0	106	3	238	0	0	241	0	0	0	0	0	0	95	42	0	137	484
07:45 AM	101	0	2	0	103	6	237	0	5	248	0	0	0	0	0	0	120	38	0	158	509
Total	350	0	10	1	361	17	804	0	6	827	0	0	0	0	0	0	341	137	0	478	1666
08:00 AM	78	0	2	0	80	6	218	0	1	225	0	0	0	0	0	0	104	34	0	138	443
08:15 AM	71	0	2	0	73	5	196	0	0	201	0	0	0	0	0	0	65	36	0	101	375
08:30 AM	75	0	0	0	75	4	220	0	3	227	0	0	0	0	0	0	66	31	0	97	399
08:45 AM	95	0	7	0	102	3	195	0	3	201	0	0	0	0	0	0	91	31	0	122	425
Total	319	0	11	0	330	18	829	0	7	854	0	0	0	0	0	0	326	132	0	458	1642
Grand Total	669	0	21	1	691	35	1633	0	13	1681	0	0	0	0	0	0	667	269	0	936	3308
Apprch %	96.8	0	3	0.1		2.1	97.1	0	0.8		0	0	0	0		0	71.3	28.7	0		
Total %	20.2	0	0.6	0	20.9	1.1	49.4	0	0.4	50.8	0	0	0	0	0	0	20.2	8.1	0	28.3	
Unshifted	657	0	21	1	679	34	1601	0	12	1647	0	0	0	0	0	0	667	269	0	936	3262
% Unshifted	98.2	0	100	100	98.3	97.1	98	0	92.3	98	0	0	0	0	0	0	100	100	0	100	98.6
Bank 1	12	0	0	0	12	1	32	0	1	34	0	0	0	0	0	0	0	0	0	0	46
% Bank 1	1.8	0	0	0	1.7	2.9	2	0	7.7	2	0	0	0	0	0	0	0	0	0	0	1.4

SRF Associates

3495 Winton Pl
Rochester, NY, 14623

File Name : Elmwood Ave at S Goodman St WB - AM
Site Code : 11111111
Start Date : 5/2/2019

	S Goodman St From North					Elmwood Ave From East					From South					Elmwood Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	88	0	0	0	88	5	190	0	0	195	0	0	0	0	0	0	71	31	0	102	385
07:30 AM	103	0	3	0	106	3	238	0	0	241	0	0	0	0	0	0	95	42	0	137	484
07:45 AM	101	0	2	0	103	6	237	0	5	248	0	0	0	0	0	0	120	38	0	158	509
08:00 AM	78	0	2	0	80	6	218	0	1	225	0	0	0	0	0	0	104	34	0	138	443
Total Volume	370	0	7	0	377	20	883	0	6	909	0	0	0	0	0	0	390	145	0	535	1821
% App. Total	98.1	0	1.9	0		2.2	97.1	0	0.7		0	0	0	0		0	72.9	27.1	0		
PHF	.898	.000	.583	.000	.889	.833	.928	.000	.300	.916	.000	.000	.000	.000	.000	.000	.813	.863	.000	.847	.894
Unshifted	367	0	7	0	374	19	869	0	6	894	0	0	0	0	0	0	390	145	0	535	1803
% Unshifted	99.2	0	100	0	99.2	95.0	98.4	0	100	98.3	0	0	0	0	0	0	100	100	0	100	99.0
Bank 1	3	0	0	0	3	1	14	0	0	15	0	0	0	0	0	0	0	0	0	0	18
% Bank 1	0.8	0	0	0	0.8	5.0	1.6	0	0	1.7	0	0	0	0	0	0	0	0	0	0	1.0



SRF Associates

3495 Winton Pl
Rochester, NY, 14623

File Name : Elmwood Ave at S Goodman St - PM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 1

Groups Printed- Unshifted - Bank 1

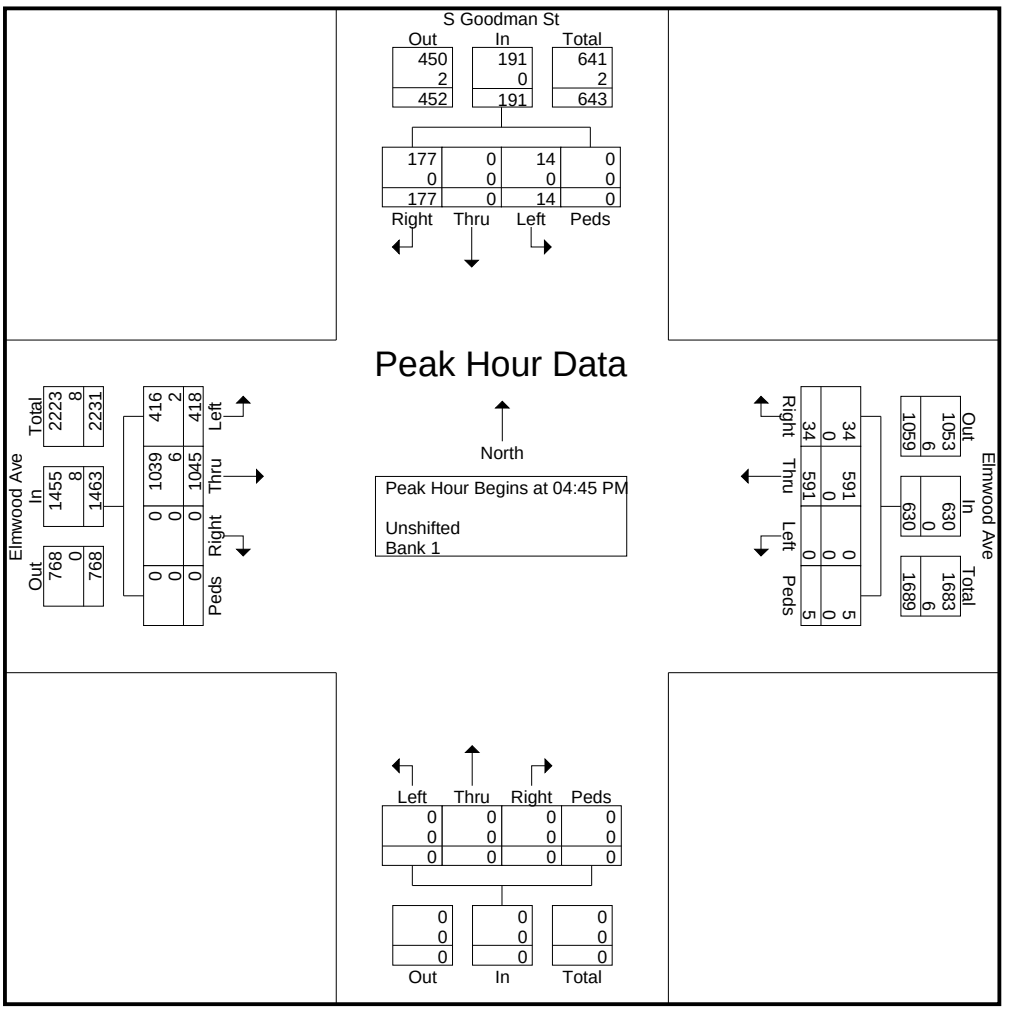
	S Goodman St From North					Elmwood Ave From East					From South					Elmwood Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	51	0	4	0	55	13	100	0	0	113	0	0	0	0	0	0	180	94	0	274	442
04:15 PM	44	0	5	0	49	3	103	0	0	106	0	0	0	0	0	0	218	94	0	312	467
04:30 PM	50	0	7	0	57	8	144	0	1	153	0	0	0	0	0	0	227	91	1	319	529
04:45 PM	51	0	3	0	54	8	162	0	2	172	0	0	0	0	0	0	238	104	0	342	568
Total	196	0	19	0	215	32	509	0	3	544	0	0	0	0	0	0	863	383	1	1247	2006
05:00 PM	43	0	3	0	46	8	136	0	1	145	0	0	0	0	0	0	294	108	0	402	593
05:15 PM	33	0	4	0	37	12	117	0	1	130	0	0	0	0	0	0	255	102	0	357	524
05:30 PM	50	0	4	0	54	6	176	0	1	183	0	0	0	0	0	0	258	104	0	362	599
05:45 PM	58	0	4	0	62	6	138	0	1	145	0	0	0	0	0	0	190	100	1	291	498
Total	184	0	15	0	199	32	567	0	4	603	0	0	0	0	0	0	997	414	1	1412	2214
Grand Total	380	0	34	0	414	64	1076	0	7	1147	0	0	0	0	0	0	1860	797	2	2659	4220
Apprch %	91.8	0	8.2	0		5.6	93.8	0	0.6		0	0	0	0		0	70	30	0.1		
Total %	9	0	0.8	0	9.8	1.5	25.5	0	0.2	27.2	0	0	0	0	0	0	44.1	18.9	0	63	
Unshifted	380	0	34	0	414	64	1076	0	7	1147	0	0	0	0	0	0	1851	791	2	2644	4205
% Unshifted	100	0	100	0	100	100	100	0	100	100	0	0	0	0	0	0	99.5	99.2	100	99.4	99.6
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	6	0	15	15
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0.8	0	0.6	0.4

SRF Associates

3495 Winton Pl
Rochester, NY, 14623

File Name : Elmwood Ave at S Goodman St - PM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 2

	S Goodman St From North					Elmwood Ave From East					From South					Elmwood Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	51	0	3	0	54	8	162	0	2	172	0	0	0	0	0	0	238	104	0	342	568
05:00 PM	43	0	3	0	46	8	136	0	1	145	0	0	0	0	0	0	294	108	0	402	593
05:15 PM	33	0	4	0	37	12	117	0	1	130	0	0	0	0	0	0	255	102	0	357	524
05:30 PM	50	0	4	0	54	6	176	0	1	183	0	0	0	0	0	0	258	104	0	362	599
Total Volume	177	0	14	0	191	34	591	0	5	630	0	0	0	0	0	0	1045	418	0	1463	2284
% App. Total	92.7	0	7.3	0		5.4	93.8	0	0.8		0	0	0	0		0	71.4	28.6	0		
PHF	.868	.000	.875	.000	.884	.708	.839	.000	.625	.861	.000	.000	.000	.000	.000	.000	.889	.968	.000	.910	.953
Unshifted	177	0	14	0	191	34	591	0	5	630	0	0	0	0	0	0	1039	416	0	1455	2276
% Unshifted	100	0	100	0	100	100	100	0	100	100	0	0	0	0	0	0	99.4	99.5	0	99.5	99.6
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	2	0	8	8
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0.5	0	0.5	0.4



SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Highland Ave - AM
Site Code : 00390111
Start Date : 5/2/2019

Groups Printed- Unshifted - Bank 1

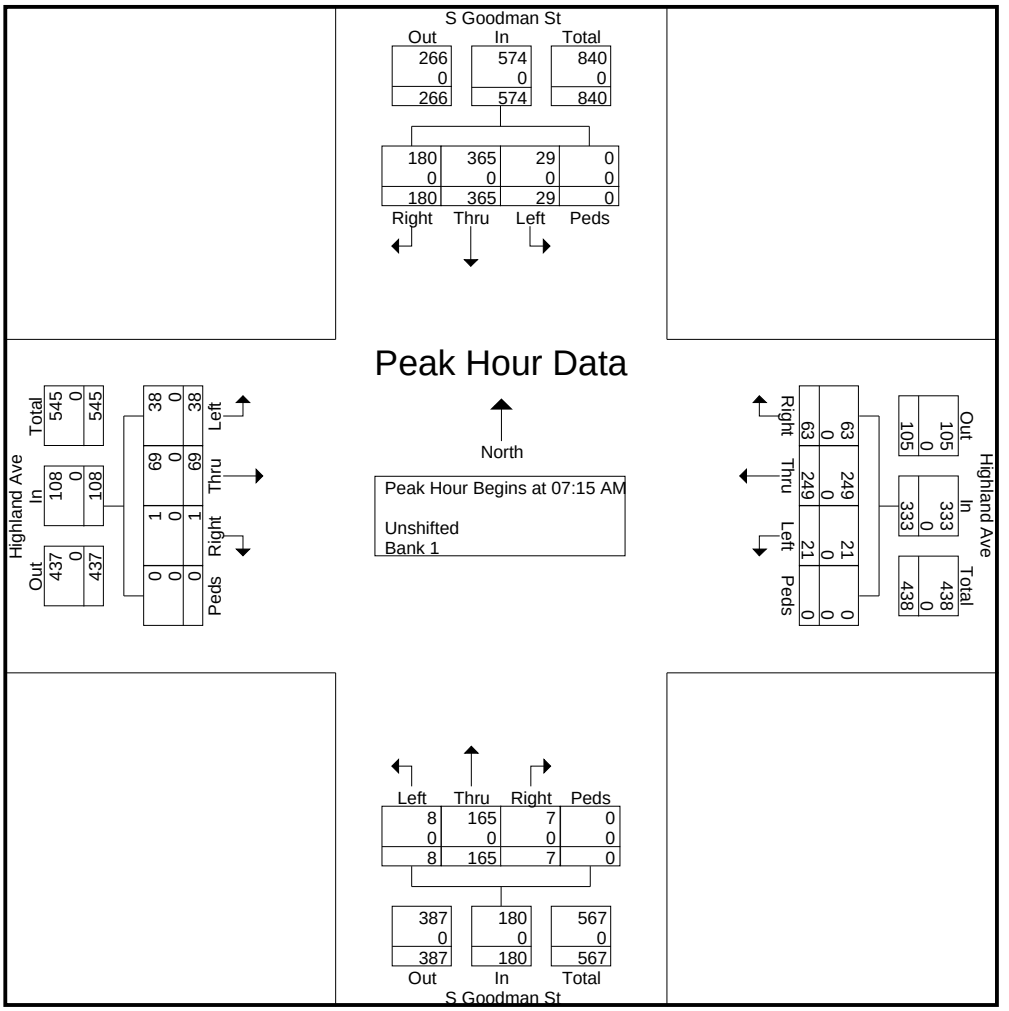
	S Goodman St From North					Highland Ave From East					S Goodman St From South					Highland Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	30	56	5	0	91	12	28	3	1	44	2	35	1	0	38	1	16	10	0	27	200
07:15 AM	38	98	4	0	140	13	39	8	0	60	0	30	2	0	32	0	15	4	0	19	251
07:30 AM	49	118	8	0	175	12	68	6	0	86	3	51	0	0	54	0	17	15	0	32	347
07:45 AM	47	83	12	0	142	20	80	5	0	105	1	45	3	0	49	1	19	9	0	29	325
Total	164	355	29	0	548	57	215	22	1	295	6	161	6	0	173	2	67	38	0	107	1123
08:00 AM	46	66	5	0	117	18	62	2	0	82	3	39	3	0	45	0	18	10	0	28	272
08:15 AM	36	64	9	0	109	17	55	5	0	77	4	35	1	0	40	2	19	4	0	25	251
08:30 AM	35	86	4	0	125	11	47	2	0	60	2	36	0	0	38	1	27	9	0	37	260
08:45 AM	30	88	7	0	125	12	43	1	0	56	2	27	1	0	30	0	19	17	0	36	247
Total	147	304	25	0	476	58	207	10	0	275	11	137	5	0	153	3	83	40	0	126	1030
Grand Total	311	659	54	0	1024	115	422	32	1	570	17	298	11	0	326	5	150	78	0	233	2153
Apprch %	30.4	64.4	5.3	0		20.2	74	5.6	0.2		5.2	91.4	3.4	0		2.1	64.4	33.5	0		
Total %	14.4	30.6	2.5	0	47.6	5.3	19.6	1.5	0	26.5	0.8	13.8	0.5	0	15.1	0.2	7	3.6	0	10.8	
Unshifted	311	659	54	0	1024	115	422	32	1	570	17	298	11	0	326	5	150	78	0	233	2153
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Highland Ave - AM
Site Code : 00390111
Start Date : 5/2/2019

	S Goodman St From North					Highland Ave From East					S Goodman St From South					Highland Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	38	98	4	0	140	13	39	8	0	60	0	30	2	0	32	0	15	4	0	19	251
07:30 AM	49	118	8	0	175	12	68	6	0	86	3	51	0	0	54	0	17	15	0	32	347
07:45 AM	47	83	12	0	142	20	80	5	0	105	1	45	3	0	49	1	19	9	0	29	325
08:00 AM	46	66	5	0	117	18	62	2	0	82	3	39	3	0	45	0	18	10	0	28	272
Total Volume	180	365	29	0	574	63	249	21	0	333	7	165	8	0	180	1	69	38	0	108	1195
% App. Total	31.4	63.6	5.1	0		18.9	74.8	6.3	0		3.9	91.7	4.4	0		0.9	63.9	35.2	0		
PHF	.918	.773	.604	.000	.820	.788	.778	.656	.000	.793	.583	.809	.667	.000	.833	.250	.908	.633	.000	.844	.861
Unshifted	180	365	29	0	574	63	249	21	0	333	7	165	8	0	180	1	69	38	0	108	1195
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Highland Ave - PM
Site Code : 03901111
Start Date : 5/2/2019

Groups Printed- Unshifted - Bank 1

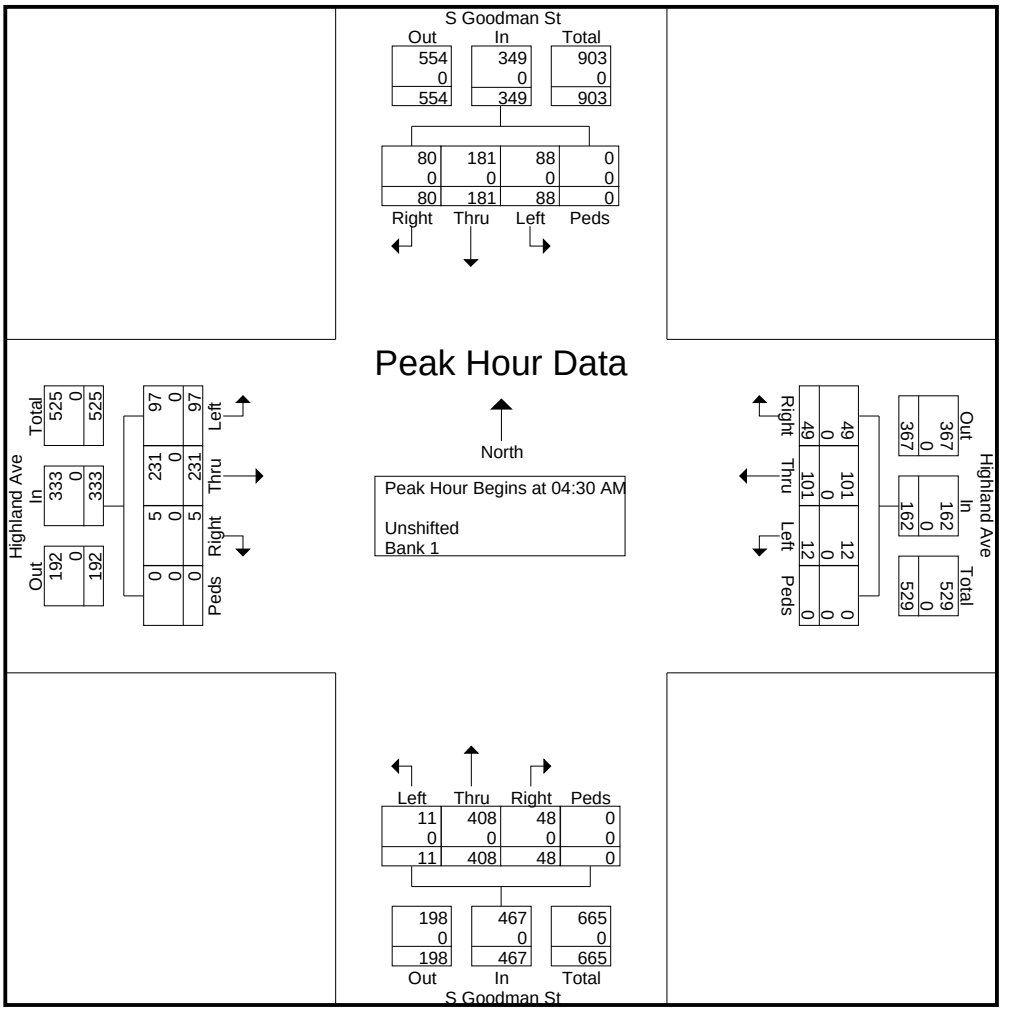
	S Goodman St From North					Highland Ave From East					S Goodman St From South					Highland Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 AM	14	39	17	0	70	9	22	3	0	34	4	95	1	0	100	2	55	20	0	77	281
04:15 AM	10	50	22	0	82	10	17	3	0	30	6	90	2	0	98	1	38	23	0	62	272
04:30 AM	22	50	18	0	90	9	24	5	0	38	12	91	4	0	107	2	58	30	0	90	325
04:45 AM	14	47	29	0	90	16	18	3	0	37	14	101	2	0	117	1	64	24	0	89	333
Total	60	186	86	0	332	44	81	14	0	139	36	377	9	0	422	6	215	97	0	318	1211
05:00 AM	25	40	16	0	81	14	21	3	0	38	13	117	2	0	132	2	57	21	0	80	331
05:15 AM	19	44	25	0	88	10	38	1	0	49	9	99	3	0	111	0	52	22	0	74	322
05:30 AM	21	50	14	0	85	14	22	5	0	41	12	92	4	0	108	3	48	18	0	69	303
05:45 AM	16	62	16	0	94	15	23	3	0	41	7	98	1	0	106	2	46	20	0	68	309
Total	81	196	71	0	348	53	104	12	0	169	41	406	10	0	457	7	203	81	0	291	1265
Grand Total	141	382	157	0	680	97	185	26	0	308	77	783	19	0	879	13	418	178	0	609	2476
Apprch %	20.7	56.2	23.1	0		31.5	60.1	8.4	0		8.8	89.1	2.2	0		2.1	68.6	29.2	0		
Total %	5.7	15.4	6.3	0	27.5	3.9	7.5	1.1	0	12.4	3.1	31.6	0.8	0	35.5	0.5	16.9	7.2	0	24.6	
Unshifted	141	382	157	0	680	97	185	26	0	308	77	783	19	0	879	13	418	178	0	609	2476
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Highland Ave - PM
Site Code : 03901111
Start Date : 5/2/2019
Page No : 2

	S Goodman St From North					Highland Ave From East					S Goodman St From South					Highland Ave From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 AM to 05:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 AM																					
04:30 AM	22	50	18	0	90	9	24	5	0	38	12	91	4	0	107	2	58	30	0	90	325
04:45 AM	14	47	29	0	90	16	18	3	0	37	14	101	2	0	117	1	64	24	0	89	333
05:00 AM	25	40	16	0	81	14	21	3	0	38	13	117	2	0	132	2	57	21	0	80	331
05:15 AM	19	44	25	0	88	10	38	1	0	49	9	99	3	0	111	0	52	22	0	74	322
Total Volume	80	181	88	0	349	49	101	12	0	162	48	408	11	0	467	5	231	97	0	333	1311
% App. Total	22.9	51.9	25.2	0		30.2	62.3	7.4	0		10.3	87.4	2.4	0		1.5	69.4	29.1	0		
PHF	.800	.905	.759	.000	.969	.766	.664	.600	.000	.827	.857	.872	.688	.000	.884	.625	.902	.808	.000	.925	.984
Unshifted	80	181	88	0	349	49	101	12	0	162	48	408	11	0	467	5	231	97	0	333	1311
% Unshifted																					
Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bank 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Campus Drive and Pinetum Dr - AM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 1

Groups Printed- Unshifted - Bank 1

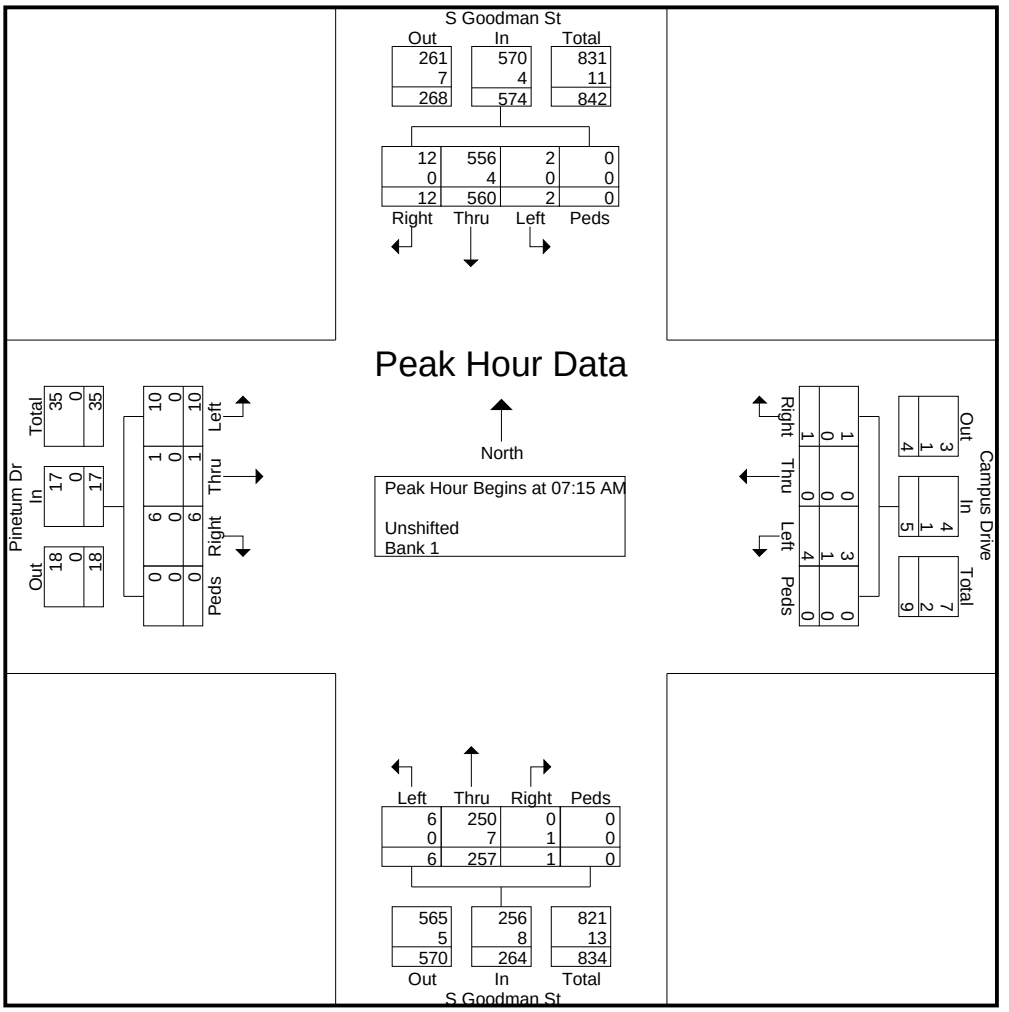
	S Goodman St From North					Campus Drive From East					S Goodman St From South					Pinetum Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	87	2	0	91	0	0	0	0	0	0	53	2	0	55	1	0	1	1	3	149
07:15 AM	5	142	0	0	147	0	0	0	0	0	0	47	1	0	48	0	0	1	0	1	196
07:30 AM	2	171	1	0	174	0	0	1	0	1	0	74	2	0	76	2	0	4	0	6	257
07:45 AM	2	136	1	0	139	0	0	1	0	1	0	71	1	0	72	3	0	1	0	4	216
Total	11	536	4	0	551	0	0	2	0	2	0	245	6	0	251	6	0	7	1	14	818
08:00 AM	3	111	0	0	114	1	0	2	0	3	1	65	2	0	68	1	1	4	0	6	191
08:15 AM	4	114	4	0	122	1	0	0	0	1	1	55	2	0	58	2	0	2	0	4	185
08:30 AM	2	120	4	0	126	1	0	0	0	1	1	54	3	0	58	1	0	2	0	3	188
08:45 AM	4	125	5	0	134	0	0	2	0	2	2	55	1	0	58	2	0	2	0	4	198
Total	13	470	13	0	496	3	0	4	0	7	5	229	8	0	242	6	1	10	0	17	762
Grand Total	24	1006	17	0	1047	3	0	6	0	9	5	474	14	0	493	12	1	17	1	31	1580
Apprch %	2.3	96.1	1.6	0		33.3	0	66.7	0		1	96.1	2.8	0		38.7	3.2	54.8	3.2		
Total %	1.5	63.7	1.1	0	66.3	0.2	0	0.4	0	0.6	0.3	30	0.9	0	31.2	0.8	0.1	1.1	0.1	2	
Unshifted	23	993	17	0	1033	3	0	5	0	8	4	455	14	0	473	12	1	17	1	31	1545
% Unshifted																					
Bank 1	1	13	0	0	14	0	0	1	0	1	1	19	0	0	20	0	0	0	0	0	35
% Bank 1	4.2	1.3	0	0	1.3	0	0	16.7	0	11.1	20	4	0	0	4.1	0	0	0	0	0	2.2

SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Campus Drive and Pinetum Dr - AM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 2

	S Goodman St From North					Campus Drive From East					S Goodman St From South					Pinetum Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	5	142	0	0	147	0	0	0	0	0	0	47	1	0	48	0	0	1	0	1	196
07:30 AM	2	171	1	0	174	0	0	1	0	1	0	74	2	0	76	2	0	4	0	6	257
07:45 AM	2	136	1	0	139	0	0	1	0	1	0	71	1	0	72	3	0	1	0	4	216
08:00 AM	3	111	0	0	114	1	0	2	0	3	1	65	2	0	68	1	1	4	0	6	191
Total Volume	12	560	2	0	574	1	0	4	0	5	1	257	6	0	264	6	1	10	0	17	860
% App. Total	2.1	97.6	0.3	0		20	0	80	0		0.4	97.3	2.3	0		35.3	5.9	58.8	0		
PHF	.600	.819	.500	.000	.825	.250	.000	.500	.000	.417	.250	.868	.750	.000	.868	.500	.250	.625	.000	.708	.837
Unshifted	12	556	2	0	570	1	0	3	0	4	0	250	6	0	256	6	1	10	0	17	847
% Unshifted		99.3	100	0	99.3	100	0	75.0	0	80.0	0	97.3	100	0	97.0	100	100	100	0	100	98.5
Bank 1	0	4	0	0	4	0	0	1	0	1	1	7	0	0	8	0	0	0	0	0	13
% Bank 1	0	0.7	0	0	0.7	0	0	25.0	0	20.0	100	2.7	0	0	3.0	0	0	0	0	0	1.5



SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

File Name : S Goodman St at Campus Drive and Pinetum Dr - PM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 1

Groups Printed- Unshifted - Bank 1

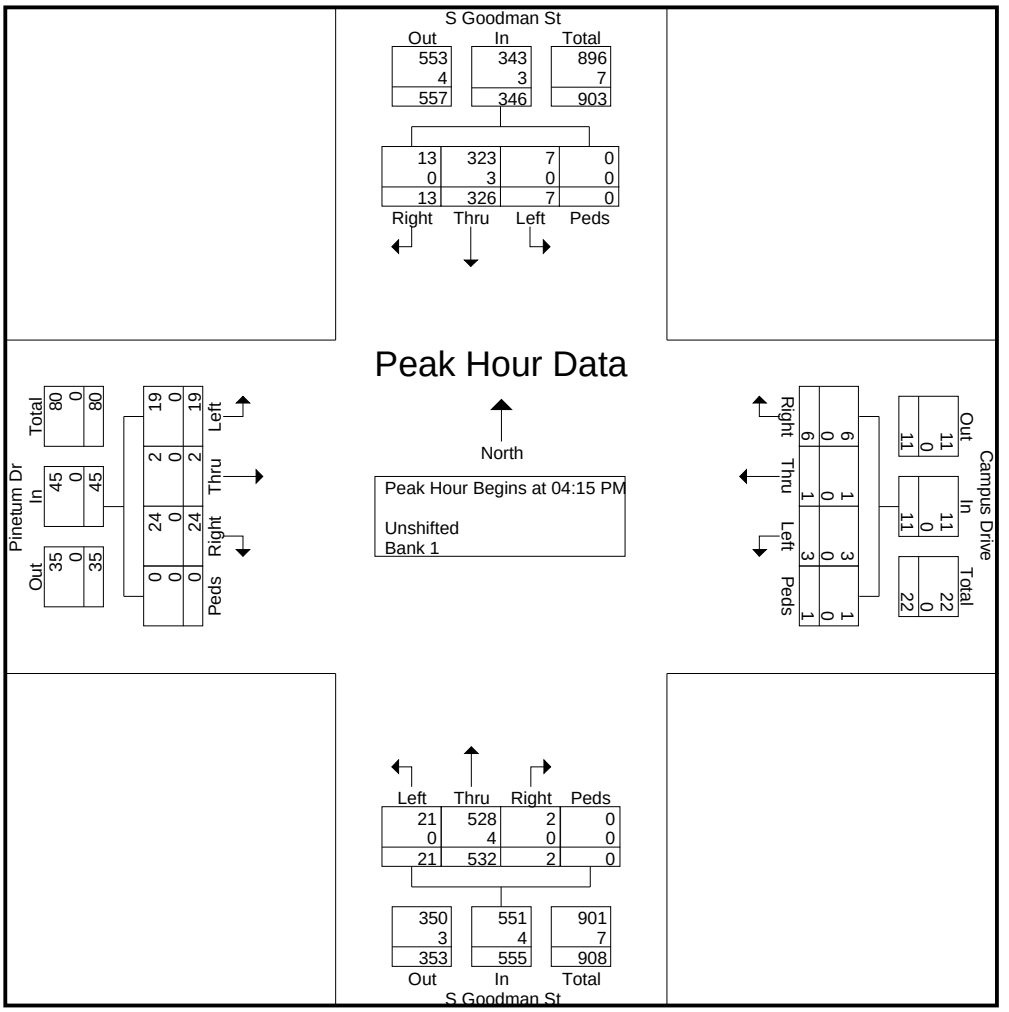
	S Goodman St From North					Campus Drive From East					S Goodman St From South					Pinetum Dr From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	3	69	0	0	72	4	0	3	0	7	1	116	4	0	121	8	0	3	0	11	211
04:15 PM	1	80	2	0	83	4	1	1	1	7	0	133	6	0	139	8	0	4	0	12	241
04:30 PM	4	82	3	0	89	0	0	1	0	1	1	125	1	0	127	5	2	7	0	14	231
04:45 PM	5	83	0	0	88	1	0	0	0	1	0	131	7	0	138	7	0	5	0	12	239
Total	13	314	5	0	332	9	1	5	1	16	2	505	18	0	525	28	2	19	0	49	922
05:00 PM	3	81	2	0	86	1	0	1	0	2	1	143	7	0	151	4	0	3	0	7	246
05:15 PM	3	76	0	0	79	2	0	2	0	4	0	129	6	0	135	8	0	4	0	12	230
05:30 PM	8	81	1	0	90	0	0	1	0	1	6	113	5	0	124	6	1	7	0	14	229
05:45 PM	7	84	0	0	91	0	0	1	0	1	1	122	5	0	128	6	0	7	0	13	233
Total	21	322	3	0	346	3	0	5	0	8	8	507	23	0	538	24	1	21	0	46	938
Grand Total	34	636	8	0	678	12	1	10	1	24	10	1012	41	0	1063	52	3	40	0	95	1860
Apprch %	5	93.8	1.2	0		50	4.2	41.7	4.2		0.9	95.2	3.9	0		54.7	3.2	42.1	0		
Total %	1.8	34.2	0.4	0	36.5	0.6	0.1	0.5	0.1	1.3	0.5	54.4	2.2	0	57.2	2.8	0.2	2.2	0	5.1	
Unshifted	34	631	8	0	673	12	1	10	1	24	10	1007									
% Unshifted	100	99.2	100	0	99.3	100	100	100	100	100	100	99.5	100	0	99.5	100	100	100	0	100	99.5
Bank 1	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
% Bank 1	0	0.8	0	0	0.7	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0.5

SRF Associates

3495 Winton Place, Bldg. E, Suite110
Rochester, New York, 14623

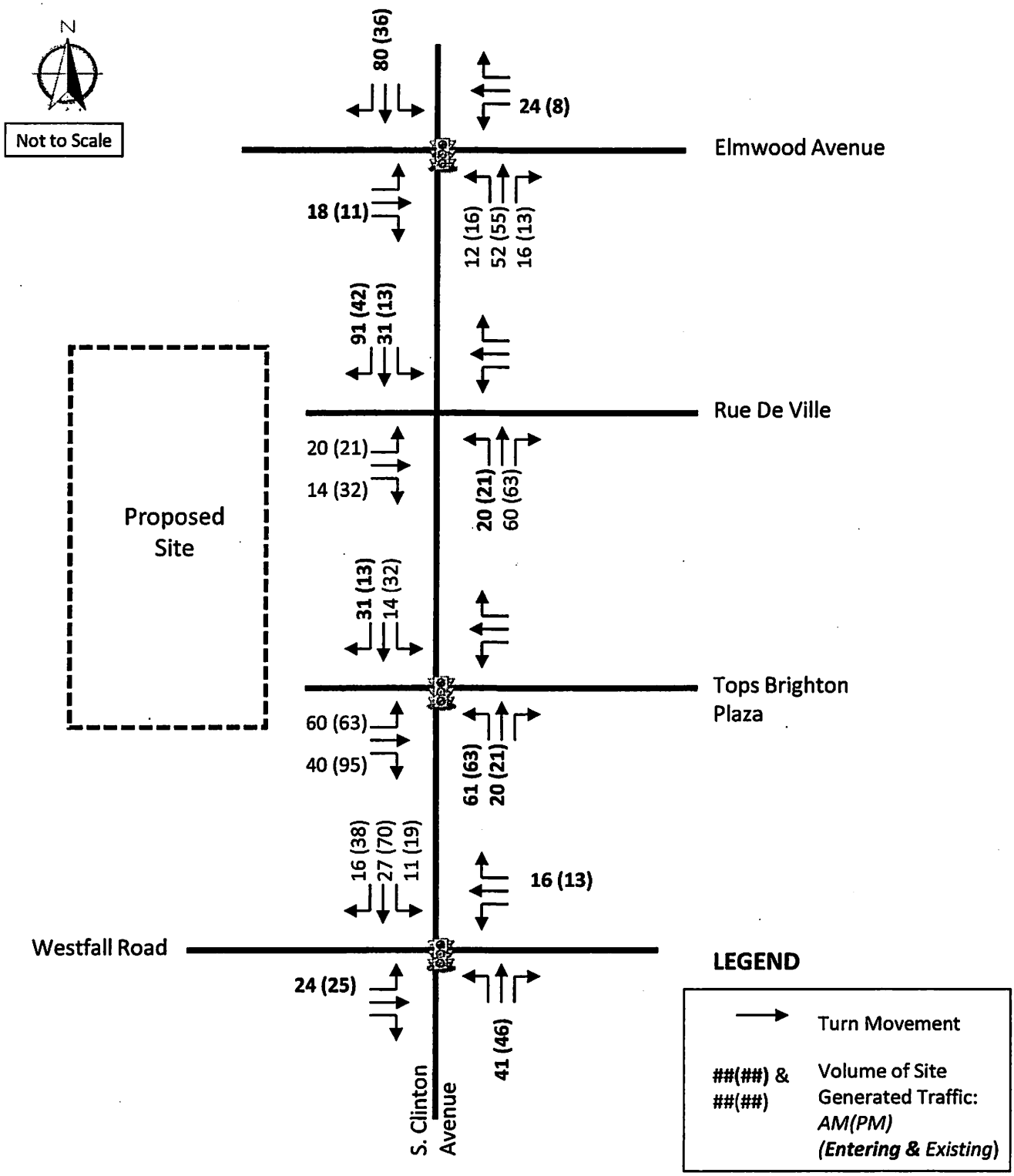
File Name : S Goodman St at Campus Drive and Pinetum Dr - PM
Site Code : 11111111
Start Date : 5/2/2019
Page No : 2

Start Time	S Goodman St From North					Campus Drive From East					S Goodman St From South					Pinetum Dr From West					
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	1	80	2	0	83	4	1	1	1	7	0	133	6	0	139	8	0	4	0	12	241
04:30 PM	4	82	3	0	89	0	0	1	0	1	1	125	1	0	127	5	2	7	0	14	231
04:45 PM	5	83	0	0	88	1	0	0	0	1	0	131	7	0	138	7	0	5	0	12	239
05:00 PM	3	81	2	0	86	1	0	1	0	2	1	143	7	0	151	4	0	3	0	7	246
Total Volume	13	326	7	0	346	6	1	3	1	11	2	532	21	0	555	24	2	19	0	45	957
% App. Total	3.8	94.2	2	0		54.5	9.1	27.3	9.1		0.4	95.9	3.8	0		53.3	4.4	42.2	0		
PHF	.650	.982	.583	.000	.972	.375	.250	.750	.250	.393	.500	.930	.750	.000	.919	.750	.250	.679	.000	.804	.973
Unshifted	13	323	7	0	343	6	1	3	1	11	2	528	21	0	551	24	2	19	0	45	950
% Unshifted		99.1	100	0	99.1	100	100	100	100	100	100	99.2	100	0	99.3	100	100	100	0	100	99.3
Bank 1	0	3	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
% Bank 1	0	0.9	0	0	0.9	0	0	0	0	0	0	0.8	0	0	0.7	0	0	0	0	0	0.7

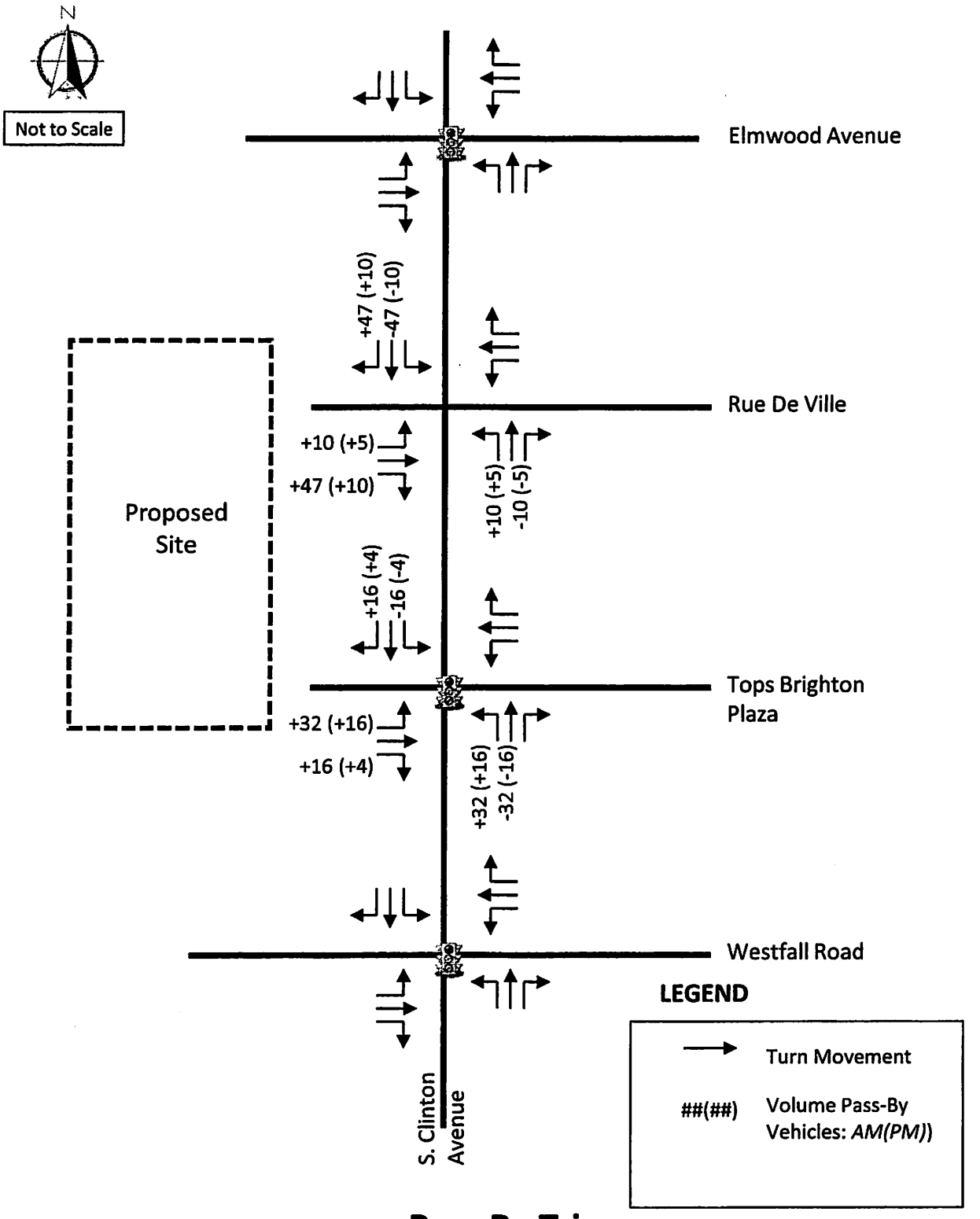


A2

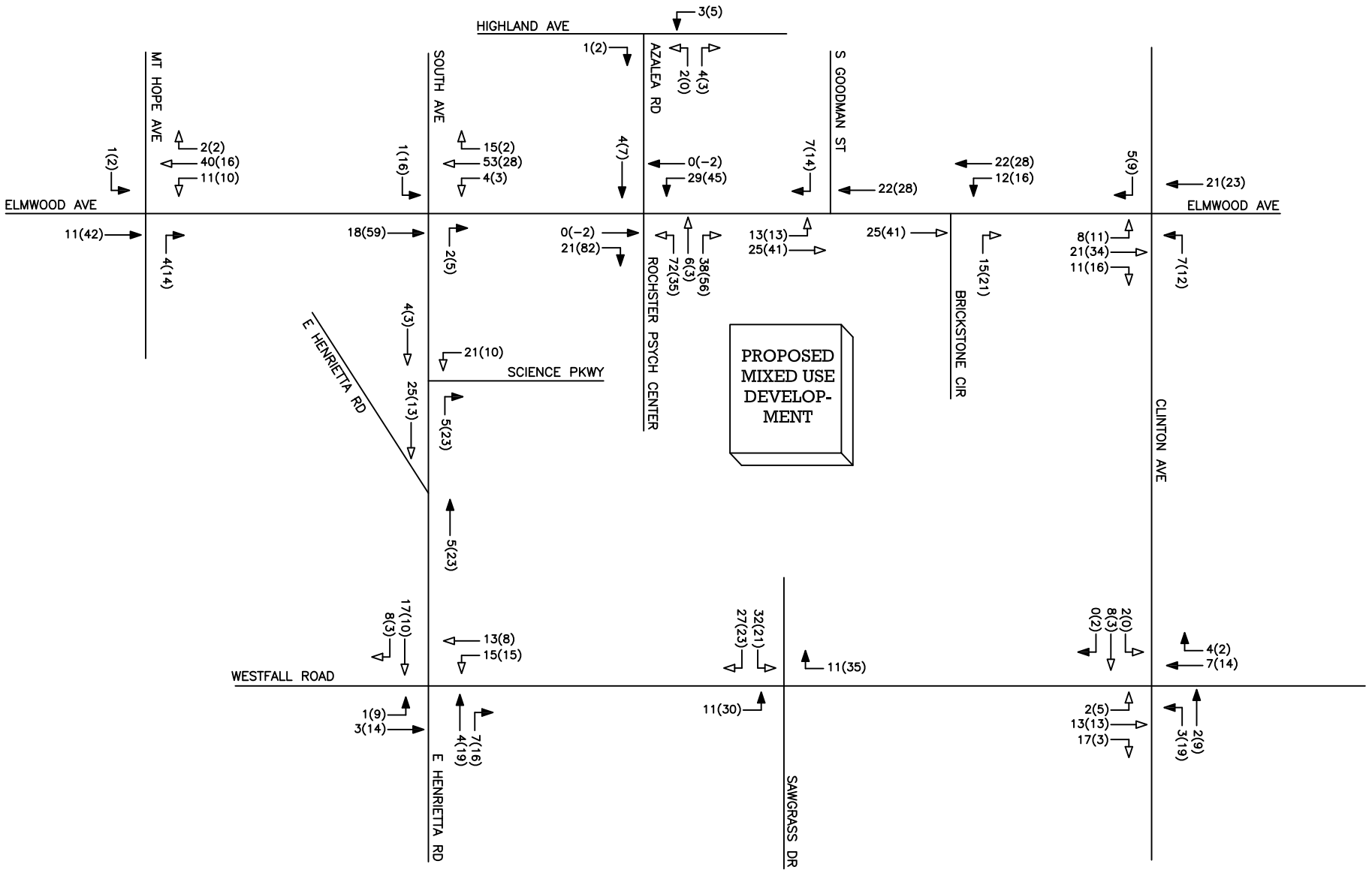
Miscellaneous Traffic Data and Calculations



New Trip Generation Volumes



Pass By Trips



PROJECT NO: 35066

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N
NOT TO SCALE

FIGURE 8

SITE GENERATED TRIPS

PROPOSED 1201 ELMWOOD AVE MIXED USE DEVELOPMENT,
CITY OF ROCHESTER/TOWN OF BRIGHTON, NY

KEY

00(00) = AM(PM)

→ = ENTERING TRIPS

→ = EXITING TRIPS

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Proposed Colgate Divinity Development, Town of Brighton, Monroe County, NY

Documentation of Ambient Traffic Volume Growth

Roadway	Segment starts at	Segment end at	Location	2006	2010	2013	2014	2015	2009	2019	Annual Growth
S Goodman St	Elmwood Ave	Highland Ave	Brighton, NY			6,573				6,670	0.24%
S Goodman St	Highland Ave	Campus Drive	Brighton, NY					12,513		8,980	-7.96%
Highland Ave	South Ave	David Dr	Brighton, NY	6,580						5,180	-1.82%
Elmwood Ave	South Ave	S Goodman St	Brighton, NY		22,034					22,310	0.14%
Elmwood Ave	S Goodman St	S Clinton Ave	Brighton, NY				9,294			16,840	12.62%

PROJECT DETAILS

Project Name:	Colgate Divinity - July Update	Type of Project:	
Project No:		City:	
Country:		Built-up Area(Sq.ft):	
Analyst Name:	Amy Dake	Clients Name:	
Date:	2/3/2019	ZIP/Postal Code:	
State/Province:		No. of Scenarios:	2
Analysis Region:			

SCENARIO SUMMARY

Scenarios	Name	No. of Land Uses	Phases of Development	Horizon Year	User Group	Estimated New Vehicle Trips		
						Entry	Exit	Total
Scenario - 1	PM Peak Hour	5	1	2018		113	95	208
Scenario - 2	AM Peak Hour	4	1	2019		97	65	162

Scenario - 1

Scenario Name: PM Peak Hour
User Group:
Dev. phase: 1
Horizon Year: 2018
Analyst Note:

Warning: The time periods and settings/location among the land uses do not appear to match.

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
9001 - Banquet/Convention Space [Private]	Others	Seats	190	Friday, PM Peak Hour of Generator	Best Fit (LOG)	45	18	63
Data Source: Private Data Sets					Ln(T) =0.65Ln(X) + 0.73	72%	28%	
310 - Hotel	General Urban/Suburban	Rooms	29	Weekday, PM Peak Hour of Generator	Best Fit (LOG)	12	8	20
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.93Ln(X) + -0.14	58%	42%	
220 - Multifamily Housing (Low-Rise)	General Urban/Suburban	Dwelling Units	132	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	48	28	76
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.89Ln(X) + -0.02	63%	37%	
710 - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	7.92	Weekday, Peak Hour of Adjacent Street Traffic,	Best Fit (LOG)	2	9	11
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.95Ln(X) + 0.36	16%	84%	
710(1) - General Office Building	General Urban/Suburban	1000 Sq. Ft. GFA	32	Weekday, Peak Hour of Adjacent Street	Best Fit (LOG)	6	32	38
Data Source: Trip Generation Manual, 10th Ed					Ln(T) =0.95Ln(X) + 0.36	16%	84%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
9001 - Banquet/Convention Space [Private]	95	95	1	1	72	28
310 - Hotel	100	100	1	1	58	42
220 - Multifamily Housing (Low-Rise)	100	100	1	1	63	37
710 - General Office Building	100	100	1	1	16	84
710(1) - General Office Building	100	100	1	1	16	84

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
9001 - Banquet/Convention Space [Private]	45	18	2	1	47	19
	63		3		66	
310 - Hotel	12	8	0	0	12	8
	20		0		20	
220 - Multifamily Housing (Low-Rise)	48	28	0	0	48	28
	76		0		76	
710 - General Office Building	2	9	0	0	2	9
	11		0		11	
710(1) - General Office Building	6	32	0	0	6	32
	38		0		38	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
9001 - Banquet/Convention Space [Private]	45	18	63
310 - Hotel	12	8	20
220 - Multifamily Housing (Low-Rise)	48	28	76

710 - General Office Building	2	9	11
710(1) - General Office Building	6	32	38

RESULTS

Site Totals	Entry	Exit	Total
Vehicle Trips Before Reduction	113	95	208
External Vehicle Trips	113	95	208
New Vehicle Trips	113	95	208

Scenario - 2

Scenario Name: AM Peak Hour
User Group:
Dev. phase: 1
Horizon Year: 2019
Analyst Note:
Warning:

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method / Rate/Equation	Entry / Split%	Exit / Split%	Total
310 - Hotel	General	Rooms	29	Weekday, Peak Hour of	Best Fit (LIN)	5	4	9
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.50(X) + -5.34	59%	41%	
220 - Multifamily Housing (Low-Rise)	General	Dwelling Units	132	Weekday, Peak Hour of	Best Fit (LOG)	14	48	62
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban			Adjacent Street Traffic,	Ln(T) =0.95Ln(X) + -0.51	23%	77%	
710 - General Office Building	General	1000 Sq. Ft. GFA	32	Weekday, Peak Hour of	Best Fit (LIN)	49	8	57
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.94(X) + 26.49	86%	14%	
710(1) - General Office Building	General	1000 Sq. Ft. GFA	7.92	Weekday, Peak Hour of	Best Fit (LIN)	29	5	34
Data Source: Trip Generation Manual, 10th Ed	Urban/Suburban			Adjacent Street Traffic,	T = 0.94(X) + 26.49	86%	14%	

VEHICLE TO PERSON TRIP CONVERSION

BASELINE SITE VEHICLE CHARACTERISTICS:

Land Use	Baseline Site Vehicle Mode Share		Baseline Site Vehicle Occupancy		Baseline Site Vehicle Directional Split	
	Entry (%)	Exit (%)	Entry	Exit	Entry (%)	Exit (%)
310 - Hotel	100	100	1	1	59	41
220 - Multifamily Housing (Low-Rise)	100	100	1	1	23	77
710 - General Office Building	100	100	1	1	86	14
710(1) - General Office Building	100	100	1	1	86	14

ESTIMATED BASELINE SITE PERSON TRIPS:

Land Use	Person Trips by Vehicle		Person Trips by Other Modes		Total Baseline Site Person Trips	
	Entry	Exit	Entry	Exit	Entry	Exit
310 - Hotel	5	4	0	0	5	4
	9		0		9	
220 - Multifamily Housing (Low-Rise)	14	48	0	0	14	48
	62		0		62	
710 - General Office Building	49	8	0	0	49	8
	57		0		57	
710(1) - General Office Building	29	5	0	0	29	5
	34		0		34	

NEW VEHICLE TRIPS

Land Use	New Vehicle Trips		
	Entry	Exit	Total
310 - Hotel	5	4	9
220 - Multifamily Housing (Low-Rise)	14	48	62
710 - General Office Building	49	8	57
710(1) - General Office Building	29	5	34

RESULTS

Site Totals	Entry	Exit	Total

Vehicle Trips Before Reduction	97	65	162
External Vehicle Trips	97	65	162
New Vehicle Trips	97	65	162

PROPOSED COLGATE DIVINITY RE-DEVELOPMENT
CITY OF ROCHESTER, NY
AM PEAK FIG 3 FIG 4 FIG 6 FIG 7 FIG 8

			Num of yrs 3									
LOCATION NUMBER	**INTERSECTION DESCRIPTION**	**2019 Existing Volume**	**2022 Bkgd Vol. 1.50%**	**1201 Elmwood**	**1925 S. Clinton**	**2022 Bkgd Vol.**	**Proposed Colgate Divinity Development** Enter Dist. %	Exit Dist. %	Trips IN 97	Trips OUT 65	**Total Site Trips**	**FULL Build Volumes**
1	S Goodman St/ Elmwood Ave											
	SR	370	387	7		394		50%		33	33	420
	ST											
	SL	7	7			7		12%		8	8	15
	WR	20	21			21	37%		36		36	57
	WT	883	923	22	12	957						923
	WL											
	NR											
	NT											
	NL											
	ER											
	ET	390	408	25	18	451						408
	EL	145	152	13		165	22%		21		21	173
2	S Goodman St/ Highland Ave											
	SR	180	188			188		18%		12	12	200
	ST	365	382	7		389		62%		40	40	422
	SL	29	30			30		8%		5	5	35
	WR	63	66			66	13%		13		13	79
	WT	249	260	3		263						260
	WL	21	22			22						22
	NR	7	7			7						7
	NT	165	173	13		186	59%		57		57	230
	NL	8	8			8						8
	ER	1	1			1						1
	ET	69	72	4		76						72
	EL	38	40			40	4%		4		4	44
3	S Goodman St/ Pinetum Dr & Campus Dr											
	SR	12	13			13						13
	ST	560	586	7		593						586
	SL	2	2			2	23%		22		22	22
	WR	1	1			1		11%		7	7	7
	WT							1%		1	1	1
	WL	4	4			4		88%		57	57	57
	NR	1	1			1	76%		74		74	74
	NT	257	269	13		282						269
	NL	6	6			6						6
	ER	6	6			6						6
	ET	1	1			1	1%		1		1	2
	EL	10	10			10						10

PROPOSED COLGATE DIVINITY RE-DEVELOPMENT
CITY OF ROCHESTER, NY
PM PEAK FIG 3 FIG 4 FIG 6 FIG 7 FIG 8

			Num of yrs 3									
LOCATION NUMBER	**INTERSECTION DESCRIPTION**	**2019 Existing Volume**	**2022 Bkgd Vol. 1.50%**	**1201 Elmwood**	**1925 S. Clinton**	**2022 Bkgd Vol.**	**Proposed Colgate Divinity Development** Enter Dist. %	Exit Dist. %	Trips IN 113	Trips OUT 95	**Total Site Trips**	**FULL Build Volumes**
1	S Goodman St/ Elmwood Ave											
	SR	177	185	14		199		26%		25	25	210
	ST											
	SL	14	15			15		21%		20	20	35
	WR	34	36			36	21%		24		24	60
	WT	591	618	28	16	662						618
	WL											
	NR											
	NT											
	NL											
	ER											
	ET	1045	1093	41	11	1145						1093
	EL	418	437	13		450	49%		55		55	492
2	S Goodman St/ Highland Ave											
	SR	79	83			83		7%		7	7	90
	ST	181	189	14		203		47%		45	45	234
	SL	84	88			88		27%		26	26	114
	WR	54	56			56	7%		8		8	64
	WT	99	104	5		109						104
	WL	12	13			13						13
	NR	48	50			50						50
	NT	409	428	13		441	70%		79		79	507
	NL	11	12			12						12
	ER	6	6			6						6
	ET	221	231	3		234						231
	EL	85	89			89	10%		11		11	100
3	S Goodman St/ Pinetum Dr & Campus Dr											
	SR	19	20			20						20
	ST	321	336	14		350						336
	SL	3	3			3	12%		14		14	14
	WR	4	4			4		18%		17	17	17
	WT							1%		1	1	1
	WL	4	4			4		81%		77	77	77
	NR	7	7			7	87%		98		98	98
	NT	516	540	13		553						540
	NL	25	26			26						26
	ER	25	26			26						26
	ET	1	1			1	1%		1		1	2
	EL	19	20			20						20

Intsec, SD → N 343' Actual (Vertical curve)

→ S 295' Actual (Horiz curve)

Stopping SD

SB Goodman St. 300' Actual

NB Goodman St. 236' Actual

View Obstructed by trees

S Goodman at CRDS Dw.
5/2/19 10:30 AM cloudy, dry

Cory R.
Alan S.

SRF ASSOCIATES, D.P.C.
3495 Winton Place, Building E, Suite 110
Rochester, New York 14623

File Name : Speed Study
Site Code : 00000000
Start Date : 7/1/2019
Page No : 1

Class	Vehicle Count	85 Percentile	10 MPH Pace Speed	Number in Pace	Percent in Pace	Number of Vehicles Over 30 MPH	Percent of Vehicles Over 30 MPH	Average Speed	Number of Vehicles Over 30 MPH	Percent of Vehicles Over 30 MPH
Northbound	110	30	21 - 30	100	91	10	9	26	10	9
Southbound	130	32	25 - 34	107	82	43	33	29	43	33
Summary	240	32	23 - 32	194	81	53	22	28	53	22

Guideline for determining left-turn Lane at a two-way stop-controlled intersection
TWO LANE ROADWAY

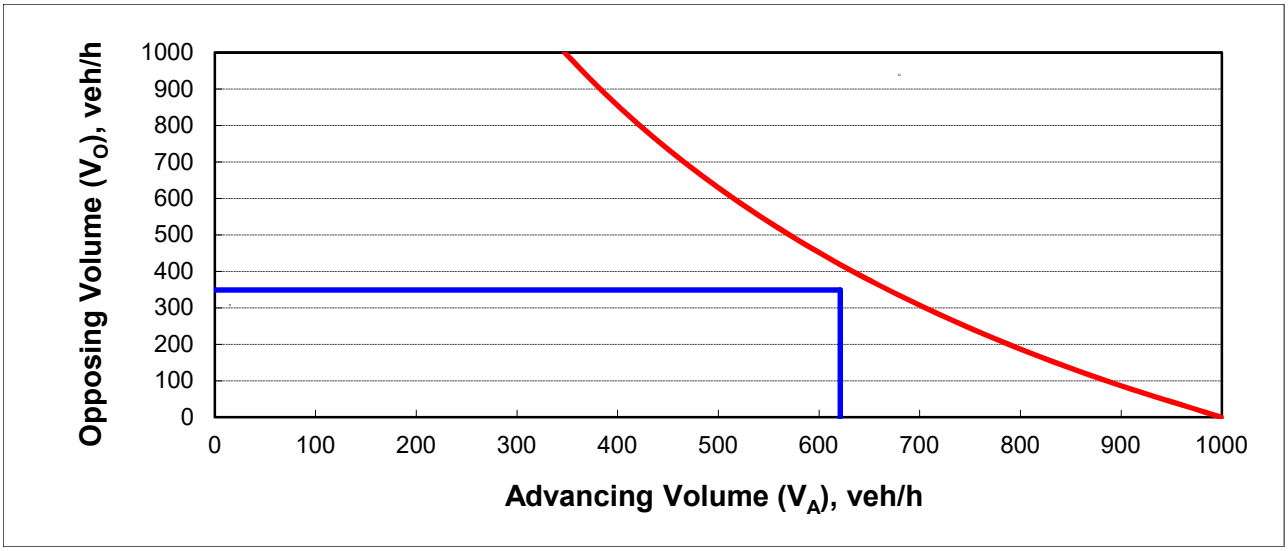
INPUT

Variable	Value
Major Approach	S. Goodman St @ Campus Dr
Approach	SB - AM Peak Full Build
Design Speed Limit - MPH	35
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	621
Opposing volume (V_O), veh/h:	349

CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

PLOT - LINE 1		PLOT - LINE 2	
0	349	621	0
621	349	621	349



OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	669
Guidance for determining the need for a major-road left-turn bay:	
SB - AM Peak Full Build Left-turn treatment NOT warranted at S. Goodman St @ Campus Dr Intersectior	

Guideline for determining left-turn Lane at a two-way stop-controlled intersection
TWO LANE ROADWAY

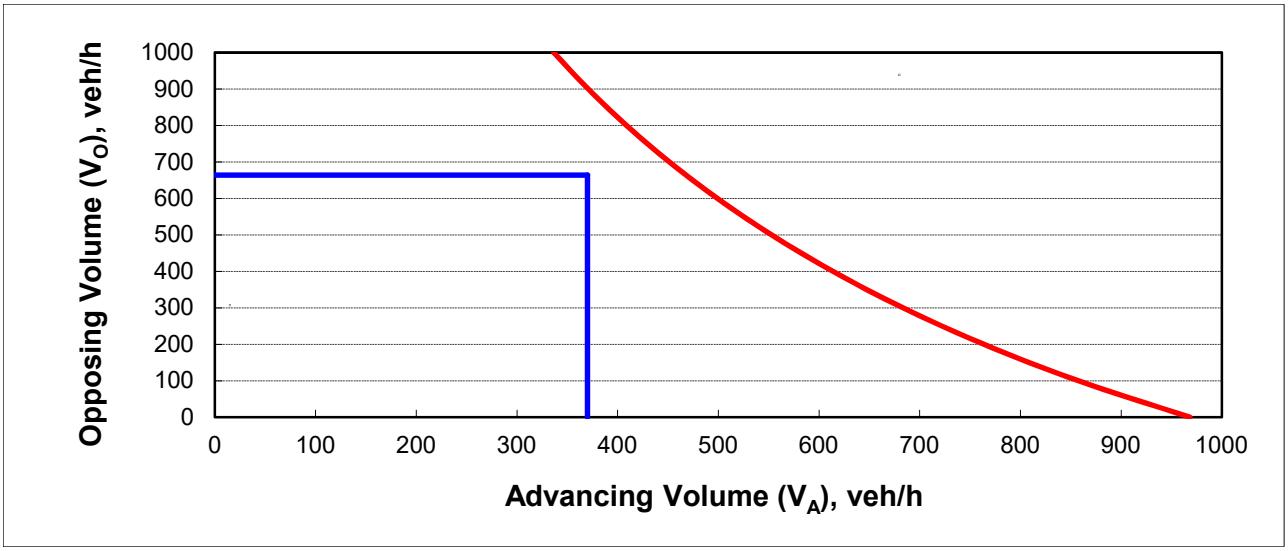
INPUT

Variable	Value
Major Approach	S. Goodman St @ Campus Dr
Approach	SB - PM Peak Full Build
Design Speed Limit - MPH	35
Percent of left-turns in advancing volume (V_A), %:	4%
Advancing volume (V_A), veh/h:	370
Opposing volume (V_O), veh/h:	664

CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

PLOT - LINE 1		PLOT - LINE 2	
0	664	370	0
370	664	370	664



OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	468
Guidance for determining the need for a major-road left-turn bay:	
SB - PM Peak Full Build Left-turn treatment NOT warranted at S. Goodman St @ Campus Dr Intersection	

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ELMWOOD AVENUE at S. GOODMAN STREET
PM PEAK HOUR
Combined (4 Lanes)

Start Time	2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22-23	24-25	26-27	28-29	>29	Int. Total	Average
4:30:00 PM	15	5	2	4	3	0	1	0	1	1	0	0	0	0	0	32	4-5
4:45:00 PM	15	6	2	3	2	1	0	0	0	0	0	0	0	0	0	29	2-3
5:00:00 PM	8	3	2	1	0	2	1	0	0	0	0	0	0	0	0	17	4-5
5:15:00 PM	9	3	1	1	0	0	0	0	0	0	0	0	0	0	0	14	2-3
Grand Total	47	17	7	9	5	3	2	0	1	1	0	0	0	0	0	92	2-3

Left-out	*Headways*		7.5		11		14.5		18	21.5		25		28.5			
tc = 7.5	*% of Gap*		0.25		0.5		0.25		0	0.75		0.5		0.25			
tf = 3.5			1.75	9	3												
					3	3	0.5										
							1.5	0	0								
									1	0.75							
										0.25	0	0					
												0	0	0			
														0	0		
	# of Gaps			***13.25***		***6.00***		***1.50***		***1.75***	***0.25***		***0.00***	***0.00***			

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S. Goodman Street - Left Out (onto Elmwood Avenue)

Proposed Colgate Divinity Redevelopment Project, City of Rochester, NY

PM Peak Hour # of two-*way* gaps (in seconds) between:

7.5	11.0	14.5	18.0	21.5	25.0	28.5	or greater	Left Turn Capacity
13								13
	6							12
		2						6
			1					4
				0				0
					0			0
						0		0
								35

A3

Level of Service:
Criteria and Definitions

Level of Service Criteria

Highway Capacity Manual 2016

SIGNALIZED INTERSECTIONS

Level of Service is a qualitative measure describing operational conditions within a traffic stream, based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience. Level of Service for signalized intersections is defined in terms of delay specifically, average total delay per vehicle for a 15 minute analysis period. The ranges are as follows:

Level of Service	Control Delay per vehicle (seconds)
A	< 10
B	10 – 20
C	20 – 35
D	35 – 55
E	55 – 80
F	>80

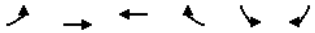
UNSIGNALIZED INTERSECTIONS

Level of Service for unsignalized intersections is also defined in terms of delay. However, the delay criteria are different from a signalized intersection. The primary reason for this is driver expectation that a signalized intersection is designed to carry higher volumes than an unsignalized intersection. The total delay threshold for any given Level of Service is less for an unsignalized intersection than for a signalized intersection. The ranges are as follows:

Level of Service	Control Delay per vehicle (seconds)
A	< 10
B	10 – 15
C	15 – 25
D	25 – 35
E	35 - 50
F	>50

A4

Level of Service Calculations: Existing Conditions



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	145	390	883	20	7	370
Future Volume (vph)	145	390	883	20	7	370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.997			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3526	0	1805	1599
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3526	0	1805	1599
Link Speed (mph)		30	30		30	
Link Distance (ft)		799	1144		2017	
Travel Time (s)		18.2	26.0		45.8	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.89	0.92
Heavy Vehicles (%)	0%	0%	2%	5%	0%	1%
Adj. Flow (vph)	171	459	960	22	8	402
Shared Lane Traffic (%)						
Lane Group Flow (vph)	171	459	982	0	8	402
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 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	145	390	883	20	7	370
Future Vol, veh/h	145	390	883	20	7	370
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	92	92	89	92
Heavy Vehicles, %	0	0	2	5	0	1
Mvmt Flow	171	459	960	22	8	402

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	982	0	-	0	1543	491
Stage 1	-	-	-	-	971	-
Stage 2	-	-	-	-	572	-
Critical Hdwy	4.1	-	-	-	6.8	6.92
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	711	-	-	-	108	526
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	534	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	711	-	-	-	82	526
Mov Cap-2 Maneuver	-	-	-	-	82	-
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	534	-

Approach	EB	WB	SB
HCM Control Delay, s	3.2	0	31.1
HCM LOS			D

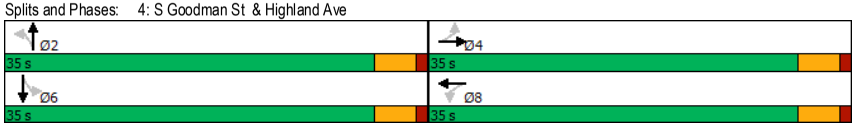
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	711	-	-	-	82	526
HCM Lane V/C Ratio	0.24	-	-	-	0.096	0.765
HCM Control Delay (s)	11.7	-	-	-	53.5	30.7
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	0.9	-	-	-	0.3	6.8

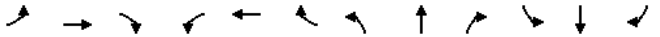
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	69	1	21	249	63	8	165	7	29	365	180
Future Volume (vph)	38	69	1	21	249	63	8	165	7	29	365	180
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	75		0	75		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.974			0.995			0.958	
Flt Protected		0.983			0.997			0.998			0.998	
Satd. Flow (prot)	0	1866	0	0	1845	0	0	1887	0	0	1817	0
Flt Permitted		0.811			0.978			0.969			0.979	
Satd. Flow (perm)	0	1539	0	0	1810	0	0	1832	0	0	1782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			21			3			42	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1290			681			2017			758	
Travel Time (s)		29.3			15.5			45.8			17.2	
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	45	82	1	27	315	80	10	199	8	35	445	220
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	422	0	0	217	0	0	700	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		17.7			17.7			25.1			25.1	
Actuated g/C Ratio		0.34			0.34			0.48			0.48	
v/c Ratio		0.25			0.68			0.25			0.80	
Control Delay		14.6			20.8			9.8			20.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		14.6			20.8			9.8			20.8	
LOS		B			C			A			C	
Approach Delay		14.6			20.8			9.8			20.8	
Approach LOS		B			C			A			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 52.3			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 18.6		Intersection LOS: B	
Intersection Capacity Utilization 67.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: S Goodman St & Highland Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1	10	4	0	1	6	257	1	2	560	12
Future Volume (vph)	6	1	10	4	0	1	6	257	1	2	560	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.977						0.997	
Flt Protected		0.983			0.960			0.999				
Satd. Flow (prot)	0	1715	0	0	1475	0	0	1844	0	0	1876	0
Flt Permitted		0.983			0.960			0.999				
Satd. Flow (perm)	0	1715	0	0	1475	0	0	1844	0	0	1876	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		392			349			758			552	
Travel Time (s)		8.9			7.9			17.2			12.5	
Peak Hour Factor	0.71	0.71	0.71	0.42	0.42	0.42	0.87	0.87	0.87	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	8	1	14	10	0	2	7	295	1	2	683	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	12	0	0	303	0	0	700	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

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

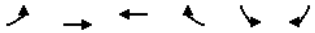
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	1	10	4	0	1	6	257	1	2	560	12
Future Vol, veh/h	6	1	10	4	0	1	6	257	1	2	560	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	42	42	42	87	87	87	82	82	82
Heavy Vehicles, %	0	0	0	25	0	0	0	3	0	0	1	0
Mvmt Flow	8	1	14	10	0	2	7	295	1	2	683	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1006	1005	691	1012	1012	296	698	0	0	296	0	0
Stage 1	695	695	-	310	310	-	-	-	-	-	-	-
Stage 2	311	310	-	702	702	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.35	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.35	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.35	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.725	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	222	243	448	198	241	748	908	-	-	1277	-	-
Stage 1	436	447	-	654	663	-	-	-	-	-	-	-
Stage 2	704	663	-	394	443	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	219	240	448	189	238	748	908	-	-	1277	-	-
Mov Cap-2 Maneuver	219	240	-	189	238	-	-	-	-	-	-	-
Stage 1	432	446	-	648	657	-	-	-	-	-	-	-
Stage 2	695	657	-	379	442	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.4	22.1	0.2	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	908	-	-	315	222	1277	-	-
HCM Lane V/C Ratio	0.008	-	-	0.076	0.054	0.002	-	-
HCM Control Delay (s)	9	0	-	17.4	22.1	7.8	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.2	0	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	418	1045	591	34	14	177
Future Volume (vph)	418	1045	591	34	14	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.992			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3574	3581	0	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3574	3581	0	1805	1615
Link Speed (mph)		30	30		30	
Link Distance (ft)		799	1144		2017	
Travel Time (s)		18.2	26.0		45.8	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	459	1148	687	40	16	201
Shared Lane Traffic (%)						
Lane Group Flow (vph)	459	1148	727	0	16	201
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	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	418	1045	591	34	14	177
Future Vol, veh/h	418	1045	591	34	14	177
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	86	86	88	88
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	459	1148	687	40	16	201

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	727	0	-	0	2199	364
Stage 1	-	-	-	-	707	-
Stage 2	-	-	-	-	1492	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	886	-	-	-	39	639
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	176	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	886	-	-	-	19	639
Mov Cap-2 Maneuver	-	-	-	-	19	-
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	176	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	43.6
HCM LOS			E

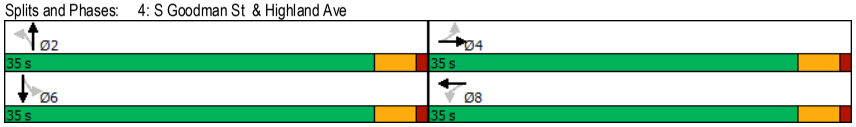
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	886	-	-	-	19	639
HCM Lane V/C Ratio	0.518	-	-	-	0.837	0.315
HCM Control Delay (s)	13.4	-	-	-	$ 427.6	13.2
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	3.1	-	-	-	2.3	1.3

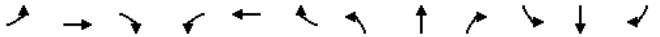
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	221	6	12	99	54	11	409	48	84	181	79
Future Volume (vph)	85	221	6	12	99	54	11	409	48	84	181	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.956			0.986			0.969	
Flt Protected		0.987			0.996			0.999			0.988	
Satd. Flow (prot)	0	1870	0	0	1809	0	0	1872	0	0	1819	0
Flt Permitted		0.858			0.965			0.990			0.808	
Satd. Flow (perm)	0	1625	0	0	1753	0	0	1855	0	0	1488	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			44			10			27	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1290			681			2017			758	
Travel Time (s)		29.3			15.5			45.8			17.2	
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.89	0.89	0.89	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	97	251	7	14	118	64	12	460	54	88	189	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	355	0	0	196	0	0	526	0	0	359	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		15.7			15.7			18.1			18.1	
Actuated g/C Ratio		0.36			0.36			0.41			0.41	
v/c Ratio		0.61			0.30			0.68			0.57	
Control Delay		17.5			10.2			15.9			13.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		17.5			10.2			15.9			13.7	
LOS		B			B			B			B	
Approach Delay		17.5			10.2			15.9			13.7	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 43.7			
Natural Cycle: 50			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 15.0		Intersection LOS: B	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: S Goodman St & Highland Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1	25	4	0	4	25	516	7	3	321	19
Future Volume (vph)	19	1	25	4	0	4	25	516	7	3	321	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.925			0.932			0.998			0.993	
Flt Protected		0.979			0.976			0.998				
Satd. Flow (prot)	0	1721	0	0	1711	0	0	1892	0	0	1869	0
Flt Permitted		0.979			0.976			0.998				
Satd. Flow (perm)	0	1721	0	0	1711	0	0	1892	0	0	1869	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		392			349			758			552	
Travel Time (s)		8.9			7.9			17.2			12.5	
Peak Hour Factor	0.80	0.80	0.80	0.50	0.50	0.50	0.91	0.91	0.91	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	24	1	31	8	0	8	27	567	8	3	338	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	56	0	0	16	0	0	602	0	0	361	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	1	25	4	0	4	25	516	7	3	321	19
Future Vol, veh/h	19	1	25	4	0	4	25	516	7	3	321	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	91	91	91	95	95	95
Heavy Vehicles, %	0	0	0	0	0	2	0	0	0	0	1	0
Mvmt Flow	24	1	31	8	0	8	27	567	8	3	338	20

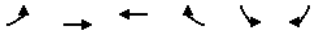
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	983	983	348	995	989	571	358	0	0	575	0	0
Stage 1	354	354	-	625	625	-	-	-	-	-	-	-
Stage 2	629	629	-	370	364	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	230	251	700	226	249	520	1212	-	-	1008	-	-
Stage 1	667	634	-	476	480	-	-	-	-	-	-	-
Stage 2	474	478	-	654	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	220	242	700	209	240	520	1212	-	-	1008	-	-
Mov Cap-2 Maneuver	220	242	-	209	240	-	-	-	-	-	-	-
Stage 1	645	631	-	460	464	-	-	-	-	-	-	-
Stage 2	451	462	-	621	624	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17	17.8	0.4	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1212	-	-	357	298	1008	-	-
HCM Lane V/C Ratio	0.023	-	-	0.158	0.054	0.003	-	-
HCM Control Delay (s)	8	0	-	17	17.8	8.6	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.2	0	-	-

A5

Level of Service Calculations: Background Conditions



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	165	451	957	21	7	394
Future Volume (vph)	165	451	957	21	7	394
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.997			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3526	0	1805	1599
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3526	0	1805	1599
Link Speed (mph)		30	30		30	
Link Distance (ft)		799	1144		2017	
Travel Time (s)		18.2	26.0		45.8	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.89	0.92
Heavy Vehicles (%)	0%	0%	2%	5%	0%	1%
Adj. Flow (vph)	194	531	1040	23	8	428
Shared Lane Traffic (%)						
Lane Group Flow (vph)	194	531	1063	0	8	428
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 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	165	451	957	21	7	394
Future Vol, veh/h	165	451	957	21	7	394
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	92	92	89	92
Heavy Vehicles, %	0	0	2	5	0	1
Mvmt Flow	194	531	1040	23	8	428

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1063	0	-	0	1706	532
Stage 1	-	-	-	-	1052	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.1	-	-	-	6.8	6.92
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	663	-	-	-	84	495
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	485	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	663	-	-	-	59	495
Mov Cap-2 Maneuver	-	-	-	-	59	-
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	485	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	43.8
HCM LOS			E

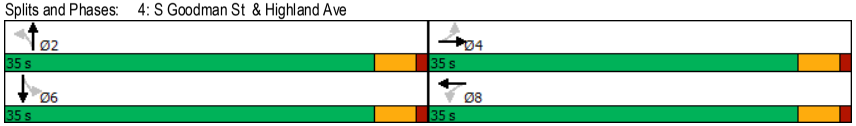
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	663	-	-	-	59	495
HCM Lane V/C Ratio	0.293	-	-	-	0.133	0.865
HCM Control Delay (s)	12.7	-	-	-	75.2	43.2
HCM Lane LOS	B	-	-	-	F	E
HCM 95th %tile Q(veh)	1.2	-	-	-	0.4	9.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	76	1	22	263	66	8	186	7	30	389	188
Future Volume (vph)	40	76	1	22	263	66	8	186	7	30	389	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	75		0	75		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.975			0.996			0.958	
Flt Protected		0.983			0.997			0.998			0.998	
Satd. Flow (prot)	0	1866	0	0	1847	0	0	1889	0	0	1817	0
Flt Permitted		0.784			0.977			0.971			0.977	
Satd. Flow (perm)	0	1488	0	0	1810	0	0	1838	0	0	1778	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			21			3			41	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1290			681			2017			758	
Travel Time (s)		29.3			15.5			45.8			17.2	
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	48	90	1	28	333	84	10	224	8	37	474	229
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	0	445	0	0	242	0	0	740	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		19.0			19.0			27.8			27.8	
Actuated g/C Ratio		0.34			0.34			0.50			0.50	
v/c Ratio		0.28			0.71			0.27			0.82	
Control Delay		15.3			22.5			10.4			23.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.3			22.5			10.4			23.0	
LOS		B			C			B			C	
Approach Delay		15.3			22.5			10.4			23.0	
Approach LOS		B			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 56.1			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 20.3		Intersection LOS: C	
Intersection Capacity Utilization 71.0%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 4: S Goodman St & Highland Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1	10	4	0	1	6	282	1	2	593	13
Future Volume (vph)	6	1	10	4	0	1	6	282	1	2	593	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.918			0.977						0.997	
Flt Protected		0.983			0.960			0.999				
Satd. Flow (prot)	0	1715	0	0	1475	0	0	1844	0	0	1876	0
Flt Permitted		0.983			0.960			0.999				
Satd. Flow (perm)	0	1715	0	0	1475	0	0	1844	0	0	1876	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		392			349			758			552	
Travel Time (s)		8.9			7.9			17.2			12.5	
Peak Hour Factor	0.71	0.71	0.71	0.42	0.42	0.42	0.87	0.87	0.87	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	8	1	14	10	0	2	7	324	1	2	723	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	23	0	0	12	0	0	332	0	0	741	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	1	10	4	0	1	6	282	1	2	593	13
Future Vol, veh/h	6	1	10	4	0	1	6	282	1	2	593	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	42	42	42	87	87	87	82	82	82
Heavy Vehicles, %	0	0	0	25	0	0	0	3	0	0	1	0
Mvmt Flow	8	1	14	10	0	2	7	324	1	2	723	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1075	1074	731	1082	1082	325	739	0	0	325	0	0
Stage 1	735	735	-	339	339	-	-	-	-	-	-	-
Stage 2	340	339	-	743	743	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.35	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.35	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.35	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.725	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	199	222	425	176	219	721	876	-	-	1246	-	-
Stage 1	414	428	-	630	643	-	-	-	-	-	-	-
Stage 2	679	643	-	374	425	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	196	219	425	168	216	721	876	-	-	1246	-	-
Mov Cap-2 Maneuver	196	219	-	168	216	-	-	-	-	-	-	-
Stage 1	410	427	-	624	637	-	-	-	-	-	-	-
Stage 2	670	637	-	359	424	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.5	24.3	0.2	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	876	-	-	290	198	1246	-	-
HCM Lane V/C Ratio	0.008	-	-	0.083	0.06	0.002	-	-
HCM Control Delay (s)	9.1	0	-	18.5	24.3	7.9	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	450	1145	662	36	15	199
Future Volume (vph)	450	1145	662	36	15	199
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.992			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3574	3581	0	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3574	3581	0	1805	1615
Link Speed (mph)		30	30		30	
Link Distance (ft)		799	1144		2017	
Travel Time (s)		18.2	26.0		45.8	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	495	1258	770	42	17	226
Shared Lane Traffic (%)						
Lane Group Flow (vph)	495	1258	812	0	17	226
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 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	9.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	450	1145	662	36	15	199
Future Vol, veh/h	450	1145	662	36	15	199
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	86	86	88	88
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	495	1258	770	42	17	226

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	812	0	-	0	2410	406
Stage 1	-	-	-	-	791	-
Stage 2	-	-	-	-	1619	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	823	-	-	-	28	600
Stage 1	-	-	-	-	412	-
Stage 2	-	-	-	-	150	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	823	-	-	-	~ 11	600
Mov Cap-2 Maneuver	-	-	-	-	~ 11	-
Stage 1	-	-	-	-	164	-
Stage 2	-	-	-	-	150	-

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	80.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	823	-	-	-	11	600
HCM Lane V/C Ratio	0.601	-	-	-	1.55	0.377
HCM Control Delay (s)	15.7	-	-	-	$ 949.4	14.6
HCM Lane LOS	C	-	-	-	F	B
HCM 95th %tile Q(veh)	4.1	-	-	-	2.9	1.7

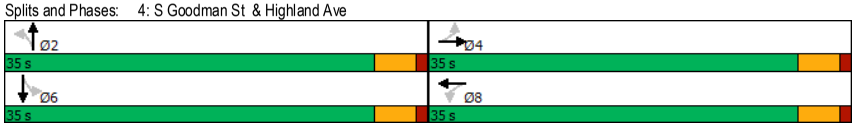
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

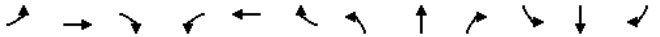
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	234	6	13	109	56	12	441	50	88	203	83
Future Volume (vph)	89	234	6	13	109	56	12	441	50	88	203	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.957			0.987			0.970	
Flt Protected		0.987			0.996			0.999			0.988	
Satd. Flow (prot)	0	1870	0	0	1811	0	0	1873	0	0	1821	0
Flt Permitted		0.859			0.964			0.989			0.792	
Satd. Flow (perm)	0	1627	0	0	1753	0	0	1855	0	0	1460	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			42			10			26	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1290			681			2017			758	
Travel Time (s)		29.3			15.5			45.8			17.2	
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.89	0.89	0.89	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	101	266	7	15	130	67	13	496	56	92	211	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	374	0	0	212	0	0	565	0	0	389	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		5.0			5.0			5.0			5.0	
Minimum Split (s)		22.5			22.5			22.5			22.5	
Total Split (s)		35.0			35.0			35.0			35.0	
Total Split (%)		50.0%			50.0%			50.0%			50.0%	
Maximum Green (s)		30.5			30.5			30.5			30.5	
Yellow Time (s)		3.5			3.5			3.5			3.5	
All-Red Time (s)		1.0			1.0			1.0			1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			None			None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		17.0			17.0			19.7			19.7	
Actuated g/C Ratio		0.37			0.37			0.42			0.42	
v/c Ratio		0.63			0.32			0.71			0.61	
Control Delay		18.4			10.8			17.5			15.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		18.4			10.8			17.5			15.4	
LOS		B			B			B			B	
Approach Delay		18.4			10.8			17.5			15.4	
Approach LOS		B			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 46.5			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 16.3		Intersection LOS: B	
Intersection Capacity Utilization 90.0%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 4: S Goodman St & Highland Ave





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	1	26	4	0	4	26	553	7	3	350	20
Future Volume (vph)	20	1	26	4	0	4	26	553	7	3	350	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.924			0.932			0.998			0.993	
Flt Protected		0.979			0.976			0.998				
Satd. Flow (prot)	0	1719	0	0	1711	0	0	1892	0	0	1869	0
Flt Permitted		0.979			0.976			0.998				
Satd. Flow (perm)	0	1719	0	0	1711	0	0	1892	0	0	1869	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		392			349			758			552	
Travel Time (s)		8.9			7.9			17.2			12.5	
Peak Hour Factor	0.80	0.80	0.80	0.50	0.50	0.50	0.91	0.91	0.91	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	25	1	33	8	0	8	29	608	8	3	368	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	16	0	0	645	0	0	392	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.7%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	26	4	0	4	26	553	7	3	350	20
Future Vol, veh/h	20	1	26	4	0	4	26	553	7	3	350	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	50	50	50	91	91	91	95	95	95
Heavy Vehicles, %	0	0	0	0	0	2	0	0	0	0	1	0
Mvmt Flow	25	1	33	8	0	8	29	608	8	3	368	21

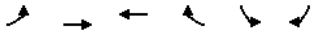
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1059	1059	379	1072	1065	612	389	0	0	616	0	0
Stage 1	385	385	-	670	670	-	-	-	-	-	-	-
Stage 2	674	674	-	402	395	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	204	226	672	200	224	493	1181	-	-	974	-	-
Stage 1	642	614	-	450	459	-	-	-	-	-	-	-
Stage 2	448	457	-	629	608	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	194	217	672	184	215	493	1181	-	-	974	-	-
Mov Cap-2 Maneuver	194	217	-	184	215	-	-	-	-	-	-	-
Stage 1	618	612	-	433	442	-	-	-	-	-	-	-
Stage 2	424	440	-	595	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.7	19.3	0.4	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1181	-	-	321	268	974	-	-
HCM Lane V/C Ratio	0.024	-	-	0.183	0.06	0.003	-	-
HCM Control Delay (s)	8.1	0	-	18.7	19.3	8.7	0	-
HCM Lane LOS	A	A	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	0.2	0	-	-

A6

Level of Service Calculations: Full Development Conditions



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	173	408	923	57	15	420
Future Volume (vph)	173	408	923	57	15	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.991			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3610	3501	0	1805	1599
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3610	3501	0	1805	1599
Link Speed (mph)		30	30		30	
Link Distance (ft)		799	1144		2017	
Travel Time (s)		18.2	26.0		45.8	
Peak Hour Factor	0.85	0.85	0.92	0.92	0.89	0.92
Heavy Vehicles (%)	0%	0%	2%	5%	0%	1%
Adj. Flow (vph)	204	480	1003	62	17	457
Shared Lane Traffic (%)						
Lane Group Flow (vph)	204	480	1065	0	17	457
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 60.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	12.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	173	408	923	57	15	420
Future Vol, veh/h	173	408	923	57	15	420
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	92	92	89	92
Heavy Vehicles, %	0	0	2	5	0	1
Mvmt Flow	204	480	1003	62	17	457

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1065	0	-	0	1682	533
Stage 1	-	-	-	-	1034	-
Stage 2	-	-	-	-	648	-
Critical Hdwy	4.1	-	-	-	6.8	6.92
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.31
Pot Cap-1 Maneuver	662	-	-	-	87	494
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	488	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	662	-	-	-	60	494
Mov Cap-2 Maneuver	-	-	-	-	60	-
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	488	-

Approach	EB	WB	SB
HCM Control Delay, s	3.8	0	54.1
HCM LOS			F

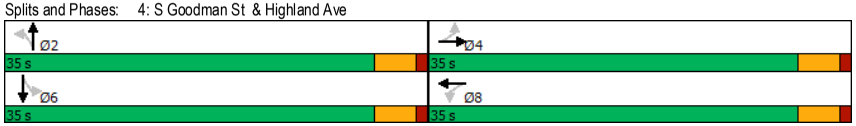
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	662	-	-	-	60	494
HCM Lane V/C Ratio	0.307	-	-	-	0.281	0.924
HCM Control Delay (s)	12.8	-	-	-	86.9	52.9
HCM Lane LOS	B	-	-	-	F	F
HCM 95th %tile Q(veh)	1.3	-	-	-	1	10.9

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	72	1	22	260	79	8	230	7	35	422	200
Future Volume (vph)	44	72	1	22	260	79	8	230	7	35	422	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	75		0	75		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.999			0.970			0.996			0.959	
Flt Protected		0.982			0.997			0.998			0.997	
Satd. Flow (prot)	0	1864	0	0	1837	0	0	1889	0	0	1817	0
Flt Permitted		0.729			0.978			0.974			0.971	
Satd. Flow (perm)	0	1384	0	0	1802	0	0	1843	0	0	1769	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			26			3			40	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1290			681			2017			758	
Travel Time (s)		29.3			15.5			45.8			17.2	
Peak Hour Factor	0.84	0.84	0.84	0.79	0.79	0.79	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	52	86	1	28	329	100	10	277	8	43	515	244
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	139	0	0	457	0	0	295	0	0	802	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	35.0	35.0		35.0	35.0		35.0	35.0		35.0	35.0	
Total Split (%)	50.0%	50.0%		50.0%	50.0%		50.0%	50.0%		50.0%	50.0%	
Maximum Green (s)	30.5	30.5		30.5	30.5		30.5	30.5		30.5	30.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		19.6			19.6			30.9			30.9	
Actuated g/C Ratio		0.33			0.33			0.52			0.52	
v/c Ratio		0.30			0.75			0.31			0.86	
Control Delay		15.9			24.6			10.9			26.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		15.9			24.6			10.9			26.2	
LOS		B			C			B			C	
Approach Delay		15.9			24.6			10.9			26.2	
Approach LOS		B			C			B			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 59.6			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay: 22.3		Intersection LOS: C	
Intersection Capacity Utilization 78.1%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 4: S Goodman St & Highland Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	2	6	57	1	7	6	269	74	22	586	13
Future Volume (vph)	10	2	6	57	1	7	6	269	74	22	586	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.957			0.985			0.971			0.997	
Flt Protected		0.973			0.958			0.999			0.998	
Satd. Flow (prot)	0	1769	0	0	1471	0	0	1801	0	0	1873	0
Flt Permitted		0.973			0.958			0.999			0.998	
Satd. Flow (perm)	0	1769	0	0	1471	0	0	1801	0	0	1873	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		392			349			758			552	
Travel Time (s)		8.9			7.9			17.2			12.5	
Peak Hour Factor	0.71	0.71	0.71	0.80	0.80	0.80	0.87	0.87	0.87	0.82	0.82	0.82
Heavy Vehicles (%)	0%	0%	0%	25%	0%	0%	0%	3%	0%	0%	1%	0%
Adj. Flow (vph)	14	3	8	71	1	9	7	309	85	27	715	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	81	0	0	401	0	0	758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

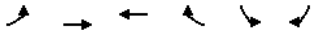
Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	2	6	57	1	7	6	269	74	22	586	13
Future Vol, veh/h	10	2	6	57	1	7	6	269	74	22	586	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	71	71	71	80	80	80	87	87	87	82	82	82
Heavy Vehicles, %	0	0	0	25	0	0	0	3	0	0	1	0
Mvmt Flow	14	3	8	71	1	9	7	309	85	27	715	16

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1148	1185	723	1149	1151	352	731	0	0	394	0	0
Stage 1	777	777	-	366	366	-	-	-	-	-	-	-
Stage 2	371	408	-	783	785	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.35	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.35	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.35	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.725	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	177	191	430	158	200	696	883	-	-	1176	-	-
Stage 1	393	410	-	609	626	-	-	-	-	-	-	-
Stage 2	653	600	-	354	407	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	167	182	430	147	190	696	883	-	-	1176	-	-
Mov Cap-2 Maneuver	167	182	-	147	190	-	-	-	-	-	-	-
Stage 1	389	394	-	603	620	-	-	-	-	-	-	-
Stage 2	637	594	-	331	391	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	24.3	48.2	0.2	0.3
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	883	-	-	212	161	1176	-	-
HCM Lane V/C Ratio	0.008	-	-	0.12	0.505	0.023	-	-
HCM Control Delay (s)	9.1	0	-	24.3	48.2	8.1	0	-
HCM Lane LOS	A	A	-	C	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	2.5	0.1	-	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	492	1093	618	60	35	210
Future Volume (vph)	492	1093	618	60	35	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	100
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.987			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	3574	3563	0	1805	1615
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1805	3574	3563	0	1805	1615
Link Speed (mph)		30	30		30	
Link Distance (ft)		799	1144		2017	
Travel Time (s)		18.2	26.0		45.8	
Peak Hour Factor	0.91	0.91	0.86	0.86	0.88	0.88
Heavy Vehicles (%)	0%	1%	0%	0%	0%	0%
Adj. Flow (vph)	541	1201	719	70	40	239
Shared Lane Traffic (%)						
Lane Group Flow (vph)	541	1201	789	0	40	239
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 59.6%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	33.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	492	1093	618	60	35	210
Future Vol, veh/h	492	1093	618	60	35	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	100
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	86	86	88	88
Heavy Vehicles, %	0	1	0	0	0	0
Mvmt Flow	541	1201	719	70	40	239

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	789	0	-	0	2437	395
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	1683	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	840	-	-	-	~ 27	610
Stage 1	-	-	-	-	431	-
Stage 2	-	-	-	-	139	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	840	-	-	-	~ 10	610
Mov Cap-2 Maneuver	-	-	-	-	~ 10	-
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	139	-

Approach	EB	WB	SB
HCM Control Delay, s	5.2	0	$ 309.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	840	-	-	-	10	610
HCM Lane V/C Ratio	0.644	-	-	-	3.977	0.391
HCM Control Delay (s)	16.7	-	-	-	$ 2080.4	14.6
HCM Lane LOS	C	-	-	-	F	B
HCM 95th %tile Q(veh)	4.8	-	-	-	6.1	1.9

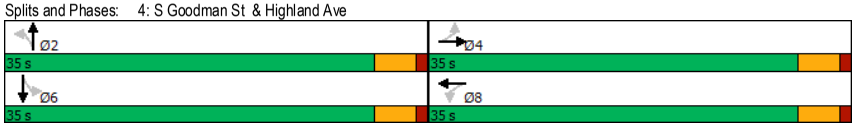
Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	231	6	13	104	64	12	507	50	114	234	90
Future Volume (vph)	100	231	6	13	104	64	12	507	50	114	234	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.952			0.988			0.972	
Flt Protected		0.985			0.997			0.999			0.987	
Satd. Flow (prot)	0	1868	0	0	1803	0	0	1875	0	0	1823	0
Flt Permitted		0.854			0.964			0.989			0.724	
Satd. Flow (perm)	0	1619	0	0	1744	0	0	1857	0	0	1337	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			50			9			24	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1290			681			2017			758	
Travel Time (s)		29.3			15.5			45.8			17.2	
Peak Hour Factor	0.88	0.88	0.88	0.84	0.84	0.84	0.89	0.89	0.89	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	114	263	7	15	124	76	13	570	56	119	244	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	384	0	0	215	0	0	639	0	0	457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s)		5.0			5.0			5.0			5.0	
Minimum Split (s)		22.5			22.5			22.5			22.5	
Total Split (s)		35.0			35.0			35.0			35.0	
Total Split (%)		50.0%			50.0%			50.0%			50.0%	
Maximum Green (s)		30.5			30.5			30.5			30.5	
Yellow Time (s)		3.5			3.5			3.5			3.5	
All-Red Time (s)		1.0			1.0			1.0			1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Recall Mode		None			None			None			None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)		18.4			18.4			24.8			24.8	
Actuated g/C Ratio		0.35			0.35			0.47			0.47	
v/c Ratio		0.68			0.34			0.73			0.71	
Control Delay		22.2			11.9			18.4			19.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.2			11.9			18.4			19.7	
LOS		C			B			B			B	
Approach Delay		22.2			11.9			18.4			19.7	
Approach LOS		C			B			B			B	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 52.8			
Natural Cycle: 55			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay: 18.8		Intersection LOS: B	
Intersection Capacity Utilization 97.6%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 4: S Goodman St & Highland Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	2	26	77	1	17	26	540	98	14	336	20
Future Volume (vph)	20	2	26	77	1	17	26	540	98	14	336	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.927			0.976			0.980			0.993	
Flt Protected		0.980			0.961			0.998			0.998	
Satd. Flow (prot)	0	1726	0	0	1776	0	0	1858	0	0	1866	0
Flt Permitted		0.980			0.961			0.998			0.998	
Satd. Flow (perm)	0	1726	0	0	1776	0	0	1858	0	0	1866	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		392			349			758			552	
Travel Time (s)		8.9			7.9			17.2			12.5	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.91	0.91	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%
Adj. Flow (vph)	25	3	33	96	1	21	29	593	108	15	354	21
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	118	0	0	730	0	0	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 61.0%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	2	26	77	1	17	26	540	98	14	336	20
Future Vol, veh/h	20	2	26	77	1	17	26	540	98	14	336	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	91	91	91	95	95	95
Heavy Vehicles, %	0	0	0	0	0	2	0	0	0	0	1	0
Mvmt Flow	25	3	33	96	1	21	29	593	108	15	354	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1111	1154	365	1118	1110	647	375	0	0	701	0	0
Stage 1	395	395	-	705	705	-	-	-	-	-	-	-
Stage 2	716	759	-	413	405	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.22	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.318	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	188	199	685	186	211	471	1195	-	-	905	-	-
Stage 1	634	608	-	430	442	-	-	-	-	-	-	-
Stage 2	424	418	-	620	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	170	187	685	167	198	471	1195	-	-	905	-	-
Mov Cap-2 Maneuver	170	187	-	167	198	-	-	-	-	-	-	-
Stage 1	608	595	-	412	424	-	-	-	-	-	-	-
Stage 2	387	401	-	576	589	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.7	51.7	0.3	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1195	-	-	289	189	905	-	-
HCM Lane V/C Ratio	0.024	-	-	0.208	0.628	0.016	-	-
HCM Control Delay (s)	8.1	0	-	20.7	51.7	9	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	3.6	0.1	-	-